

**FACTORS INFLUENCING THE IMPLEMENTATION OF HEALTHCARE  
PROJECTS: THE CASE OF MERU COUNTY, KENYA.**

**By**

**ZABERIO GITONGA**

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## DECLARATION

I declare that this research project is my own original work and it has not been presented in this or any other institution for any award.

**Signature:** .....

**Date:** .....

**Name: Zaberio Gitonga**

**L50/84586/2016**

This research project has been presented for examination with my approval as the university supervisor.

**Signature;** .....

**Date:** .....

**Dr. Peter Keiyoro**

**Senior Lecturer; School of open and Distance learning**

**Odel campus, University of Nairobi.**

## **DEDICATION**

This work is dedicated to my loving wife Catherine Gitonga and my children Agnes Nkirote, Risper Gatwiri, Christine Kananu and Victor Mutuma. Their moral support during the period of struggle for this degree and contribution towards my success is invaluable.

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## **BBREVIATIONS AND ACRONYMS**

|                        |   |
|------------------------|---|
| <b>A.C</b>             | Autonomous Communities                                |
| <b>AIDS</b>            | Acquired Immunodeficiency Syndrome                    |
| <b>ATW</b>             | Ambulatory Testing Workflow                           |
| <b>CHSB</b>            | Council Health Service Board                          |
| <b>CHWs</b>            | Community Health Workers                              |
| <b>COPD</b>            | Chronic Obstructive Pulmonary Disease                 |
| <b>CSOs</b>            | Civil Society Organizations                           |
| <b>DHSC</b>            | Departmental Health Social Councils                   |
| <b>FBO</b>             | Faith Based Organizations                             |
| <b>HHR</b>             | Human Resources for Health                            |
| <b>HIV</b>             | Human immunodeficiency virus                          |
| <b>HRIS</b>            | Human Resources Information Systems                   |
| <b>LHC</b>             | Local Health Committees                               |
| <b>LTW</b>             | Laboratory Testing Workflow                           |
| <b>MCH</b>             | Maternal and Child Health care                        |
| <b>MCHI</b>            | Maternal and Child Health Information                 |
| <b>NGO</b>             | Non-Governmental Organizations                        |
| <b>OECD</b>            | Organization for Economic Cooperation and Development |
| <b>PA</b>              | Performance Appraisals                                |
| <b>PHC</b>             | Primary Health Care                                   |
| <b>SWF</b>             | Scheduled Workflow                                    |
| <b>TBA<sub>s</sub></b> | Traditional Birth Attendants                          |
| <b>T.B</b>             | Tuberculosis  |
| <b>U.K</b>             | United Kingdom  |
| <b>VHT</b>             | Village Health Teams                                  |

## ABSTRACT

The devolving of national government functions in Kenya especially the implementation of health care is influenced by various factors in the expedition process of these projects. This study investigated the issues that influence the implementation of health care projects under the devolved system of governance. It investigated the influence of: collaborations of communities, distribution of human resources for health, financing of human resources for health and health infrastructure and learning and adoption of best practices. The study was hinged on four theories; Empowerment Theory, Theory of Optimal Resource Allocation, Theory of Fiscal Decentralization and Organizational Learning Theory. The study employed descriptive survey research design. Target population of 703 respondents. The sample size was of 15 (n=15), Meru County Government Department of Health Staff, 224 (n=224) Medical personnel working at public hospitals managed by the Department of Health Meru County and 10 (n=10) Health Civil Societies' Managers that were selected to participate in the study. Stratified sampling and Simple random sampling were used to pick the respondents. Questionnaires were used to collect data in the study locale. Data was analyzed qualitatively and quantitatively using Statistical Package for the Social Sciences (SPSS) version 22.0, was presented in Frequency and Percentage tables and the regression model  $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$  was applied. The study established that collaboration of communities, distribution of human resources, financing, learning and adoption all influenced the implementation of health care projects under devolved system of governance in Meru County, Kenya. Many of the respondents as shown by a mean of 3.74 agreed that collaboration of communities significantly influenced the implementation of county funded health care projects' sustainability. A good number of the respondents as shown by a Mean of 3.77 agreed that the successful implementation of county funded healthcare projects was influenced by the distribution of human resources for health in Meru County. Further, the results of this research as shown by a mean of 3.87 have revealed that health grants are not utilized due existing corruption adversely influencing the implementation of health care projects at the devolved governance level. 65.6% of respondents agreed that there was need to adopt performance appraisals and evaluations on medical personnel to enhance provision of health care services in the county under study. The study concludes that benchmarking is an important learning tool for medical personnel in enhancing of quality standards in health care provision. It can also be concluded that, adequate financial resources disbursed in good time are key drivers of the implementation of health care projects in Meru County. From the findings, the study recommends that an enforcement of Kenya's Health Policy 2011–2030 on distribution of human resources for health in public health facilities. The study also recommends that the county government should adopt an effective stakeholder mobilization strategy that would help build working collaborations with other health sector players like Non-governmental Organizations, community based organizations and private companies for the realization of health goals in Kenya through devolved units. Studies could be done in other counties in the country for purposes of comparison and generalization.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background to the Study**

According to Bremner (2011) health care services provisions in the devolved system of governance refers to the various processes undertaken by sub-national governments through which inputs like; finances, human resources, equipment, medical drugs and other essential supplies are amalgamated to facilitate the delivery of health interventions to the populace. White, (2011) observes that it is the lack of one or several of these inputs that influences the provision of healthcare in the devolved even at lowest level; primary care. In Colombia, Faguet (2009) reported that budget constraints did lead to the introduction of local taxation measures to enhance the financing of human resources for health (HRH) and health infrastructure by local governments. Méndez and Torres, (2010) reported on challenges of distribution of human resources for health that did adversely influence the implementation of health care projects by regional governments for the provision of health services in Chile.

Loayza, Rigolini and Calvo-González (2014) reported that issues of financial planning and inadequate local taxation systems coupled with staffing of hospitals did have a negative influence on the implementation process of health care projects and the provision of health services by municipal governments in Peru. In Bolivia, Torri and Hollenber (2013) reported failure to form partnerships between traditional healers and biomedical staff (doctors and nurses) did adversely influence the implementation of comprehensive health care projects that would have enhanced the provision of health services by departmental governments. Challenges related to financing emanating from low levels of disbursements from the central government that contributed to bottlenecks of low staffing of HRH adversely influenced the implementation of health care projects that would have witnessed the provision of health services by municipal governments in Nicaragua (Mathauer, Cavagnero, Vivas & Carrin, 2010).

Devolution of the health care function has brought with it different results in Europe especially in matters health care projects. In Uzbekistan, Ahmedov et la., (2014) reported that the un-even distribution of human resources for health did adversely influence the implementation of health care projects by provincial governments derailing access to health care services in the remote areas of the country. Collins and Hayes (2010) reported that collaborative communities which

included partnerships with non-governmental organizations and other levels of government did both positively influence the implementation of health care projects by municipal governments and enhancing the provision of health care services in Portugal. In Serbia, Milicevic, Vasic and Edwards (2015) reported that bottlenecks related to distribution of human resources and financing did adversely influence both the implementation of health care projects and provision of health care services by municipal governments. Bordignon and Turati, (2009) also reported that issues of financing of human resources for health and health infrastructure adversely influenced the implementation of health-care projects for provision of health care services by regional governments in Italy.

Costa-Font, (2010) reported the existence of inequalities in the distribution process for human resources for health and the construction of better health care facilities emanating from poor intergovernmental relations and poor financial planning adversely influenced the provision of healthcare services by regional governments in Spain. Chestnutt, (2014) reported that effective financing of human resources for health and health infrastructure did positively influence the implementation of dentistry health care projects and the provision of these services in Wales. In Denmark, Pedersen, Andersen & Søndergaard (2012) reported that the adoption of local taxation did improve on the ability of regional governments to finance the provision of human resources for health and implementation health infrastructure projects. Cole, (2011) reported that the non-existence of cordial intergovernmental relations between the central government and regional units arising mostly from performance management and targets did adversely influence the implementation of health care projects and provision of healthcare services in France. Jelamschi, (2011) also reported that challenges associated with the migration of medical staff did adversely influence the implementation of health care projects and provision of health care services by district governments in Moldova.

In China, Chen (2013) noted that challenges of financing of human resources for health (HRH) and consequently distribution of HRH did negatively influence the implementation of health-care projects and provision of healthcare services by provincial governments. The unequal expenditure on health care did negatively influence the distribution of HRH and the provision of facilities that enhance provision of health care services to the populace in some prefectures in Japan (Hayashi & Oyama, 2014). Orbista, (2012) also reported that larger provincial

governments were better placed to work in partnership with Non-governmental organizations than smaller provincial governments adversely influencing the implementation process of health care projects and provision of health care by the later in the Philippines. Heywood and Choi, (2010) reported that issues related to limited funding did adversely influence the implementation of health care infrastructure projects such as health care innovations by provincial governments at the district level resulting to high reliance to private sector providers in Indonesia. In Pakistan, Pervaiz, Shaikh and Mazhar (2015) reported that failure to integrate collaboration of communities by provincial governments that would entail partnerships with Non-governmental Organizations (NGOs), Community Based Organizations (CBOs) and Faith Based Organizations (FBOs) did derail the implementation of maternal and child health care projects (MCH) and provision of health care services related to this subsector.

*Ascroft, et al., (2011)* reported that there existed the need for collaborative communities between provincial governments and religious organizations to enhance the implementation process of health care projects that would enhance provision of health care services in Papua New Guinea. In New Zealand, Eppel (2013) reported that the involvement of other stakeholders in the form collaborative governance integrated in community participation did positively influence the implementation of health care projects and consequent provision of health care services by regional governments in New Zealand. In the Solomon Islands, Whiting et al., (2016) reported that the equitable distribution of human resources for health (HRH) as an important factor in the implementation of public goods among them health care projects that enhanced the provision of health care services by provincial governments.

Devolution of the health function for implementation of healthcare projects to enhance provision of this public service has had its fair share of challenges in Africa (Wunsch, 2014). In South Africa, Stuckler, Basu and McKee (2011) noted the uneven allocation of finances and the resultant imbalance in health care infrastructure coupled with the consequent uneven distribution of doctors and nurses did adversely influence the implementation of health care projects by provincial governments. Frumence, Nyamhanga, Mwangi and Hurtig (2013) reported that insufficient funding and inopportune disbursement of funds from the central government for financing of human resources for health (HRH) coupled with poor and uneven distribution of unqualified human resources and the non-existence of collaborative communities did adversely

influence the implementation of health care projects in Tanzania. Nannyonjo and Okot, (2013) reported that poor distribution HRH and in particular doctors who were fewer than nurses did pose challenges to local governments in their quest to implement health care projects and provide health care services especially in rural Uganda. In Kenya, Mwamuye and Nyamu (2014) underscored the importance of partnerships between civil society and county governments in the implementation of health care projects. Okech, (2016) also reported that budgetary constraints and unequal distribution of human resources for health had adversely influenced the implementation of health care projects by county governments.

## **1.2 Statement of the Problem**

The Constitution of Kenya 2010 brought with it devolution of power and the promise of better delivery of public services, for low income earning Kenyans. Though several health facilities have been built under devolution since 2014 and ambulance services have also improved owing to the purchase of new ambulance vehicles by several county governments, health care still remains a reserve of the privileged. This is evidenced by the fact that most health care facilities are understaffed, are also ill-equipped, lack drugs and other medical supplies, lack proper basic amenities such as toilets and clean drinking water (Kimanthi, 2015; Muchui, 2015).

In Meru County, despite The Meru County Government having allocated Ksh. 1.7 billion in the financial year 2015/2016, frequent strikes by health workers coupled by lack of medical supplies have been reported to often paralyze operations at the Meru Level 5 hospital and other county health facilities leading to poor delivery of services to patients putting the lives of these patients in danger. Further, despite recent alarming reports of rising cases of cancer, with 15% of those referred to the Kenyatta coming from the study locale, the major county hospitals lacks proper equipment for proper diagnosis and treatment (Kimanthi, 2015). According to a Ministry of Health 2015 Oral report, Meru County has a dentist/patient ratio of 1:14,286 adversely affecting the provision of this health service to the populace in the county. Further, according to the Ministry of Health 2015 report on Meru County: Health at a Glance, the situation is made worse by the alarming doctor/patient and nurses/patient ratios which are currently estimated at 1:5,882 and 1:1,515 respectively. This leads to overworking of these sensitive human resources for health care consequently leading to poor quality health care services delivery especially in subsectors such as maternal and child health (MCH), cancer and oral health (Changalawa,

2016). Changalwa, (2016) also noted that the Meru County lacks a linear accelerator machine to treat cancer a disease that is growing at an alarming rate in the county and that available dialysis machines are

This study seeks therefore to investigate on the factors that influence the implementation of health care projects in the devolved system of governance in Meru County. Specifically the study will look at the influence of; collaborative communities, distribution of human resources for health, financing of health human resources and health infrastructure, learning and adoption of best practices. It recommends that issues such as; financing of human resources for health and health infrastructure and embracing of collaborations of communities in the form of public private partnerships for financing of medical equipment should be adopted and policy strategies should be formulated and implemented for the equitable distribution of human resources for health. County Medical staff and department of health non-medical staff should also be exposed to both international and national trainings for learning and adoption of best practices.

### **1.3 Purpose of the Study**

The purpose of the study was to investigate factors that influence the implementation of health care projects by the Meru County government.

### **1.4 Research Objectives**

The objectives of the study were as follows;

1. To determine how collaboration of communities influence the implementation of health care projects.
2. To determine how the distribution of human resources for healthcare services influence the implementation of health care projects
3. To establish how financing of human resources for health and infrastructure influence the implementation of health care projects in Meru County;
4. To assess how learning and adoption of best practices influence the implementation of health care projects.



## 1.5 Research Questions

The study answered the following research questions;

1. How does the collaboration of communities influence the implementation of health care projects?
2. How does distribution of human resources for health care services influence the implementation of health care projects?
3. How does financing of human resources for health and infrastructure influence the implementation of health care projects?
4. In what way does learning and adoption influence the implementation of health care projects?

## 1.6 Hypothesis

**H<sub>0</sub>:** All the above factors combined do not have a relationship with implementation of healthcare projects in the county.

**H<sub>1</sub>:** All the above factors combined have a relationship with implementation of healthcare projects in the county.

## 1.7 Significance of the Study

It is anticipated that this study provides useful data, which can be used by policy planners in the national government's Ministry of Devolution and Planning and Ministry of Health and will also be useful for the Meru County Department of Health to both evaluate and issue guidelines on distribution of human resources and collaboration of communities in the implementation of health care projects. It is also hoped the study findings were useful in particular to planners in the Ministry of Finance on issues related to fiscal decentralization for health care projects and Ministry of Devolution and Planning on issues related to medical equipment and supplies transfer to county governments in Kenya. The study also contributed important literature on factors influencing health care projects implemented by devolved governments and by so doing inform policy gaps in the measures so far undertaken to address emanating challenges in the realization of equitable access to health care at county level. It is also hoped study findings evoked other researchers to perform inquiry on the influence of other factors on the implementation of health care projects on devolved funding.

### **1.8 Limitations of the Study**

The predominant limitation is that the topic of study is socio-political in nature and information related to it may be considered sensitive by the intended respondents resulting to their unwillingness to discuss openly. To address this, questionnaires were used to ensure confidentiality and anonymity. The study was also limited to four primary variables; financing, distribution of human resources, collaboration of communities, learning and adoption; how these influence the implementation of health care projects under devolved governance. The implementation of health care projects under devolved governance could also be influenced by a multiplicity of other factors not covered by the study.

### **1.9 Delimitation of the Study**

The scope of the study was public hospitals under the management of county government of Meru and Civil Society in Meru County. The respondents were; Staff at the Department of Health Meru County, Managers from Civil Society and Medical personnel in all public hospitals in the study locale. The findings of the study can not also be generalized to other counties in Kenya.

### **1.10 Basic Assumptions of the Study**

It is assumed that the sample population is a representative of the general population; the researcher assumed that the Staff at the Department of Health Meru County would not be barred by their contractual agreements to pragmatically discuss the topic of study; the researcher further assumed that civil societies' managers and Medical personnel in all public hospitals in the study locale are aware of factors that influence the implementation of health care projects under the devolved system of governance.

### **1.11 Definitions of Significant Terms used in the Study** **Collaboration of Communities**

This refers to the existence of working partnerships between a county government with other county governments, Non-governmental Organizations (NGOs), Community Based

Organizations (CBOs), Faith Based Organizations (FBOs), traditional healers and private sector with the goal of implementing health care projects.

### **County governments**

This refers to autonomous levels of political and administrative authority devolved from central governments that are charged with the responsibility of performing functions that were previously performed by national governments. In the context of this study, the administrative function these types of governments are charged with is the provision of health care services.

### **Devolution**

It refers to a political process that involves the transfer of power from central governments to sub national governments or regional administrations with the aim delegating the responsibility of performing some functions.

### **Devolved System of Governance**

Refers to laid out political structures of ruling from the local geographical areas commonly referred to as sub-national level which are either; county, provincial, oblasts, prefectures, regional and municipal governments. The constitution of Kenya, 2010 creates a decentralized system of government wherein two of the three arms of government, namely the Legislature, and the Executive are devolved to the 47 political and Administrative Counties as provided for under Article 6 and specified in the First schedule.

### **Healthcare services**

It refers to services that relate to the wellbeing of the citizenry residing in a devolved unit of governance. They include; dental or oral health, issues to do with vision, child immunization, fertility and maternal health, dialysis and cancer treatment, transportation through the use of ambulances and availability of human resources for health such as doctors, dentists, nurses, pharmacists and clinical officers.

### **Implementation of Health care Projects**

In the context of this study, this refers to a unique undertaking actualized in the shortest time possible by devolved units of governments (County Governments) to provide better quality

health care services in terms of maternal and child health (MCH), cancer diagnosis and treatment, HIV/AIDS management, dental care, diabetes and dialysis management either through building of hospitals, health centers, provision of medical supplies and or providing medical equipment.

### **Financing of Human Resources for Health and Health Infrastructure**

This refers to funds that are transferred from the central/national government whose goal is to implement development projects at the sub-national/devolved level. In relation to this study it is fiscal decentralization for health care projects at the County governments level for financing of doctors, nurses, dentists, pharmacists and clinical officers. In Kenya, the national government devolves 45% of national revenue to the 47 counties.

### **Distribution of Human Resources for Healthcare Services**

It refers to the procedures adopted by a particular devolved unit that informs its allocation of medical staff across the public hospitals and health centers across its geographical area. It is this procedural allocation that determines the number of doctors, nurses, pharmacists, radiologist, dentists and ophthalmologists present to provide health care services in either district hospitals or village health centres.

### **Learning and Adoption of Best Practices**

In the context of this study, this refers to the identification by devolved units of opportunities to assimilate through benchmarking of different effective processes in management of health care implemented by their peers internationally and nationally and implementing them in their own governments.

### **1.12 Organization of the Study**

This study is organized into five chapters. Chapter One is introduction covering; background to the study, statement of the problem, purpose of the study which explains what the study intends to accomplish, research objectives and research question, significance of the study. The significance of the study justifies the reason for my study. This chapter also highlights delimitation and limitation of the study, and assumptions of the study.

Chapter Two reviewed literature of the study. This chapter brought out what previous researchers have found out in the area of study. This chapter covered how various independent variables: Collaboration of Communities, Distribution of Human Resources for Health, Financing of human resources for Health and Health Infrastructure and Learning and Adoption of best practices and how these influences the implementation of health care projects from an international perspective narrowing down to the local level. It also covered theoretical and conceptual frameworks.

Chapter Three comprised of Research methodology that covered; research design, target population, sampling procedure which discussed in detail how the sample for this study was selected. It also covered methods of data collection, pilot study, validity and reliability of data collection instruments and the choice of data analysis.

Chapter four covered data analysis, presentation and interpretation of findings, based on background information and on four variables under study which include; Collaboration of Communities, Distribution of Human Resources for Health, Financing of human resources for Health and Health Infrastructure and Learning and Adoption of best practices. Chapter five covers summary of findings, discussions of the findings, conclusions and recommendations. It will also present suggestions for further studies.

## **CHAPTER TWO:**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter reviews literature related to the study based on thematic areas drawn from the study objectives. It also discusses the theoretical framework and the conceptual framework that guided the study.

