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A Qualitative and quantitative assessment of a leadership training programme's impact on health system performance in 19 counties in Kenya.

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Submitted in total fulfillment of the requirements for the Degree of Doctor of Philosophy in Health System Management at Strathmore University

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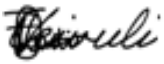
DECLARATION

I declare that the entirety of the work contained therein is my own, original work and that this work has not been previously submitted or approved for any degree requirement by this or any other University. To the best of my knowledge, the thesis does not contain material that was previously published except where reference is made in the thesis.

Tecla Chelagat



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ABSTRACT

Health service delivery was devolved from the national Government to the counties in 2013 following the adoption of a new constitution in 2010. The aim was to make service delivery more efficient through closer leadership oversight at the counties. However, evidence suggests that health system performance in Kenya remains poor as manifested by inadequate funding and inefficient use of available resources. The main issue appears to be inadequate leadership at national and county levels. To address this issue, several institutions in Kenya have implemented training programmes targeting healthcare leaders. However, most of such training in Kenya focus on "leaders" (individual) development as opposed to "leadership" training (development of groups from an organization). The former approach has been shown to be ineffective in transforming institutional health system performance. The goal of the study was to examine the effect of a project-based leadership training implemented at Strathmore University since 2013 on health system performance in selected Counties in Kenya. A multi-method research design comprising of quasi-experimental time-series and qualitative methods was employed. Questionnaires and in-depth interviews were administered to 39 health managers from the public, private and faith-based institutions from 19 counties in Kenya who had undergone the leadership training followed by coaching and implementation of an institutional improvement project. The control group comprised 39 other health institutions within the same counties with managers that did not receive the leadership training. The proxy measure of the success of the leadership training was completion of implementation of the institutional improvement project. Thirty-three (85%) of the projects were successfully implemented and 29 (88%) and were sustained for a period of 60 months after the leadership training. Control health institutions had no health system performance enhancement activities during the same period. A responsive (health system performance enhancement) leadership training curriculum, alignment of the project to the County's strategic plan and stakeholders buy-in and support for the programme were reported as

the key project implementation and sustainability enablers. These findings show that leadership training and team coaching built around priority institutional improvement projects result in measurable and sustainable health system performance improvements indicators.

Keywords: Impact; sustainability; health systems performance; leadership development; team coaching.

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ABBREVIATIONS AND ACRONYMS

ED.	Edition
CDC	United States Centers for Disease Control
DHMT	District Health Management Team
DID	Difference-in-Difference
DMR	Desired Measurable Result
FBO	Faith-Based Organization
HRH	Human Resources for Health
HS	Health Services
HSS	Health System Strengthening
IHF	International Hospital Federation
LDP	Leadership Development Program
LeHHO	Leading High-Performing Healthcare Organisations
LMS	Leadership, Management and Sustainability
LMG	Leadership, Management, and Governance
LTSI	Learning Transfer System Inventory
MDGs	Millennium Development Goals
MOH	Ministry of Health
MSH	Management Sciences for Health
NACOSTI	National Commission for Science, Technology, and Innovation
NGO	Non-governmental Organization
NTCP	National Tuberculosis Control Program
SD	Service Delivery
SDGs	Sustainable Development Goals
SPSS	Statistical Package for Social Sciences
TB	Tuberculosis
ToC	Theory of Change
UHC	Universal Health Coverage
UNDP	United Nations Development Programme

UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WCA	Work Climate Assessment
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

Challenge:	The constraints acknowledged at first that prompted the necessity for leadership, management and governance action.
Challenge Model:	A leadership learning tool for institutional teams to be used to address real workplace challenges and achieve the desired results over time. The tool challenges teams to design a shared vision which motivates the team to commit on working on one challenge at a time.
Desired Measurable Result:	Measuring for overall performance and growth towards a specific goal.
Health System:	The body of people, institutions, and resources that deliver health care services to the target population by meeting their health needs.
Health System Building Blocks:	An analytical framework used by World Health Organisation to describe health systems, disaggregating them into six core components: service delivery, leadership and governance (stewardship), health information system, health workforce, medical products, vaccines and technologies, and health system financing.
Health System Strengthening:	Strategies for improving the six-health system building blocks by addressing key constraints in each block.
Leadership:	The art of motivating a group of people to act towards achieving a common goal (Edger, 2012)
Governance:	The process of decision-making and the process by which decisions are implemented.

Priority:	Something that is very important and must be dealt with before other things.
Project:	A set of planned activities with interrelated tasks to be implemented within a fixed time period, cost and other constraints.
Sustainability:	The capacity to retain the positively achieved results post-intervention.

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This study would not have been possible without the support and guidance from my mentor and supervisor Prof. Gilbert Kokwaro who challenged me and provided direction and insights throughout my Ph.D. journey. I appreciate his commitment and support by sharing the breadth of knowledge and expertise. Dr. Jim Rice deserves recognition for his expertise and provision of guidance on leadership and governance in healthcare. I extend my appreciation to Dr. Joseph Onyango for challenging me to learn and apply new knowledge to my study. I am equally grateful to my fellow Ph.D. peers for their invaluable support and contribution to this scholarly pursuit.

Special words of thanks go to my best friend Jackline Aridi who was always a big source of help when things were starting to get a little disheartening, and for her amazing sense of integrity in helping me study the thesis and write retreats. To Mary Nyikuri who was always encouraging and supportive when called upon.

To the leadership of Strathmore Business School, Office of Graduate Studies, Doctoral Academy and Institute of Healthcare Management, for providing the much-needed support through timely financial support and feedback.

DEDICATION

This thesis is dedicated to the memory of my mother, Selina, who embodied leadership through serving, enabling and challenging others to be the change they want to see around them. I learned from her what commitment, justice, embracing life with a sense of humor really meant. I also dedicate this work to my family for their constant support and encouragement to keep going despite many challenges. Words cannot express my dedication to women and men in charge of bringing change in our health system when the challenges are plenty and resources are limited. I am proud to reflect on your commitments and what you stand for in my writing.

THESIS CHAPTER OVERVIEW

The thesis includes six chapters as described below:

Chapter 1: Introduction

The chapter presents the research context, objectives and questions.

Chapter 2: Literature Review

The chapter presents a review of relevant literature on various aspects of leadership development training and its influence on performance within the health system context. The review explored various theories and empirical findings underpinning the research study.

Chapter 3: Research Methodology

The research methods and methodology adopted is presented in this chapter. The basic components discussed include methodological study model, research design, population and sampling design, data collection, research instrument validity and reliability, data analyzes and ethical considerations

Chapter 4: Presentation of Research Findings

The chapter presents the study and conclusions which are consistent with the research goals.

Chapter 5: Discussion

The chapter presents conclusive thoughts through discussion of the key findings of the research objectives to illuminate clarity on how the findings relate to highlighted literature. The study limitations are also presented in the chapter.

Chapter 6: Conclusions and Recommendations

The chapter discusses results taken from the study, shortcomings and strengths of the study, implications of the research findings and the future research recommendations.

CHAPTER ONE

INTRODUCTION

Chapter one presents the research topic overview from the global, national and local contexts. The research gap, scope, justification, objective, questions, and significance are also discussed.

1.1: Background

Despite the significant investment of about $8 trillion in global health care spending, millions of people especially from the developing countries still die each year from preventable causes (Thomas & Wise, 2016). This has been attributed among other factors to a majority of the people responsible for leading healthcare have little or no preparation to succeed in this role (Management Sciences for Health, 2008). A point of departure for this study is that leadership is considered important in any organization because it includes determining a team's focus and collaborating it to people and empowering them to actively participate towards the organizational success (Management Sciences for Health, 2010). Chemers (1997) developed an umbrella definition of leadership that would earn the acceptance of a majority of theorists and researchers as, 'a process of social influence in which one person is able to enlist the aid and support of others in the accomplishment of a common task'. This definition is further supported by (Cole, 2005; Nel et al., 2004).

From the healthcare context, Edmonstone (2009) & Chreim et al. (2010) stresses the need of a broader conceptualization of health care leadership, which encapsulates interactions between leaders, followers and contexts. Their argument is further supported by a team of researchers who have revealed that leadership within the health service delivery involves multiple actors from different professional groups who are influenced by diverse institutional contextual factors (Denis et al. 2010; Ferlie et al. 2013; Fitzgerald et al. 2013 &

Nzinga et al. 2013). Nzinga et al. (2018) further unpacks the definition of leadership to include a relational aspect involving power, relationships between actors involved and the context within which they operate.

Leadership and governance is therefore one of the health system building blocks (Figure 1.1, World Health Organization, 2007) and is currently recognized as an important factor in improving national health systems and is therefore at the heart of achieving health-related objectives (Dodd & Cassels, 2006; United Nations, 2014).

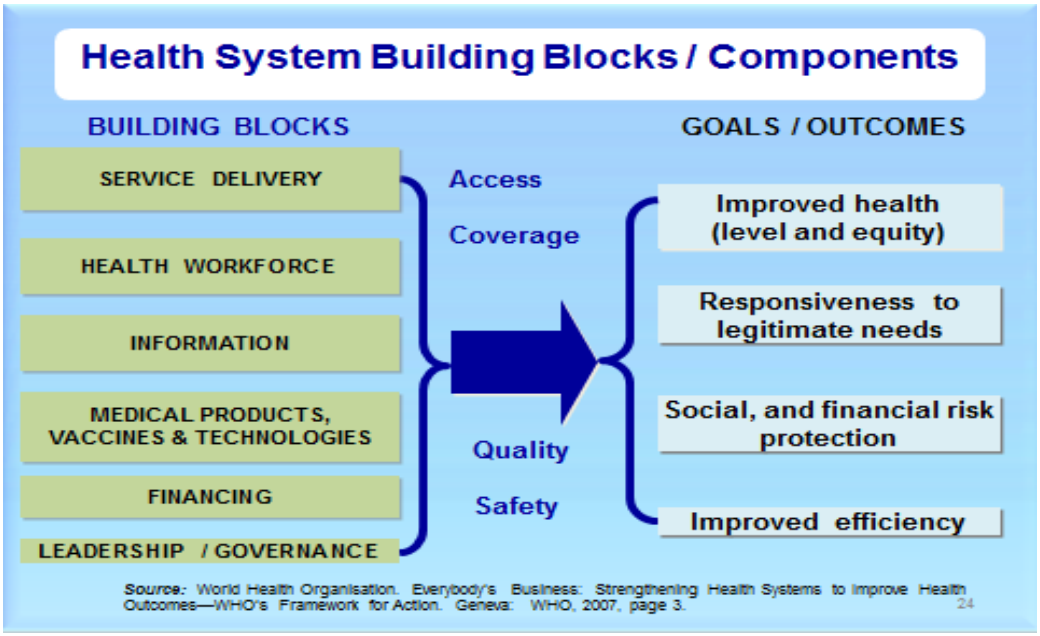

Figure 1.1 The Health System Building Blocks (Source: WHO 2007)

Good leadership is an enabler of good governance, management, service delivery and overall improvement of population health (Figure 1.2) (Management Sciences for Health et al., 2015)

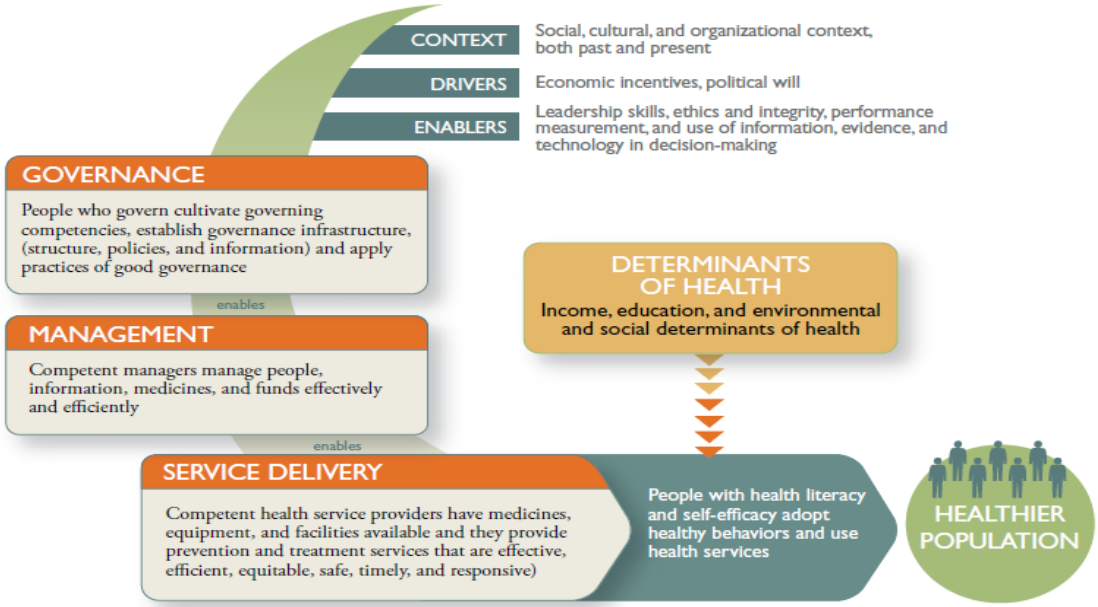

Figure 1.2: Logic Model of Good Governance (Source: Management Sciences for Health et al., 2015)

When people who govern, managers, service providers, patients and community member consistently practice good leadership, this will ultimately result to a healthier population (English & Todd, 2011; Nzinga et al., 2013; Rice, 2014).

1.2: Overview of Global Health Systems

A health system is described as "all of the organizations, institutions, resources, and the people whose primary purpose is to improve health" (World Health Organization, 2010). The Health system is, therefore, a means to deliver effective and affordable care towards meeting health goals (The Global Fund, 2009). To achieve Sustainable Development Goals, health systems strengthening strategies (such as inspired leadership, sound management, and transparent governance) are critical as they can catalyze expanded investments in health (Management Sciences for Health, 2013). Strengthening health systems, therefore, means addressing key constraints in each of these areas, with a goal of promoting effective access, improved quality and increased utilization of health services (World Health Organization, 2010). This includes developing effective approaches

for monitoring and evaluating the various levels of system inputs, processes, outputs and outcomes (de Savigny & Adam, 2009). This calls for innovative education approaches for health workers is needed to drive the improvement of health system performance.

The World Health Organisation and global partners have developed a framework for measuring health system performance that is comprised of six core components or "building blocks" (World Health Organisations, 2007). The WHO framework that describes health systems in terms of six core components or "building blocks": (i) service delivery, (ii) health workforce, (iii) health information systems, (iv) access to essential medicines, (v) financing, and (vi) leadership/governance (World Health Organization, 2010. Leadership and governance and health information systems are cross-cutting components that provide the basis for the overall policy and regulation of the other system blocks. Leadership and Governance component is concerned with procedures that promote commitment and accountability. Financing and the workforce are key input components, while medical products / technologies and the provision of services represent immediate system output. The framework provides a structure for this complex system by defining these elements, allowing the identification of measures and measurement methods for monitoring and evaluation (World Health Organisations, 2010).