#### **2.2 Devolved Governments and Provision of Healthcare Services**

In South America, Faguet, (2014) identifies several countries that have a devolved health function including; Bolivia, Chile, Colombia, Nicaragua and Peru, mainly provided through municipalities and regional governments he reports on challenges faced and successes achieved. In Europe, several countries have also adopted the devolution of the health function including; Denmark, Finland, France, Georgia, Greece, Italy, Portugal, Serbia, Spain, Ukraine in which health care is provided by municipalities, oblasts, provincial, regional governments and autonomous communities while the United Kingdom (U.K) has three devolved governments; Ireland, Wales and Scotland providing health care services through local governments (Keating, 2009; Rodríguez-Pose & Krøijer, 2009).

In Asia, different forms of devolved governance are mentioned as well: China, Indonesia, Pakistan and South Korea are all ruled under provincial governments, devolved governance in Japan is ruled through prefectures while The Philippines and Myanmar are ruled through regional and municipal governments respectively all of which are tasked with the responsibility of providing healthcare services to their populace (Martinez-Vasquez, 2011; Shair-Rosenfield, Marks & Hooghe, 2014).

In Africa, Canares and Shekhar (2016) mentions several countries with a devolved system of governance including; South Africa, Tanzania, Rwanda, all ruled under provincial governments Uganda and Mali local governments and Kenya county governments which are charged with the responsibility of provision of healthcare services.

### **2.3 Collaboration of Communities and Implementation of Healthcare Projects**

Mubyazi and Hutton, (2012) defines community participation through collaboration as process that integrate different spheres of the society at various stages of projects implementation such as; priority setting, resource allocation, service management and monitoring and evaluation. According to Ramírez, Ruiz, Romero and Labonté (2011) weak community participation structures adversely influence the implementation of primary health care projects by devolved governance structures in South America. However, in their study Ruiz-Rodríguez, Acosta-Ramírez, Villamizar, Uribe and León-Franco (2011) found evidence indicating that the collaboration of communities in the form of integration of community participation was important in the successful implementation of primary health care (PHC) projects by departmental governments in Colombia. Further, they contend that community participation through the involvement of women's groups was important in the implementation of maternal and child health (MCH) and family planning projects by departmental and municipal governments (Ruiz-Rodríguez, et al., 2011). Similarly, Sandoval and Cáceres, (2013) found evidence indicating that collaborations of communities which integrated community participation in the form of; Community representatives in regional governments health committees and partnerships with private sector health companies and Non-governmental Organizations (NGOs) was important in the successful implementation of health care projects by regional governments in Peru. They also noted that the positive influence emanating from this was more pronounced to access to health services related to; HIV, Tuberculosis (T.B) and Cancer in the regions of Peru (Sandoval & Cáceres, 2013).

*Caruso, Stephenson and Leon (2010)* observed that departmental governments and municipalities in Bolivia had created Departmental Health Social Councils (DHSC) and Local Health Committees (LHC) respectively which enhanced community participation in both the implementation and management of health projects. These they contend played key roles in the management of MCH and in particular projects related to child diarrhea by these devolved governance units (Caruso, et al., 2010). However, Soza-González, Soza González and Soza-González (2012) observed that both the DHSC and LHC were not effective in preventive health care projects as they were in curative ones. Further, they contend that preventative health care

projects would have been more successful through community participation such as those related to dealing with cases of dental cavities and fluorosis (Soza-González, et al., 2012).

In their study, García-Goñi, Hernández-Quevedo, Nuño-Solinís and Paolucci (2011) postulated the need for collaboration of communities in terms of integration of community participation for the successful implementation of health care projects in the autonomous communities (A.C) of Spain. They also argued that to realize positive health outcomes, autonomous communities (A.C) could no longer work in isolation and in particular in health care projects related to chronic diseases such as cancer and diabetes (García-Goñi, et al., 2011). On their part, Santana, Szczygiel and Redondo (2014) found evidence indicating that collaborations of communities in the form partnerships between municipalities and private non-profit organizations were important in the successful implementation of health care projects by these devolved governance units. Further, they contend the positive influence emanating from these partnerships led to decreased rates of maternal and infant mortality in these municipalities in Portugal (Santana, et al., 2014).

Further, Ejaz, Shaikh and Rizvi (2011) observed that need to embrace collaborations of communities and in particular partnerships with NGOs for the successful implementation of health care projects by provincial governments in Pakistan. This they noted would assist in the filling of gaps such as those related to; primary health care information, human resources for healthcare (HRH) and medical supplies and new equipment technologies thereby positively influencing the implementation of health care projects at these devolved governance units (Ejaz, et al., 2011). In his study, Nobuya (2011) postulated the need for inter-prefectures partnerships for the successful implementation of prenatal projects by these devolved governance units in Japan. He in particular observed that the positive influence emanating from this would be more pronounced in emergency responses to pregnant women in rural prefectures (Nobuya, 2011). In his study also, Ambaretnani (2012) found evidence indicating that partnerships between skilled midwives and traditional birth attendants and a provincial government was influential in the implementation of health care projects whose target was decreasing maternal mortality and severe morbidity in Indonesia. He further contends that this was because most women in the rural areas believed more in being served by traditional birth attendants in their homes than



going to provincial hospitals and therefore skilled midwives were integrated to provide medical attention in complicated cases (Ambaretnani, 2012).

In their study, Meier, Pardue and Leslie London (2012) had postulated the need to adopt policy measures backed by legislation on the integration of community participation in health care projects implemented by provincial governments in South Africa for better health outcomes. Gibbs and Campbell, (2012) found evidence indicating that collaboration of different communities through the integration of community participation played a vital role in the implementation of health care projects related to HIV/AIDS management in a province in South Africa. Further, they argued it was the inclusion of; community health workers (CHWs), women's groups, traditional healers, local political leaders, religious leaders and youth groups that positively influenced HIV/AIDS management the overall goal of these projects (Gibbs & Campbell, 2012). However, Parr (2014) found different evidence noting that failure by provincial government managers to integrate the community participation did negatively influence the implementation of primary health care (PHC) projects by these devolved governance units. He also contends that failure to integrate Non-governmental Organizations (NGO) had a more pronounced adverse influence on primary health care projects related to services such as; family planning, nutrition and antenatal care in district hospitals under provincial governments (Parr, 2014).

Kamuzora, Maluka, Ndawi, Byskov and Hurtig, (2013) found evidence indicating that community participation by way of collaboration through the Council Health Service Board (CHSB), Faith Based Organizations (FBOs) and NGOs did result to prioritization of health needs in a particular district positively influencing the implementation of healthcare projects by a regional government in Tanzania. Further, they did contend that this did enhance transparency and accountability on how different resources were allocated in the implementation of these projects especially those related to HIV/AIDS and MCH resulting to reduced numbers on new HIV infections and both maternal and infant mortality (Kamuzora, et al., 2013). In their study, Turinawe et al., (2016) observed that the embracing of partnerships between Traditional Birth Attendants (TBAs), Village Health Teams (VHT) and collaborations with NGOs on the training of TBAs did positively influence the implementation of emergency obstetric projects by Local Governments in Uganda. They also contend that this did lead to the integration of males as

important instruments in the preparedness of women for maternity which exhibited an association with decreasing cases of maternal morbidity and prenatal mortality in hospitals managed by these devolved governance levels (Turinawe et al., 2016).

#### **2.4 Distribution of Human Resources for health and Implementation of Health care projects**

According to Dieleman and Hilhorst, (2011) the important role of equitable distribution of human resources for health care for the realization of access to health through health care projects can not be overemphasized. Further, they noted that the unequal allocation of doctors, nurses, midwives and other human resources for health (HRH) is a global challenge emanating from corruption and lack of transparency that adversely influences access to maternal and child health (MCH) and other health services especially in countries under devolved governance (Dieleman & Hilhorst, 2011). In their study, Silva and Batista (2010) found evidence which led them to conclude that the uneven distribution of HRH to public hospitals and community clinics managed by urban and rural departmental governments and municipalities operating under them did adversely influence the implementation of health care projects related to MCH in the later. They also noted that this did impede devolved governance units' efforts of reducing maternal and infant mortality rates in Bolivia (Silva & Batista 2010).

In their study, Groenewegen and Jurgutis, (2013) observed that lack of a reliable HRH allocation coordinating body and procedures did result to inequalities among regional governments having a negative influence on the implementation of health care projects. They also argued that this negative influence was more pronounced on MCH due to non-existence of nurses and mid-wives in some regions of Greece (Groenewegen & Jurgutis 2013). Polyzos, Karakolias, Mavridoglou, Gkorezis and Zilidis (2015) also found evidence that indicated that the overreliance for data from the National Organization for Health Care Provision (EOPYY) had a direct relationship in the mal-distribution of HRH in the regional governments in Greece. This they contend did adversely influence the implementation of MCH projects due to the existence of low numbers among nurses and mid-wives providing health care services in public hospitals managed by regional governments (Polyzos et al., 2015). Further, Santric-Milicevic, Vasic and Marinkovic\_(2013) found evidence indicating that there was an insufficient supply of HRH and in particular nurses and physicians to public hospitals in rural Serbian municipalities. They also noted that this was

due to the non-existence of reliable human resources information systems (HRIS) in these devolved levels of governance (Santric-Milicevic, et al., 2013). On his part Bjegovic-Mikanovic, (2016) observed that failure to engage qualified human resources for health managers in the distribution of HRH did greatly influence the implementation of health care projects that would enhance the provision quality service health care in Serbian municipalities. He therefore contends that there is need to create reliable governance structures that would integrate a HRIS for effective distribution of HRH to public hospitals in all devolved governance levels (Bjegovic-Mikanovic, 2016).

Different scholars have found mixed results on the relationship between distribution of human resources and the implementation of health care projects by devolved governments in Asian countries. Bossert and Mitchell, (2011) found evidence that indicated that mal-distribution of medical staff among provincial governments did negatively influence the implementation of health care projects in Pakistan. He also observed that this negative influence was more pronounced on maternal and child health (MCH) leading to increased cases of morbidity and infant mortality in these devolved units (Bossert & Mitchell, 2011). However, Heywood, Harahan and Aryani (2011) observed different results noting that policy measures that enhanced the equal distribution of medical staff; doctors, nurses and midwives in district hospitals did positively influence the implementation of health care projects by a provincial government in Indonesia. Further, they argued that this did improve maternal and child health (MCH) leading to both reduced maternal and infant mortality rates in the province (Heywood, et al., 2011).

In their study, Kelekar and Llanto, (2013) observed that the unequal allocation of financial resources to did negatively influence the uniform distribution of medical human resources by provincial governments in The Philippines. This they noted did influence the implementation of health care projects related to both communicable and non-communicable diseases (Kelekar & Llanto, 2013). Similarly, Chen, Zhao, Du, Wu, Huang and Guo (2014) found that the mal-distribution of medical staff did adversely influence the implementation of health care projects in China. Further, they noted this did result to an increased maternal and infant mortality emanating from human resources deficit undertaking responsibilities related to maternal and child health services projects (Chen, et al., 2014).

*Feng, Li and Wu (2014)* also observed an uneven distribution of HRH that had negatively influenced the implementation of health care projects by provincial governments in China. This they noted resulted to allocation of more doctors, nurses and health technicians to public hospitals in urban areas as compared to very few and in some cases none in rural public hospitals managed by provincial governments (Feng, et al., 2014). In their study Tanihara, Kobayashi, Une and Kawachi (2011) observed similar results noting that the mal-distribution of medical staff did negatively influence the implementation of health care projects by prefectures in Japan. This they contend resulted to poor health outcomes most importantly that which related to maternal and child health (MCH) and dental health especially among prefectures serving rural populations (Tanihara, et al., 2011).

In their study, Lodenstein and Dao (2011) postulated that the uneven distribution of HRH emanating from the unavailability of reliable human resources information systems (HRIS) did adversely influence the implementation of health care projects by municipalities in Mali. Further, they contend that even with the adoption of an HRIS there was need to implement policy measures that would address corruption and transparency in allocation of HRH (Lodenstein & Dao, 2011). Cooke, Couper and Versteeg (2011) also observed that there existed a mal-distribution of human resources for health (HRH) among urban and rural provinces in South Africa with the later receiving low numbers. This they also noted derailed the successful implementation of projects related to decreasing maternal and infant mortality rates, the management of HIV/AIDs and Tuberculosis (T.B) especially those under the management of provincial governments (Cooke et al., 2011). van Rensburg, (2014) also found evidence on the uneven distribution of HRH noting that this adversely influenced the implementation of projects related to the management of HIV/AIDS by provincial governments in South Africa. He also argued that the high number of doctors, nurses, health technicians in public hospitals managed by provincial governments in urban areas compared to those in rural areas did result to increased morbidity and infant mortality in rural provinces (van Rensburg, 2014).

In his study, Munga, (2011) found evidence indicating that the unequal distribution of human resources characterized by misbalanced allocation of the number doctors, clinical medicine practitioners, nurses and pharmacists did adversely influence the implementation of health care projects by regional governments in Tanzania. He further argued that the negative influence was

more pronounced on child health care most especially immunization which resulted to high infant mortality rates in some regional governments (Munga, 2011). Similarly, Lutwama, Roos and Dolamo (2012) postulated that there existed uneven distribution of human resources for health (HRH) among urban local authorities compared to rural ones in Uganda. They however noted that despite this, health care projects related to reduction of maternal and infant mortality were successfully implemented by both rural and urban authorities due to the competence of the HRH in these levels of governance (Lutwama, et al., 2012). Further, Wakaba et al., (2014) postulated that the mal-distribution of nurses to different counties due to the existence of unreliable human resources information systems (HRIS) had negatively influenced the implementation of health care projects related to reduction of maternal and infant mortality rates in these devolved levels of governance. They however noted that it was difficult to establish the exact impact of these as result of lack of county-specific data on both maternal and infant mortality rates (Wakaba et al., 2014).

## **2.5 Financing of Human Resources for Health and Infrastructure and Implementation of Health care Projects**

In their study, Crivelli, Leive and Stratmann, (2010) had found evidence that showed that budgetary constraints were directly correlated to the implementation of health care projects by member countries from South America Europe and South East Asia of the Organization for Economic Cooperation and Development (OECD) with a devolved system of governance. Further, they contend that failure by devolved units to raise enough local taxes coupled with inadequate financial disbursements from central governments in these countries did adversely influence the implementation of health care projects (Crivelli, et al., 2010). However, Jiménez-Rubio, (2011) found different evidence that indicated fiscal decentralization had resulted to reduced infant mortality rates in OECD countries with devolved system of governance. This he argues was as a result of effective local government financing strategies that positively influenced implementation of child immunization projects (Jiménez-Rubio, 2011).

Similarly in their study Soto, Farfan, and Lorant (2012) found evidence noting that the effective central governmental fiscal disbursement program did enhance the implementation of health care projects by departmental governments in Colombia. They further argued that this did reduce the rate of infant mortality especially among low income populace in local municipalities but noted

there was need to improve local tax capacity of departmental governments for the realization of greater gains in all health care subsectors (Soto, et al., 2012). Similarly, Faguet (2012) observed that fiscal decentralization had mixed results on projects related to different health care subsectors implemented by municipal governments in Bolivia. He however argued that there was need to enhance the taxing capacity of most municipal governments operating under department care to reduce their overreliance on disbursements from central government for implementation of health care projects (Faguet, 2012). Further, Martinez-Vazquez (2013) found evidence which indicated that insufficient central government financial disbursements adversely influenced the implementation of health care projects by regional governments in Peru. He however noted regional disparities in financial disbursements with Lima municipality enjoying a higher amount of disbursed funds for implementation of her health care projects (Martinez-Vazquez, 2013).

*Tediosi, Gabriele and Longo (2009)* observed budgetary constraints had an existing association with the implementation of health care projects by regional governments in Italy. Further, they argued that occurrences that witnessed regional governments experiencing insufficient funds either that raised from local taxes or that disbursed from the central government, their implementation of health care projects was derailed (Tediosi, et al., 2009). Similarly, Ferrario and Zanardi (2010) found evidence that showed the existence of a correlation between both the amount of local taxes raised by regional governments and that disbursed from the central government and the implementation of health care projects by the regional governments in Italy. They also argued there was need to address health care budgetary constraints by increasing the number of local taxes at regional level which would enhance the implementation process of health care projects (Ferrario & Zanardi, 2010).

In their study, Gené-Badia, Gallo, Hernández-Quevedo and García-Armesto (2012) observed that reductions in central government's fiscal disbursements to autonomous communities had adversely influenced the implementation of health care projects by these devolved units in Spain. These they contend did have a pronounced negative influence on health care projects related to non-communicable diseases such as; cancer, chronic respiratory diseases and diabetes implemented by the autonomous communities (Gené-Badia, et al., 2012). Further, Galloa and Gené-Badia (2013) found evidence that reductions on fiscal disbursements did adversely influence the implementation of health care projects by autonomous communities in Spain. They

also argued that this had negatively influenced medical insurance schemes especially those related to management of non-communicable diseases such as; cancer and diabetes (Gallo & Gené-Badia 2013). In a separate study, Avlijaš and Bartlett (2011) found that budgetary constraints did negatively influence the implementation of health care projects by municipal governments in Serbia. They however note that these emanated from insufficient fiscal decentralization from the central government to municipalities adversely influencing the acquisition of medical equipment that would lead to better primary health care (Avlijaš & Bartlett 2011).

In their study Jin and Sun, (2011) found evidence that indicated that fiscal decentralization did enhance provincial government efforts in undertaking child immunization in China. This they contend did positively influence the reduction of child mortality rates (Jin & Sun, 2011). On their part Bixi, Mu, Targa and Hipgrave, (2013) observed that budgetary constraints did adversely influence the realization of equal access to health care provided through financing by provincial governments. They also contend these constraints had more pronounced negative influence on the implementation of maternal and child health (MCH) projects resulting to increased maternal morbidity and infant mortality (Bixi et al., 2013). Hartwig et al., (2015) found evidence that decentralized financing had positively influenced the implementation of maternal health care projects by provincial governments in Indonesia. They also argued that this was indicated by increased central government financial disbursements that had led to increased construction of provincial hospitals offering maternal health care services (Hartwig et al., 2015). However, Sparrow (2016) found different evidence noting that though decentralized financing had led to the introduction of medical insurance schemes by provincial governments in Indonesia these were only catering for outpatient. Further, he contends that this did not aid the continued limited access to devolved health care services such as; dialysis, maternal and child health care and dental care by low income populace (Sparrow, 2016).

In their study, Boex and Selemani (2013) observed that the unequal disbursement of financial resources negatively influenced the implementation of health care projects by regional governments in Tanzania. This they did contend mainly affected regional governments that had received monetary resources that didn't match their health care needs (Boex & Selemani, 2013). Nangoli, Ngoma, Kimbugwe and Kituyi (2015) found evidence that budgetary constraints

created by high cases of corruption at devolved units derail the implementation of health care projects in Uganda. They also argued that this did have adverse effects on the amount of fiscal disbursements from the central government equally having a negative influence on the implementation process of health care projects (Nangoli, et al., 2015). Further, Gachie and Iravo (2016) found evidence that established that insufficient and inconsistent fiscal decentralization adversely influenced the implementation of health care projects by county governments in Kenya. They also contends that delayed central government fiscal disbursements did influence the acquisition of medical equipment that would have lead to better management of non-communicable diseases by county governments (Gachie & Iravo, 2016).

## **2.6 Learning and Adoption of Best Practices and Implementation of Health care Projects**

According to Lovaglio, (2012) the concept of learning and adoption relates to carrying out research on various health care innovations such as; benchmarking and E-health applications and thereafter embracing them in your locale for better results in the implementation process of your health care projects. In their study, Curioso, Roman, Perez-Lu, Castagnetto and García, (2010) found evidence that the adoption of E-health application in mobile phones by a regional government did improve access to maternal and child health information (MCHI) for low-income pregnant women in Peru. This they argued did lead to reduced cases of maternal mortality in this particular area governed by this devolved unit (Curioso, et al., 2010). Further, Zolfo et al., (2010) found evidence that a regional government in Peru adopted the use of mobile phones for the training of HIV/AIDS health workers in remote areas. They also contend that this enhanced the management of HIV/AIDS and reduced the occurrence of new infections in these areas by governed by this particular devolved unit (Zolfo et al., 2010). Similarly, Cerón Reyes (2010) found evidence indicating that the adoption of E-health was influential in the implementation of a pharmaceuticals and medical supplies stock management project by a regional government in Chile. He also observed that this did enhance the implementation of health care projects related to; management and treatment of diabetes and dental care in municipal hospitals managed by this particular devolved governance unit (Cerón Reyes, 2010).

In his study, Vainieri (2010) found evidence that indicated that the adoption of performance management by regional governments in Italy did improve their implementation of health care projects. Further, he notes that benchmarking especially among regional governments was



important in the learning process which led to the adoption of more improved process that resulted to better allocation of resources especially limited funds which positively influenced the implementation of health care projects at these devolved governance levels (Vainieri, 2010). Similarly, Barbarito et al., (2012) observed that the effective learning and eventual adoption of E-health applications did positively influence the implementation of health care projects by a regional government in Italy. Further, they note that the E-health applications in particular enhanced the implementation of; Scheduled Workflow (SWF) which improved the availability of doctors, physicians and nurses for patients, the Ambulatory Testing Workflow (ATW) which enhances ambulance orders and the Laboratory Testing Workflow (LTW) manages laboratory exams (Barbarito et al., 2012).

*Garcia Martinez, (2011)* found evidence indicating that the learning process on the effects of electronics on health care was influential in the adoption of E-health technologies which positively influenced the implementation of various health care projects by several autonomous communities in Spain. This he contends did enhance the implementation of various projects namely; electronic prescription, image digitization, mobile phone monitoring for chronic obstructive pulmonary disease (COPD) patients and health channel all of which had positive results on the management of chronic respiratory diseases (Garcia Martinez, 2011). In their study, Ettorechi-Tardy, Levif and Michel, (2012) observed that benchmarking as a health care innovation significantly improved project management of health care projects implemented by regional governments in France. This they argued did enhance; stakeholder mobilization, monitoring and evaluation, financial management and adoption of costs reduction processes resulting to the implementation of health care projects that improved on quality (Ettorechi-Tardy, et al., 2012).

In his study, Halamka (2011) found evidence indicating that failure by Prefectures to adopt e-health had adversely influenced the implementation of health care projects in Japan. He further noted that this had a more pronounced negative influence on the management of diseases affecting the elderly in rural prefectures resulting to high deaths reported as a result of; hypertension and heart attack (Halamka, 2011). Further, Li and Dong (2015) found evidence that a provincial government had not adopted benchmarking as a measure for the technical efficiency of public hospitals under its management in China. This they observed had adversely influenced

the adoption of performance improvement activities which had negative influence on the implementation of healthcare projects in this devolved governance unit (Li & Dong, 2015). In their study, Cheng et al., (2016) also observed that failure to adopt benchmarking by another provincial government for its health care projects to others had resulted to decreasing levels of productivity and technical efficiency (TE) in the township hospitals it managed. This they noted had adversely influenced resources allocation, adoption of performance improvement activities and the implementation of healthcare projects related to chronic diseases management and in-patient care (Cheng et al., 2016).

In their study, Roberts et al., (2015) found evidence indicating that the benchmarking of health systems among different regions at local government levels did positively influence the implementation of healthcare projects related to maternal and child health (MCH) in Uganda. This they note did lead to decreased cases of maternal morbidity and infant mortality in areas governed by these devolved units as it led to better resource allocation and an improved decision-space on project management (Roberts et al., 2015). Similarly, Noor (2015) also observed that benchmarking of health systems at local government levels positively influenced the decision-space leading to better allocation of both financial and human resources to healthcare projects. He further contends that this had resulted to decreased maternal and infant mortality rates (Noor, 2015). However, Musyoka, Adoyo and Oluoch, (2015) observed that failure to adopt performance appraisals (PA) by health service managers working in public hospitals managed by county governments did adversely influence motivation levels of health workers. Further, they contend that this translated to quality of service provided in these hospitals adversely influencing different healthcare projects implemented by county governments in public hospitals (Musyoka, et al., 2015).

## **2.7 Theoretical Framework**

The study will be hinged on four theories; Empowerment Theory, Theory of Optimal Resource Allocation, Theory of Fiscal Decentralization and Organizational Learning Theory.

*Fawcett, et al., (1995)* proponents of the empowerment theory in the provision of health care advance that, there exist complementary influences that guide partnerships among different stakeholders in this public services sector. In this vein, they contend that for effective implementation of health care projects there must be an interactive empowerment process that incorporates; collaborative planning, governing, community action, capacity building and

community change (Fawcett, et al., 1995). On his part, Perkins and Zimmerman (1995) argued that collaborative empowerment is a responsive process that engages civil society organizations and other grant making organizations to bring about societal change that addresses community concerns such as health care. This takes the form of collaborative partnerships which borrow the principle of community participation through which partners with a common goal implement projects that affect the lives of local populations (Perkins & Zimmerman, 1995).

In adopting this theory, this study contends that collaborative partnerships are essential for effective implementation of health care projects (Butterfoss, Goodman & Wandersman 1993). This theory relates to study variable collaborations of communities which advance the argument that collaborative partnerships initiated by devolved units in the health care sector with the civil society, traditional healers and the private sector positively influence the implementation process of health care projects.

Developed by *Laska, Meisner and Siegel (1972)* the theory of Optimal Resource Allocation is based on the premise that tasks possessing a homogenous distribution of service times are risk of collapsing when resources are not uniformly allocated. In advancing the theory, they contend that the resource is required to perform a number of tasks by the source and that the source is glamorized with the assumption that it does possess at any given time capacity to randomly allocate fractional proportions of its service resources to one or more of its projects (Laska, et al., 1972). It is however required of the source to adopt strategies that will ensure that the apportionment of the resource is done in an optimal way that would enhance task completion time and decrease chances of project collapse (Laska, et al., 1972). In the same vein Keshtkar, Salimifard and Faghih (2015) contend that in allocation of human resources for health (HRH), there is need to adopt procedures such as; analysis and forecasting the demand for health services and HRH roster and scheduling that would enhance optimal allocation of HRH which in turn improves health care projects implementation.

In adopting this theory, this study contends that for effective implementation of health care projects the existence of reliable strategies that would enhance an optimal allocation of human resources for health (HRH) is a requirement (Keshtkar, et al., 2015). This theory relates to study variable distribution of human resources which advances that without proportionate allocation of

HRH that is; doctors, physicians, nurses and midwives, the process of implementation of health care projects would be adversely influenced.

Formulated by *Oates (1972)* the theory of fiscal decentralization is based on a premise that the decentralization of funds from national governments to sub-national governments meant for development would bring services closer to local citizen levels. Oates, (1972) notes fiscal decentralization hinges heavily on the two concepts; efficient and effective allocation of financial resources for enhanced service delivery in the public sector. In this vein, Oates (2006) advances the arguments on the theory of fiscal decentralization which presupposes that sub-national governments are in a position to adapt outputs of public services to the preferences and particular circumstances of their constituencies, as compared to a central solution that presumes one size fits all.

In adopting this theory therefore, this study contends that unlike the monopolistic environment enjoyed by national governments, devolved governments encounter stiff competition from their peers. It is such competition that necessitates constraints in budgetary growth and contributes the pressure for the efficient provision of services to the public for example through the implementation of responsive health care projects (Oates, 2006 ; Tiebout, 1956). Through the theory, this research also holds that fiscal decentralization can act as a critical vehicle to achieving sustainable development in the health care sector especially the implementation of projects if it is used to provide a logical framework for mobilizing local support and resources, and promoting participation among beneficiaries of these public service development programs (Porcelli, 2009).

Through the theory, the researcher also argues that fiscal decentralization should not be taken as the panacea for the implementation of public services projects such as health care projects. Its existence may not even necessarily produce positive outcomes if there is no fair and clearly defined mechanism for resource allocation and distribution. In fact, as it has been argued, fiscal decentralization could lead to Allocative inefficiencies, as well as poor accountability and governance (Seabright, 1996). This has been found to limit innovations in the provision of public sector services by devolved units of governance. This theory relates to study variable financing which advances that without proper allocation of financial resources raised either through local taxation, funding disbursed from national governments and possibly grants from international

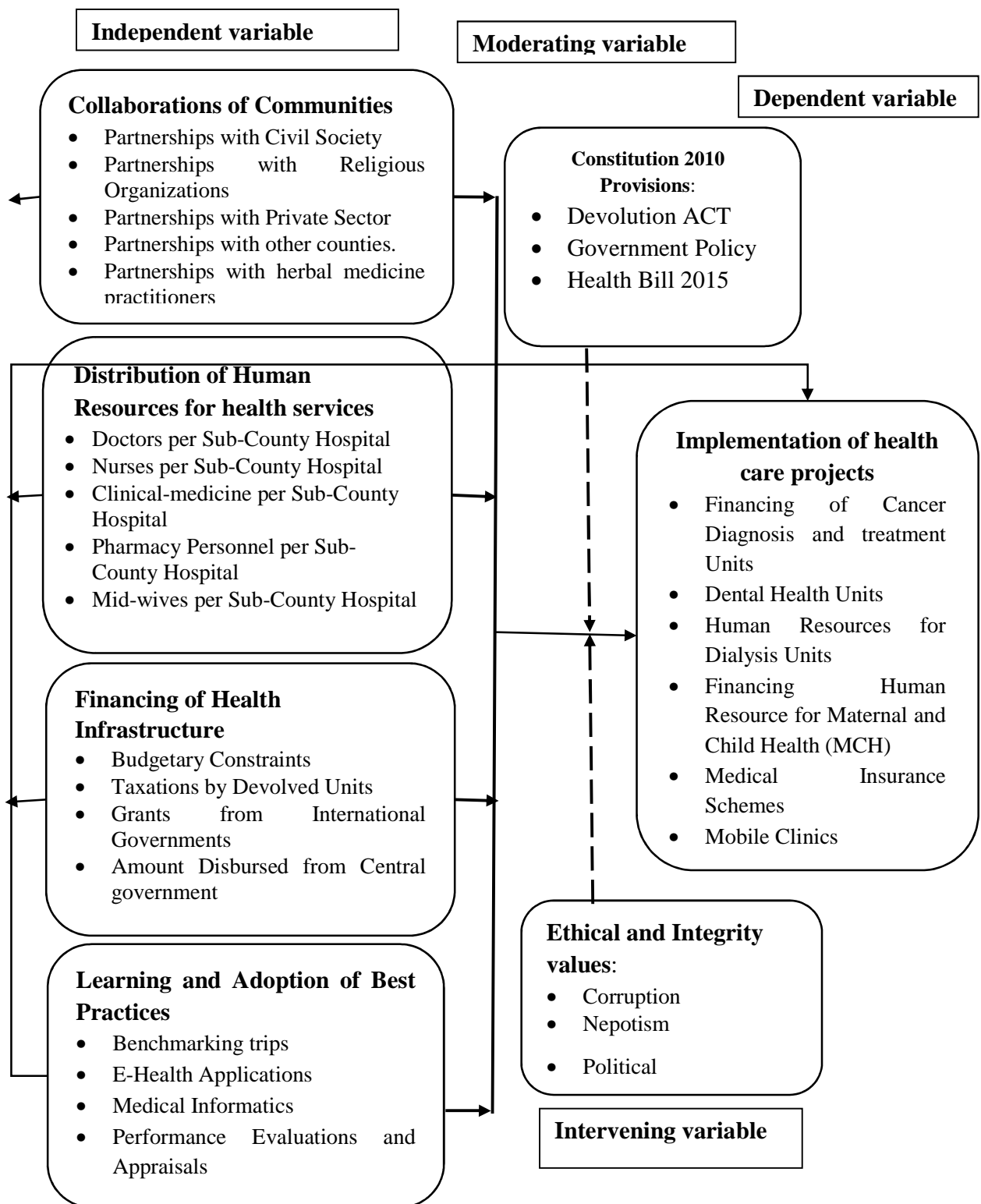
development partners, the process of implementation of health care projects would be adversely influenced.

Developed by *Argyris and Schon (1978)* the organizational learning theory is based on the premise that organizations need to create an environment that would enhance the acquisition of knowledge which would foster better processes in either product manufacturing or service delivery. Vera and Crossan, (2004) proponents of organizational learning theory also advance that the theory is based on the premise that organizations can always learn new things and acquire capabilities that would enhance their performance. In the same vein, Kalling (2007) another proponent of organizational learning theory notes that learning for modern organizations has become a necessity as it leads to improved processes and the introduction of new and better services.

In adopting this theory, this study contends that for effective implementation of health care projects devolved governments need to create a climate that would enhance institutional learning for all its HRH (Miovic, Tesfu & Göök 2010). This theory relates to study variable learning and adoption which advances that devolved governments ought to create learning environments either from their peers nationally or internationally through benchmarking a process that would lead to better implementation of health care projects due to the adoption of management processes such as; performance appraisal and evaluations, e-health applications and medical informatics.

## **2.8 Conceptual Framework**

*Orodho, (2009)* defines a conceptual framework as a model of presentation where a researcher represents the relationship between variables in the study and shows the relationship diagrammatically. Implementation of health care projects by county governments is influenced by a multiplicity of factors such as: Collaboration of Communities, Distribution of Human Resources for health services, Financing of human resources for health and health infrastructure and Learning and Adoption of best practices. The study's independent variables form either the positive or adverse influence brought about by these factors and their correlation with the study's dependent variable (Implementation of health care projects) is as illustrated in Figure: 1



**Figure 1: Conceptual Framework: Implementation of health care projects**

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter includes: the research design to be used in the study, the target population, sampling procedure and sample size and methods of data collection, pilot test, validity and reliability of research instruments which will be used for data collection. It also contains data analysis techniques and the operationalization table of variables and objectives under study plus ethical considerations.

### **3.2 Research Design**

*Vogt, Gradner and Haeffele, (2012)* define research design as the plan adopted in research studies which enables a researcher to carry out various research operations, hence creating a favorable environment to access sufficient information with very little expenditure on effort, time and financial resources. This study will adopt the descriptive survey research design to investigate on factors that influence the implementation of health care projects by devolved governance units in Kenya with reference to those implemented by the Meru County government. Descriptive survey research design assisted the researcher to gather both qualitative and quantitative data from Staff at the Department of Health Meru County, Managers from Civil Society and Medical personnel in all public hospitals in the study locale on the relationship between study variables such as; collaborations of communities, distribution of human resources, financing and learning and adoption and implementation of health care projects by Meru County. Further, this design is more specific and accurate because it involves description of events in a conscientiously outlined way (*Vogt, Gradner & Haeffele, 2012*). This research design also illustrates the characteristics of a population fully (*Fram, 2014*).

### **3.3 Target Population**

According to the Department of Health (DOH) Meru County Government, the study locale has 9 public hospitals under its management. The department has 23 non-medical staff and there are 670 medical personnel (doctors, nurses, clinical-medicine officers and pharmacists) in the public hospitals in Meru County. 10 Managers from registered health Civil Society Organizations (CSOs) operating in the study locale will also form part of the study respondents. This study

concentrated on these respondents to collect the required data for this study because they are familiar with the variables under study and their existing relationship in respect to the topic under study.

This is summarized in Table: 3.1 on target population

**Table 3.1 Target Population**

| <b>Respondents</b>   | <b>Target Population</b> |
|--|--------------------------|
| <b>Department of Health (DOH) Staff - non medical</b>              | 23                       |
| <b>Medical Personnel (Doctors, Nurses, Pharmacists, Clinical )</b> | 670                      |
| <b>Health CSOs Managers</b>  | 10                       |
| <b>Total</b>   | <b>703</b>               |

### 3.4 Sample Size and Sampling Procedure

Lohr, (2010) defines sampling as the procedure by which units of a population are selected as representation of the total population. Probability sampling techniques; Stratified and Simple Random sampling were used in this research study.

#### 3.4.1 Sample Size

This sample size was obtained by applying the formula:

$$Ns = (Np)(p)(1-p)$$

$$(Np - 1)(B/C)^2 + (p)(1-p)$$

$n = (Z^2 \cdot PQ / \alpha^2)$  by Dillman, (2007) as shown in 3.4.2 sampling procedure.

249 respondents drawn from a targeted population of 703 will form the sample size for the study.

#### 3.4.2 Sampling Procedure

The adjusted sample size  $n_1 = 1 + 384 / (1 + 384 / 703) = 249$

The sample size was computed as follows:



At 95% confidence level or probability of 0.05, sample size n can be calculated as:

$$\text{Desired sample } n = (Z^2 \cdot PQ / \alpha^2)$$

Where Z= Critical value of Z at 0.05 which is equal to 1.96

P= Accessible proportion of the target population= 50%

Q= In accessible proportion of the target population=50%

The acceptance error estimate =  $\alpha$ .

Using the above formula, the maximum sample size ( $n_o$ ) required from a large population of 10,000 or more units would be 384 units. The sample size can be adjusted with respect to target population as:

The adjusted sample size  $n_1 = n_o / (1 + n_o / N)$ . Where N is the size of the target population in the area of study

$$\text{The adjusted sample size } n_1 = 1 + 384 / (1 + 384 / 703) = 249$$

The sample size is as shown in Table 3.2 on Sampling Frame

**Table 3.2 Sampling Frame**

| <b>Respondents</b>                            | <b>Target Population</b> | <b>Sample Size</b> |
|---|--------------------------|--------------------|
| <b>Department of Health Non-Medical Staff</b> | 23                       | 15                 |
| <b>Medical Personnel (Nurses, Doctors)</b>    | 670                      | 224                |
| <b>Health CSOs Managers</b>                   | 10                       | 10                 |
| <b>Total</b>                                  | <b>703</b>               | <b>249</b>         |

### **3.5 Research Instruments**

Primary data for this study was collected through the use of questionnaires. According to Leedy and Ormrod, (2010) a questionnaire is a well constructed research tool that enables researchers to acquire information from respondents on their characteristics, present and past behavior, code of conduct or attitudes and their beliefs and or reasons for action with respect to the topic under investigation. The choice of this instrument is in line with its advantages such as; it is free from the bias of the interviewee and respondents will have ample time to give well thought out

answers. The questionnaires also provide the researcher with an opportunity to analyze data more objectively than any other forms of research (Ghauri, & Grønhaug, 2010). The questionnaire consisted of both closed and open ended questions. Closed questions consisted of a fixed set of questions that were answered by; Non-Medical Staff at the Department of Health Meru County, Managers from Civil Society and Medical personnel in all public hospitals in the study locale in a specified sequence and with a pre-designated response options. Open ended questions will not be prohibitive to the respondents. Open ended questions provided respondents with chance to disclose information in a realistic way. The questionnaire was divided in 5 sections. Section one requested the respondent to fill in his or her background information, whereas the remaining 4 sections consisted of variables which the researcher researched on. The sections were; Collaborations of Communities, Distribution of Human resources, Financing and Learning and Adoption.

### **3.5.1 Pilot Test**

A pilot study was conducted to address any unclear and or ambiguous items in the research instruments. By conducting a pilot study, the researcher examined the feasibility of the intended approach that the researcher will use in the main study. Fisher, (2010) argued that, the accuracy of data to be collected is largely dependent on the data collection instruments in terms of validity and reliability which can only be established through a pilot test. The first step in conducting the pilot study involved selection and recruitment of participants by employing convenience sampling. The researcher then used 10–20% of the main sample size for conducting this study's pilot study (Neuman, 2011). The next step was to administer the research instrument (questionnaire) to the 50 pilot participants. Data entry and analysis was then conducted, results discussed with supervisor for ironing of errors and spotting of weaknesses in the research instruments.

### **3.5.2 Validity Research Instruments**

According to *Kothari (2012)* the validity of a research instrument refers to the degree to which the instrument measures what it is expected to measure. This study adopted; content, construct and face validity. The researcher looked into content validity of the research instruments through constant consultations with supervisors from University of Nairobi with respect to variables and tests. This helped the researcher in establishing whether the chosen measurement tools include a sufficient and indicative set of items to cover the concept under study (Drost, 2011).

Consultations will also assist the researcher in making modifications to the structure of research tools as advised by experts. Construct was achieved through checking on adequacy of the operational definition of variables by checking on clarity, vagueness and quality of instructions in the questionnaires. Face validity was established by skimming through the surface of the research instruments; it involved the application of a objective and subjective overview of the questionnaire by the researcher's supervisor.

### **3.5.3 Reliability of Research Instruments**

Reliability of a research instrument is defined as the consistency of the instrument to produce similar results with the same units of measurement (Drost, 2011). The study adopted internal consistency procedure, through which the researcher used Cronbach Alpha to check the reliability of instruments to be used in the study. To check reliability of the research instruments, the researcher also undertook a pilot study on a total of 50 respondents from different strata in main sample size. The results of the pilot study were discussed with experts and supervisors from University of Nairobi to come to a conclusion on the reliability of the research instruments. Alpha values range from scores below 0.5 being considered unreliable, 0.5 adequate and a coefficient of 0.7 is acceptable and while 0.8 and or higher demonstrating good reliability of study instruments (Trochim, 2006). This study was successful because it produce Alpha values ranging between 0.793 – 0.915.