The Sustainable Development Goals three, for health (safeguard healthy lives and ensures wellbeing for all ages) and four, for education are linked with health systems strengthening which aims at not only producing competent health workers but also research results that inform health policies and practices (Oyugi, 2015). A majority of health managers in many developed countries, including Kenya, are qualified health professionals who may have the technical skills but who are not skilled or experienced in management and leadership before being offered a managerial role (Management Sciences for Health, 2011). The international Hospital Federation (IHF) lists leadership among the five

competencies that modern healthcare managers need to have (Figure1. 3) (International Hospital Federation, 2015).

Figure 1.3: Leadership Competencies for Health Service Managers (Source: International Hospital Federation, 2015)

It is expected of health managers to acquire these skills through additional in-service training (Peterson et al., 2011). The newly qualified health workers are usually posted based purely on clinical skills. Most of these health workers are ill-prepared for leadership and managerial duties. They are often expected to undertake new positions without these skills thus contributing to an even more broken health system (Nzinga et al., 2013). A broken health system results in more illness and death, irrespective of the existence of the public health and medical skills and knowledge to significantly decrease disease and save millions of lives, predominantly in the low-income countries (O'Neil et al., 2013). Consequently, there has been a surge of leadership development training in the

past decade due to its high association with increased positive changes in service delivery and its health outcomes (World Health Organization, 2007).

1.3: Kenya's Health System Performance in the Context of Devolution

Kenya promulgated a new constitution in 2010 (Government of Kenya, 2010). The constitution adopted a devolved government structure that shifted management functions of health services from the central government to 47 semi-autonomous government units known as counties in 2013 (Kramon & Posner, 2010). Devolution is an aspect of decentralization. It signifies to the conveyance of authority and responsibility from central government agencies to lower level autonomous units of government through statutory or constitutional measures. The main purpose of decentralization is to increase efficiency in service delivery through active local participation and increased accountability. This is intended to get people closer to health care and decision-making (Mills et al., 1990). However, decentralized (devolved) health systems are more complex than a centralized system, and transition to a decentralized system is usually turbulent (Zhong, 2010). For decentralization to work, healthcare managers need to assume new leadership roles to bring order to the turbulent transition (Bouzidi et al., 2003). The structure of the Health System under the devolved system of leadership and governance is shown in Figure 1. 4 (Ministry of Health, 2013).

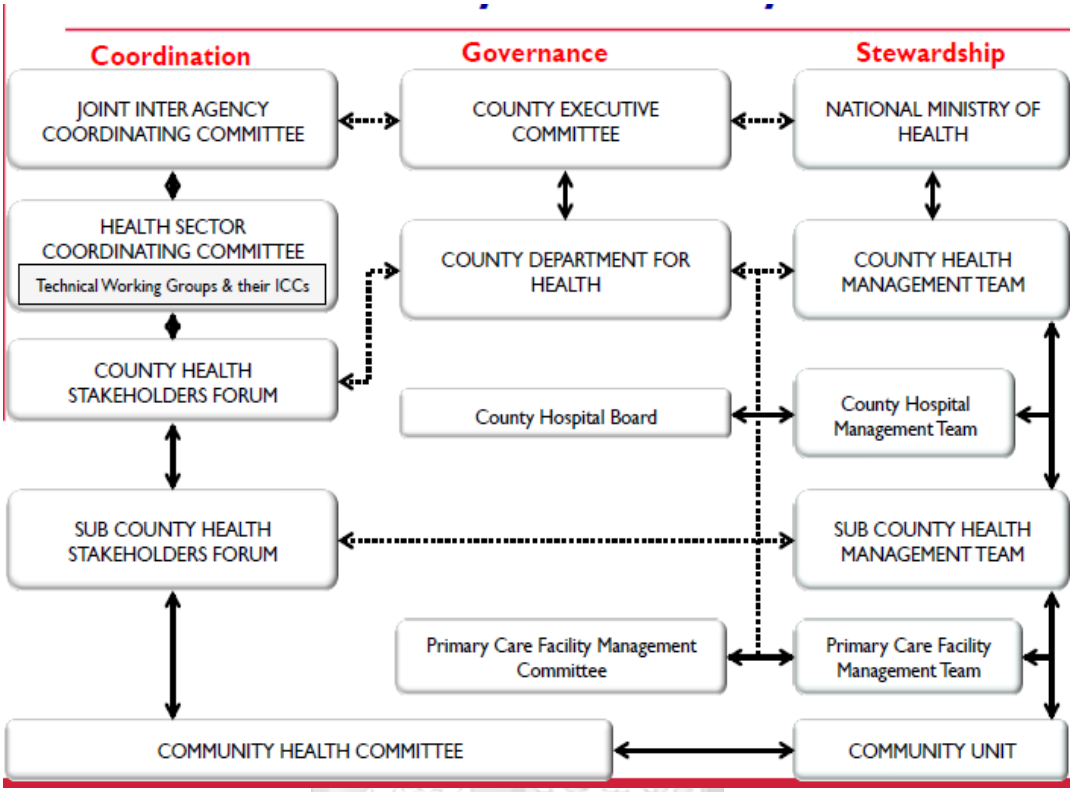

Figure 1.4: Leadership Structure of the Kenyan Health System (Source: KHSSP, 2012-2017)

The national government is responsible for setting standards of health care, providing technical assistance to county governments and overseeing regional referral hospitals (Ministry of Health, 2014). Counties became responsible for health service delivery, and the national government's new focus of responsibility became setting standards and policy development. Health service delivery and management functions at the County level are overseen by the County Departments of Health governed by the County Health Management Teams (CHMT). Evidence suggest that decentralization improves efficiency, equity, access, delivery, accountability and responsiveness of the health system (The World Bank, 2008; World Health Organisation, 2008). However, other studies have reported that decentralization have negative effects on health system performance (Bossert & Beauvais, 2002; Mehrotra, 2006; Zhong, 2010). Some of the main contributing issues is inadequate leadership resulting in poor health

system performance including inefficient use of available resources and under-funding of key programs (Management Sciences for Health, 2014).

Kenya remains one of the countries within sub-Saharan Africa that exhibit insufficient progress in improving its health indicators (National Bureau of Statistics-Kenya and ICF International, 2015). It is focused on two performance metrics of the health system, that is, under-five mortality rates and maternal mortality ratio. The 2014 Kenya Demographic and Health Survey study shows that Kenya made praiseworthy progress towards child survival in the last five years prior to the survey (Kenya National Bureau of Statistics & Macro, 2010). This had resulted in the decline of childhood deaths as measured by under-five mortality ration to 52 deaths per 1,000 live births, down from 74 deaths per 1,000 live births (Figure 1.5). However, these figures were still above the target of 35/1000 live births set in the fourth Health Sector Strategic and Investment plan (2014-2018), and Kenya's Sustainable Development Goal (SDG) target of 25/1,000 live births.

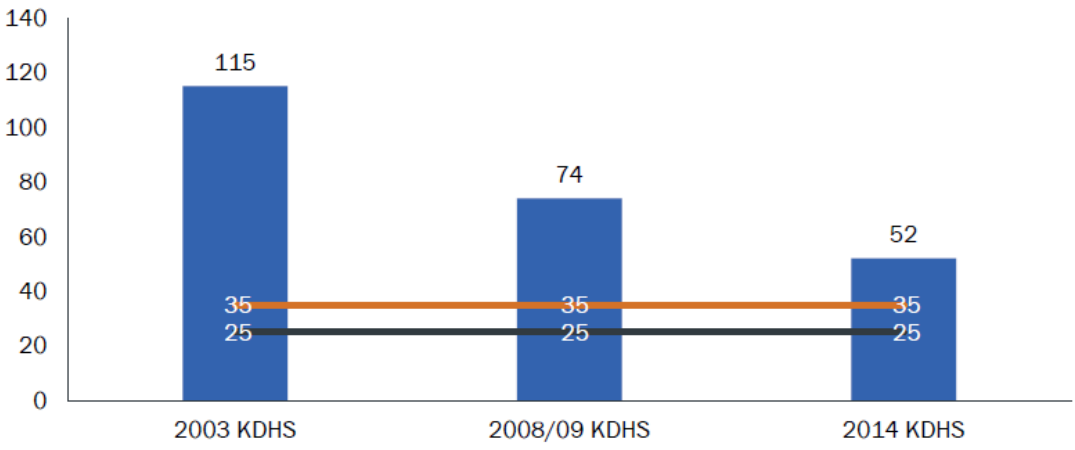

Figure 1.5: Kenya's Under-five Mortality Rate (per 1,000 live births) (Source: Kenya National Bureau of Statistics & Macro, 2010; National Bureau of Statistics-Kenya and ICF International, 2015)

Likewise, while Kenya performed well in reducing maternal mortality between 2003 and 2014, the reported (2014) maternal mortality ratio of 362 per 100,000 live births was still above the regional target of 200 and the SDG target of 70 per 100,000 live births (Figure 1.6).

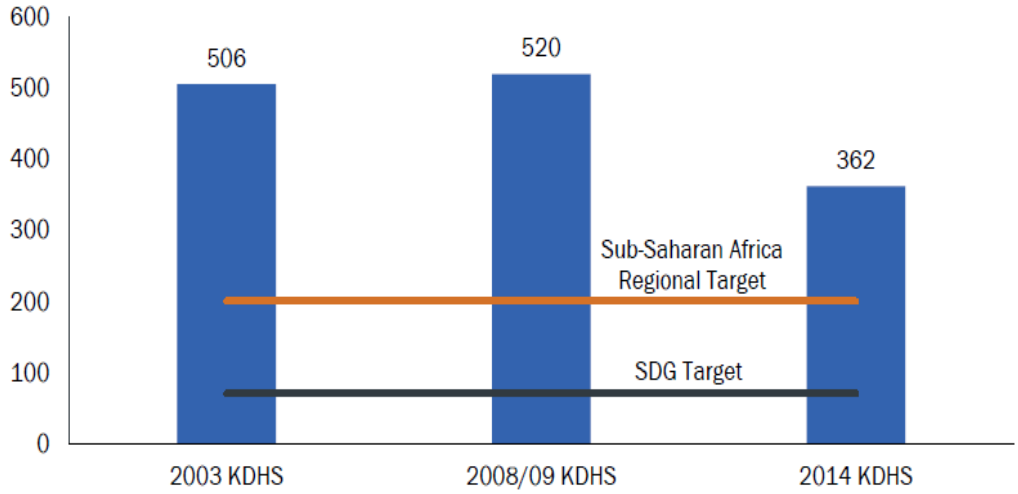

Figure 1.6: Maternal Mortality Ratio for Kenya (Source: Kenya National Bureau of Statistics & Macro, 2010; National Bureau of Statistics-Kenya and ICF International, 2015)

The main functions of the health system against which performance is measured are stewardship, creation of resources financing and delivery of service (Lambert & Lapsley, 2010). Inadequate leadership has been identified as one of the key impediments to effective health system performance in Kenya (Shukla et al., 2014). Additionally, devolution reforms have been identified to be highly complex and challenging to implement in similar settings (Bossert & Beauvais, 2002; Regmi, 2014). As a result, Kenya's devolved system of government has exhibited leadership and governance challenges with regard to health service provision because of the radical departure from the highly centralized form of the governance structure, the delivery of health services in the country is poor, irresponsive, inefficient and inequitable (Adieno et al., 2015; Catherine et al., 2014). For example, since 2013, the devolved health sector has experienced

considerable challenges ranging from resource allocation, capacity gaps, human resource deficiency, including the unparalleled number of strikes by healthcare workers (Kilonzo et al., 2017; Kimathi, 2017; Makokha, 2017). These challenges, however, can be resolved through appropriate leadership training of healthcare workers that fosters appropriate institutionalization of good governance practices (World Health Organization, 2007).

Examples, where such 'Leadership Development Program' (LDP) training has been shown to result in improved health system performance, are provided in the cases reviewed by (Hatt et al., 2015 & Peterson et al., 2011). A study by Seims et al. (2012) on improving management and leadership practices to improve health service delivery is the most recent study done in Kenya. The results of a quasi-experimental study conducted in six Kenyan provinces revealed the positive effect of leadership training on health service delivery metrics among the educated health workforce compared to the untrained teams. Those enhancements have been made for at least five years (Seims et al., 2012).

1.3.1. The Kenya Health Policy and the National Development Agenda

The Fourth Kenya Health Sector Strategic and Investment Plan, 2014-2018 (KHSSP IV) was developed to align with Kenya's devolved system of governance (Ministry of Health, 2013 & 2016). An evaluation on the health sector strategic plan under the leadership and governance performance showed positive adoption of the Kenya Health Policy, 2014-2030 to provide guidance on the creation of health sector plans and the effective creation of county health strategic plans during their first year of implementation (Ministry of Health, 2014). Though this was the case, the study highlighted key governance and leadership challenges; a) lack of structured guidelines for creating a county health management agency framework to enhance health goals and better coordination; b) the lack of a cooperation structure to encourage and organize international assistance better, and to foster transparency and, c) The Ministry of Health had lacked a focused capacity building program for the counties (Ministry of Health, 2014). Given the

highlighted challenges, the Kenya Health Policy, 2014-2030 provides a structure that harnesses and collaborates the health service delivery at all levels of the devolved system, with the national government providing overall policy direction, strategic leadership and stewardship aimed at defining the strategic vision of the health agenda in Kenya (Ministry of Health, 2014).

The successful implementation of the policy is therefore dependent upon the collaborative efforts and synergies of all the stakeholders and actors, through the establishment of an effective partnership framework via new institutional and management arrangements (UNDP, 2017). Health leadership and governance is one of Kenya's health policy orientations and aspiration towards the delivery of the health agenda. Healthcare leadership and governance therefore relates to how the oversight of the delivery of health and related services is provided. Adopted from the Kenya Health Policy Framework (Figure 1.7) illustrates how the leadership development training is connected to improved human resources for health competencies resulting in improved health system performance indicators for better health in a responsive manner.