### **3.6 Data Collection Procedures**

Primary data was collected through the use of questionnaires and this will be administered in person through the use of the drop and pick later method to the sampled respondents. Structured questionnaires were used because they were be easy to administer as each item is accompanied by choice answers and they will also be economical in terms of time and money (Sarlis, 2007). To ensure a good response rate is realized, a register of the questionnaires was developed that assisting in tracking of this research collection instrument.

### **3.7 Data Analysis**

*Tabachnick and Fidell, (2013)* define data analysis as the technique that involves the packaging of collected information, formulating and arranging its main components to such a degree that it can be easily and effectively conveyed. The researcher did sort, edit, code and analyze primary data that was collected so as to ensure that errors and points of contradiction were eliminated.

Quantitative data for each research question was also tabulated for purposes of providing the researcher with a comprehensive picture of how the data looked like and also assisting the researcher in identifying patterns. For reliable analysis, SPSS version 22.0 was used to analyze collected data and this was presented using descriptive statistic such as frequencies, mean, variance and standard deviation. Results of the analysis made it easy for the researcher to make valid conclusions on the topic of study.

Content analysis was used to analyze data from open ended questions and the results from this analysis presented in themes as per the study's objectives. Frequencies and percentages were used to summarize information.

A multivariate regression model was used to determine the relationship between the four variables and their relationship to the topic under study. This is an adjustable method of data analysis that is appropriate in the occasion that the researcher seeks to examine the relationship between the dependent variable and other factors. The correlation may be linear which means that the degree to which the change in the dependent variable is related to the change in the independent variables (Mertler & Vannatta, 2010).

Functions for the regression model are presented as:

$$Y = \beta_0 + \beta_1X_1 + \varepsilon$$

$$Y = \beta_0 + \beta_2X_2 + \varepsilon$$

$$Y = \beta_0 + \beta_3X_3 + \varepsilon$$

$$Y = \beta_0 + \beta_4X_4 + \varepsilon$$

The regression model is presented as:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Where:

Y = Health-Care Projects Implementation under Devolved System of Governance

$\beta_0$  = Constant Term

$\beta_1, \beta_2, \beta_3$  and  $\beta_4$  = Beta coefficients

X1= Collaborations of Communities

X2= Distribution of Human Resources

X3= Financing

X4= Learning and Adoption

$\varepsilon$  = Error term

### **3.8 Ethical Considerations**

To conduct this study, the researcher sought a permit from the National Commission for Science, Technology and Innovation (NACOSTI). The researcher also acknowledged secondary data from all literatures collected for the purpose of this study in the reference list. Permission was also sought from intended research participants to indicate their willingness to participate; the researcher also ensured anonymity when it came to answering the study questionnaire. The researcher also ensured that data collected in the course of the study is used for research purposes only.

### **3.9 Operational Definition of Variables**

The variables are defined as shown on Table 3.3

**Table 3.3 Operationalization Table of Variables**

| <b>Objectives</b>  | <b>Variable</b>   | <b>Indicators</b>                             | <b>Measurement</b>   | <b>Measurement Scale</b> | <b>Data Analysis</b>                   | <b>Tools of Analysis</b> |
|--|---|---|--|--------------------------|--|--------------------------|
| To examine how collaborations of communities influence the implementation of health care projects in Meru County | <u>Independent Variable</u><br><br>Collaboration of Communities | Partnerships with civil society organizations | Number of DOH staff and health CSOs' managers reporting on the existence of partnerships and the influence of this on the implementation of health care projects.  | Ordinal Scale            | Descriptive and Inferential Statistics | Regression               |
|  |   | Partnerships with private sector              | Number of DOH staff and medical personnel reporting on the existence of partnerships with the private sector and the influence of this on implementation of health care projects.                          | Ordinal Scale            | Descriptive and Inferential Statistics | Regression               |
|  |   | Partnerships with other devolved governments  | DOH staff and medical personnel reporting on the existence of partnerships with other devolved governments on implementation of health care projects.  | Interval Scale           | Descriptive and Inferential Statistics | Regression               |
|  |   | Partnerships with traditional healers         | Number of DOH staff, health CSO's and medical staff reporting the existence of partnerships with traditional healers and the influence of this on implementation of health care projects.                  | Ordinal Scale            | Descriptive and Inferential Statistics | Regression               |
|  |   | Partnerships with religious organizations     | Number of DOH staff, health CSOs' managers and medical personnel reporting the existence of partnerships with religious organizations and the influence of this on implementation of health care projects. | Ordinal Scale            | Descriptive and Inferential Statistics | Regression               |

|  |  |  |  |                |  |             |
|--|--|--|--|----------------|--|-------------|
| To determine how distribution of human resources influence the implementation of health care projects in Meru County | <u>Independent Variable</u><br>Distribution of Human Resources | Number of Doctors per Sub-county hospital                    | Number of DOH staff, health CSOs' managers and medical personnel reporting on the number of doctors per Sub-county hospital and the influence of this on the implementation of health care projects.       | Ordinal Scale  | Descriptive and Inferential Statistics | Coefficient |
|  |  | Number of Nurses per Sub-county hospital                     | DOH staff, health CSOs' managers and medical personnel reporting on the number of nurses per Sub-county hospital and the influence of this on the implementation of health care projects.                  | Interval Scale | Descriptive and Inferential Statistics | Coefficient |
|  |  | Number of clinical-medicine officers per Sub-county hospital | DOH staff and medical personnel reporting on the number of clinical-medicine officers per Sub-county hospital and the influence of this on the implementation of health care projects.                     | Interval Scale | Descriptive and Inferential Statistics | Coefficient |
|  |  | Number of pharmacists per Sub-county hospital                | Number of DOH staff, health CSOs' managers and medical personnel reporting on the number of doctors per Sub-county hospital and the influence of this on the implementation of health care projects.       | Ordinal Scale  | Descriptive and Inferential Statistics | Coefficient |
|  |  | Number of mid-wives per Sub-county hospital                  | Number of DOH staff, health CSOs' managers and medical personnel reporting on the number of doctors per Sub-county hospital and the influence of this on the implementation of health care projects.       | Ordinal Scale  | Descriptive and Inferential Statistics | Regression  |
| To establish how financing influence the implementation of health care projects in Meru County                       | <u>Independent Variable</u><br>Financing                       | Local taxations by devolved units                            | Number of DOH staff, health CSOs' managers and medical personnel reporting that local taxations are enough for financing implementation of health care projects.   | Ordinal scale  | Descriptive statistics                 | Regression  |
|  |  | Grants from international governments                        | Number of DOH staff, health CSOs' managers and medical personnel reporting that there exist grants from international governments and the influence of this on the implementation of health care projects. | Ordinal Scale  | Descriptive Statistics                 | Regression  |
|  |  | Funding disbursed from                                       | DOH staff, health CSOs' managers and   | Interval Scale | Descriptive and Inferential            | Coefficient |

|   |  |  |   |                |  |             |
|---|--|--|---|----------------|--|-------------|
|   |  | central government   | medical personnel reporting that funding disbursed from central government is enough and the influence of this on the implementation of health care projects.   | Ordinal Scale  | Statistics                             |             |
|   |  | Budgetary constraints                                      | Number of DOH staff and medical personnel reporting that there exist budgetary constraints and the influence of this on the implementation of health care projects.   | Ordinal Scale  | Descriptive Statistics                 | Coefficient |
|   |  | Financing of human resources for maternal and child health | DOH staff and medical personnel reporting that the county government does finance the provision of human resources for maternal and child health and the influence of this on the implementation of health care projects. | Interval Scale | Descriptive and Inferential Statistics | Regression  |
| To assess how learning and adoption influence the implementation of health care projects in Meru County | <u>Independent Variable</u><br>Learning and Adoption | Number of benchmarking trips                               | Number of DOH staff and medical personnel reporting on the number of benchmarking trips either to their peer devolved units or internationally and the influence of this on the implementation of health care projects.   | Ordinal Scale  | Descriptive and Inferential Statistics | Regression  |
|   |  | E-health Applications adopted                              | Number of DOH staff and medical personnel reporting on the number of E-health applications adopted and the influence of this on the implementation of health care projects.   | Ordinal Scale  | Descriptive and Inferential Statistics | Regression  |
|   |  | Number of Performance Evaluations and appraisals conducted | DOH staff and medical personnel reporting on the Number of Performance Evaluations and appraisals conducted and the influence of these on the implementation of health care projects.                                     | Interval Scale | Descriptive and Inferential Statistics | Coefficient |
|   |  | Medical Informatics adopted                                | Number of DOH staff, health CSOs' managers and medical personnel reporting on the number of Medical Informatics adopted and the influence of these on the implementation of health care projects.                         | Ordinal Scale  | Descriptive and Inferential Statistics | Regression  |
|   |  | Mobile Clinics   | Number of DOH staff, health CSOs' managers and medical personnel reporting the existence of mobile clinics and the influence of these on the implementation of health care projects.                                      | Ordinal Scale  | Descriptive and Inferential Statistics | Regression  |



|  |                           |   |   |                |  |             |
|--|---------------------------|---|---|----------------|--|-------------|
|  |                           | Medical Insurance Schemes                                     | DOH staff, health CSOs' managers and medical personnel reporting the existence of medical insurance schemes and the influence of these on the implementation of health care projects.   | Interval Scale | Descriptive and Inferential Statistics | Regression  |
| Implementation of health care projects | <u>Dependent Variable</u> | Community disability health centres                           | Number of DOH staff, health CSOs' managers and medical staff reporting the existence of community disability health centres and their influence on implementation of health care projects.  | Ordinal Scale  | Descriptive and Inferential Statistics | Regression  |
|  |                           | Community Clinics   | DOH staff, health CSOs' managers and medical personnel reporting the existence of community clinics and the influence of this on implementation of health care projects.  | Interval Scale | Descriptive and Inferential Statistics | Coefficient |
|  |                           | Human resources for dialysis units                            | Number of DOH staff and medical personnel reporting on the number of doctors and nurses for dialysis units and the influence of this on the implementation of health care projects.   | Ordinal Scale  | Descriptive and Inferential Statistics | Regression  |
|  |                           | Financing of Cancer diagnosis and treat units                 | DOH staff and medical personnel reporting that the county government is financing cancer diagnosis and treat units and the influence of this on implementation of health care projects.   | Interval Scale | Descriptive and Inferential Statistics | Regression  |
|  |                           | On-job training for medical human resources                   | Number of DOH staff and medical personnel reporting that the county government is undertaking on-job training for medical personnel and the influence of this on the implementation of health care projects.                          | Ordinal Scale  | Descriptive and Inferential Statistics | Regression  |
|  |                           | E-health Pharmaceutical and Medical Supplies Stock Management | Number of DOH staff and medical personnel reporting that there exists E-health Pharmaceutical and Medical Supplies Stock Management in the county government and the influence of this on the implementation of health care projects. | Ordinal Scale  | Descriptive and Inferential Statistics | Regression  |

## CHAPTER FOUR:

### DATA ANALYSIS, INTERPRETATION AND PRESENTATION

#### 4.1 Introduction

This chapter discusses the interpretation and presentation of the findings obtained from the field. The chapter presents the background information of the respondents, findings of the analysis based on the objectives of the study. Descriptive and inferential statistics have been used to discuss the findings of the study.

#### 4.2 Response Rate

The study targeted a sample size of 249 respondents from which 181 filled in and returned the questionnaires making a response rate of 72.7 %. This response rate was satisfactory to make inferences as it worked as a suitable representative of the general population. According to *Fincham (2008)* a response rate of 50 % is acceptable for analysis and reporting, a rate of 60% is good and a response rate of 70% and over is excellent. This is as presented in Table 4.1

**Table 4.1 Response Rate**

| Clusters                                  | Targeted<br>Sample Size | Response   | Percentage |
|---|-------------------------|------------|------------|
| Health CSO's Managers                     | 10                      | 10         | 100        |
| Medical Personnel                         | 224                     | 156        | 69.6       |
| Department of Health Non-medical<br>staff | 15                      | 15         | 100        |
| <b>Total</b>                              | <b>249</b>              | <b>181</b> |            |

**Table 4.1: Reliability Analysis**

| Variable                        | Cronbach Alpha<br>coefficient score | No. Of Items |
|---------------------------------|-------------------------------------|--------------|
| Collaboration of communities    | 0.793                               | 4            |
| Distribution of Human Resources | 0.840                               | 5            |
| Financing                       | 0.848                               | 5            |
| Learning and Adoption           | 0.915                               | 7            |

A pilot study on sample respondents was carried out to determine reliability of the questionnaires. Reliability analysis was subsequently done using Cronbach’s Alpha, Tavakol and Dennick (2011) which measured the internal consistency by establishing if certain item within a scale measures the same construct. The Alpha value threshold at 0.7, Tavakol and Dennick (2011) thus forming the study’s benchmark. Cronbach alpha was established for every objective which formed a scale. The table shows that learning and adoption had the highest reliability ( $\alpha=0.915$ ), followed by Financing ( $\alpha=0.848$ ), Distribution of human resources ( $\alpha=0.840$ ) and finally Collaboration of communities ( $\alpha=0.793$ ) this illustrates that all the variables were reliable as their reliability values exceeded the prescribed threshold of 0.7.

### 4.3 Demographic Information

The results were analyzed as per; age distribution, gender category, education level and period of service in their different public and private organizations. Different study respondents were requested to indicate their ages. This was in the belief that different age groups hold varying viewpoints on divergent topics that this study sought to unravel.

Results are presented in Table 4.3

**Table 4.3: Distribution of respondents in terms of their age group**

| Age group    | Medical Personnel |              | Department of Health Staff |              | Health Civil Society organization’s Managers |              |
|--------------|-------------------|--------------|----------------------------|--------------|--|--------------|
|              | Frequency         | Percentage   | Frequency                  | Percent      | Frequency                                    | Percentage   |
| 20-29 years  | 27                | 16.6         | 2                          | 18.2         | 1  | 14.3         |
| 30-39 years  | 41                | 25.1         | 5                          | 45.5         | 3  | 42.9         |
| 40-49 years  | 65                | 40.0         | 3                          | 27.3         | 2  | 28.6         |
| 50 and above | 30                | 18.3         | 1                          | 9.1          | 1  | 14.3         |
| <b>Total</b> | <b>163</b>        | <b>100.0</b> | <b>11</b>                  | <b>100.0</b> | <b>7</b>                                     | <b>100.0</b> |

As per the above analyzes, it’s imperative that Medical personnel category is dominated by those in middle age of 40-49, accounting for 40%. The Department of Health is mostly controlled by youthful employees who are within the age bracket of 30-39, as indicated by a 45.5%. likewise, most of the managers working within the health sector of Civil Society Organizations were energetic since they fall within the age range of 30-39 as shown by a 42.9% in the above table.

The results are further analyzed and presented as per the respondents' gender category. This was necessary with the view of understanding issues to do with gender equity amongst the respondents. Results are as presented in Table 4.4

**Table 4.4: Gender category**

| Gender       | Medical Personnel |              | DOH Staff |              | Health CSO's Managers |              |
|--------------|-------------------|--------------|-----------|--------------|-----------------------|--------------|
|              | Frequency         | Percentage   | Frequency | Percentage   | Frequency             | Percentage   |
| Male         | 76                | 46.6         | 4         | 36.4         | 3                     | 42.9         |
| Female       | 87                | 53.4         | 7         | 63.6         | 4                     | 57.1         |
| <b>Total</b> | <b>163</b>        | <b>100.0</b> | <b>11</b> | <b>100.0</b> | <b>7</b>              | <b>100.0</b> |

As per the three categories, the study findings revealed that female employees controlled the health sector in Meru county. In the Medical Personnel category, female stood at 53.4%, Department of Health staff, 63.6%, whereas, in Health Civil Society organization's management, they were 57.1%. This essentially means that the health sector is making great gains in terms of gender equity.

The study sought to determine the highest level of education attained by respondents. Results on level of education are presented in Table 4.5

**Table 4.5: Level of Education**

| Level of Education | Medical Personnel |            | Department of Health Staff |              | Health Civil Society's Organization managers |              |
|--------------------|-------------------|------------|----------------------------|--------------|--|--------------|
|                    | Frequency         | Percentage | Frequency                  | Percentage   | Frequency                                    | Percentage   |
| Certificate        | 20                | 12.3       |                            |              |  |              |
| Diploma            | 66                | 40.5       | 3                          | 28.3         | 2  | 28.6         |
| Bachelor's Degree  | 64                | 39.2       | 5                          | 45.5         | 3  | 42.9         |
| Masters and Above  | 13                | 8          | 3                          | 26.2         | 2  | 28.6         |
| <b>Total</b>       | <b>163</b>        | <b>100</b> | <b>11</b>                  | <b>100.0</b> | <b>7</b>                                     | <b>100.0</b> |

From results on education levels showed above, 39.2% of Medical Personnel held Bachelor’s Degree. 40.5% had a Diploma. At least 45.5% of non-medical staff in the Department of Health had attained degree level, while a large number of Health Civil Society organization’s managers totaling to 42.9% also held Bachelor’s degree. From these study findings, it can be deduced that a good number of the respondents were literate which implies that they were in a position to both comprehend and give credible information related to the topic under study.

Respondents were requested to indicate the period which they had worked in their respective public health institutions and private organizations. Results are presented in Table 4.6

**Table 4.6: Period of Service**

| Period of Service  | Medical Personnel |            | DOH Staff |              | Health CSO’s Managers |              |
|--------------------|-------------------|------------|-----------|--------------|-----------------------|--------------|
|                    | Frequency         | Percentage | Frequency | Percentage   | Frequency             | Percentage   |
| Below 3 Years      | 27                | 16.6       | -         | -            | 1                     | 14.3         |
| 3 to 5 Years       | 15                | 9.2        | 2         | 18.2         | 2                     | 28.6         |
| 5 to 10 Years      | 56                | 34.4       | 9         | 81.8         | 3                     | 42.9         |
| More than 10 Years | 65                | 39.8       | -         | -            | 1                     | 14.3         |
| <b>Total</b>       | <b>163</b>        | <b>100</b> | <b>11</b> | <b>100.0</b> | <b>7</b>              | <b>100.0</b> |

Results obtained showed that 39.8% of Medical Personnel had served in public health sector for more than 10 years, while majority of DOH Staff as shown by 81.8% and Health CSOs’ Managers as shown by 42.9% had served between 5 to 10 years. These study findings imply that most of the participants in this study were in a position to provide credible information based on the experience in their respective service terms.

#### **4.4 Analysis by Research questions**

The researcher sought to find out how different factors under study influence the implementation of healthcare projects in Meru County. This was facilitated through the distribution of questionnaires that aimed at determining the extent to which respondents agreed with the following statements on the influence of Collaboration of Communities on the Implementation of Healthcare projects in Meru County. Results are presented in Table 4.7

**Table 4.7: collaboration of communities on Health Care Projects**

| Statement   | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Mean | Std Deviation |
|---|-------------------|----------|---------|-------|----------------|------|---------------|
| Existence of partnerships between county government and civil society organizations that do not influence health care projects                        | 42.9%             | 14.3%    | 0%      | 26.6% | 14.3%          | 2.57 | 1.72          |
| Existence of partnerships between county government and religious organizations however these do not influence implementation of health care projects | 27.0%             | 36.8%    | 8.0%    | 12.9% | 15.3%          | 2.53 | 1.407         |
| Partnerships between county government and private sector do not exist and this does influence the implementation of health care projects.            | 7.4%              | 9.8%     | 10.4%   | 46.0% | 26.4%          | 3.74 | 1.17          |
| Partnerships between county government and other county governments however this does not influence implementation of health care projects.           | 41.1%             | 26.4%    | 4.9%    | 7.4%  | 20.2%          | 2.39 | 1.56          |
| Non-existence of partnerships between county government and Herbal Medicine practitioners does influence  | 6.7%              | 10.4%    | 11.0%   | 40.5% | 31.3%          | 3.79 | 1.19          |

the implementation of health care projects.

| <b>Average Mean</b> | <b>3.0</b> | <b>1.8</b> |
|---------------------|------------|------------|
|---------------------|------------|------------|

From study findings, large number of the respondents as represented by a 46.0% (mean=3.74 std dev =1.17) agreed that partnerships between county government and the private sector do not exist influencing implementation of health care projects, 41.1% of respondents (Mean =2.39, std dev =1.56) felt that partnerships between county governments influence implementation of health care projects, 40.5% (Mean =3.79, std dev =1.19) agreed that the non-existence of partnerships between county government and traditional healers influenced implementation of health care projects in the study locale while 42.9% (Mean =2.57, std dev =1.72) of respondents disagreed that there exist partnerships between county government and civil society organizations that do not influence health care projects. This essentially means that a vast majority of respondents 46.0% attached greater importance to the building of partnerships between the county government and the private sector; partnerships that would positively influence implementation of health care projects, most of respondents 42.9% also recognized the need to appreciate the existence of partnerships between county government and civil society organizations that influence implementation of health care projects, while a significant number of respondents 41.1% acknowledged the need to appreciate the influence on health care projects brought about by partnerships between county governments and a minimal number 40.5% placed the importance of having partnerships between county government and traditional healers.