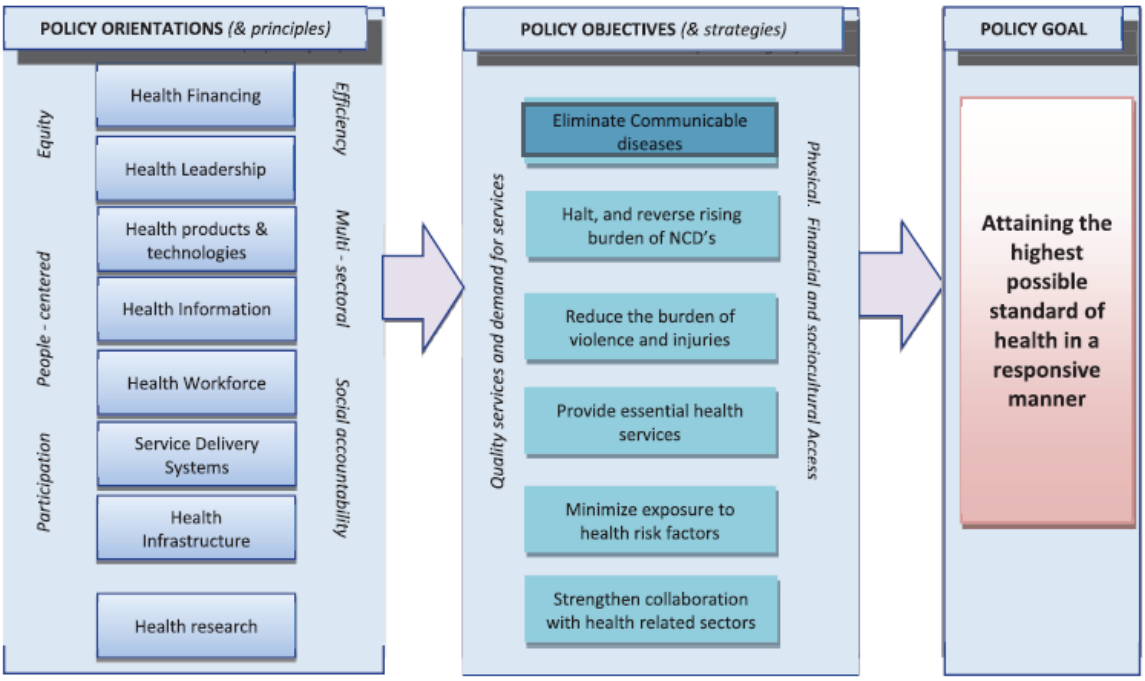

Figure 1.7: How Leadership, Management and Governance Interact with other Health System Elements to Strengthen the Performance of a Health System (Source: KHSSP 2014-2018)

1.4: Leadership Development Interventions

Leadership development is created through rich progressive experiences (Dragoni et al., 2009). Van Velsor et al. (2010) & Day (2000) discusses the difference between the leader and leadership development. Leader development refers to the development of an individual person, whereas leadership development refers to a collective dimension of development that occurs within different groups or social capital (Van Velsor et al., 2010; Kark, 2011). & Day, 2000). The leadership development can be triggered and shaped from planned activities such as formal education, leader development programmes, coaching, mentoring, teamwork, networking, unstructured on-the-job learning and changes in role and tasks (Kjellström et al. 2019). The main interest in the study is those developmental experiences that health care senior managers and their teams can work deliberately to introduce and enhance leadership development towards improvement of the health systems performance.

Literature regarding health system leadership suggests that there are potential benefits of leadership training among health workers (Hatt et al., 2015; Peterson et al., 2011; Seims et al., 2012). However, there are limited systematic investigations of leadership development interventions and the practice of leadership development (Day & Sin, 2011; Dvir et al., 2011). Leadership training encompasses formal and informal professional development programs designed to assist employees in developing leadership skill. The overarching goal of leadership development training is to enhance the capacity for individuals and teams align with an organization's corporate strategy and offer development opportunities (Kjellström et al., 2019).

Building strong and sustainable health systems, therefore, requires novelty, including innovative education for health workers (World Health Organisations, 2010). The innovative education that facilitates collective developmental relationship, such as trust building, group coaching and networking are considered more effective for groups collaboration and exchange (Kjellström et al., 2019). Comprehending the effective implementation of such leadership development is therefore vital (Goleman et al., 2002). Although the potential impacts of leadership training among the health workers seem apparent, there are limited systematic inquiries of leadership development interventions and the practice of leadership development (Avolio et al., 2009; Day, 2000).

The increasing body of literature on coaching as a leadership development tool presents it as a promising intervention for leadership development (Carey et al., 2010; Day, 2000). Coaching, in essence, is defined as "a process of supporting coachees to step back, and take in the 'big picture', and craft a future they desire through a commitment to the goal" (Rosinski, 2003). Team coaching is therefore a systematic approach to bringing about positive and sustainable change for individual team members, the entire team, and the company they represents (Carey et al., 2010). Coaching, therefore, is a means of supporting team improve

performance through reflection and dialogue (Cloutier et al., 2016; Grant et al., 2009; Grant, 2014; Grant & Hartley, 2013).

Team coaching provides an unbiased perspective of the team and therefore encourages conversations that allow the team to fine-tune the working relationship while fulfilling the interests of their organization (Brown & Grant, 2010; Grant, 2014; Peters & Carr, 2013). However, despite coaching popularity, research on coaching effectiveness is still limited. For example, Grant assessed the effect of executive coaching through periods of organizational change, the study findings associated coaching with increased goal attainment and decrease in depression among others (Grant, 2014). The findings also indicated that the positive effect of coaching was generalized beyond work to family life (Grant, 2014). However, there was some criticism on the dyadic (one-to-one) coaching done in many organizations suggesting that interventions in organizations should also be targeted at the group level, as evidenced by the few existing models of group coaching that have been developed (Brown & Grant, 2010). A comprehensive meta-analysis by Peters & Carr (2013) on team effectiveness indicated that team coaching resulted in better interpersonal, communication and improved team performance (Peters & Carr, 2013). The authors recommended that future researchers should conduct more management and leadership team coaching studies in real work settings. These are the research gaps that we sought to address.

1.4.1. Health Leadership development at Strathmore University through the "Leading High-Performing Healthcare Organisations (LeHHO)" program

The Institute of Healthcare Management (IHM) at the Strathmore University Business School, has developed and implemented a Health Managers' Leadership training programme based on the competency domains summarized in Figure 1.3 in section 1.2, upon which this study is based. It is called on 'The Leading High-performing Healthcare Organizations' (LeHHO). The program was developed and first implemented in the year 2010 by Strathmore Business School (SBS) in

partnership with Management Sciences for Health (MSH) and Ministry Of Health (MOH), with funding support from United States Agency for International Development (USAID). The aim of the program was to enable Kenya's national and county health management teams to address the most important health systems challenges in a devolved health system of government. The program has been implemented in nine cycles between the years 2010-2016 and trained over 200 healthcare managers and leaders. A critical part of the training is the incorporation of institutional improvement projects which have to be undertaken by teams from the participating institution. The idea is that it is through implementation of such projects that participants are able to translate leadership training theory into practice and have a positive impact on institutional health system performance.

This study covers the period 2010 to 2016. During this period, 69 such projects have been undertaken by LeHHO trainees drawn from 39 health facilities in 19 counties in Kenya. The design of the leadership training program was informed by the rationale that its success and sustainability would depend on; a) working with key stakeholders in health with the intention of addressing the devolved health system challenges, b) integrating post-classroom training modules and team-coaching around institutional improvement projects, which is a newly adapted concept in Kenya and most part of Africa, c) designing the training programme to suit all the health sector needs (public, private and the faith-based health facilities) and, d) planning the training programme with deliberate consideration on how monitoring and evaluation process could be implemented throughout the program. Most health leadership training programmes in Kenya are never evaluated for their impact. To the best of our knowledge, LeHHO is the first project-based experiential learning leadership training to be evaluated post-devolution in Kenya.

1.4.1.1: The LeHHO Program Delivery Approach

The aim of the LeHHO leadership program is to enable senior national and county management teams to address the most important health system challenges in a devolved system of government. The program cohort cycle is implemented within a nine-month period and is composed of five workshop modules, four team coaching sessions and one cross-learning site visit. Each workshop module is equivalent to four classroom days, and a coaching session takes between 60 to 120 minutes. Unlike mentorship which is holistic involving hand-holding and provision of answers based on experience, coaching is largely utilized in LeHHO program because it involves an active process of imparting specific skills to the coachees that enable them to achieve a particular goal. The coaching session acted as a link between; a) the classroom learning, b) the application of the learned knowledge in the workplace and, c) team support and accountability. Trained local and international faculty and coaches were seconded to deliver the coaching.

In line with the needs of the participants as experienced managers, the primary focus of delivery was "participant-centered learning" (LeHHO curriculum, 2010). This type of learning is particularly suitable to the target audience in that it has as its core ingredient that combined experiences of the team participant. The teaching methodology included: case method, experiential learning, and group work. Participants were supposed to end the program with the presentation of team's projects implementation progress to their peers, sponsors and the program facilitators for feedback.

1.4.1.2: Scope of Institutional Improvement Projects-based Team Coaching Modules

The overarching objective of team coaching was to link experienced health professionals across the health sectors (public, private & faith-based), to share knowledge and experiences hence building their leadership capacities and develop a pool of coaches and mentors within the public sector for sustainability. The team coaching module was aimed at developing and sustaining quality health

workforce performance. This was an effort towards supporting Kenya's healthcare strategic goals and support the mission success in the future of developing a versatile and competent workforce to meet the long-term needs of healthcare institutions. Team coaching, therefore, served as a knowledge and skill transfer tool developed to foster a positive work climate while encouraging a strategy that guides the workforce to produce tangible results.

The target teams for coaching modules were all LeHHO participants. One coaching session was approximately two hours. The project teams scanned their work environment and identified a key challenge area to focus on. These challenge areas included the teams were then randomly matched with coaches by the end of the module during coach and coachee formal introduction session. The teams had upto five members all derived from the same institution or County except in exceptional cases. These teams were randomly matched with coaches at the end of the first module. The mandate of the coaches was to support teams scan their institutional challenges and focus on one challenge to be addressed throughout the nine months of training.

1.4.2. Coaching Teams Using the "Challenge Model"

The "Challenge Model" (Management Sciences for Health, 2008) is "a systematic approach to planning and problem solving that program participants can use to apply to a real worksite problem" (Management Sciences for Health, 2008) . The model is anchored on the opinion that measurement of leadership, management and governance competencies is not an end itself, but relatively that the application of defined practices to achieve a desired measurable result is an approach for improving work climate, management and governance system, and strengthening health service delivery (Management Sciences for Health, 2008).

The purpose of using the Challenge model in this training program was to identify priority institutional improvement projects and support the implementation process across the project's phases. The Challenge Model" was introduced to the

participants during the first module of the workshop. The model formed the 'heart' of the leadership learning and application plan. It also acted as a coaching conversation guide throughout the training. The teams ensured that the identified projects were aligned to Institutional Strategic Plans. It is these projects that provided a platform for coaching. The challenge models were filled by the project teams at the beginning of the program and the action plan was developed around the challenge model's priority actions. The teams were expected to present the project's progress at the beginning of every program module. The project indicators at the beginning of the training were labeled as a baseline while the project indicators at the end of the training were labeled as end-line.

The Challenge Model has eight critical systematic steps: a) review of organizational mission and strategic priorities; b) creation of a shared vision; c) agreement on one measurable result; d) assessment of the current situation; e) identification of obstacles and their root causes; f) defining primary issues and defining priority activities; g) development of an action plan and; h) implementation of action plan and monitor and evaluate your progress. Participants learn together about the power of teams; the complementarity and integration of each other's skills; and the practice of reflecting on their own behavior as it impacts others, including both clients and colleagues. Unique among other leadership improvement approaches, the LeHHO program integrates the conscious, systematic application of leading and managing practices to lasting attitudinal changes as participants pass on their new skills and enthusiasm to others.

The coaching sessions were developed based on the projects that teams had chosen using the Challenge Model. This coaching approach enables the coach and teams to achieve their set goals by systematically following the Challenge Model critical steps to address the team's priority challenges. The role of a coach is to help teams set a goal, develop actionable plans and monitor and evaluate their project implementation progress between the coaching sessions throughout the

nine months training period. The coaching sessions were interspersed with the workshop modules thus the phrase 'integrated leadership development and coaching continuum' (Figure 1.8).

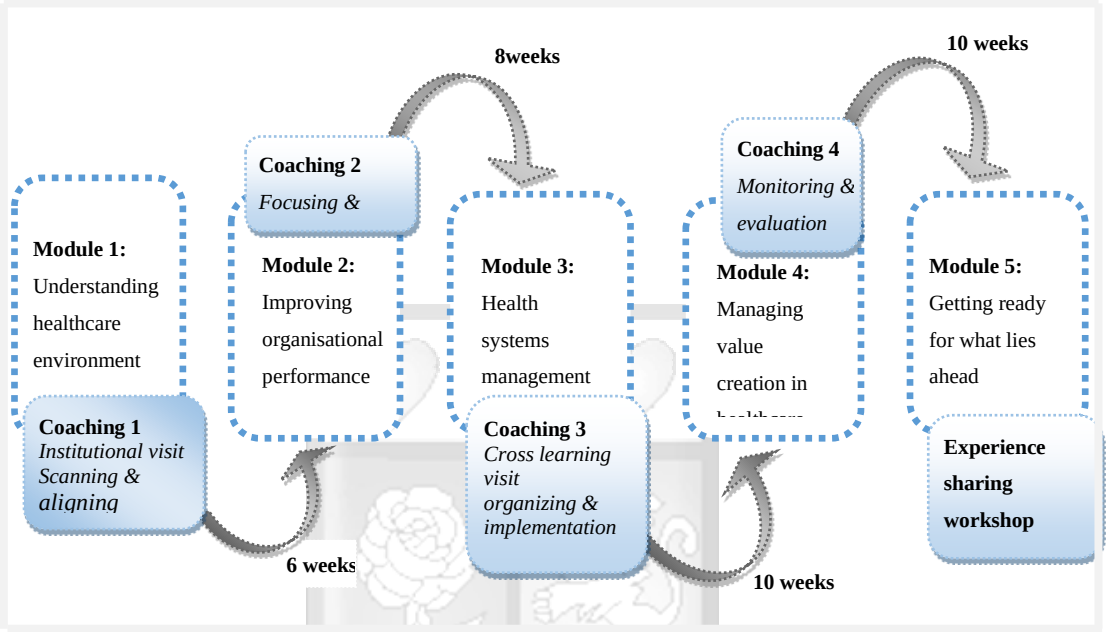

Figure 1.8: Integrated Leadership Development and Coaching Continuum (Source: Strathmore Business School-LeHHO Curriculum, 2010)

1.5: Problem Statement

Leadership is commonly regarded as key to effective healthcare systems (Swanson, 1995). However, most of the training in Kenya focuses on "leaders" development (individual) as opposed to "leadership" training (group growth from an organization) (Currie et al. 2009a) The previous strategy had little impact ((Day et al. 2014 & Heifetz, 1994). Heifetz (1994) & Currie et al. (2009a) argues that leadership must facilitate a process that limits individualistic leadership but leadership influence that goes beyond a single, 'heroic' individual. Several partnering agencies and institutions have therefore designed and implemented leadership training across the Counties as informed by the Management Sciences of health (2008), Kenya's Ministry of Health and Funzo Kenya (2015) training

needs assessment for healthcare managers and the health sector strategic investment plan for the year 2013 (Management Sciences for Health, 2013; Ministry of Health, 2015). The Strathmore leadership development program was proposed as a response to the Ministry of Health and its partners training needs report. The curriculum was designed to provide an opportunity for the teams develop their leadership skills that will enable them to address real workplace policy and systems challenges to produce measurable results towards improving health performance. Taking into account that the program evaluation activities for the LeHHO program could be described as primarily formative or process oriented. However. little is known of the training attributed outcome and impacts.

The program share similarities with a majority of training programs whereby outcomes are measured during or just after the training program focusing on learning and retention of learned knowledge. Transfer studies, on the other hand, indicate that the transfer result can be measured by evaluating whether the trainee's learned skills have been retained and generalized after some time on the job (Baldwin and Ford, 1988). These are the evaluation areas least considered during training design and are the gaps in research that this study intended to fill. In summary, the problem statement is: "The Leadership training at Strathmore University has now been going on for over eight years, yet we do not know whether it is achieving its intended purpose, which is to equip leaders with knowledge, skills, and practice to improve health system performance under the devolved system of government".