#### **4.5 Distribution of Human Resources**

Further research questions were formulated to find out to what extent the respondents agreed with the following statements assessing on influence of Distribution of Human resources on the implementation of healthcare projects. Results are presented in Table 4.8

**Table 4.8: Distribution of Human Resources and Health care**

|   | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Mean | Std Deviation |
|---|-------------------|----------|---------|-------|----------------|------|---------------|
| Existence of low number of doctors in every public sub county hospital and these does not influence implementation of health care projects.       | 37.4%             | 30.1%    | 3.7%    | 10.4% | 18.4%          | 2.42 | 1.52          |
| The number of nurses in every public sub-county hospital is good enough and this does not influence health care projects.                         | 28.2%             | 42.3%    | 6.1%    | 9.2%  | 14.1%          | 2.39 | 1.36          |
| Existence of a low number of clinical medical officers in every public sub-county hospital influences the implementation of health care projects. | 8.0%              | 14.7%    | 5.2%    | 42.3% | 29.4%          | 4.02 | 4.3           |
| Existence of a good number of pharmacists in every sub-county hospital and this does not influence healthcare projects.                           | 39.3%             | 25.8%    | 4.3%    | 13.5% | 17.2%          | 2.44 | 1.53          |
| Existence of a low number of mid-wives in every public sub-county hospital that influences the implementation of health care projects.            | 4.9%              | 16.6%    | 3.1%    | 47.2% | 28.2%          | 3.77 | 1.17          |



|                     |            |             |
|---------------------|------------|-------------|
| <b>Average mean</b> | <b>3.0</b> | <b>1.97</b> |
|---------------------|------------|-------------|

Based on the study findings majority of the respondents as represented by a 47.2% (mean=3.77 std dev =1.17) agreed that there exists a low number of mid-wives in every public sub-county hospital influencing implementation of health care projects, 42.3% of respondents (Mean = 4.02, std dev =4.3) felt that the existence of a low number of clinical medical officers in every public sub-county hospital influences the implementation of health care projects, 42.3% (Mean =2.39, std dev =1.36) of respondents disagreed that there exist a good number of nurses and that this does not influence health care projects, 39.3% (Mean =2.44, std dev =1.53) disagreed that there exists a good number of pharmacists in every public sub-county hospital and that this does not influence health care projects while 37.4% (Mean =2.42, std dev =1.52) disagreed that the existence of a low number of doctors did not influence implementation of health care projects in the study locale. This essentially means that a vast majority of respondents 47.2% attached greater importance to how low mid-wives numbers in public hospitals influence healthcare, most of respondents 42.3% also placed greater importance on the influence of the low numbers of clinical medical officers and nurses on implementation of health care projects, while a significant number of respondents 39.3% acknowledged the need to appreciate the influence of low pharmacists' numbers in public hospitals on health care projects and a minimal number 37.4% attached the importance of addressing low doctors' numbers in health care projects.

#### **4.6 Financing**

The study sought to determine the extent to which respondents agreed with the following statements assessing on influence of financing on the implementation of healthcare projects for provision of health services at devolved units. Results are presented in Table 4.9

**Table 4.9: Financing and implementation of Health care projects**

| Statement  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Mean        | Std Deviation |
|--|-------------------|----------|---------|-------|----------------|-------------|---------------|
| Revenue raised through local taxation is enough and this does not influence implementation of health care projects.          | 6.7%              | 19.6%    | 2.5%    | 44.8% | 26.4%          | 3.62        | 1.25          |
| Health Grants received by county government from international government and this does not influence health care projects.  | 6.7%              | 11.7%    | 3.7%    | 43.6% | 34.4%          | 3.87        | 1.20          |
| Funding disbursed from the central government is good enough and this does influence implementation of health care projects. | 3.1%              | 20.2%    | 3.7%    | 43.6% | 29.4%          | 3.76        | 1.17          |
| County government faces budgetary constraints however these do not influence healthcare projects.                            | 40.5%             | 35.0%    | 3.1%    | 6.7%  | 14.7%          | 2.20        | 1.42          |
| County government finances the provision of human resources for MCH influencing the implementation of health care projects.  | 12.3%             | 16.6%    | 4.3%    | 41.1% | 25.8%          | 3.52        | 1.36          |
| <b>Average mean</b>  |                   |          |         |       |                | <b>3.39</b> | <b>1.3</b>    |

A sizeable number of the respondents as represented by a 44.8% (mean=3.62 std dev =1.25) agreed that revenue raised through local taxation is enough and this did not influence implementation of health care projects, 43.6% of respondents (Mean =3.87, std dev =1.20) felt that health Grants received by county government from international government do not

influence implementation of health care projects, 43.6% of respondents (Mean =3.76, std dev =1.17) agreed that funding disbursed from the central government is good enough and this influenced implementation of health care projects in the study locale, 41.1% of respondents (Mean =3.52, std dev =1.36) agreed that county government finances the provision of human resources for MCH which influenced health care projects, while 40.5% of respondents (Mean =2.20, std dev =1.42). This essentially means that a vast majority of respondents 44.8% recognized that revenue raised through local taxation is enough however this did not influence implementation of health care projects possibly emanating from high levels of corruption in county governments;most of respondents 43.6% also recognized the county government receives health grants from international governments that do not influence implementation of health care projects possibly due to high levels of corruption and political interference, most of the respondents 43.6% also appreciated that funding from the central government was enough and did influence the implementation of health care projects, while a significant number of respondents 41.1% acknowledged that the county government finances the provision of human resources for MCH may be because majority of the respondents were female and a minimal number 40.5% noted that the county government does not face budgetary constraints that influence implementation of health care projects.

#### **4.7 Learning and Adoption**

The study sought to determine the extent to which respondents agreed with the following statements assessing on influence of learning and adoption on the implementation of healthcare projects for provision of health services at devolved units. Results are presented in Table 4.10

**Table 4.10: Learning and Adoption influence on Health care projects**

| Statement   | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Mean | Std Deviation |
|---|-------------------|----------|---------|-------|----------------|------|---------------|
| Medical personnel attendance of Benchmarking trips and these has no influence on health care projects.                                | 12.9%             | 17.2%    | 4.9%    | 40.5% | 24.5%          | 3.47 | 1.38          |
| Medical personnel do not attend international benchmarking trips and this influences health care projects.                            | 8.0%              | 11.7%    | 2.5%    | 35.6% | 42.3%          | 3.93 | 1.28          |
| County Government through the department of health has adopted e-health applications and these do not influence health care projects. | 21.5%             | 44.8%    | 5.5%    | 9.8%  | 18.4%          | 2.6  | 1.41          |
| Performance evaluations and appraisals conducted on medical personnel influencing implementation of health care projects.             | 3.1%              | 5.5%     | 7.8%    | 65.6% | 18.0%          | 3.8  | 1.18          |
| Average mean  |                   |          |         |       |                | 3.5  | 1.31          |

Based on the study findings majority of the respondents as represented by a 65.6% (mean=3.8 std dev =1.18) agreed that performance evaluations and appraisals conducted on medical personnel influenced implementation of health care projects, 44.8% of respondents (Mean = 2.6, std dev =1.41) felt that e-health adopted by the county government influenced the implementation of health care projects, 42.3% (Mean =3.93, std dev =1.28) of respondents agreed that medical personnel do not attend benchmarking international trips which influenced health care projects, while 40.5% (Mean =3.47, std dev =1.38) felt that medical personnel attend benchmarking trips in peer counties however failed to influence implementation of health care projects in the study locale. This essentially means that a vast majority of respondents 65.6%

attached greater importance on the influence of performance evaluations and appraisals conducted on medical personnel to healthcare, most of respondents 44.8% acknowledged the need to appreciate the influence of e-health applications on health care projects, while a significant number of respondents 42.3% attached greater importance to the influence of international benchmarking trips on implementation of healthcare projects and a minimal number 40.5% of respondents recognized that benchmarking trips to peer counties failed to influence implementation of health care projects probably due to pre-existing attitudes among medical personnel.

**Table 4.11: Learning and Adoption influence on Health care projects**

| Statement  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Mean     | Std Deviation |
|--|-------------------|----------|---------|-------|----------------|----------|---------------|
| Medical informatics adopted however these do not influence implementation of health care projects.                 | 12.9%             | 11.0%    | 3.7%    | 44.2% | 28.2%          | 3.64     | 1.34          |
| County government has introduced mobile clinics and these do influence implementation of health care projects.     | 6.7%              | 8.0%     | 3.1%    | 47.2% | 35.0%          | 3.96     | 1.15          |
| County Government has not introduced medical insurance schemes influencing implementation of health care projects. | 11.0%             | 5.5%     | 4.9%    | 32.5% | 46.2%          | 3.10     | 1.32          |
| <b>Average mean</b>  |                   |          |         |       |                | <b>3</b> | <b>1.23</b>   |

From the research findings, majority of the respondents as represented by a 47.2% (Mean = 3.96, std dev =1.15), agreed that the introduction of mobile clinics by the county government had influenced implementation of health care projects, 46.2% of respondents (Mean =3.10, std dev =1.32) felt that failure by the county government to introduce medical insurance schemes influenced implementation of health care projects, 44.2% (Mean = 3.64, std dev =1.34) observed that the adoption of medical informatics by the county had not influenced the implementation of health care projects. This essentially means that a vast majority of respondents 47.2% attached

greater importance on the influence of community clinics in the implementation of health care projects, most of respondents 46.2% also recognized the need to introduce medical insurance schemes to address shortcomings in health care projects and a minimal number 44.2% acknowledged there was need to address the low influence of medical informatics on health care projects.

#### 4.8 Measures of Provision of Health Care through Health Care Projects

Respondents were requested to highlight on indicators of provision of health care through health care projects. Results are presented in Table 4.12

**Table 4.12: Measures of provision of Health Care through Health Care projects**

| Statement  | Very Low Extent | Low Extent | Moderate | Great Extent | Very Great Extent | Mean | Std Deviation |
|--|-----------------|------------|----------|--------------|-------------------|------|---------------|
| Community Disability Health Centers                              | 5.5%            | 3.1%       | 5.5%     | 47.9%        | 38.0%             | 1.90 | 1.03          |
| Community Clinics  | 3.7%            | 3.1%       | 6.1%     | 42.3%        | 44.8%             | 1.79 | 0.96          |
| Financing of Cancer diagnosis and Treatment Units                | 0%              | 9.2%       | 3.7%     | 48.5%        | 38.7%             | 1.83 | 0.88          |
| Existence of a good number of Human resources for dialysis units | 1.8%            | 6.1%       | 6.1%     | 46.6%        | 39.3%             | 1.85 | 0.92          |
| On-job training for medical human resources                      | 3.1%            | 5.5%       | 13.5%    | 43.6%        | 34.4%             | 1.99 | 0.99          |
| E-health Pharmaceuticals and supplies stock management           | 8.6%            | 20.2%      | 6.7%     | 30.1%        | 34.4%             | 2.39 | 1.36          |

From the study findings, majority of the respondents as shown by 48.5% agreed that financing of cancer diagnosis and treat units was to a great extent an indicator of provision of health care through implementation of health care projects at county level. This is essentially because of reports of high cancer cases in the study locale. 47.9% of respondents agreed that community

disability health centres are to a great extent an indicator of provision of health care through implementation of health care projects at county level. 46.6% of respondents agreed that existence of a good number of human resources for dialysis units to a great extent is an indicator of provision of health care at county level. 44.8% of respondents agreed that community clinics were to very great extent indicators of provision of health care through implementation of health care projects at county level and 34.4% agreed that E-health Pharmaceuticals and medical supplies stock management is to a very great extent an indicator of provision of health care at county level.

#### 4.9 Regression Results-Inferential Statistics

The data presented before on financing of human resources, distribution of human resources, collaboration of communities, learning and adoption of best practices and implementation of healthcare projects in the county were computed into single variables per factor by obtaining the averages of each factor. Correlations analysis and multiple regression analysis were then conducted at 95% confidence interval and 5% confidence level 2-tailed to establish the relationship between the variables. The research used statistical package for social sciences (SPSS V 22.0) to code, enter and compute the measurements of the Pearson’s Product Moment Correlation and multiple regression.

#### Pearson’s Product Moment Correlation

A Pearson’s Product Moment Correlation was conducted to establish the strength of the relationship between the variables. The findings are presented in Table 4.13.

**Table 4. 13: Correlation Matrix**

|   | Implementation of healthcare projects | Financing of human resources | Distribution of human resources | Collaboration of communities | Learning and adoption of best practices |
|---|---------------------------------------|------------------------------|---------------------------------|------------------------------|---|
| Implementation of healthcare projects   | 1                                     |                              |                                 |                              |   |
| Financing of human resources            |                                       | 1                            |                                 |                              |   |
| Distribution of human resources         |                                       |                              | 1                               |                              |   |
| Collaboration of communities            |                                       |                              |                                 | 1                            |   |
| Learning and adoption of best practices |                                       |                              |                                 |                              | 1                                       |

|   |                     |      |      |      |      |   |
|---|---------------------|------|------|------|------|---|
| healthcare projects                     | Sig. (2-tailed)     | .    |      |      |      |   |
| Financing                               | Pearson Correlation | .806 | 1    |      |      |   |
|   | Sig. (2-tailed)     | .029 | .    |      |      |   |
| Distribution of human resources         | Pearson Correlation | .603 | .522 | 1    |      |   |
|   | Sig. (2-tailed)     | .016 | .017 | .    |      |   |
| Collaboration of communities            | Pearson Correlation | .606 | .742 | .587 | 1    |   |
|   | Sig. (2-tailed)     | .028 | .013 | .018 | .    |   |
| Learning and adoption of best practices | Pearson Correlation | .881 | .543 | .723 | .521 | 1 |
|   | Sig. (2-tailed)     | .056 | .008 | .003 | .016 | . |

Results in Table 4.21 reveal that there is a strong, positive and significant correlation between financing of human resources and implementation of healthcare projects in the county. ( $r = 0.806$ ,  $p$  value=  $0.029$ ). In addition, the study reveals that the correlation between distribution of human resources and implementation of healthcare projects in the county is positive and significant ( $r=0.603$ ,  $p$  value= $0.016$ ). Further, the study reveals that the correlation between collaboration of communities and implementation of healthcare projects in the county is positive and significant ( $r=0.606$ ,  $p$  value= $0.028$ ). Finally the study establishes that there was a very strong, positive and significant correlation between learning and adoption of best practices and implementation of healthcare projects in the county. ( $r=0.881$ ,  $p$  value= $0.056$ ). This implies that all the variables had a positive and significant correlation with implementation of healthcare projects in the County.

#### 4.10 Multiple Regression Analysis

In this study, a multiple regression analysis was conducted to test the effect among predictor variables. The summary of regression model output is presented in Table 4.14.

**Table 4.14: Summary of Regression Model Output**

| Model                  | R  | R Square | Adjusted R Square | Std. Error of the Estimate |
|------------------------|--|----------|-------------------|----------------------------|
| 1                      | 0.926 <sup>a</sup>   | 0.857    | 0.854             | 1.287                      |
| Predictors: (constant) | Community Collaborations, Financing, Distribution of human resources and Learning and Adoption |          |                   |                            |



The study found that independent variables selected for the study (i.e. financing of human resources, distribution of human resources, collaboration of communities and learning and adoption of best practices accounted for 85.4% of the variations in implementation of healthcare projects in the county. According to the test model, 14.6% percent of the variation in the implementation of healthcare projects in the county could not be explained by the model. Therefore, further studies should be done to establish the other factors that contributed the unexplained (14.6%) of the variation in the implementation of healthcare projects in the county.

The analysis of variance results for the relationship between the four independent variables and the implementation of healthcare projects in the county is shown in Table 4. 3.

#### 4.11The Relationship

**Ho:** there is no relationship between the combined factors and implementation of Healthcare projects.

The study further tested the null hypothesis and significance of the model through the application of ANOVA procedure. Results are presented in Table 4.15

Table 4.15: Summary of One-Way ANOVA results

| Model |            | Sum of Squares | df  | Mean Square | F       | Sig.  |
|-------|------------|----------------|-----|-------------|---------|-------|
|       | Regression | 1724.82        | 4   | 431.205     | 177.250 | 0.000 |
| 1     | Residual   | 416            | 171 | 2.433       |         |       |
|       | Total      | 2012.82        | 175 |             |         |       |

Dependent Variable: Implementation of Health Care Projects

Source: Research data, 2017

The study used ANOVA to establish the significance of the regression model from which an f-significance value of p less than 0.05 was established ( $p= 0.00 < 0.05$ ). The probability value of 0.000 indicated that the regression relationship was significant in predicting the effects of

financing of healthcare, distribution of human resources, collaboration of communities and learning and adoption of best practices on implementation of healthcare projects in the county. The calculated F (177.250) was significantly larger than the critical value of F= 2.4344. This again shows that the overall test model was significant. Therefore, the null hypothesis; All the above factors combined do not have a relationship with implementation of health care projects in the county is rejected.

The Regression coefficients for the relationship between the four independent variables and implementation of healthcare projects in the county are shown in Table 4.16.

**Table 4. 16: Regression coefficients**

| Model                              | Unstandardized |            | Standardized | t     | Sig.  |
|------------------------------------|----------------|------------|--------------|-------|-------|
|                                    | Coefficients   |            | Coefficients |       |       |
|                                    | B              | Std. Error | Beta         |       |       |
| (Constant)                         | 0.684          | 0.123      |              | 5.561 | 0.000 |
| Collaboration of communities       | 0.604          | 0.187      | 0.443        | 3.230 | 0.002 |
| Distribution of human resources    | 0.601          | 0.276      | 0.645        | 2.178 | 0.035 |
| Financing of health infrastructure | 0.796          | 0.342      | 0.676        | 2.327 | 0.025 |
| Learning and adoption              | 0.861          | 0.156      | 0.792        | 5.519 | 0.000 |

The established multiple regression equation for predicting factors influencing implementation of healthcare projects in the county variables was:

$$Y = 0.684 + 0.604X_1 + 0.601X_2 + 0.796X_3 + 0.861X_4$$

Where, Y= Implementation of healthcare projects in the county.

$\beta_0$ =constant

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

$X_1$ = Collaboration of communities

$X_2$ = Distribution of human resources

$X_3$ = Financing of Health Infrastructure

$X_4$ = Learning and adoption of best practices

$\varepsilon$ =Error Term

The regression equation above has established that taking all factors into account (collaboration of communities, distribution of human resources, financing of health infrastructure and learning and adoption of best practices) constant at zero, implementation of healthcare projects in the county was 0.684. The findings presented also show that taking all other independent variables at zero, a unit increase in the financing of human resources would lead to a 0.796 increase in the scores of implementation of healthcare projects in the county and a unit increase in the scores of distribution of human resources would lead to a 0.601 increase in the scores of implementation of healthcare projects in the county.

Further, the findings shows that a unit increases in the scores of collaboration of communities would lead to a 0.604 increase in the scores of implementation of healthcare projects in the county. The study also found that a unit increase in the scores of learning and adoption of best practices would lead to a 0.861 increase in the scores of implementation of healthcare projects in the county. Overall, learning and adoption of best practices had the greatest effect on the implementation of healthcare projects in the county, followed by financing of health infrastructure, then collaboration of communities while distribution of human resources had the least effect to the implementation of healthcare projects in the county. All the variables were significant ( $p$ -values  $< 0.05$ ).

## **CHAPTER FIVE:**

### **SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary of the findings, conclusions, recommendations and ends with suggestions for further study.