1.6: Scope of the Study

Several key factors informed the scope of the study. First, the study focused only on the senior leadership program (LeHHO) at Strathmore University Business School as opposed to other middle-level management training for health managers. Second, the intervention and control institutions were confined to the 19 counties represented by the program alumni between the years (2010-2016). Third, out of the 165 training alumni, only project team leaders from the 39

randomly selected institutional projects with 39 non-randomly matching controls across public, private and faith-based/NGO sectors were recruited to the study. Fourth, the impact assessment level was at priority project level using the "challenge model" as a referencing checklist tool. Fifth, the impact of leadership training as a health system strengthening intervention was assessed majorly at the institutional and not at community or individual health status level.

1.7: Justification of the Study

Training as an organizational practice has come to be recognized as the most common human resource strategy and solution for improving performance (USAID, 2015). The goal of any training is to ensure that knowledge is translated to desired measurable results in the work environment in order to increase organizational team performance. Research findings however objectively doubt the efficacy of training programs (Kilbourne et al., 2007). Although the potential benefits and impacts of leadership training among the health workers seem apparent, there is limited systematic investigations of leadership development interventions and the practice of leadership development (Doherty & Gilson, 2015). Leadership literature has been a focus of research since the conceptual models for understanding the concept since the 18th century are limited because of the leadership measurement complexities (Black & Earnest, 2009).

Notwithstanding the growing recognition on capacity building as a health system strengthening intervention in Sub-Saharan African countries, the issue of application of new knowledge to real-workplace challenge has been given low priority by health managers, policymakers, and training institutions. However, in the era of scarce resources, accountability, and a dynamic business environment, organizations are unable to make the return on investment (ROI) possible for training their employees due to the underutilization of learned knowledge, skills, and behaviors. A systematic approach to determining the cause and effect of effective leadership training appears to be lacking (Ahmad, 2013). Research evidence suggests that the context under which training knowledge is transferred

has a great influence on organizational performance. However, little is known regarding the impact of leadership training to the workplace challenges, what are the evidence-bases for the claimed impact of leadership training on health system performance specifically in Kenya? These are the research gap that the study intended to fill.

1.8: Research Objectives

To assess the impact of leadership training on health system performance in selected Counties in Kenya.

Specific Research Objectives

The study sought to:

i. Describe the healthcare leadership challenges identified and addressed by the management teams for priority institutional improvement projects.

ii. Analyze the implementation and sustainability status of selected priority institutional improvement projects for selected County health facilities between the years 2010-2016.

iii. Explore factors that contributed to the achievement or non-achievement priority institutional improvement projects at their institutions.

iv. Evaluate the impact of the priority institutional improvement projects on the base-lined health system performance indicators as compared to non-trained teams within the same county.

v. Explore factors that influenced the sustainability of the attained results across different health system contexts in the selected counties.

1.9: Research Questions

i. How has the leadership training enabled health managers identify and address the priority institutional improvement projects?

ii. What is the implementation and sustainability status of the institutional improvement projects for the selected county facilities between the years 2010-2016?

iii. What factors could have facilitated or hindered the implementation of the institutional improvement projects following the leadership training?

iv. How has the leadership training impacted on the implementation of the priority institutional improvement projects as compared to non-trained teams within the same County?

v. What factors could have influenced the sustainability of the positive results attained after the leadership training in the health institutions?

1.10: Significance of the Study

Without addressing the health system performance which impacts the county's socioeconomic status, we will not be able to attain sustainable development goal number three (health) and the social pillar (health) in vision 2030. This can be achieved through timely and compelling evidence that links leadership development and health services provisions improvement for decision-makers to strengthen their health systems to improve the health and well-being of their citizens. In summary, the only way to achieve the devolved health system objective is through evidenced-based health system intervention. Without the evidence, it is more difficult to scale-up best practices.

The study, therefore; a) offers new insights perceived relevant by respondents on challenge-based learning and especially emerging factors that seem under-researched in the training transfer literature, b) contributes the empirical literature on how incorporating institutional improvement projects and coaching

into leadership training leads to the immediate application of knowledge into health system performance improvement in Kenyan Counties, c) engages the human resources for health professionals, training institutions, healthcare institutions and County government in the formulation relevant policies to guide future training activities in leadership and governance to improve health system performance and, d) presents significant policy and procedure consequences which can be drawn for the purpose of improving the efficiency of health systems. For example, the urgent need to address the endemic industrial action of health workers across the county, the findings suggest that even with effective training and availability of adequate resources, the health institutions will not function optimally if the health worker issues are not addressed explicitly.

CHAPTER TWO

LITERATURE REVIEW

2.1: Introduction

The chapter provides a study of related literature on diverse leadership development programs and its influence on performance within the health system context. The review explored various theories and empirical findings underpinning the research study. The chapter is therefore split into seven major themes: a) theoretical foundation of the study; b) leadership development theories and models; c) empirical reviews; d) summary; e) gaps in research; f) conceptual framework and hypothesis and; h) operationalization of variable.

2.2: Theoretical Foundation of the Study

This section provides an analysis of the theoretical claims concerning the study variables. Three underpinning theories for this study are: a) distributed leadership theory of leadership; b) problem-solving theory (problem-focused and solution-focused) in coaching and, c) theory of change.

2.2.1 Distributed Leadership Theory

Given the aim of this study, the distributed leadership theory was adopted because according to researchers, leadership in health care involves multiple stakeholders (Denis et al. 2010; Ferlie et al. 2013; Fitzgerald et al. 2013; Nzinga et al. 2018). Yammarino et al. (2012) further argues that the contemporary work challenges require conceptualization of leadership that encapsulates interactions between leaders, followers and contexts. Bolden (2011) & Currie & Lockett (2011) has widely advocated a contextualized approach to investigating leadership that is subsumed into distributed leadership that involves a set of interacting influences that can be analyzed at all levels. Gronn (2002) & Denis et al. (2012) simply puts that, distributed leadership conceptualizes leadership as a joint practice

entrenched within a broader constellation of relations between leaders, followers and context.

According to Gronn, (2002) distributed leadership has two main dimensions (concertive action and Conjoint agency). Concertive action involves sharing of leadership within work groups through alignment, while conjoint agency is about leader's willingness to mutually engage and influence their followers (Gronn, 2002; Bolden, 2011; Currie & Lockett 2011). Whereas the use of distributed leadership as theoretical 'unit of health care leadership analysis has been increasing exponentially (Currie & Lockett, 2011), limited studies on its application in LMICS (Nzinga et al. 2018 & Fitzgerald et al. 2012). For this study, we used distributed leadership to frame the process of leadership as a co-construction of shared meaning and action to accomplish common objectives (Bolden, 2011). The distributed leadership theory provides a useful lens for examining leadership in both public and private health facilities in Kenya.

2.2.2 Problem-focused and the Solution-focused Theory

Problem-focused theory entails the coaching questions focusing on reducing negative affect and increasing self-efficacy. For the solution-focused theory, the driving coaching questions focal point is the provision of matching benefits as the problem-focused situation and growing the positive impact and the perception of the essence of the problem by the participants. The problem-focused theory involves identifying and removing the root cause of the negative outcome. A problem arises when we need to resolve some of the barriers to get to the desired state from our current state. Therefore, problem-solving is the mechanism an organism conducts to try to get from the current state to the desired state (Newell & Simon, 1972).

Solution-focused theory, on the other hand, is a goal-directed collaborative approach focusing on bringing a desired state of change by looking at present and future circumstances or goals rather than past experiences by leveraging on builds

on the strengths and resources available (Theeboom & Passmore, 2015). The Challenge Model (Figure 2.1) is an example of a hybrid model integrating both the problem and a solution-focused approach towards the achievement of a goal (Management Sciences for Health, 2008).

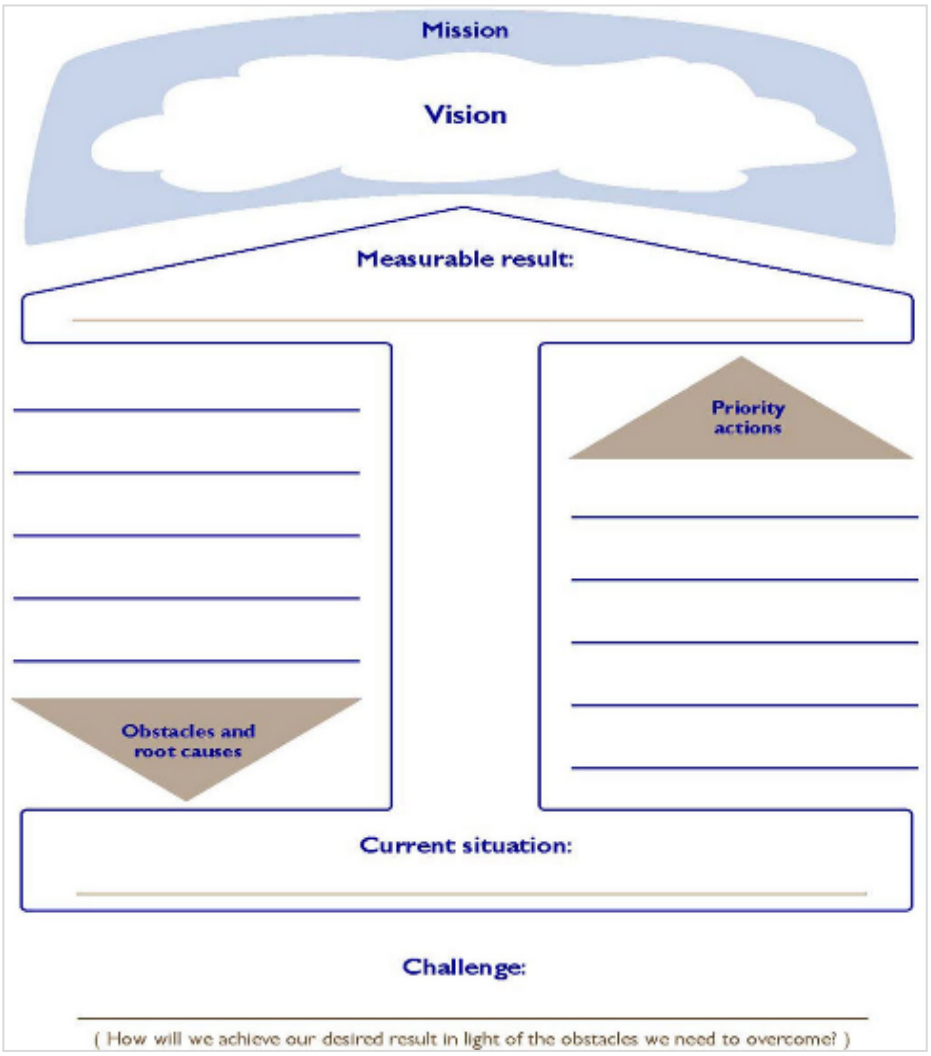

Figure 2.1: The Challenge Model (Source: Management Sciences for Health, 2008)

2.2.3: Theory of Change

The theory of change is basically a “detailed explanation and example of how and why the desired change is supposed to occur in a given context” (Weiss, 1997). In particular, it focuses on filling in what has been described as the "missing center" between what a program does its activities and how they achieve desired goals (Weiss, 1997). The theory of change is defined as a theory of how and why an initiative works and can be empirically tested by measuring indicators for every expected step on the hypothesized causal pathway to impact, then maps backwards by identifying long-term objectives to define required preconditions (Weiss, 1997). Theories of change are used in evaluations of interventions in complex social settings such as schools or communities (Connell, et al, 1995). The theory of change is therefore recognized for its capacity to provide a tracking, assessment and learning process during the program period and complex interventions (Connell & Kubisch, 1998). It is considered effective in evaluation by providing a simple explanation of the mechanisms of change by which intervention results in real-world effects by analyzing how the intervention interacts with the context (Bonell et al., 2012).

2.2.4: Leadership Training and Health System Performance Improvement

Training is a planned learning experience that teaches employees how to perform current and future job (Neelam et al., 2014). According to Armstrong (2016) training acts as a pathway for learning and creating a sense of progression in employees which indirectly leads the organizational achievement; therefore, without proper training and staff development, employees will not be able to carry out their assigned task effectively. In general, leadership is ‘an amorphous and little understood phenomenon is yet seen as a mysterious enabler, a force that can lift a struggling organization from insolvency or refocus committed and responsible citizens toward achieving a common good’ (Hopkins, 2014).

The present study is driven by the shift structure theory adapted from the Management Sciences for Health "integrated leadership management and governance results framework". The framework integrates leading, managing and governance practices approach towards developing managers who lead and govern well. The program is anchored on the assumption that leadership can be learned through action learning approach where participants learn to apply a set of leading, managing, and practices to address their real workplace challenges over time (Dweyer et al., 2013). Whereas traditional leadership programs often physically and psychologically separate the participant from his or her work environment, the LMG approach operates on a framework that connects the training to current challenges facing participants in their workplaces and with results through the implementation of action plans.

The results model (Figure 2.2) illustrates the program principle that measurement of leadership, management and governance capacity is not an end itself; rather, working on leadership, management and governance skills is a means of improving work climate, management and governance system, and eventually strengthening health service (Management Sciences for Health et al., 2015). The study will, therefore, focus on evaluating results on outcome and sustainability level with an aim to determine contribution rather than demonstrate causality.

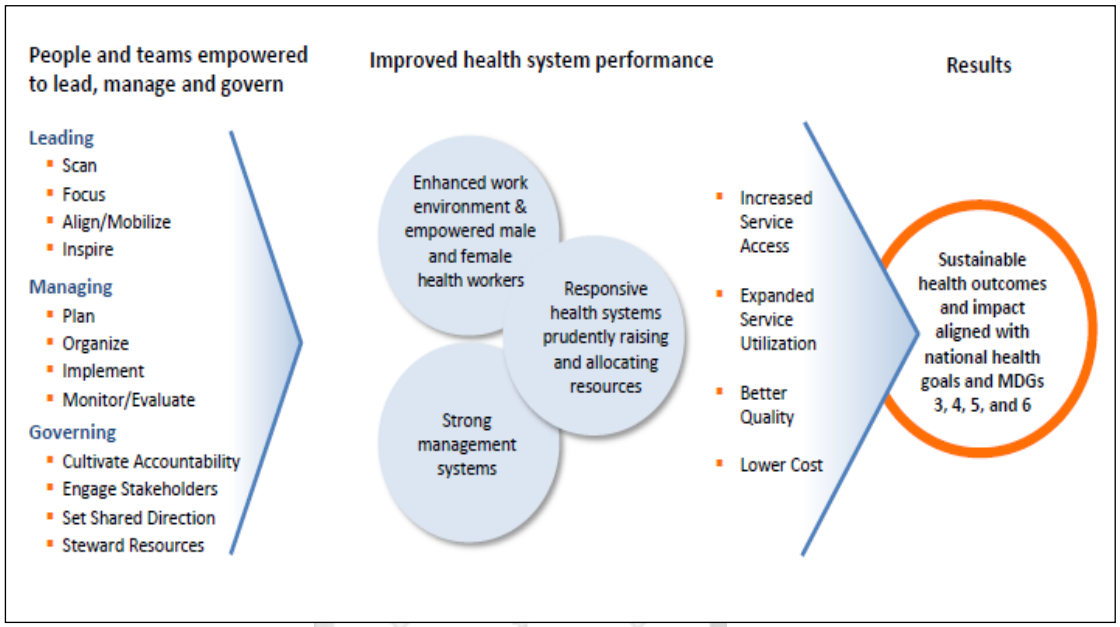

Figure 2.2: The Leading, Managing and Governing Results Framework (Source: Management Sciences for Health, 2008)

Using the leading, managing and governance results framework to gain insights on health system performance changes, the information was collected from the institutional improvement projects identified by the team. The leadership outcome depends on the desired results selected by the project teams and their specific context. Since the projects selected are informed by either county or institutional strategic plans and across the six pillars of the health system, some of the possible context-specific intermediate outcomes will include changes in work climate or in management systems and processes such as finance, human resources, information management, and research. The expected long-term outcome assessment would involve results from service delivery such as enhanced quality of care, expanded access and service usage, or higher customer loyalty and lower operating costs.

2.2.5: Leadership Challenges in a Decentralized Health System

Decentralization of healthcare is a concept that has gained popularity in developing countries (Kolehmainen-Aitken, 1999). Gilson and Raphaely (2008) defines decentralization as a complex but imperative concept in healthcare management that takes on different forms including devolution, de-concentration, delegation, and privatization. The concept devolution involves the transference of authority and power over public service delivery from the central government to a semi-autonomous sub-national structure, which aids in the management, decision-making, and public planning (Atkinson & Haran, 2004). In 2010 a new constitution was promulgated in Kenya implementing the principle of resource and power transfer from the national government to 47 counties created (Government of Kenya, 2013). "Essential health care delivery was delegated to local governments, while the central government retained health policy, local technical assistance, and regional reference health facility management" (Adieno et al., 2015).

Decentralization of the health sector services has been claimed to improve quality, encourage innovation, increase access to and equity of resources and foster accountability and transparency in the provision of services (Bossert, 1998). However, the complexity of Kenya's devolution framework led to services disruption due to poor transition management, which were further complicated by the inheritance by the new framework of some of the negative consequences of the extremely centralized government system characterized by frail, unresponsive, ineffective, and inequitable delivery of health services in Kenya (Barker et al., 2014). Developing the health role also raised structural, resource management and utilization issues that need to be tackled to ensure an effective and sustainable health system at county level (Adieno et al., 2015; World Bank).

Studies on the effects of decentralization by Kolehmainen-Aitken (1999) that has also been exposed in countries as diverse as Haiti and the Philippines; the general public is losing faith in the program and national health indicators are

plummeting. It, therefore, takes great leadership Management and governance to turn the health system around. According to Management Sciences for Health (2013) the success of health-sector reforms in Kenya depends upon leadership, management and governance competence and capacity at all levels. The strengthening of the core leadership, management and governance competencies of the top leadership, health managers, and young professionals are, therefore, the key to improving the capabilities of these groups to support health-sector reforms (Vriesendorp et al., 2010). Building strong and sustainable health systems, therefore, requires innovation, including innovative education for health workers (World Health Organisation, 2010).

2.2.6: Improving Health Systems Performance

Nzinga et al. (2009) & English et al. (2011) commented that the poor performance of hospitals in Kenya and other LMICs is often attributed to poor leadership at operational, yet such leadership is often situated in a complex healthcare context that undermines leaders' abilities to act. It therefore widely recognized that good health networks are key in achieving health-care objectives (Evans et al., 2008). As a result, a range of new programs or initiatives have been initiated at global and national level to resolve some of the gaps in basic health care and improve other components of the health system (Van Etten et al., 2006). The Strathmore healthcare leadership program" Leading High-performing Healthcare Organisations (LeHHO) is anchored on LMG principles and designed to foster a series of "leadership shifts" to bring about awareness of attitudinal shift that characterizes good leadership. These leadership shifts are fundamental to effective leadership; however, it is not enough to have the right mentality alone but the implementation of learned skills to real-work challenges. The approach is based on the evidence gathered by Peterson et al. (2011) that applying proven leading, managing and governing practices will ultimately lead to improved health performance, this practices include: a) scanning healthcare environment to identify gaps according to a priority health area; b) prioritization and focus on a specific challenge; c) aligning and mobilizing the stakeholders and resources; d)

inspiring teams to address challenges; e) developing the action plan; f) organizing the team to implement the plan and; g) monitoring and evaluating the result (Peterson et al., 2011; Peza et al., 2016).

2.2.7: Knowledge and Skills Transfer to Work Environment

Training as an organizational practice has been recognized as the most common human resource strategy and solution for improving performance (Dean et al., 1996). In this respect, the purpose of any training is to ensure that awareness is converted to tangible results in the workplace in order to increase organizational performance. Empirical studies on the transfer of knowledge and skills suggest a low return on investment in training and development because of weak knowledge application in specific work environments (Wen & Lin, 2014).

Several studies have found it challenging to compare the learning transfers due to non-uniform evaluation models and approaches used (Schneier, 2011). It is estimated that only about 10% to 15% of all training experiences are transferred from the training environment to the job (Blume et al., 2010; Georgenson, 1982). Another estimate puts training expenditure vis-a`-vis transfer as a skill loss of 87% to 90% of investment (Curry et al., 1994). Additionally, Wexley & Latham estimated that approximately 40% of newly acquired training knowledge and skills are instantly lost after the training, then it drops to 25% after 6 months and 15%, 1-year post-training (Wexley & Latham, 2002). These estimates, however, differ from Saks and Belcourt (Saks & Belcourt, 2006)) evaluation on effective application of learned knowledge from training on the job at three subsequent data point periods. Their findings indicated the approximated knowledge transfer at 62%, 44%, and 34% immediately after training, six months, and one year after training respectively. This is an indicator that many organizations are not able to realize the return on investment (ROI) for training their employees due to underutilization of learned knowledge, skills, and behaviors. Consequently, the exploration of knowledge application to work environments, and how it can be improved, is receiving increased importance among researchers and

practitioners, especially in an era of scarce resources, accountability and dynamic business environment.

Broadly described transfer of training as "the application to job performance continued by trainees, individuals, group commitment of experience in learning activities" (Broad, 1997). Even though the transfer through the application of knowledge beyond the training is the prime purpose in knowledge development, it has been considered by some research as the most challenging goal to attain (Foley, 2013). Despite being a major research interest area for many scholars, understanding how to apply the results of the training process are limited (Cheng & Hampson, 2008). Consequently, exploration of variables affecting learning transfer to workplace, and how it can be improved is acquiring prominence among the researchers and practitioners especially in the era of scarce resources, accountability, and dynamic business environment.

2.2.8: Coaching Using the Challenge Model

The LeHHO training approach focuses on learning and experiencing theories, values, and behaviors that are placed in the context of producing measurable organizational results by applying these processes over and over even after the program ends. The Challenge Model Figure 2.1 is "a systematic approach to problem-solving that program participants use to apply these practices to a real worksite problem" (Management Sciences for Health, 2008). The model has eight critical systematic steps: a) review their corporate agenda and strategic priorities; (b) creation of a shared vision; c) agreement on one measurable result; d) assessment of the current situation; e) identification of obstacles and their root causes; g) definition of key challenge and select priority actions; h) development of an action plan and; i) implementing your Action Plan and measuring and evaluating your progress. Participants learn together about the power of teams, the complementarity, and integration of each other's skills; and the practice of reflecting on their own behavior as it impacts others, including both clients and colleagues. Unique among other leadership improvement approaches, the

Strathmore leadership program integrates the conscious, systematic application of leading and managing to last attitudinal changes as participants pass on their new skills and enthusiasm to others.

Coaching and mentoring are common capacity building tools, particularly in the leadership development as a performance improvement method and a leadership style that delivers results (Brown & Grant, 2010; Goleman et al., 2002; Grant, 1996). According to Management Sciences for Health (2008) an organization's failure to achieve its objective can sometimes be traced to unclear objectives mismatch between what people set out to do and what they actually accomplish leading to resource wastage and frustration (Management Sciences for Health, 2008). Coaching managers have been proposed to influence results through a coaching conversation and the challenge model offers a systematic approach on how to structure the coaching conversation towards achieving an agreed desired goal.

The leadership, management and governance results framework that informed the design and implementation of the LeHHO program underscores how teams can tackle one challenge at a time as a team and achieve superior performance. Therefore, it is the duty of coaches to help leaders develop notably by demonstrating their own leadership skills through practice. Part of the growth is leaders' ability to act as coaches after completing their six-month project-based team coaching process. More fundamentally the trained leaders-coaches post-training are tasked to transfer the learnt knowledge to their teams back in their organisations to find practical solutions to the concrete challenges they face by planning well, improving leadership and communication, achieve ambitious work goals, have a better life balance, understand and use emotions, develop their creative thinking, overcome harmful stress, establish constructive relationships, and so on.

2.2.9: Sustainable Leadership and Knowledge Transfer

The urgency over the last decade of improving the efficiency of health systems performance through evidence-based programs and practices has gained heightened research attention. Yet in many interventions, efforts and evidence of sustainability and scaling up are least discussed. Whereas studies examining the implementation and short-term outcome efforts, little has been done to determine what happens post-intervention. An extensive literature synthesis on the sustainability of community-based programs by Shediac-Rizkallah & Bone (1998) defined sustainability as "the general phenomenon of program continuation" (Shediac-Rizkallah & Bone, 1998). From the leadership perspective, Hargreaves (2007) proposed a definition of sustainable leadership in an educational setting as leadership that develops in-depth learning in a way that does not harm and generates positive effects for all stakeholders, present and future. The Institute for Sustainable Leadership (2015) defines sustainable leadership in a business environment as those behaviours, practices and systems that create enduring value for all stakeholders of organizations, including investors, the environment, other species, future generations and the community (Edge equilibrium, 2015). From the organization change perspective sustainability implies that new working methods and performance levels persist for a period appropriate to the setting (Buchanan et al., 2005).

According to Stirman et al. (2012), there is the awareness that the degree to which new projects are implemented is affected by several different factors, and that more needs to be learned about what these factors are and how they interact. In the quest to answer why do some changes to organization structures, working practices and culture appear to be irreversible, while others decay rapidly? Buchanan et al. (2005) found out that sustainability is dependent on multiple factors, at different levels of analysis: substantial, individual, managerial, financial, leadership, organizational, cultural, political, processual, contextual and temporal. (Buchanan et al., 2005).

From the training program viewpoint sustainability of a practice may be influenced by program design; financial support; organisational structure; powerful champions; evidence of effectiveness; use of data for continuous improvement; training and maintenance of program; human resource (Gustafsson et al., 2003; Shediac-Rizkallah & Bone, 1998). Although there has been a substantial amount of literature on the transfer of training, there are still mixed findings and lack of empirical synthesis whereby studies on transfer have merely been beyond most of the leadership and management training. This is not a unique case in Kenya especially with an upsurge of health system strengthening interventions under the devolved health system, resulting in an information gap on transfer and sustainability of learning.

2.3: Empirical Literature Reviews

This section of study offers a summary of the current empirical literature, focused on the interaction of the adopted study variable. The fundamental aim of this empirical review is to identify common themes from a broad range of leadership development interventions, training and development, and their impact literature as published in peer-reviewed international journals. The researcher reviewed a series of recent studies on; leadership coaching and performance, the impact of leadership development on health system performance, knowledge transfer and sustainability in training. The review generated crucial information on what are the basic principles, trends, models, and attributions of leadership development and performance. Finally, it ends by demonstrating the limitations of the existing state of information and thereby revealing the study gaps. The outlined empirical review framework provided a comprehensive clarity on relevant research reviewed thematic areas and inform the researcher on how to align the current research to the existing framework.

The following research objectives were to be addressed:

a) **Research Objective ONE:** to identify and describe the healthcare leadership challenges addressed by the healthcare teams.

b) **Research Objective TWO**: to establish the implementation status of the priority improvement projects housed in 39 facilities in 19 counties in Kenya

c) **Research Objective THREE:** to establish the enablers and barriers to transferability and implementation of the prioritized projects at the workplace in different county facilities.

d) **Research Objective FOUR:** to assess the effectiveness and impact of the leadership development training on the health system performance indicators through the implementation of institutional improvement priority projects.

e) **Research Objective FIVE:** to determine whether improvements gained by the implementation of health system improvement projects by alumni, were sustained post-training.

These research objectives guided the formulation of the research questions as described in sections 2.3.1 to 2.3.4 below.

2.3.1: Leadership Development

Superior organizational performance and other factors critical to organizational competitive advantage has been associated with effective leadership (Zeb, Ahmad, & Saeed, 2018). Leadership has therefore been conceptualized as an outcome of social structure and process rather than as an individually driven system input that enables teams and organizations to navigate the complexity of their internal and external environment (Salancik et al. 1975; Dachler 1992, DeRue, 2011 & Kotter 2001).

Leadership development is defined as expanding the collective capacity of organizational members to social systems that supports building commitments

among members of a community of practice (McCauley et al., 1998; Wenger, 1998; Day et al., 2014; Day, 2015). This perspective is supported by Bouty (2000) and Tsai & Ghoshal (1998), of which they describe leadership development emphasis with social capital is on building networked relationships among individuals that enhance cooperation and resource exchange in creating organizational value. The orientation towards social capital emphasized the development of reciprocal obligations and commitments built on a foundation of mutual trust and respect (Drath, 1998; Whitener, 2000).

In healthcare, the rapid technological, policy, and procedural changes, emerging and re-emerging diseases, accountability presents a unique leadership challenge that is magnified within the healthcare industry (Throgmorton et al., 2016). leadership is recognized as a central to changing organizations (Bennis, 2003; Yukl, 2006). Many organizations therefore perceive leadership as a source of competitive advantage and are investing in its development accordingly (McCall, 1998; Lamoreaux, 2007; Vicere & Fulmer, 1998). In order to improve quality and efficiency within the health systems, healthcare managers are challenged to consider innovative approaches such us leadership development to address these issues (McAlearney, 2010). Clinicians for example who are trained to be medical experts and not executives are now becoming administrative leaders and so they are often ill prepared to assume leadership roles (Stoller et al., 2013; Stoller, 2008; Seims et al., 2012 & Suliman et al., 2013). To achieve superior health systems performance indicators such as quality care, employee engagement, implementing effective leadership development programs for the healthcare workforce has become an essential healthcare performance tool (Throgmorton et al., 2016). Leadership development involves building the capacity for groups of people to learn their way out of problems that could not have been predicted (Dixon, 1993).

Avolio et al. (2010); Solansky (2010) & Kraus (2014) describe leadership development initiatives as a process that involves formal programs and policies instituted by an organization targeted at cultivating leadership skills, or

experiential learning that presents leaders with novel challenges to overcome. Instituting formal leadership development programs therefore is one of the widely used strategy for developing strong leaders (Reichard et al., 2017). Salas et al. (2004b), (2009) asserts that leadership development is facilitated when teams are exposed to specific experiences or formal interventions. Thus, leadership is developed over time, with proximal indicators suggesting that more distal development is likely to occur (Day, 2015).