#### **5.2 Summary of Findings as per the four objectives:**

The study targeted a sample size of 249 respondents from which 181 filled in and returned the questionnaires making a response rate of 72.7 %. This response rate was satisfactory to make inferences as it worked as a suitable representative of the general population. According to Fincham (2008) a response rate of 50 % is acceptable for analysis and reporting, a rate of 60% is good and a response rate of 70% and over is excellent. Results obtained showed that majority of respondents 45.5% were aged 30-39 years. From the research findings, the study revealed that majority of respondents 42.9% also held Bachelor's degree.

The study revealed that collaboration of communities in implementation of health care projects funded by county government generates invaluable support during the implementation of project activities. Based on research findings, greater emphasis was placed on importance to the building of partnerships between the county government and the private sector at 46.0% as important and invaluable relationships in the provision of health care through health care projects at county levels. Respondents at 42.9% largely appreciated that partnerships between county government and civil society organizations positively influenced the provision of health care services. Respondents at 41.1% largely acknowledged partnerships between county governments influenced the provision of health care services at county level.

The study revealed that distribution of human resources for health played a key role in the successful implementation of health care projects. Based on research findings, majority of respondents at 47.2% placed greater emphasis on how low mid-wives numbers in public hospitals influenced the provision of healthcare services at county level. Respondents largely at 42.3% also placed greater importance on the influence of the low numbers of clinical medical officers and nurses on the provision of health care services at county levels. About 39.3% of respondents agreed that low number of pharmacists influenced the provision of health care services at county level. Another 37.4% of respondents agreed that low doctors' numbers influenced the provision of health care services at county levels through implementation of health care projects.

The research revealed that the funds disbursed from the central government for the implementation of health care projects in Meru County are sufficient; the county government raises enough revenue from taxation however this does not positively influence provision of health care services and health Grants received by county government from international government do not influence implementation of health care projects. Based on research findings, majority of respondents at 44.8% agreed to a greater extent that revenue raised through local taxation is enough however this failed to positively influence the provision of health care services through implementation of these types of projects. Respondents agreed to a great extent at 43.6% that health Grants received by county government from international government have not influenced provision of health care services and that funding disbursed from the central government is good enough and influenced provision of health care services at county level. Respondents largely at 41.1% agreed that county government finances the provision of human resources for MCH which influenced provision of health care services through implementation of health care projects. A sizeable number of respondents at 40.5% noted that the county government does not face budgetary constraints which influenced provision of health care services through implementation of health care projects at county level.

The research revealed that performance evaluations and appraisals conducted on medical personnel, e-health adopted by the county government influenced the provision of healthcare services through implementation of health care projects. Based on research findings, 65.6% of the respondents agreed to a great extent that performance evaluations and appraisals conducted on medical personnel influenced provision of health care services through implementation of health care projects at county level. About 47.2% of the respondents agreed that the introduction of mobile clinics had influenced the provision of health care services through implementation of health care projects at county level. Respondents largely at 46.2% felt that failure by the county government to introduce medical insurance schemes influenced provision of health care services while a significant number of respondents at 44.8% agreed that e-health adopted by the county government influenced the implementation of health care projects. A sizeable number of respondents at 44.2% and 42.3% respectively also agreed that medical informatics adopted by the county had not influenced provision of healthcare services and that failure by medical personnel to attend international trips benchmarking influenced the provision of healthcare services through implementation of health care projects.

### **5.2.1 Measures on Provision of Health Care Services through Implementation of Health care Projects**

The study also revealed that financing of cancer diagnosis and treatment units was an important indicator to the provision of health care services through implementation of health care projects. Based on the study findings, majority of the respondents at 48.5% agreed to a great extent that financing of cancer diagnosis and treat units was an indicator of provision of health care through implementation of health care projects at county level. Respondents largely at 47.9% agreed that community disability health centres are an indicator of the provision of health care services through implementation of health care projects at county level. A significant number of respondents at 46.6% agreed that existence of a good number of human resources for dialysis units to a great extent is an indicator of provision of health care services at county level. A sizeable number of respondents at 44.8% and 34.4% respectively also agreed that community clinics and E-health Pharmaceuticals and medical supplies stock management are to a very great extent indicators of provision of health care services at county level.

### **5.3 Discussion of the Findings as per the four objectives;**

This section focuses on the discussion of the findings relative to what previous researchers have found on the study variables. It correlates the findings with those of the previous literature and establishes where they are in agreement or they contradicted.

#### **5.3.1 Objective 1**

In line with the first objective, the study noted that the need to cultivate working collaborations between county governments' departments of health and private companies in the health sector. The research revealed that these types of collaborations would enhance the provision of health care services in terms of enhancing E-health Pharmaceuticals and medical supplies stock management, the provision of opportunities for medical personnel to attend international benchmarking trips and the financing of cancer diagnosis and treatment units. The findings are in line with finding by Sandoval and Cáceres, (2013) who contend collaborations between regional governments and private sector health companies in Peru led to the financing of cancer fighting initiatives. However, the findings are in contrary to study by García-Goñi, et al., (2011) argued Autonomous communities worked in isolation adversely influencing the provision of health care services.

Further, the research revealed that collaborations between county governments were important for the realization of health care goals. The study notes that partnerships between county governments addressed challenges associated with the provision of maternal and child health care (MCH) services to rural populations. This findings concur with the study by Nobuya (2011) argued that inter-prefectures partnerships led to the successful implementation of prenatal projects by these devolved governance units in Japan. The research revealed that there was an imminent need to build strong collaborations between county governments' departments of health and civil society organizations such as; Non-governmental Organizations (NGOs) and Community Based Organizations (CBOs). These types of partnerships would assist in addressing already existing challenges related to human resources for health (HRH) gaps; enhance the provision of equipment and technologies. The findings are in line with the study by Ejaz, Shaikh and Rizvi (2011) argued that provincial governments in Pakistan needed to strengthen collaborations with NGOs to address challenges associated with human resources for healthcare (HRH) and medical supplies. The findings are also in line with the research by Santana,

Szczygiel and Redondo (2014) who found evidence indicating that collaborations of communities in the form partnerships between municipalities and private non-profit organizations resulted to the financing of HRH for MCH leading to decreased maternal and infant mortality.

### **5.3.2 Objective 2**

The research revealed that failure by the county government to both hire more and evenly distribute midwives did lead to increased cases of maternal morbidity and infant mortality in remote areas of the county. This was also due to lack of human resources for health management information systems leading to the untimely identification of emergence of low numbers of HRH and in particular midwives. The findings are in line with the research by Groenewegen and Jurgutis, (2013) who argued that the lack of a reliable HRH allocation management system resulted to low midwives numbers adversely influencing MCH in the regions of Greece.

The study also revealed that the county government had had failed to address the low number of clinical medical officers and doctors in public hospitals in every sub-county. This adversely influenced support health services provided by the clinical medical officers to doctors such as the provision of; dialysis services and addressing disability issues. It also negatively influenced the provision of major medical services provided by doctors such as cancer diagnosis and treatment and treatment of chronic diseases such as Tuberculosis (T.B). It was reported that this emanated from the existence of an unreliable human resources information systems (HRIS) that distributed more clinical medical officers to urban sub-county public hospitals than those in rural sub-county public hospitals. The findings are in line with the study by Feng, Li and Wu (2014) contend that more doctors and clinical medical officers were allocated to urban hospitals than in rural hospitals by provincial governments in China. The study also revealed that the county government had failed to address the low number of nurses in public hospitals in every sub-county. This leads to high numbers of maternal and infant mortality and also leads to high adult patient deaths due to chronic diseases such as Tuberculosis (T.B). It also adversely influenced the provision of health care services through mobile clinics. The findings are in line with those of the study by Wakaba et al., (2014) argued that the existence of unreliable human resources information systems (HRIS) leads to uneven distribution of nurses to county public hospitals in Kenya adversely influencing of MCH services. The findings are however in contrary to the study



by Heywood, Harahan and Aryani (2011) who contend that the existence of a reliable HRIS did enhance the even distribution of nurses by provincial governments leading to both reduced maternal and infant mortality rates in the provinces of Indonesia.

### **5.3.3 Objective 3**

The research revealed that revenue raised through local taxation is enough however this failed to positively influence the provision of health care services through implementation of these types of projects. This emanated from high cases of corruption and political interference that led to fraudulent misuse public financial resources meant for the implementation of health care projects. The findings are contrary to the study by Ferrario and Zanardi (2010) who contend that regional governments raised low amounts of financial resources from local taxation for the implementation of health care projects in Italy.

The study also revealed that funding disbursed from the central government was good enough and positively influenced provision of health care services at county level. This could be because the national government takes the health of its citizens seriously. The funds disbursed also influenced provision of health care services as they were used to finance the provision of human resource for maternal and child health. The findings are in line with the research by Soto, Farfan, and Lorant (2012) who argued that effective central governmental fiscal disbursement program departmental governments assisted the financing of human resource for maternal and child health consequently reducing the rate of infant mortality especially among low income populace in Colombia. The findings are however contrary to the research by Gené-Badia, et al., (2012) who argued that reductions on funds disbursed by the central government in Spain had negatively influenced the provision of health care services by Autonomous Communities. The study also revealed that the county government does not face budgetary constraints which adversely influenced provision of health care services. This is because the county received enough funds from the central government, raised enough taxes and received health grants from international governments. The findings are contrary to the research by Avlijaš and Bartlett (2011) argued that municipal governments in Serbia faced budgetary constraints due to low central government disbursements, low revenue from local taxes and the non-existence of health grants which negatively influenced provision of health care services

#### **5.3.4 Objective 4**

The study also revealed that the county government had failed to adopt performance appraisals and evaluations for medical personnel. This leads to low motivation levels among HRH adversely influencing the provision of health care services. It also led to low HRH participation levels in county level implemented health care projects such as; community and mobile clinics and community disability health centres. The findings are in line with the research by Musyoka, Adoyo and Oluoch, (2015) argued that failure to adopt performance appraisals (PA) by county health service managers adversely influenced the motivation of HRH in the sub-county public hospitals resulting to poor quality health care services. The county government had failed to fully utilize the benefits of benchmarking trips by its medical personnel to peer counties. This leads weak quality stakeholder mobilization strategies, monitoring and evaluation processes, financial management and low adoption of costs reduction processes adversely influencing implementation of health care projects. The findings are contrary to the study by Ettorchi-Tardy, Levif and Michel, (2012) contend that benchmarking trips positively influenced implementation of health care projects by regional governments in France.

The research revealed that e-health adopted by the county government influenced the implementation of health care projects. This was in the form of e-health mobile phone applications that enhanced the provision of health care services especially those related to MCH. The findings are in line with the study by Curioso, et al., (2010) argued that adoption of E-health application in mobile phones by a regional government in Peru did improve access to maternal and child health information (MCHI) leading to reduced cases of maternal mortality. It further revealed that medical informatics adopted by the county had not influenced provision of healthcare services. This leads to weak Scheduled Workflow (SWF) adversely influencing the availability of doctors, clinical medical officers and nurses for patients and negatively influenced ambulance orders due to the existence of a weak Ambulatory Testing Workflow (ATW). The finding is contrary to Barbarito et al., (2012) argued that the adoption of medical informatics by a regional government in Italy positively influenced the provision of health care services.

#### **5.4 Conclusions**

The study concludes that collaborations of communities had a direct influence on implementation of health care projects in Meru County, participation by other stakeholders in devolved units' implementation of healthcare projects facilitated the access to financial resources

and supplementary human resources for health needed in the implementation of these projects and that collaborations of communities helped to build on local strengths, creativity for example the provision of mobile clinic and that collaborations of communities helped to align project needs to community specific needs that outside planners cannot. Collaborations of communities promoted the sustainability of community clinics and community disability health centres.

The study concludes that distribution of human resources for health influenced the implementation of health care projects in Meru County, the uneven distribution and the consistent existence of human resources for health (HRH) numbers had negative influence on the implementation process of health care projects and that lack of a reliable human resources information system (HRIS) crippled down the provision of health care services in Meru County.

The study concludes that adequate financial resources are key drivers in implementation of health care projects in Meru County, the rate of flow of health care projects' funds especially those disbursed from the central government to devolved units influences the implementation of these projects, health care projects and the consequent provision of health services should have sound financial base arising from reliable sources of funding such as local taxation initiatives and that funds must be clearly designated and committed to the project so as to ensure successful implementation of activities without the possibility of stalling and subsequent abandonment.

The study concludes that learning and adoption had a direct influence on the implementation of health care projects in Meru County; implementation of health care projects under devolved governments in the country did rely on performance appraisals and evaluations, the adoption of e-health applications and medical informatics. That benchmarking is an important learning tool for medical personnel in terms of quality standards improving processes for the provision of health care services through health care projects implemented under the devolved system of governance.

## 5.5 Recommendations

On collaboration of communities, the study recommends that the county government should adopt an effective stakeholder mobilization strategy that help build collaborations with other health sector players like NGO's, CBOs and private companies for the realization of health goals in Kenya through devolved units.

Based on the present findings and analysis, the study recommends an enforcement of Kenya's Health Policy 2011–2030 and the 2010 Constitution of Kenya both of which require an appropriate and equitable distribution of health workforce in public health facilities and their subsequent training and development, enhancing their retention packages and incentives and upgrading of institutional and health worker productivity and performance.

It further recommends that the county government with the help other central government agencies and the ministry of health should put in place measures that would ensure health grants from international governments are utilized for the implementation of intended health care projects. Further, the county government with the help of anti-corruption agencies should combat corruption to ensure revenue from local taxation is appropriately utilized to implement health care projects for the provision of health care services at the county level.

The county government should also encourage benchmarking trips amongst the implementers of the health care project and further enhance performance evaluations and appraisals to motivate its employees .

#### **5.6 Area for Further Research**

The current study investigated the factors that influence the implementation of health care projects by the Meru County government, Kenya. Research could be done on similar topic on in all county governments in Kenya including: Nairobi, Mombasa, Kisumu, Nakuru and possibly neighboring counties such as: Isiolo, Tharaka Nithi and Embu County for comparison and generalization purposes.

## REFERENCES

- Ahmedov M, Azimov, R., Mutalova, Z. Huseynov, S., Tsoyi, E. & Rechel,B. (2014). Uzbekistan: Health System Review. *Health Systems in Transition*, 2014,16(5):, pp.1–137:
- Ambaretnani, P. (2012). Paraji and Bidan in Rancaekek: Integrated Medicine and Advanced Partnerships Among Traditional Birth Attendants and Community Midwives in the Sunda Region of West Java, Indonesia. *Leiden University*, <https://openaccess.leidenuniv.nl/bitstream/handle/1887/18457/.summary.pdf?sequence=5>
- Argyris,C. & Schon,D.A (1978). *Organizational learning: A theory in action perspective*.Reading, MA: Addison-Wesley Publishing Company
- Ascroft, J. Sweeney, R., Samei, M., Semos, I., & Morgan, C. (2011). Strengthening church and government partnerships for primary health care delivery in Papua New Guinea: Lessons from the international experience. *Health Policy and Health Finance Knowledge Hub*, pp.2-38: [https://www.burnet.edu.au/system/publication/file/1226/MORGAN\\_WP16\\_Strengthening\\_church\\_and\\_government\\_partnerships\\_in\\_PNG.pdf](https://www.burnet.edu.au/system/publication/file/1226/MORGAN_WP16_Strengthening_church_and_government_partnerships_in_PNG.pdf).
- Avlijaš, S. & Bartlett, W. (2011). *The Political Economy of Decentralization and Regional Policy: Choices and Outcomes*. South European Institute: [http://www.lse.ac.uk/europeanInstitute/research/LSEE/Research/SEE\\_Programme/images/Research\\_Paper\\_3.pdf](http://www.lse.ac.uk/europeanInstitute/research/LSEE/Research/SEE_Programme/images/Research_Paper_3.pdf).
- Barbarito, F., Pincirolli,F., Mason, J., Marceglia,S., Mazzola,L. & Bonicina, S. (2012). Implementing standards for the interoperability among healthcare providers in the public regionalized Healthcare Information System of the Lombardy Region. *Journal of Biomedical Informatics* 45 (2012), pp.736-745:<http://www.sciencedirect.com/science/article/pii/S153204641200007X>.
- Bjegovic-Mikanovic, V. (2016). Governance and management of health care institutions in Serbia: An overview of recent developments. *South Eastern European Journal of Public Health:94*
- Boex, J. & Selemani, O. (2013). *Strengthening the Geographical Allocation of Resources within the Health Sector in Tanzania:Towards Greater Equity and Performance*. Dar es Salaam: health...resource-allocation: Ministry of Health Tanzania .
- Bordignon, M. & Turati, G. (2009). Bailing out expectations and public health expenditure. *Journal of Health Economics*, 2009, vol. 28, issue 2,, pp.305-321.

- Bossert, T.J & Mitchell, A.D (2011). Health sector decentralization and local decision-making: Decision space, institutional capacities and accountability in Pakistan. *Social Science Medical* 72(1), pp.39-48
- Bremner, J. (2011). The complexities of decentralization. *Euro Observer Volume 13, Number 1*, pp.1-10
- Brix, H., Mu, Y., Targa, B. & Hipgrave, D. (2013). Engaging sub-national governments in addressing health equities: challenges and opportunities in China's health system reform. *Health Policy Plan*. 2013Dec;28(8):pp.809-824:
- Butterfoss, F.D., Goodman, R.M., & Wandersman, A. (1993). Community coalitions for prevention and health promotion. *Health education research*, 8(3), pp.315-330:
- Changalwa, K. (2016, December 15). The Contestation of Rights In The Health Sector In Kenya: The Right To Health Vis A Vis Labour Rights featured on Kenya National Commission for Human Rights (Blog Post). Retrieved from [http://knchr.org/Blogs/tabid/1256/Article\\_ID/5/The-Contestation-of-Rights-In-The-Health-Sector-In-Kenya-The-Right-To-Health-Vis-A-Vis-Labour-Rights.aspx](http://knchr.org/Blogs/tabid/1256/Article_ID/5/The-Contestation-of-Rights-In-The-Health-Sector-In-Kenya-The-Right-To-Health-Vis-A-Vis-Labour-Rights.aspx)
- Canares, M.P., & Shekhar, S. (2016). Open Data and Subnational Governments: Lessons from Developing Countries. *The Journal of Community Informatics*, 12(2).
- Caruso, B. Stephenson, R., & Leon, J.S. (2010). Maternal behavior and experience, care access, and agency as determinants of child diarrhea in Bolivia. *Pan American Journal of Public Health* 28:, pp.429–439: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3142664/pdf/nihms309265.pdf>.
- Cerón Reyes, C. (2010). Improving quality of care and patient safety in Chile:. *GSI Healthcare Reference Book, 2010/2011*. pp.1-3:
- Chen, R., Zhao, Y., Du, J., Wu, T., Huang, Y., & Guo, A. (2014 ). Health Workforce Equity in Urban Community Health Service of China. *PLoS ONE* 9(12):, pp.1-15: <http://dx.doi.org/10.1371/journal.pone.0115988>.
- Chen, Y. (2013 ). Health care financing in China : what lessons China can learn from other countries on healthcare reform?. *Un-published Thesis University of Hong Kong, Pokfulam, Hong*, pp.1-26:
- Cheng, Z. Cia, M., Tao, H., He, Z., Lin, X., Lin, H., & Zuo, Y. (2016 ). Efficiency and productivity measurement of rural township hospitals in China: a bootstrapping data envelopment analysis. *BMJ Open* 2016;6:e011911, pp.1-10

- Chestnutt, I.G. (2014). Devolution and dentistry in Wales. *Faculty Dental Journal Volume 5 Issue3*, pp.111-113:
- Cole, A. (2011). The French State and its territorial challenges. *Public Administration* 90(2), pp.335-350:[http://blogs.sciences-po.fr/recherche-recomposition-etat/files/2011/04/A\\_Cole\\_working-paper.pdf](http://blogs.sciences-po.fr/recherche-recomposition-etat/files/2011/04/A_Cole_working-paper.pdf).
- Collins, P.A. & Hayes, M.V (2010). The role of urban municipal governments in reducing health inequities: A meta-narrative mapping analysis. *International Journal for Equity in Health* 2010,9:13,pp.2-20
- Cooke, R., Couper, I. & Versteeg, M., (2011). Human Resources for Rural Health. *Centre for Rural Health, University of the Witwatersrand*, pp.107-117:
- Costa-Font, J. (2010). Does devolution lead to regional inequalities in welfare activity? *Environment and Planning C: Government and Policy* 28(3), pp.435–449
- Crivelli, E. Leive, A. & Stratman, T. (2010). *Subnational Health Spending and Soft Budget Constraints in OECD Countries*. Washington D.C : The International Monetary Fund (IMF)
- Curioso, W. R.-L. (2010). Improving Maternal Health Information Systems: Validation Of Electronic Medical Records In Callao, Peru. *Rev Peru Med Exp Salud Publica* 2010 September;27(3):,pp.487–489:
- Dieleman, M. & Hilhorst, T. (2011). Governance and human resources for health. *Human Resources for Health* 9:29, pp.2-3:
- Drost, E.A. (2011). Validity and Reliability in Social Science Research. *Education Research and Perspectives*, Vol.38, No.1, pp.105-123:
- Ejaz, I. Shaikh, B.T., & Rizvi, N. (2011). NGOs and government partnership for health systems strengthening: A qualitative study presenting viewpoints of government, NGOs and donors in Pakistan. *BMC Health Services Research* 11:122, pp.2-7:<https://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-11-122>.
- Eppel, E. (2013). *Collaborative Governance: Framing New Zealand Practice*. Wellington: Victoria University of Wellington <http://ips.ac.nz/publications/files/07705653e38.pdf>.
- Ettorchi-Tardy, Amina., Levif, M. & Michel, P. (2012). Benchmarking: A Method for Continuous Quality Improvement in Health. *Healthcare Policy* Vol.7 No.4, 2012, pp.101-119.
- Faguet, Jean-Paul. (2009). Improving The Education And Health Of The Poor: Decentralization and Policy Reform in Colombia. *CAF Working paper N° 2009/02*, pp.3-26:
- Faguet, Jean-Paul. (2012). *Decentralization and Popular Democracy*. Ann Arbor: Michigan Publishing, University of Michigan Press DOI: 10.3998/mpub.175269.