Some of the effective leadership development approaches include is experiential learning, where high potential employees identified as having realizable leadership ability are introduced to bigger and more specific organizational challenges (Lamoreaux (2007) & Kraus (2014). This approach is however complex in highly professionalized organizations such as healthcare, change leadership is considered as an ambiguous interactive process (Fitzgerald et al., 2002, Nzinga et al, 2018). However, drawing from the work of Mansour et al. (2010) & Kwamie et al. (2014) leadership development among healthcare teams contributed to attain short-term outcomes because the novel approach supported teamwork, initiative-building, and improved prioritisation.

Research by Ciccone et al. (2014) & Seims et al. (2012) has shown that the modes of leadership and management may influence health outcomes such as life expectancy at birth, child mortality, maternal mortality, and self-reported health status. Despite the established link between leadership development and health systems performance improvement, there is limited evidence for the effectiveness of leadership-development programs in promoting positive health systems performance (Kebede et al., 2012 & Peterson et al., 2011).

2.3.2: Executive Coaching as a Leadership Development Practice

The increasing body of literature on coaching as a leadership development tool presents leadership coaching as promising leadership development and has become widely used intervention for leadership development (Carey et al., 2010;

Day, 2000). Athanasopoulou & Dopson (2018) posit that leadership development interventions, such as executive coaching enables individuals on how to better manage themselves and how to use that knowledge to better manage others and eventually influence the organization for the better. These abilities are vital in the current world which is becoming increasingly complex and the current economic crisis are turning complexity into the norm (Heifetz et al., 2009a). In such an environment characterized by constant crisis, it is crucial to have leaders who are able to cope with uncertainty and efficaciously lead others (Heifetz et al., 2009a).

Kilburg (1996) described executive coaching as 'a helping relationship formed between a client who has managerial authority and responsibility in an organization and a consultant who uses a wide variety of behavioural techniques and methods to help the client achieve a mutually identified set of goals to improve his or her professional performance, and personal satisfaction and, consequently, to improve the effectiveness of the client's organization within a formally defined coaching agreement'. Executive coaching is therefore one of the leadership development practice that can help individuals manage complexity more effectively (Abbott & Rosinski, 2007).

Executive interventions therefore enable the participants to develop both individual mindfulness and organizational mindfulness through the individual or team coaching approach. Team coaching is a systematic approach to create positive and sustainable progress for individual team leaders, team members and the company the team represents (Anderson et al., 2008). Coaching, therefore, is a means of supporting teams to improves performance, and the processes through reflection and dialogue (Grant, 2014; Grant et al., 2009; Rosenman et al., 2014). The team coach offers an objective view on how to work effective as a team and members of one organization (Carey et al., 2010; Peters & Carr, 2013).

Grant (2014) examined the effect of executive coaching during times of organizational transition and, in its results, coaching was correlated with "increased target accomplishment, improved solution-focused thinking, increased capacity to cope with transition, increased self-efficacy and resilience in leadership, and decreased depression" (Grant, 2014). The results also showed that the positive effect of coaching on personal spheres such as family life was generalized. It also criticized the dyadic (one-to-one) coaching done in many organizations suggesting that interventions in organizations should also be targeted at the group level, as evidenced by and few models of group coaching have been developed (Brown & Grant, 2010). An empirical study by Goldsmith (2009) associated impact of leadership development programmes on increased leadership effectiveness. Participants who do not follow-up make no progress, compared to those who engaged co-workers, and do regular progress checks are seen as becoming more effective leaders' (Goldsmith, 2009). A comprehensive meta-analysis by Peters & Carr (2013) on team effectiveness indicated that team coaching resulted in interpersonal, communication and improved team performance (Peters & Carr, 2013). The authors recommended that future researchers should conduct more management and leadership team coaching studies in real work settings.

However, despite coaching popularity, research on coaching effectiveness is still limited (De Haan et al., 2013; Tim Theeboom et al., 2013). There are few studies that have evaluated the impact of health leadership training that includes coaching. Despite the increasing number of well-thought and designed studies on leadership and coaching fields, supplementary systematic evaluations include appropriate standards that link theory and practice are crucial in designing tools for leadership development (Baron et al., 2011; Ely et al., 2010). The aim of the present study was to assess the impact of integrating coaching around the actual needs of the organization to address institutional improvement projects, towards the enhancement health service delivery indicators. This study mainly focused on the Strathmore leadership program and some of the challenges identified by the

trainees as priority challenges to be addressed during the training, therefore leading to research question **ONE:** *How has the leadership training enabled health managers identify and address the priority institutional improvement projects ?*

2.3.3: Evidence of Leadership on Improved Health System Performance

Although the potential benefits and impacts of leadership training among the health workers seem apparent, there are limited systematic investigations of leadership development interventions and the practice of leadership development (Avolio et al., 2009; Day, 2000). Next are the most significant recent research about the effect of leadership on organizational success. Seddiq et al. (2014) analyzed 15 key informants' care for TB patients' centers in Afghanistan. The study was on the role of the leadership development program in restructuring National Tuberculosis Control Programme (NTCP) through the integration of tuberculosis treatment into primary health care and achieves most of its targets in conflict areas using the stop Tuberculosis (TB) strategy by the year 2011. Using a case study methodology, the study findings revealed that the training was effective and performance measurements included: a) TB incidence and mortality per 100,000 decreased from 325 and 92 to 189 and 39 respectively; b) efficient program structures were enabled through high political commitment from the Government; c) the team experienced strong leadership and; effective partnership and coordination among stakeholders from the programme; and finally d) adequate technical and financial support from the development partners (Seddiq et al., 2014).

Kwamie et al. (2014) carried out a case study in Dangme West district in Ghana on 'why the LDP 'works' when it is introduced into a district health system in Ghana, and whether or not it supports systems thinking in decision-making by district team in Ghana". The research analyzed five hospital administrators from district and sub-district teams. Using a practical assessment and Theory of Change (TOC), the team worked backwards from an in-depth scenario study and identified short- and medium-term results, drawing a causal loop diagram to illustrate the

relationships between situations, results and mechanisms. The study findings demonstrated that; a) since the new strategy promoted collaboration, initiative-building and stronger priority-setting and b) the leadership development program helped district managers and teams attain short-term outcomes. Nevertheless, the LDP was not established in district teams and did not lead to amplified systems thinking. The researchers concluded that when (LDP) was introduced in a complex system with semiautonomous features, chances are it tends to be rejected (Kwamie et al., 2014).

Another key study of interest was conducted in Upper Egypt by Mansour et al. (2010). This was a case study with before and after design, without a comparison group of 10 teams of health workers from five (5) primary health units, three (3) districts, one (1) rural hospital and one (1) the governorate team of administrators took part in the study. The team leadership challenge was "to improve health services in three districts by increasing managers' ability to create high performing teams and lead them to achieve results" (Mansour et al., 2010). The study results indicated the positive impact of the training on the following health indicators; a) reduction in the maternal mortality rate from 85.0 per 100,000 live births to 35.5 per 100,000 in Aswan Governorate, b) inspired and committed team changed from complaining about problems to identifying actionable challenges they could address and, c) when the result were tracked for 5 years, it demonstrated sustainability and scaling up (Mansour, Bragar, et al., 2010).

A research by Seims et al. (2012) on improving management and leadership activities to improve health service delivery in Kenya is the only research so far undertaken on the effect of leadership development training on efficiency of the health care system. The researchers used a quasi-experimental design to be evaluated with comparative groups but without random assignment to analyze 67 project teams of District Health Management Team (DHMT) from 6 provinces in Kenya. The study findings positively revealed the positive impact of leadership

training whereby the health service delivery indicators increased from 54% at baseline to 65% at endline, and 67% post-intervention, as compared with a control group and that the improvements were sustained at least for six years (Seims et al., 2012). In summary, it is important to assess the implementation status of the learned skill application to real work leading us to research question; **TWO:** *What is the implementation and sustainability status of the institutional improvement projects for the selected county facilities between the years 2010-2016?*

2.3.4: Training knowledge Transfer

To date, the current literature has established three key determinants of the difficulty of training transfer: training design (principle of learning, timing, and training content), individual characteristics (capacity, temperament, and motivation), and the working environment (support and ability to use) (Cheng & Hampson, 2008). Studies by Tracey et al. (Tracey et al., 1995) and Blume et al. (Blume et al., 2010) on the application of learned skills to the workplace and the role of the work environment have shown that when workers experience a positive organizational atmosphere, they are more likely to apply their new knowledge to the work environment. Still, other studies such as Rouiller & Goldstein (1993) found non-significant relationships between a supportive environment and training transfer.

Velada et al. (2007) examined how training style, human characteristics and job environment affect knowledge transfer. Their results suggest that organizations need to concentrate on all three determinants of training transition in order to maximize their return on training and growth investments: training design, individual features, and work climate. Transfer studies confirm that certain strategies are a crucial prerequisite for transfer because they are key mediators between influencing factors and transfer (Burke & Baldwin, 1999; Gollwitzer, 1999; Machin, 2006). Pham et al. (Pham et al., 2013) conducted studies on the role of the work environment on training transfer for the academic master's program

in Vietnam. The results showed key players of transfer training strategy as the trainees, training providers and employers. These studies suggest that there is a need to evaluate training with two levels of outcome; a) training outcomes and b) transfer outcomes (Hung, 2013). However, most training outcomes are measured during or just after the training program on learning and retention of learned knowledge. Conversely, the outcomes of the transition are measured by evaluating how the trainee generalizes and retains learned skills after some time on the job (Blume et al., 2010). These areas are the least considered during training design. Knowledge transfer at the workplace can, therefore, be improved if transfer outcomes are evaluated after the training and if transfer enablers and barriers could be further unpacked.

The study was guided by the concepts of dynamic interaction and emergent knowledge transfer factors drawn from the theoretical model for training transfer by Baldwin & Ford (Baldwin & Ford, 1988). Baldwin and Ford's model is widely recognized to be grounded on the idea that training transferability depends on training design, trainee characteristics and work environment (Baldwin & Ford, 1988). The model postulates that; a) training design, b) work environment (support on all levels, organizational climate both in the learning and transfer phase) and, c) trainee characteristics (personality, motivation) predict learning transfer. The general model is well supported by empirical data by Clarke (2004) and Lim and Johnson (2003) (Clarke, 2004; Lim & Johnson, 2003). This study utilizes an analytical approach that recognizes similar attributes such as design, trainee characteristics, and work environment, but further explored and unpacked to understand how the identified attributes interact in different contexts. This approach fosters the development of rich explanations and a deeper understanding of the factors underpinning knowledge transfer in different health systems in Kenya. Research question **THREE:** *What factors could have facilitated or hindered the implementation of the institutional improvement projects following the leadership training?*

2.3.5: Evaluation of Leadership Development

Evaluation of leadership development programs is a burgeoning area of research (Gentry & Martineau, 2010). Notwithstanding the diverse approaches in the designing and implementation of leadership development programs, one issue that remains is how to evaluate the impact of these programs to assure they meet their objectives (Van Velsor et al., 2010). Kirkpatrick & Kirkpatrick (1996) note that impact assessment determines how much was related to training and the overall results of a program. Impacts therefore may emerge over time and be gauged at various levels (Watkins, Lysø, & de Marrais, 2011). Leskiw and Singh (2007) asserts that while best practice organizations are committed to evaluating the effectiveness of their leadership development, a full evaluation of learning is infrequently conducted, despite researchers' agreement that it is essential. Literature on estimates from business and industry suggest that only half of training programs are evaluated for objective performance outcomes (Twitchell et al., 2000).

Research indicates that evaluation of leadership development programs is difficult because the stakeholders are often unable to clarify the observable outcomes. Van Velsor et al. (2010) elegantly puts forth that it is harder to measure the impact of an initiative that includes multiple components over the course of five to ten months than a single program event. Avolio et al. (2009) note the extreme complexity of measuring impact of leadership development programs due to interaction of different contextual elements such as organizational work environment. Avolio et al. (2010) argument is further supported by Leskiw & Singh (2007) on the feasibility of evaluation leadership development programs in quantifiable terms. Phillips (1998) emphasizes that even though impact assessment provides a measure of the program's overall success, a central challenge of impact assessments is isolating causality, given the many different factors influencing participants and the business.

Yet, Dopson et al. (2016) review revealed some models such Kirkpatrick and Kirkpatrick's that could enable evaluation of intricate leadership development programs. Kirkpatrick & Kirkpatrick, 2016) and leadership development programs specifically (Gentry & Martineau, 2010) are some of the existing models for evaluating training programs. McAllan & MacRae (2010) & Leskiw & Singh (2007) recommended Kirkpatrick and Kirkpatrick's (2006) four-stage model of responses to learning that is applicable on a variety of issues. In addition to Kirkpatrick & Kirkpatrick's model, several approaches estimating the degree of change or performance that can be attributed to the program have been adopted (Gentry & Martineau, 2010). This approach requires administration of pre- and post-assessments that reflect the intended program outcomes in order to determine whether the program achieved its objectives (Watkins et al., 2011). Gentry and Martineau (2010) advises that evaluations be done in multiple intervals, over an extended period of time; before, during, and after the program, and possibly years apart.

In experiential learning, a co-reflective practice wherein people discuss learning and applications and action plans, which can provide concrete evidence of their application of learned competencies and the resulting business impacts can be used (Kirkpatrick & Kirkpatrick, 2016; Watkins et al., 2011). Setting targets for each metric being evaluated is therefore highly recommended in order to determine the appropriate scope of program evaluation (Phillips, 1998; 1996). Even with the above discussed evaluation strategies, Dopson et al. (2016) systematic review noted that there are few strongly theorized and published studies which explore the long-term impact of the many leadership development programmes in Higher Education. From their findings, Dopson et al. (2019) proposed a future longitudinal, processual and comparative case-study-based approach in tracking a desired strategic change or organisational transformation. To explore the impact of transferred knowledge at the workplace the researcher, therefore, sought to explore research question **FOUR:** *How has the leadership*

training impacted on the implementation of the priority institutional improvement projects as compared to non-trained teams within the same County?

2.3.6: Sustainability of Knowledge Transfer

Although knowledge transfer has been a major research interest area for many scholars with an interest in understanding the transfer of the training process; sustainability is of great importance to many non-profit organisations (Gruen et al., 2008). Sustainability is sadly rarely incorporated into program preparation nor in the overall evaluation processes, but are designed to assess the immediate program outcome and neglecting long term sustainability (Sridharan et al., 2007). In order to reap long-term benefits, system advances need to be maintained past the initial interventional duration (Goetz et al., 2009). Jansen et al. (2009) suggest that to guarantee the prolongation of a successful pilot program, the sustainability strategies and change processes should be considered beyond theories to practical application. Sustainability is described as the final stage of program use in which the program is incorporated into organizational routines so that it will be maintained once the original program funding, adopters or program champion are no longer present (Kilbourne et al., 2007). Program sustainability is renowned as a key component of any successful project and therefore spurs investment in educational improvement to ensure the sustainability of stiff-won gains (Loman et al., 2010).

The growing body of literature synthesis by Shediac-Rizkallah and Bone defined sustainability as "the general phenomenon of program continuation" (Shediac-Rizkallah & Bone, 1998). Hargreaves (2007) & Hargreaves & Fink (2004) equates sustainability of leadership to distributed leadership as an accurate description of how much leadership is already exercised, and also as an ambition for what leadership can become. There is increasing awareness that the degree of sustainability of new initiatives is determined by many different factors and demands more insights on what and how these factors interact (Stirman et al., 2012). The common emerging themes on factors affecting program sustainability

include; a) the design of the program, b) available resources, c) existing organizational structure, d) availability of powerful change champions, e) evidence-based output and, f) continuous improvement using data (Egbu et al., 2005; 2003; Shelton et al., 2018). Buchanan et al. (2005) review findings suggests that sustainability is dependent on multiple factors, at different levels of analysis: substantial, individual, managerial, financial, leadership, organizational, cultural, political, processual, contextual and temporal.

A recent systematic review of the success of sub-African health programmes, by Iwelunmor et al. (2016), community ownership and mobilization were recognized as main facilitators of sustainability of action, technological, ecological and technological upheavals have been cited as obstacles that have affected the sustainability of interventions in sub-Saharan Africa (Iwelunmor et al., 2016). Even with these pieces of evidence, a synthesis on how different sustainability enablers interact with each other in diverse health systems is deficient. Research evidence shows that the quality of health service provision can only be improved by paying attention to how health care providers operate and lead their facilities and teams (La Rue et al., 2012; Mansour, Bragar, et al., 2010; O'Neil et al., 2013).

In recent years, therefore, the introduction of evidence-based practices in the healthcare context has been the subject of an increasing amount of research (Stirman et al., 2012), and yet, there is little consensus to why some effectively implemented evidence-based practices fail to sustain (Loman et al., 2010). Although knowledge transfer has been a major research interest area for many scholars with an interest in understanding the transfer of the training process; sustainability remains the main concern for many programs (Gruen et al., 2008). Regrettably, sustainability is barely incorporated in the many programs and the existing evaluation processes are designed to assess the immediate program outcome and neglecting long term sustainability (Sridharan et al., 2007). Pluye et al. (2004) suggest that in order to guarantee the continuity of a successful pilot

project, the mechanism of transition and the idea of sustainability need to be expanded beyond concrete implementation theories (Pluye et al., 2004).

A recent study on the sustainability of evidence-based intervention by Shelton et al. (2018) posit that even though the earlier literature on sustainability-focused largely on routinization of a new set of practices into organizations' routine operation; the utilized frameworks did not fully address sustainability in the context of change over time (Shelton et al., 2018). These are the research gaps that the current study seeks to address from the context of a devolved health system. Our study was guided by the Iwelunmor et al. (2016) proposed systematic conceptual framework for sustainability that widely maps the results of Sub-Saharan Africa interventions (Iwelunmor et al., 2016). The framework underlines the intersection of the intervention itself with a wider socio-cultural and societal context; As well as the role of organizational aspects in affecting sustainability, this is the fundamental factor of an initiative that evolves over time, incorporated into the overall project's life cycle (Iwelunmor et al., 2016).

From the methodological point of view, Shelton and colleagues' (Shelton et al., 2018) studies reported that most sustainability studies have used self-reporting, with few studies using fidelity assessment. Using Shelton's et al. (2018), recommendations, our current study assessed sustainability of desired measurable outcomes over time while comparing with the set threshold on projects indicator sustainability post-training period of (2-5) years. To this end, this research addressed the relative influence of specific sustainability factors for leadership training interventions. Respond to the research question **FIVE:** *What factors could have influenced the sustainability of the positive results attained after the leadership training in the health institutions?*

2.3.7: Summary

The finding on the empirical reviews on impact of leadership on health system performance confirms that: a) strengthening the leadership and management skills of health teams by team-based solutions to selected challenges and leading to better quality outcomes for health services; b) coaching is an effective intervention in organizations towards increased goal realization, superior solution-focused thinking, a better capacity to deal with change, improved leadership self-efficacy and resilience, and reduce in depression. However, it is important to mention that only one leadership study was done in Kenya and for the coaching studies none was from Africa; c) most training outcomes are measured during or just after the training program on learning and retention of learned knowledge. In contrast, transfer outcomes are evaluated by measuring how trained skills have been maintained and generalized by the trainee after being on the job for some time (Baldwin and Ford, 1988) and; d) the common emerging themes on program sustainability suggested that sustainability of a practice may be influenced by program design; financial support; organizational structure; powerful champions; evidence of effectiveness; use of data for continuous improvement; training and maintenance of program; human resource (Gustafsson et al., 2003; Shediac-Rizkallah & Bone, 1998).

2.4: Gaps in Research

Based on the empirical reviews above, all the findings point to one conclusion, which is the application of leadership management and governance practices, have a positive impact on health systems. However, under the evidence of leadership on improved health system performance empirical review, the researcher identified the following four limitations in research that merit addressing: a) majority of the studies focused only on one pillar of health system building block (service delivery) rather than the six health system pillars; b) Only one research implemented evaluation methods that took into account the characteristics of complex adaptive structures, such as non-linearity of results or interactions between the building blocks of the health system; c) all the studies

were undertaken in public sector facilities this limiting the findings to the public sector only and; d) the main study participants and program targets were front line health service providers limiting the generalization of the findings to service delivery health workers.

From the review, it is apparent that none of the studies analyzed the role of coaching as a facilitator in the achievement of the desired results, yet the leadership challenges were addressed through coaching conversation. The researcher was therefore prompted to further empirical research on the impact of coaching on individual and organizational performance and the conclusions that coaching is an effective intervention in organizations towards increased goal attainment. However, the researcher identified *three* limitations in these studies that warrant addressing: a) most of the studies, coaching could be described as individual instead of group-oriented; b) a few studies which analyzed group-oriented coaching were criticized for their goal-focused nature rather than process-orientation of group facilitation, resulting to under-use of coaching process potential as a means of creating change in organizational contexts and; c) there was no representation of the coaching frameworks and models used for coaching.

The cumulative evidence from the extant literature points us to the conclusion that there is an impending need to evaluate training with two levels of outcome: a) training outcomes and b) transfer outcomes (Hung, 2013). However, most training outcomes are measured during or just after the training program on learning and retention of learned knowledge. In contrast, transfer outcomes are evaluated by measuring how trained skills have been maintained and generalized by the trainee after being on the job for some time (Timothy & Kevin, 1988). These are the evaluation areas least considered during training design. These are the gaps in research that this study intended to fill.

The unprecedented resources made available for global health, particularly in the fight against major pandemics, have allowed countries to greatly broaden the scope of life-saving interventions in health. But attempts to extend these services have been thwarted in several countries by poor health systems (Management Sciences for Health, 2010). Research suggestions indicates that much can be changed merely by looking at how health care providers are leading and governing their health institution and the workforce (Mansour et al., 2010; O' Neil et al., 2006). Introduction of evidence-based programs and practices into healthcare settings, therefore, has been the subject of an increasing amount of research in recent years (Stirman et al., 2012) and yet, there is little consensus as to why some programs sustain or fail to sustain the effective implementation of evidence-based practices (Gustafsson et al., 2003).

2.5: Conceptual Framework

The contribution of this research to the owing body of leadership development studies is centered on the overall research question; has leadership development program contributed to improved health system performance in different counties in Kenya? The employed research strategy is to address this question is grounded on a conceptual model that links leadership development training and improved health system performance indicators (Figure 2.3).

The model is based on the Management Sciences for Health LMG for results model (Management Sciences for Health, 2008). In brief, it describes how appropriate training in Leadership, Management, and Governance (LMG) leads to a Desired Measurable Result (DMR) in one or several of the six health system pillars (Leadership and Governance; Healthcare Financing; Human Resource for Health; Health Service Delivery; Health Information; Medical Products and Technology). This is based on the fact several studies have shown that applying proven leading, managing, and governing practices (Independent Variable) improves the work environment through motivation, it ensures that management systems are responsive to changing circumstances and needs; that resources are effectively

secured; and that resources are allocated responsibly (Immediate Results). Such improvements result in improved access to service, improved use of service, greater quality of service and lower costs (Dependent Variable). These changes, in turn, lead to improved health system performance (Secondary Variable), therefore, contributing to the ultimate goal of achieving desirable and sustainable health outcomes in the long run (Management Sciences for Health, 2015). The model provides a structure that guides collection process as well as an abstract view of analyzing the data.

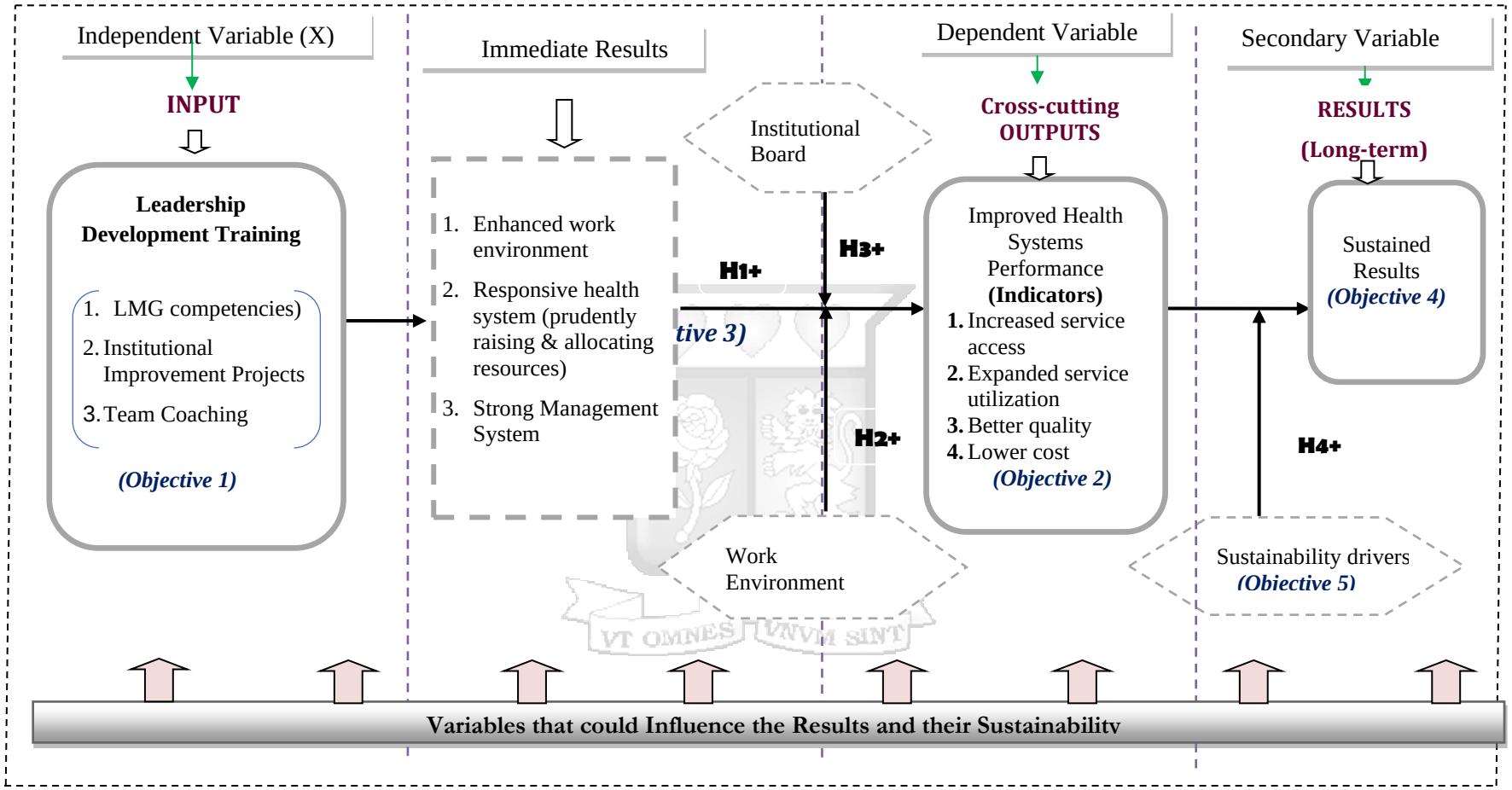

Figure 2.3: Research Conceptual Framework

Based on the above conceptual framework, the following four hypotheses were developed; -

-**H1:** Implementation of the priority improvement project has a positive effect on health system performance indicators.

-H2: The work environment context significantly influences the achievement of DMR and positive results on health system performance such that institutional teams produced positive results on health system performance when the work environment climate is positive.

-H3: Nature of organizational board members has a significant influence on the successful implementation of the institutional improvement project

-H4: The relationship between the achieved results on health system performance indicators and its sustainability was moderated by the organizational sustainability drivers such that the sustainability of the results is positive when organizational sustainability drivers are present.

2.6: Operationalization of the Variables

To ensure reliability and replicability of the study, variables were quantitatively and qualitatively operationalized to provide a clear and objective definition of variables.

2.6.1: Dependent Variables (Y)

The two identified outcome variables will be operationally defined as follows;

i. Improved Health System Performance: a) Increased healthcare service access; b) expanded service utilization; c) better quality (safe, timely, efficient, effective, equitable and patient-centered) and; d) lower cost.

ii. Sustainability of the results: level of maintenance and improvement of results achieved.

2.6.2: Independent Variable (X)

The predictor variables were operationally defined as follows as: The sustainable leadership development: 9-month leadership training integrating team recruitment and training on leadership, management, and governance practices, institutional improvement project and team-based coaching.

2.6.3: Moderating Variable (M)

There are two identified variables which could change the effect component of the cause-effect relationship between the dependent and independent variable*;*

i. Work environment context as a determinant of achievement or non-achievement of projects DMR's (work climate perception and management system and board members).

ii. The organizational sustainability drivers (champion presence, buy-in, and alignment) as moderators of sustainability of results achieved: a) buy-in across organization; b) presence of champion and; c) alignment.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1: Introduction

The aim of this chapter is to present the overall methodology of the study including goals, data collection plan and analysis (Figure 3.1). First, there is an important distinction between method and methodology. Methodology refers to the philosophical or theoretical approach to the research, along with the principles used (Babbie, 2008). The method refers to "the technique or approach that is taken to undertake the research" (Apuke, 2017; Leedy & Ormrod, 2010). Research methods and methodology adopted are presented in this chapter to explore the existing descriptive and empirical association linking sustainable leadership training and improved health systems performance in selected counties in Kenya. The relevant components covered include the research; philosophy, design, population and sampling design, data collection, validity and reliability of the research instrument, data analysis, and ethical considerations.

3.2: Research Philosophy

Neuman (2011) defined research philosophy as a whole system of thinking. Research paradigm, therefore, includes the established theories and models or framework for observation (Rubin & Babbie, 2010). Gephart (1999) classified research paradigms into three philosophically distinct categories as positivism, interpretivism and critical postmodernism. This three-fold classification is considered ideal for this study because these three categories can be used to conveniently place the more specific psychological and sociological theories.