- Faguet, Jean-Paul. (2014). Decentralization and Governance. *Science Direct Volume 53*, Pages 2–13.
- Fawcett, S.B., Paine-Andrews, A., & Francisco, V.T. et al., (1995 ). Using empowerment theory in collaborative partnerships for community health and development. *American journal of community psychology*, 23(5), pp.677-697:doi:10.1007/BF02506987.
- Feng, Y., Li, S., & Wu, Z., (2014 ). The Study of the Rational Allocation of China's Human Resources for Health. *Studies in Asian Social Science Vol. 1, No. 2*, pp.100-106:
- Ferrario, C. & Zanardi, A. (2010). What happens to interregional redistribution upon fiscal decentralization? Evidence from the Italian NHS. *Workshop on Fiscal Decentralization* pp.1-35:Ferrara:University of Ferrara.
- Fincham, J. E. (2008). Response rates and responsiveness for surveys, standards, and the Journal. *American journal of pharmaceutical education*, 72(2), 43.
- Fisher, C.M. (2010). *Researching and Writing a Dissertation: An Essential Guide For Business Students. 3rd ed.* Harlow: Financial Times Prentice Hall:808.066658 FIS & e-book.
- Fram, S. (2014). When to use what research design. *International Journal of Social Research Methodology Volume 17, 2014 - Issue 3*, Pages 322-324:
- Frumence, G., Nyamhanga, T., Mwangi, M., & Hurtig, Anna-Karing,. (2013). Challenges to the implementation of health sector decentralization in Tanzania: experiences from Kongwa district council. *Global Health Action 2013 6:20983*, pp.1-9:
- Gachie, M., & Iravo, M.A. (2016 ). Determinants Of Health Care Service Delivery As A Devolved Function In Level Four Hospitals In Kiambu County, Kenya. *The Strategic Journal of Business and Change Management*, pp.220-239:
- Galloa, P. & Gené-Badia, J. (2013). Cuts drive health system reforms in Spain. *Science Direct Volume 113, Issues 1–2, November 2013*, pp.1-7
- Garcia-Martinez, R. (2011). E-health experiences in Spain:mapping and analysis. *Unpublished MSC Thesis, University Polytechnic in Catalunya Barcelona*, pp.6-88
- García-Goñi, M., Hanandez-Quevedo, C., Nuno-Solonis, R. & Paulocci, F. (2011). Pathways towards chronic-care focused healthcare systems:evidence from Spain. *LSE Health Working paper No: 24*, pp.4-22:
- Gené-Badia, J., Gallo, P., Hanandez-Quevedo, C., Garcia -Armesto, S. (2012). Spanish health care cuts: penny wise and pound foolish? *Health Policy Jun;106(1)*:pp.23-8. doi:10.1016/j.healthpol.201202.001.



- Ghauri, P.N & Grønhaug, K. (2010). *Research Methods in Business Studies (4th, Edition)*. London: FT Pearson:
- Gibbs, A., & Campell, C. (2012). Strengthening community participation in primary health care: experiences from South Africa. In A. & F. McGuire, *The LSE companion to health policy*. (pp.20-33). Cheltenham: Edward Elga.
- Groenewegen, P.P., & Jurgutis, A. (2013). A future for primary care for the Greek population. *Quality in Primary Care* 2013;21:;pp.369–378:
- Halamka, J.D. (2011). *Addressing Japan's Healthcare Challenges with Information Technology: recommendations from the u.s. experience*. Washington, DC:
- Hartwig, R., Sparrow, R., Sri, B., Yumma, A., Warda, N., Suryahadi, A. & ArJun, B. (2015). *Effects of Decentralized Health Care Financing on Maternal Care in Indonesia*. The Hague: International Institute of Social Studies:
- Hayashi, M., & Oyama, A. (2014). Factor decomposition of inter-prefectural health care expenditure disparities in Japan. *PRI Discussion Paper Series (No.14A-10)*, pp.1-30
- Heywood, P. & Choi, Y., (2010). Health system performance at the district level in Indonesia after decentralization. *BMC International Health and Human Rights* 2010, 10:3, pp.2-12:doi: 10.1186/1472-698X-10-3.
- Heywood, P., Harahap, N.P. & Aryani, S. (2011). Recent changes in human resources for health and health facilities at the district level in Indonesia: evidence from 3 districts in Java. *Human Resources for Health* 2011, 9:5, pp.2-6 DOI: 10.1186/1478-4491-9-5.
- Jelamschi, N. (2011). Particularities of functioning of the health system in the Republic of Moldova under migration of medical staff. In a. C. Reinhardt V, *Migration and development in the Moldovan health system. Global trends and local challenges*. (pp. pp.98–106). Chişinău, Moldova : Institut Leipzig.
- Jiménez-Rubio, D. (2011). The impact of fiscal decentralization on infant mortality rates: Evidence from OECD countries. *Social Science & Medicine* 73(9):, pp.1401-1407
- Jin, Y. & Sun, R. (2011). "Does fiscal decentralization improve healthcare outcomes? Empirical evidence from China.". *Public Finance and Management* 11:, pp. 234–261:
- Kalling, T. (2007). The lure of simplicity: learning perspectives on innovation., *Journal of Innovation Management, Vol. 10, Issue 1* pp.65-89:
- .
- Kamuzora, P. Maluka, S. Ndawi, B., Byskov, J., Hurtig, Anna-Karin. (2013). Promoting community participation in priority setting in district health systems: experiences from Mbarali district, Tanzania. *Global Health Action* 6:22669, pp.1-11:

- Keating, M. (2009). Second Round Reform.Devolution and constitutional reform in the United Kingdom, Spain and Italy. *LEQS Paper No.15*, pp.1-26:
- Kelekar, U. & Llanto, G.M. (2013). *Perspectives on Health Decentralization and Interjurisdictional Competition among Local Governments in the Philippines*. Makati City, Philippines: Philippine Institute for Development Studies. <http://dirp3.pids.gov.ph/ris/dps/pidsdps1320.pdf>:
- Keshtkar, L., Salimifard,K., & Faghih.,N. (2015). A simulation optimization approach for resource allocation in an emergency department,.*QScience Connect 2015*:8, pp.2-11:<http://dx.doi.org/10.5339/connect.2015.8>.
- Kimanthi, K. (2015 , February 23rd ). Alarm over increased cancer cases in Meru. *Daily Nation* , pp. <http://www.nation.co.ke/news/Alarm-over-increased-cancer-cases-in-Meru/1056-2633374-ca6nmw/index.html>.
- Kothari, C.R. (2012). *Research Methodology: An introduction. In Research Methodology: Methods and Techniques*. New Delhi:New Age International.
- Laska, E. Meisner, M. & Siegel, C (1972). Contributions to the Theory of Optimal Resource Allocation. *Journal of Applied Probability Vol. 9, No. 2 (Jun.,1972)*,pp.337-359:[http://www.jstor.org/stable/3212803?loggedin=true&seq=1#page\\_scan\\_tab\\_contents](http://www.jstor.org/stable/3212803?loggedin=true&seq=1#page_scan_tab_contents)
- Leedy, P.D & Ormrod, J.E (2010). *Practical Research: Planning and Design, Ninth Edition*,. New York: Macmillan Publishing Company.
- Li, H. & Dong, S. (2015 ). Measuring and Benchmarking Technical Efficiency of Public Hospitals in Tianjin,China: A Bootstrap–Data Envelopment Analysis Approach. *The Journal of Health Care Organization, Provision, and Financing*,pp.1-5:<http://journals.sagepub.com/doi/pdf/10.1177/0046958015605487>.
- Loayza, N., Rigolini, J., Calvo-Gonzlez,O. (2014). *More than You Can Handle Decentralization and Spending Ability of Peruvian Municipalities*. Washington D.C: The World Bank.<http://perueconomics.org/wp-content/uploads/2014/01/WP-4.pdf>:
- Lodenstein, E., & Dao, D. (2011).Devolution and human resources in primary healthcare in rural Mali. *Human Resources for Health 2011*, 9:15, pp.2-6:<http://link.springer.com/article/10.1186/1478-4491-9-15>.
- Lohr, S.L. (2010). *Sampling: Design and Analysis, Second Edition*,. Boston: Brooks/Cole.
- Lovaglio, P.G. (2012).Benchmarking Strategies forMeasuring the Quality of Healthcare: Problems and Prospects. *The ScientificWorld Journal Volume 2012, Article ID 606154*, pp.2-13:doi:10.1100/2012/606154.

- Lutwama, G.W., Ross, J.H., & Dolamo, B.L. (2012). A descriptive study on health workforce performance after decentralisation of health services in Uganda. *Human Resources for Health* 2012, 10:41, pp.2-10:<https://human-resources-health.biomedcentral.com/articles/10>
- Martinez-Vasquez, J. (2011). *Fiscal Decentralization in Asia Challenges and Opportunities*. Mandaluyong City, The Philippines: Asia Development Bank. <https://www.adb.org/sites/default/files/publication/28805/fiscal-decentralization.pdf>.
- Martinez-Vazquez, J. (2013). *Fiscal Decentralization in Peru: A Perspective on Recent Developments and Future Challenges*. Atlanta: Andrew Young School of Policy Studies, Georgia State University:<http://icepp.gsu.edu/files/2015/03/ispwp1324.pdf>.
- Mathauer, I., Cavagenro, E., Vivas, G., & Carrin, G., (2010). *Health financing challenges and institutional options to move towards universal coverage in Nicaragua*. Geneva: World Health Organization:<http://www.who.int/healthsystems/topics/financing/healthreport/24Nicaragua.pdf>.
- Meier, B.M., Pardue, C., & London, L. (2012). Implementing community participation through legislative reform: a study of the policy framework for community participation in the Western Cape province of South Africa. *BMC International Health and Human Rights* 12:15, pp. 2-14:<https://bmcinthealthhumrights.biomedcentral.com/articles/10.1186/1472-698X-12-15>.
- Méndez, C.M., & Torres, A.M.C (2010). Hospital management autonomy in Chile: the challenges for human resources in health. *Rev Saúde Pública* 2010;44(2),pp.366-371:[http://www.scielo.br/pdf/rsp/v44n2/en\\_19.pdf](http://www.scielo.br/pdf/rsp/v44n2/en_19.pdf).
- Mertler, C.A & Vannatta, R.A (2010). “*Advanced and Multivariate Statistical Methods, 4th Ed.*” .Los Angeles, CA,: Pyrczak Publications:<http://www.docs-engine.com/pdf/1/mertler-and-vannatta-advanced-and-multivariate-statistical-methods.html>.
- Milicevic, M.S., Vasic, M., & Edwards, M. (2015). Mapping the governance of human resources for health in Serbia. *Health Policy*, 2015, vol. 119, issue 12, pp.1613-1620:<http://www.sciencedirect.com/science/article/pii/S0168851015002201>.
- Ministry of Health. (2015). Meru County: Health at a Glance. Nairobi, Kenya. Retrieved from <https://www.healthpolicyproject.com/pubs/291/Meru%20County-FINAL.pdf>
- Miovic, A. Tesfu, J., & Göök, C. (2010). eHealth, the future of healthcare-A case study of effects and barriers. *Unpublished Master Thesis, Lund University*,pp.8-77:<http://lup.lub.lu.se/luur/download?func=downloadFile&recordId=1542581&fileId=2435644>.

- Mubyazi, G.M., & Hutton, G. (2012). Rhetoric and Reality of Community Participation in Health Planning, Resource Allocation and Service Delivery: a Review of the Reviews, Primary Publications and Grey Literature. *Rwanda Journal of Health Sciences Vol.1, Issue 1*, pp.51-65:<http://www.ajol.info/index.php/rjhs/article/view/82343>.
- Muchui, D. (2015,September 1st). Health workers in Meru strike after county govt fails to address grievances. *Daily Nation*, pp.<http://www.nation.co.ke/counties/meru/Health-workers-strike/1183302-2854282-rmtaicz/index.html>.
- Munga, M.A. (2011). The unequal distribution of health workers in Tanzania its magnitude, causes and remedies. *Unpublished PHD, University of Bergen*, pp.2-44:<http://bora.uib.no/handle/1956/4754>.
- Musyoka, F. N., Adoyo, M., & Oluoch,M., (2015 ). Influence of Performance Appraisal on Performance of Health Care Workers in Public Hospitals: A Case of Mbagathi Hospital, Nairobi County. *The Journal of Global Health Care Systems*, pp.2-11:<http://jghcs.info/index.php/j/article/view/416>.
- Mwamuye, M.K., & Nyamu, H.M (2014). Devolution of health care system in Kenya: A strategic approach and its implementation in Mombasa County, Kenya. *International Journal of Advanced Research (2014), Volume 2, Issue 4*, pp.263-268:[http://www.journalijar.com/uploads/144\\_IJAR-2743.pdf](http://www.journalijar.com/uploads/144_IJAR-2743.pdf).
- Nangoli, S., Ngoma, M., Kimbugwe, H., & Kituyi, M. (2015). Towards Enhancing Service Delivery in Uganda's Local Government Units:Is Fiscal Decentralization Still a Feasible Strategy? *International Journal of Economics & Management Sciences Volume 4, Issue 5*, pp.2-5:<http://dx.doi.org/10.4172/2162-6359.1000251>.
- Nannyonjo, J. & Oko, N., (2013). Decentralization, Local Government Capacity and Efficiency of Health Service Delivery in Uganda. *Journal of African Development Spring 2013 / Volume 15 #1*, pp.125-158:[http://www.jadafea.com/wp-content/uploads/2014/07/JAD\\_vol15\\_ch6.pdf](http://www.jadafea.com/wp-content/uploads/2014/07/JAD_vol15_ch6.pdf).
- Neuman, W. L. (2011). *Social Research Methods: Qualitative and Quantitative Approaches, 7th Edition*. New York: Pearson:<https://www.pearsonhighered.com/program/Neuman-Social-Research-Methods-Qualitative-and-Quantitative-Approaches-7th-Edition/PGM74573.html>.
- Nobuya, U. (2011). The Perinatal Care System in Japan. *JMAJ 54(4)*:pp.234–240:[https://www.med.or.jp/english/journal/pdf/2011\\_04/234\\_240.pdf](https://www.med.or.jp/english/journal/pdf/2011_04/234_240.pdf).
- Noor, A.M., (2015). Subnational benchmarking of health systems performance in Africa using health outcome and coverage indicators.*BMC Medicine (2015)13:299*,pp.2-3DOI 10.1186/s12916-015-0541-y.

- Oates, W.E. (1972). *Fiscal Federalism.Chapter Five* .New York:Harcourt-Brace.
- Oates, W.E. (2006). On the Theory and Practice of Fiscal Decentralization. *Ifir Working Paper Series Working Paper No. 2006-05*, pp.2-35:.
- Okech, T.C. (2016). Devolution And Universal Health Coverage In Kenya: Situational Analysis Of Health Financing, Infrastructure & Personnel. *International Journal of Economics, Commerce and Management Vol. IV, Issue 5,,* pp.1094-1110:
- Orbista, C. (2012). NGOs Participation in Local Governance in the Philippines. *Unpublished M.A Political Science, University of Canterbury*,pp.2-248:
- Orodho, A.J (2009). *Elements of education and social sciences research methods*,.Maseno: Kanezja Publisher.
- Parr, J. S. (2014). Integration In South Africa: A Study Of Changes In The Community Health System.*Unpublished PHD Thesis, University of the Western Cape*, pp.5-212:etd.uwc.ac.za.
- Pedersen, K.M., Andersen, J.S. & Søndergaard, J. (2012). General Practice and Primary Health Care in Denmark. *Journal of the American Board of Family Medicine Vol. 25*,pp.34-38:doi:10.3122/jabfm.2012. 02.110216.
- Perkins, D.D., & Zimmerman, M.A. (1995). Empowerment theory, research, and application. *American Journal of Community Psychology; Oct 1995; 23,5*; pp.569-579:
- Pervaiz, F., Shaikh,B.T., & Mazhar, A. (2015). Role of development partners in Maternal, Newborn and Child Health (MNCH) programming in post-reform times: a qualitative study from Pakistan. *BMJ Open*, pp.1-6:doi:10.1136/bmjopen-2015-008665.
- Polyzos, N., Karakolias, S., Mavridogluo, G., Gkorevis, P., & Zilidis, C. (2015). Current and Future Insight into Human Resources for Health in Greece. *Open Journal of Social Sciences,3*, pp.5-14:http://file.scirp.org/pdf/ JSS\_2015052016011264.pdf.
- Porcelli, F. (2009). Fiscal Decentralisation and efficiency of government.A brief literature review.*Department of Economics,University of Warwick*, pp.1-12
- Ramírez, N.A. Ruiz, J.P., Romero, R.V., & Labonté, R. (2011). Comprehensive Primary Health Care in South America:contexts, achievements and policy implications.*Cad.Saúde Pública, Rio de Janeiro, 27(10)*.; pp.875-1890
- Roberts, D.A. et. al., (2015). Benchmarking health system performance across regions in Uganda: a systematic analysis of levels and trends in key maternal and child health interventions,1990–2011. *BMC Medicine (2015) 13:285*, pp.2-16 DOI 10.1186/s12916-015-0518-x.

- Rodríguez-Pose, A. & Krøijer, A. (2009). Fiscal Decentralization and Economic Growth in Central and Eastern Europe. *LEQS Paper No. 12*, pp.1-35:
- Ruiz-Rodríguez, M., Acosta-Ramírez,N., Villamizar, L.A.R, Uribe, M.L., & León-Franco, M. (2011). Experience of implementing a primary attention model. *REVISTA DE SALUD PÚBLICA Volumen 13(6)*,pp.885-896:
- Sandoval,C. & Cáceres, C.F. (2013). Influence of health rights discourses and community organizing on equitable access to health: the case of HIV, tuberculosis and cancer in Peru. *Globalization and Health 9:23*, pp.2-11:
- Santana, S., Szczygiel, N., & Redondo,P. (2014). Integration of care systems in Portugal: anatomy of recent reforms. *International Journal of Intergrated Care*, pp.1-10:
- Santric-Milicevic, M. Vasic, M. & Marinkovic, J. (2013). Physician and nurse supply in Serbia using time-series data. *Human Resources for Health 2013, 11:27*, pp.2-11
- Saris, W.E. (2007). *Design, evaluation and analysis of questionnaires for survey research*. Hoboken, NJ:Wiley-Interscience.
- Seabright, P. (1996). Accountability and decentralisation in government: An incomplete contracts model. *European Economic Review, 40:*,pp.61–89:
- Shair-Rosenfield, S., Marks,. & Hooghe,L.(2014). A Comparative Measure of Decentralization for Southeast Asia. *Journal of East Asian Studies 14 (2014)*, pp.85–107:
- Silva,E. & Batista, R. (2010). *Bolivian Maternal and Child Health Policies:Successes and Failures*.Ottawa:<http://www.canwach.ca/wp-content/uploads/2013/09/Bolivian-Maternal-and-Child-Health-Policies-Successes-and-Failures.pdf>: FOCAL.
- Soto, V.E., Farfan, M.I, & Lorant,V. (2012). Fiscal decentralisation and infant mortality rate: The Colombian case. *Social Science and Medicine 74*, pp.1426-1424:
- Soza-Gonza' lez S, Soza-Gonza' lez,P. & Soza-Gonza' lez, O. (2012). Relationship Between Dental Cavities and Fluorosis in school children four thermal localities Department Portosi Bolivia. *Odontologi' a pedia' trica (Lima) 11:*, pp.27–39.
- Sparrow, R. (2016). Sub-national health care financing reforms in Indonesia. *Health Policy Plan (2016) czw101.*, pp.91-101 DOI:
- Stuckler, D., Sanjay, B., & McKee, M. (2011). Health Care Capacity and Allocations Among South Africa's Provinces: Infrastructure–Inequality Traps After the End of Apartheid. *American Journal of Public Health 101(1)*,pp.165–172

- Tabachnick, B.G. & Fidell, L.S. (2013). *Using Multivariate Statistics. 6th Edition*. Boston : Pearson/Allyn and Bacon.<https://www.pearsonhighered.com/program/Tabachnick-Using-Multivariate-Statistics-6th-Edition/PGM332849..>
- Tanihara, S., Kobayashi, Y., Une, H., & Kawachi, I. (2011). Urbanization and physician maldistribution: a longitudinal study in Japan. *BMC Health Services Research* 2011, 11:260, pp.2-7:
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education*, 2, 53. DOI: 10.5116/ijme.4dfb.8dfd
- Tediosi, F., Gabriele, S., & Longo, F. (2009). Governing decentralization in health care under tough budget constraint: what can we learn from the Italian experience? *Health Policy* 90(2-3), pp.303-312:doi:10.1016/j.healthpol.2008.10.012.
- Tiebout, C.M. (1956). A pure theory of local expenditures. *The Journal of Political Economy*, 64(5), pp.416-424:
- Torri, M.C, & Hollenberg, D. (2013). Indigenous traditional medicine and intercultural healthcare in Bolivia: a case study from the Potosi region. *Journal of Community Health Nursing*. 2013;30(4):, pp.216-29.doi:10.1080/07370016.2013.838495.
- Trochim, W. (2006). *The Research Methods Knowledge Base, 2nd Edition*. Cincinnati, OH.: Atomic Dog Publishing: Retrieved:
- Turinawe, E. B., Rwemisisi, J.T., Musinguzi, L.K., de Groot, M., Muhangi, D., de Vries, D.H., Mafigiri, D.K., Katamba, A., Parker, N., & Pool, R. (2016). Traditional birth attendants (TBAs) as potential agents in promoting male involvement in maternity preparedness: insights from a rural community in Uganda. *Reproductive Health* 13:24, pp.2-11
- Vainieri, M. (2010). The relationships among performance measurement systems and context in healthcare sector. *Unpublished PHD Thesis, Scuola Superiore Sant'Anna*, pp.4-95:
- van Rensburg, H.C.J. (2014). South Africa's protracted struggle for equal distribution and equitable access – still not there. *Human Resources for Health* 2014, 12:26, pp.2-16
- Vera, D. & Crossan, M. (2004). Strategic leadership and organizational learning. *Academy of Management Review*. Vol. 29, Issue 2, pp.222-240:
- Vogt, W.P., Gradner, D.C., & Haeffele, L.M (2012). *When to use what research design*. New York, NY: The Guildford Press.
- Wakaba, M., Mbindyo, P., Ochieng, J., Kiriinya, R., Todd, J., Waudo, A., Noor, A., Rakuom, C., Rogers, M., and English, M. (2014). The public sector nursing workforce in Kenya: a county-level analysis. *Human Resources for Health* 2014, 12:6, pp.2-16:

- White, S. (2011). *Government Decentralization in the 21st Century A Literature Review* . WashingtonD.C:
- Whiting, S., Dalipanda, T., Posta, S., de Lorenzo., A.J & Aumua, A. (2016). Moving towards Universal Health Coverage through the Development of Integrated Service Delivery Packages for Primary Health Care in the Solomon Islands. *International Journal of Integrated Care*, 16(1):3, pp. 1–7,
- Wunsch, J.S. (2014). Decentralization:Theoretical, Conceptual,and Analytical Issues. In J. S. Dickovick J. Tyler and Wunsch, *Decentralization in Africa:The Paradox of State Strength* (pp.1-22). Boulder : Lynne Rienner
- Zolfo, M., Iglesias, D., Kiyon, C., Echevarria, J., Fucay, L., Llacsahuanga, E., Waard, Inge de., Suárez,V., Llaque, W.C., Lynen, L., (2010). Mobile learning for HIV/AIDS healthcare worker training in resource-limited settings. *Research and Therapy 2010*, 7:35,pp.2-6



## APPENDICES

### Appendix I: Letter of Transmittal

Zaberio Gitonga

P.O BOX - 60200,

Meru- Kenya.

**Dear Respondent,**

**FACTORS INFLUENCING THE IMPLEMENTATION OF HEALTH CARE PROJECTS UNDER THE DEVOLVED SYSTEM OF GOVERNANCE: SURVEY OF MERU COUNTY, KENYA.**

I am a student at the University of Nairobi and currently pursuing a course of study for the degree in Master of Arts in Project Planning and Management. Pursuant to the pre-requisite course work, I am currently carrying out a study on factors influencing the implementation of health care projects under the devolved system of governance in Kenya. The focus of my research will be health care projects in Meru County and this will involve use of questionnaires administered to Staff at the Department of Health Meru County, Medical Personnel in public hospitals and Managers from Civil Society. There are no correct and wrong answers to these statements and they are intended just to obtain opinions, views feelings. Kindly provide data which I require for this study through the provided study instruments. The data you provide will be used for research purpose only and your identity will be held confidential.

Thank you for your cooperation.

Yours Faithfully,

Zaberio Gitonga

L50/84586/2016

**Appendix II**  
**Questionnaire for Medical Personnel**

This questionnaire is to collect data for purely academic purposes. You are kindly requested to answer the questions as sincerely as possible. The information you will give will only be used for research purposes and your identity will be treated with confidentiality.

Fill the questionnaire by putting a tick  $\surd$  in the appropriate box or by writing your response in the provided spaces.

**PART A: PERSONAL INFORMATION**

1. Please indicate your age?

20-29  30-39  40-49  50 and above

2. Indicate your Gender.

Male  Female

3. What is your level of education?

Certificate  Diploma  Degree  Masters and Above

Any other please specify

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4. How long have you worked as medical personnel in public hospitals in Meru County? Please write down in the space provided?

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**PART B: COLLABORATIONS OF COMMUNITIES**

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

| Statement  | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| Partnerships between the county government and the private sector do not exist and this does influence the implementation of health care projects. |   |   |   |   |   |
| There exist partnerships between the county government and other county governments that do not influence implementation                           |   |   |   |   |   |

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|---|--|--|--|--|--|
| of health care projects.  |  |  |  |  |  |
| Partnerships between the county government and traditional healers do not exist and this does influence the implementation of health care projects. |  |  |  |  |  |
| There exist partnerships between the county government and religious organizations that do not influence implementation of health care projects.    |  |  |  |  |  |

6. Suggest measures that the Department of Health Meru County Government would put in place to enhance collaborations of communities in the implementation of health care projects and what would be the influence of this?

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**PART C: DISTRIBUTION OF HUMAN RESOURCES**

7. To what extent do you agree with the following statements? Use a scale of 1-5 where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5 = strongly agree

| Statement  | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| The low number of doctors in every public sub-county hospital does not influence implementation of health care projects.                       |   |   |   |   |   |
| The number of nurses in every public sub-county hospital is good enough that it does not influence the implementation of health care projects. |   |   |   |   |   |
| The low numbers of clinical medicine officers in every public sub-county hospital influence the implementation of health care projects.        |   |   |   |   |   |
| The number of pharmacists in every public sub-county hospital does not influence implementation of health care projects.                       |   |   |   |   |   |
| The low number of mid-wives in every public sub-county hospital influences the implementation of health care projects.                         |   |   |   |   |   |

8. Suggest measures that the Department of Health Meru County Government would put in place to enhance the distribution of human resources and what would be the influence of these in the implementation of health care projects?

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**PART D: FINANCING**

9. To what extent do you agree with the following statements? Use a scale of 1-5 where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5 = strongly agree

| Statement   | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Revenue raised through local taxation by the county government is enough and this does not influence implementation of health care projects.                      |   |   |   |   |   |
| The county government receives health grants from international governments however these do not influence the implementation of health care projects.            |   |   |   |   |   |
| Funding disbursed from the central government to the county government is good enough and this does influence implementation of health care projects.             |   |   |   |   |   |
| The county government faces budgetary constraints however these do not influence the implementation of health care projects.                                      |   |   |   |   |   |
| The county government finances the provision of human resources for maternal and child health and this does influence the implementation of health care projects. |   |   |   |   |   |

10. Suggest measures that the Meru County Government would put in place to enhance the financing of health care projects and what would be the influence of this in their implementation?

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**PART E: LEARNING AND ADOPTION**

11. To what extent do you agree with the following statements? Use a scale of 1-5 where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5 = strongly agree

| <b>Statement</b>   | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
|--|----------|----------|----------|----------|----------|
| Medical personnel attend several benchmarking trips in peer counties however these do not influence the implementation of health care projects.  |          |          |          |          |          |
| Medical personnel do not attended several benchmarking trips internationally and this influences the implementation of health care projects.   |          |          |          |          |          |
| The county government through the department of health has adopted several e-health applications however these do not influence the implementation of health care projects.                              |          |          |          |          |          |
| The county government through the department of health has conducted several performance evaluations and appraisals on medical personnel and this does influence implementation of health care projects. |          |          |          |          |          |

12. To what extent do you agree with the following statements? Use a scale of 1-5 where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5 = strongly agree

| <b>Statement</b>  | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
|---|----------|----------|----------|----------|----------|
| The county government through the department of health has adopted medical informatics however these do not influence the implementation of health care projects.   |          |          |          |          |          |
| The county government through the department of health has introduced mobile clinics and these do influence the implementation of health care projects.             |          |          |          |          |          |
| The county government through the department of health has not introduced medical insurance schemes and this influences the implementation of health care projects. |          |          |          |          |          |

13. Suggest measures that the Meru County Government would put in place that would ensure learning and adoption is enhanced in the department of health and what would be the influence of this on the implementation of health care projects?

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**PART F: IMPLEMENTATION OF HEALTH CARE PROJECTS**

14. To what extent do you think these variables as measures of implementation of health care projects by county government?

| <b>Statement</b>   | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
|--|----------|----------|----------|----------|----------|
| Community disability health centres                              |          |          |          |          |          |
| Community clinics  |          |          |          |          |          |
| Financing cancer diagnosis and treatment units                   |          |          |          |          |          |
| Existence of a good number of human resources for dialysis units |          |          |          |          |          |
| On-job Training for Medical Human Resources                      |          |          |          |          |          |
| E-health Pharmaceutical and Medical Supplies stock management    |          |          |          |          |          |

**Appendix III**  
**Questionnaire for DOH Staff Meru County Government**

This questionnaire is to collect data for purely academic purposes. You are kindly requested to answer the questions as sincerely as possible. The information you will give will only be used for research purposes and your identity will be treated with confidentiality.

Fill the questionnaire by putting a tick  $\surd$  in the appropriate box or by writing your response in the provided spaces.

**PART A: PERSONAL INFORMATION**

1. Please indicate your age?

20-29  30-39  40-49  50 and above

2. Indicate your Gender.

Male  Female

3. What is your level of education?

Certificate  Diploma  Degree  Masters and Above

Any other please specify

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4. How long have you worked as medical personnel in public hospitals in Meru County? Please write down in the space provided?

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**PART B: COLLABORATIONS OF COMMUNITIES**

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

| Statement  | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| Partnerships between the county government and the private sector do not exist and this does influence the implementation of health care projects. |   |   |   |   |   |
| There exist partnerships between the county government and   |   |   |   |   |   |

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|---|--|--|--|--|--|
| other county governments that do not influence implementation of health care projects.  |  |  |  |  |  |
| Partnerships between the county government and traditional healers do not exist and this does influence the implementation of health care projects. |  |  |  |  |  |
| There exist partnerships between the county government and religious organizations that do not influence implementation of health care projects.    |  |  |  |  |  |

6. Suggest measures that the Department of Health Meru County Government would put in place to enhance collaborations of communities in the implementation of health care projects and what would be the influence of this?

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**PART C: DISTRIBUTION OF HUMAN RESOURCES**

7. To what extent do you agree with the following statements? Use a scale of 1-5 where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5 = strongly agree

| Statement   | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| The low number of doctors in every public sub-county hospital influences implementation of health care projects.                                |   |   |   |   |   |
| The number of nurses in every public sub-county hospital is good enough that it does not influence the implementation of health care projects.  |   |   |   |   |   |
| The low numbers of clinical medicine officers in every public sub-county hospital influence the implementation of health care projects.         |   |   |   |   |   |
| The number of pharmacists in every public sub-county hospital is good enough that it does not influence implementation of health care projects. |   |   |   |   |   |



|  |  |  |  |  |  |
|--|--|--|--|--|--|
| The low number of mid-wives in every public sub-county hospital influences the implementation of health care projects. |  |  |  |  |  |
|--|--|--|--|--|--|

8. Suggest measures that the Department of Health Meru County Government would put in place to enhance the distribution of human resources and what would be the influence of these in the implementation of health care projects?

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**PART D: FINANCING**

9. To what extent do you agree with the following statements? Use a scale of 1-5 where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5 = strongly agree

| Statement   | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Revenue raised through local taxation by the county government is enough and this does influence implementation of health care projects.                          |   |   |   |   |   |
| The county government receives health grants from international governments however these do not influence the implementation of health care projects.            |   |   |   |   |   |
| Funding disbursed from the central government to the county government is good enough and this does influence implementation of health care projects.             |   |   |   |   |   |
| The county government faces budgetary constraints however these do not influence the implementation of health care projects.                                      |   |   |   |   |   |
| The county government finances the provision of human resources for maternal and child health and this does influence the implementation of health care projects. |   |   |   |   |   |

10. Suggest measures that the Meru County Government would put in place to enhance the financing of health care projects and what would be the influence of this in their implementation?

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**PART E: LEARNING AND ADOPTION**

11. To what extent do you agree with the following statements? Use a scale of 1-5 where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5 = strongly agree

| Statement  | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| Department of Health Staff attend several benchmarking trips in peer counties however these do not influence the implementation of health care projects.   |   |   |   |   |   |
| Department of Health Staff do not attended several benchmarking trips internationally and this influences the implementation of health care projects.  |   |   |   |   |   |
| The county government through the department of health has adopted several e-health applications however these do not influence the implementation of health care projects.                              |   |   |   |   |   |
| The county government through the department of health has conducted several performance evaluations and appraisals on medical personnel and this does influence implementation of health care projects. |   |   |   |   |   |

12. To what extent do you agree with the following statements? Use a scale of 1-5 where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5 = strongly agree

| Statement   | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| The county government through the department of health has adopted medical informatics however these do not influence the implementation of health care projects. |   |   |   |   |   |

|   |  |  |  |  |  |
|---|--|--|--|--|--|
| The county government through the department of health has introduced mobile clinics and these do influence the implementation of health care projects.             |  |  |  |  |  |
| The county government through the department of health has not introduced medical insurance schemes and this influences the implementation of health care projects. |  |  |  |  |  |

13. Suggest measures that the Meru County Government would put in place that would ensure learning and adoption is enhanced in the department of health and what would be the influence of this on the implementation of health care projects?

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**PART F: IMPLEMENTATION OF HEALTH CARE PROJECTS**

14. To what extent do you think these variables as measures of implementation of health care projects by county government for provision of health care?

| <b>Statement</b>   | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
|--|----------|----------|----------|----------|----------|
| Community disability health centres                              |          |          |          |          |          |
| Community clinics  |          |          |          |          |          |
| Financing cancer diagnosis and treatment units                   |          |          |          |          |          |
| Existence of a good number of human resources for dialysis units |          |          |          |          |          |
| On-job Training for Medical Human Resources                      |          |          |          |          |          |
| E-health Pharmaceutical and Medical Supplies stock management    |          |          |          |          |          |

### Appendix III

#### Health CSOs' Managers Questionnaire

This questionnaire is to collect data for purely academic purposes. You are kindly requested to answer the questions as sincerely as possible. The information you will give will only be used for research purposes and your identity will be treated with confidentiality.

Fill the questionnaire by putting a tick  $\surd$  in the appropriate box or by writing your response in the provided spaces.

#### PART A: PERSONAL INFORMATION

1. Please indicate your age?

20-29  30-39  40-49  50 and above

2. Indicate your Gender.

Male  Female

3. What is your level of education?

Certificate  Diploma  Degree  Masters and Above

Any other please specify

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4. How long have you worked as a manager in a health civil society organization in Meru County? Please write down in the space provided?

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**PART B: COLLABORATIONS OF COMMUNITIES**

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

| Statement   | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| There exist partnerships between the county government and civil society organizations however these do not influence implementation of health care projects. |   |   |   |   |   |
| Partnerships between the county government and religious organizations do not exist and this does influence the implementation of health care projects.       |   |   |   |   |   |
| There exists community clinics established by the county government influencing implementation of health care projects.                                       |   |   |   |   |   |
| Partnerships between the county government and traditional healers do not exist and this does influence the implementation of health care projects.           |   |   |   |   |   |

6. Suggest measures that the Department of Health Meru County Government would put in place to enhance collaborations of communities in the implementation of health care projects and what would be the influence of this?

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**PART C: DISTRIBUTION OF HUMAN RESOURCES**

7. To what extent do you agree with the following statements? Use a scale of 1-5 where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5 = strongly agree

| Statement   | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| There exist a good number of doctors in every public sub-county hospital and these do not influence implementation of health care projects.     |   |   |   |   |   |
| The number of nurses in every public sub-county hospital is good enough and this does influence the implementation of health care projects.     |   |   |   |   |   |
| There exist a good number of pharmacists in every public sub-county hospital and these do not influence implementation of health care projects. |   |   |   |   |   |
| The number of mid-wives in every public sub-county hospital is good enough and this does influence the implementation of health care projects.  |   |   |   |   |   |

8. Suggest measures that the Department of Health Meru County Government would put in place to enhance the distribution of human resources and what would be the influence of these in the implementation of health care projects?

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**PART D: FINANCING**

9. To what extent do you agree with the following statements? Use a scale of 1-5 where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5 = strongly agree

| Statement  | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| Revenue raised through local taxation by the county government is enough and this does influence implementation of health care projects.               |   |   |   |   |   |
| The county government receives health grants from international governments however these do not influence the implementation of health care projects. |   |   |   |   |   |
| Funding disbursed from the central government to the county government is good enough and this does influence implementation of health care projects.  |   |   |   |   |   |

10. Suggest measures that the Meru County Government would put in place to enhance the financing of health care projects and what would be the influence of this in their implementation?

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**PART E: LEARNING AND ADOPTION**

11. To what extent do you agree with the following statements? Use a scale of 1-5 where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5 = strongly agree

| Statement  | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| The county government through the department of health has adopted medical informatics however these do not influence the implementation of health care projects.            |   |   |   |   |   |
| The county government through the department of health has introduced mobile clinics and these do influence the implementation of health care projects.                      |   |   |   |   |   |
| The county government through the department of health has introduced medical insurance schemes however these does not influence the implementation of health care projects. |   |   |   |   |   |

12. Suggest measures that the Meru County Government would put in place that would ensure learning and adoption is enhanced in the department of health and what would be the influence of this on the implementation of health care projects?

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**PART F: IMPLEMENTATION OF HEALTH CARE PROJECTS**

13. To what extent do you think these variables as measures of implementation of health care projects by county government?

| Parameter   | Very great extent<br>1   | Great extent<br>2        | Moderate extent<br>3     | Low extent<br>4          | Very low extent<br>5     |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Community disability health Centres               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Community Clinics                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Financing of Cancer diagnosis and treatment units | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