Positivism is concerned with uncovering truth and presenting it by empirical means (Henning, Van Rensburg & Smit, 2004). The interpretive paradigm is concerned with understanding the world as it is from subjective experiences of individuals (Ponterotto, 2005 & Prasad, 2005). The critical postmodernism of critical theory encourages evaluators and instructional designers to question and also to evaluate the cultural, political, and gender assumptions underlying the effectiveness of the instructional product or programme (Reeves & Hedberg,

2003). Following the above discussions, the philosophical assumptions underlying this study come mainly post-positivism paradigm as recommended by Glicken (2003). However, the study has also footprints of the other two perspectives interpretivism (of hermeneutic in nature) and critical postmodernism (as it supports different world view).

Positivism claims that "there is an objective reality to be researched, recorded and understood, whereas post-positivists claim that reality can never be completely grasped but can only be estimated" (Taylor & Medina, 2013). Post-positivist methodology is more open to different analytical techniques, which also includes both qualitative and quantitative methods. This model usually assumes that participants have multiple experiences rather than a single truth (Creswell, 2007). Post-positivism, according to Denzin & Lincoln (2011), relies on various approaches to capture as much of truth as possible, with focus on the exploration and testing of hypotheses. This research sought to propose a coherent justification regarding the relationship between leadership development training and health systems performance. In addition, the researcher concentrated on interpreting the analysis as it progresses during the investigation and thus the post-positivist method was adopted. To gather the data for the investigation, a sequential mixed method approach was used beginning with a questionnaire, in-depth interviews, and observation checklist.

3.3: Research Design

Research design is defined as "a framework of methods and techniques chosen by a researcher to combine various components of research in a reasonably logical manner so that the research problem is efficiently handled" (Saunders et al., 2019). The goal of this research was to find answers on the effect of training in leadership development using the pre-test and post-test data, and ascertain why if any, changes occurred? The research, therefore, adopted a multi-method design embedded in an explanatory sequential approach. Multi-method design involves utilization of multiple data collections approaches of which each process is conducted rigorously and complete in itself, within one project. The results are then triangulated to form a complete whole (Morse, 2003).

Multiple-method research can include two or more exclusively qualitative or quantitative approaches (Table 3.1). Multi-method research enables the researcher to study relatively complex entities or phenomena in a way that is holistic and retains meaning. The purpose is to tackle the research objective from all the methodological sides. Rather than pigeonholing the research into series exclusive research methods for each study undertaken, but it rather frees the researcher into total immersion with the subject matter.

3.3.1: Strengths of the Multi-Method Research Design

There are various reasons why multi-method research is employed by researchers: First, approaching a subject from different perspectives or paradigms may help to gain a holistic truthful worldview. Second, using more than one should methodology help to get a clearer picture of the social world and more adequate explanations. Third, multi-methodology fits well with pragmatism. Fourth, multi-method research involves situations where one method is applied with reference to another to address a research agenda hence used for confirmatory purposes to validate a study result with supporting data from separate and related (Ahmed & Sil, 2012; Byrne & Humble, 2007).

3.3.2: Limitations of the Multi-Method Research Design

Multi-methodology is also criticized in that people have cognitive abilities that predispose them to particular paradigms. Quantitative research requires skills of data-analysis and several techniques of statistic reasoning, while qualitative research is rooted in in-depth observation, comparative thinking, interpretative skills and interpersonal ability. None of the approaches is easier to master than the other, and both require specific expertise, ability and skills (Davis et al., 2010). The highlighted advantages outweigh the disadvantages and hence the multi-method analysis is credited by management researchers for increasing the possibilities of getting varied and extensive results (Collier and Elman, 2008). In the current study, the researcher utilized three research methods to address the five-research objective; a) quasi-experimental time series, b) quantitative and, c) qualitative designs.

3.3.3: Quasi-Experimental Time Series Design

Following Avolio et al. (2009) call for more quasi-experimental research in leadership studies, the quasi-experimental time series design was utilized to establish a cause-effect relationship between variables as recommended by (Neuman, 2006). Quasi-experiments are considered effectual for the reason that they use "pre-post testing". Quasi-experiments, therefore, have independent variables that already exist, such baseline indicators for this research (Campbell & Stanley, 1963; DeRue et al., 2012). Quasi-experiments are extremely valuable when true experiment such as randomized control trial is not feasible. Such instances include evaluating the impact of public policy changes or educational interventions (Shadish, Cook & Campbell, 2002). The quasi-experimental design was deemed fit for this study because of a number of reasons; First, evaluating a leadership development intervention such as LeHHO program is a representative of what Shadish, Cook & Campbell (2002) describe as one of the many natural social settings in which the researcher may introduce experimental despite the lack of full control over the scheduling of experimental stimuli or randomize exposure which makes true experiment possible. Second, unlike the observational study or correlational designs which a presumed cause and effect are identified and measured, the presence of the design elements such as pretests and comparison group which researchers might construct a useful counterfactual inference were available (Shadish, Cook & Campbell, 2002). Third, DeRue et al. (2012) note that given the context of the training, a quasi-experimental design is easier to build in the natural environments setting than real experimental designs hence minimizing threats introduced in a well-controlled laboratory setting. Fourth, because quasi-experiments are natural experiments, results in one can be generalized to other subjects and environments, making it possible to make some generalizations about the population (DeRue et al., 2012).

It is worth noting that despite the diverse benefits of quasi-experimental design, utilization of the approach should be adopted with caution: First, quasi-experimental estimated impacts are prone to contamination by confounding variables (DiNardo, 2013). Second, non-randomization assignment in the quasi-experimental design method encourages feasibility of studies, but this also pose internal validity threats due to confounding

variables (Campbell & Stanley, 1963). Third, lack of randomization may result to data approximation, but challenging to draw conclusions of causal relationships due to a variety of extraneous and confounding variables existing in a social environment. Moreover, even if these threats to internal validity are assessed, causation still cannot be fully established because the experimenter does not have total control over extraneous variables (Seibert, 1999). Treatment and non-treatment groups may provide weaker evidence because of the lack of randomness which gives a better representation of the population as a whole. Using unequal groups can also be a threat to internal validity. The unequal grouping may result in lack of positive identification on causal effect relationship (Morgan et al., 2006).

Even though quasi-experiments are subject to concerns regarding internal validity, because the treatment and control groups may not be comparable at baseline, the benefits of the design outweighs the demerits, this includes: a) it allows group selection where a variable is tested without any random pre-selection processes, it causes as little disruption as possible; b) it can be integrated with individual case studies to increase its validity and; c) less broad pre-screening and randomization required, hence reduces time and resources required for experimentation (White and Shagun, 2014). This research utilized the quasi-experiment design because of the non-randomization assignment of intervention and comparison group, secondly, it was an impact evaluation with the intention of informing policy and educational intervention changes, and finally it was not possible to set up a true experiment such as randomized control trial.

3.3.4: Quantitative Design

Quantitative research enables the exploration of relationships with the basis for evaluating the research subject's reliability and validity. The design is based on numbers and statistics such as the design is essentially subject to statistical assumptions and conditions in the Survey questionnaire made of multiple-choice questions. It is used for forecasting, testing theories and looking at the relationship between cause and effect. Consequently, a quantitative approach is used to define statistical relations between variables and yield objective results (Garbarino & Holland, 2009). Quantitative research reduces problems and data

to percentages, decides how much and how many, by focusing on playing with predefined variables through data collection and calculation. (Snowden & Martin, 2011). This study conducted quantitative research by undertaking a survey among the health managers from the 39 health facilities in the 19 counties to ascertain the healthcare leadership challenges and explore factors that enable knowledge transfer and sustainability at workplace.

3.3.5: Qualitative Design

In this study qualitative analysis design has been adopted. The solution was considered constructive, since; a) the questions of why, how and in what way can be answered? (Wang, 2011), b) quantitative approaches aim to assess whether impacts have occurred, but are constrained in describing why they have occurred; c) qualitative methods may provide a wealth of information and allow a grounded study of the underlying causes of the results, d) participants are programmed to consider system mechanisms, external factors and individual actions to give participants an insight into how participants view the intervention project and how it impacts them and, e) qualitative analysis is used for characterizing and learning from research aspects. Unlike quantitative qualitative research, qualitative research consists of an inquiry focused on the seeking for answers to questions, systematic use is made of results not previously established but relevant outside the study's immediate boundaries (Wang, 2011).

Qualitative study is of crucial significance in gathering comprehensive cultural knowledge about individual peoples ' values, opinions, behaviors and social contexts. The design of the analysis in qualitative research consists of data collection and research questions, which are tailored to what is learned (Wang, 2011). The approaches are open-ended, based on semi-structured interviews in an individual or group setting and feedback from interviewees (Snowden & Martin, 2011). It is therefore possible to combine both the qualitative and quantitative approaches in such a way that and build on the strengths of the other is one of the assessment challenges. For instance, qualitative data can be used to help evaluate the quantitative study design, including survey and sample design, and can help gage system process activity and recommend enhancements to improve performance.

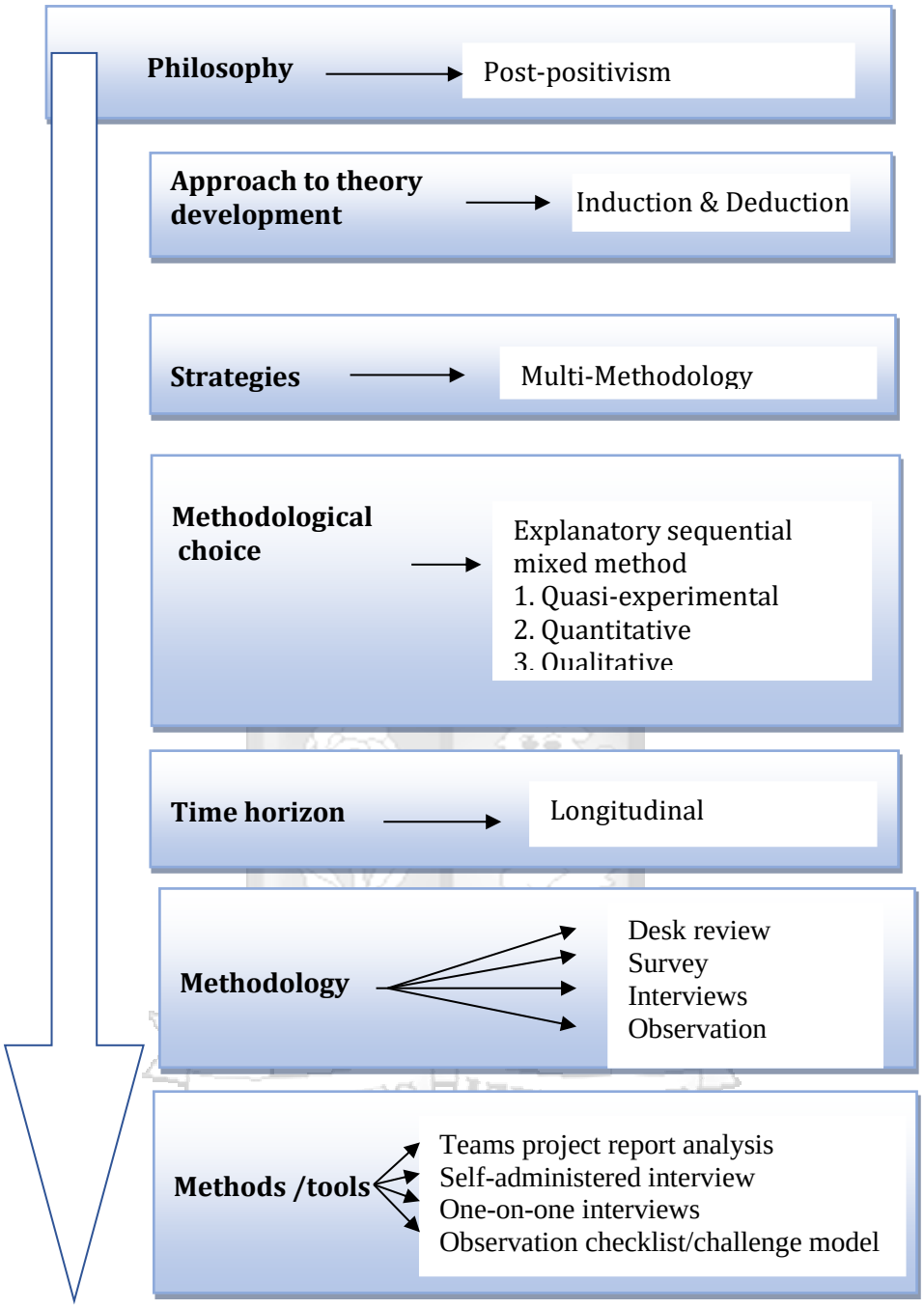

Figure 3.1: Illustration of the Overall Study (Source: adopted from Ebrahim, 2018)

3.3.6: Research Design Summary Storyboard

Table 3.1: Study Objective and Analytical Approaches

Research Questions	Research Design	Data sources	Analytical approach Manuscript	
1. How has the leadership training enabled health managers identify and address the priority institutional improvement projects?	Mixed Methods Interactive or equal status design	**Desk review (primary data)** - Program curriculum, baseline reports, team's priority projects challenge models, module and end-line evaluation reports. **Desk review secondary data** - Program brochure, success stories publications, program annual reports. **Interviews-** In-depth (39 respondents). - Closed-ended questionnaires (39 respondents).	- Descriptive analysis - Thematic analysis	1
2. What is the implementation and sustainability status of the institutional improvement projects for the selected county facilities between the years 2010-2016?	Mixed Methods Quantitatively driven approach	-Completed challenge Model and DMR -Experience sharing presentation and report -Institutional and departmental registers and reports. -Closed-ended questionnaires	Descriptive analysis	2
3. What factors could have facilitated or hindered the implementation of the institutional improvement projects following the leadership training?	Mixed Methods Qualitatively driven approach	- Closed-ended questionnaires - In-depth interviews 39 key informants from case projects and control team.	- Thematic analysis - Descriptive analysis	3
4. How has the leadership training impacted on the implementation of the priority institutional improvement projects as compared to non-trained teams within the same County?	Quasi-experimental time series design (retrospective approach)	-Completed challenge Model (Baseline, endline and post-training) -In-depth interviews 39 for the cases and matching 39 matching health institutions with indicators of interest -KDHS reference data	- Multivariate logistic regression analysis.	4
5. What factors could have influenced the sustainability of the positive results attained after the leadership training in the health institutions?	Mixed Methods Qualitatively driven approach	-Open-ended questionnaire -In-depth interviews 39 key informants from case projects	- Thematic analysis - Descriptive analysis	5

3.4: Population and Sampling

3.4.1: Study Populations

The target population comprised of senior healthcare management teams drawn from 19 counties in Kenya as illustrated in (Figure 3.2), who had undergone the Strathmore leadership training (LeHHO), with matching comparison health institutions from the same counties representing either public, private, faith-based and non-governmental health institutions whose management teams had not undergone the LeHHO training. The counties represented different health system performance challenges in terms of healthcare workers distribution, resource allocation, numbers and types of facilities and their distribution and population demographics.

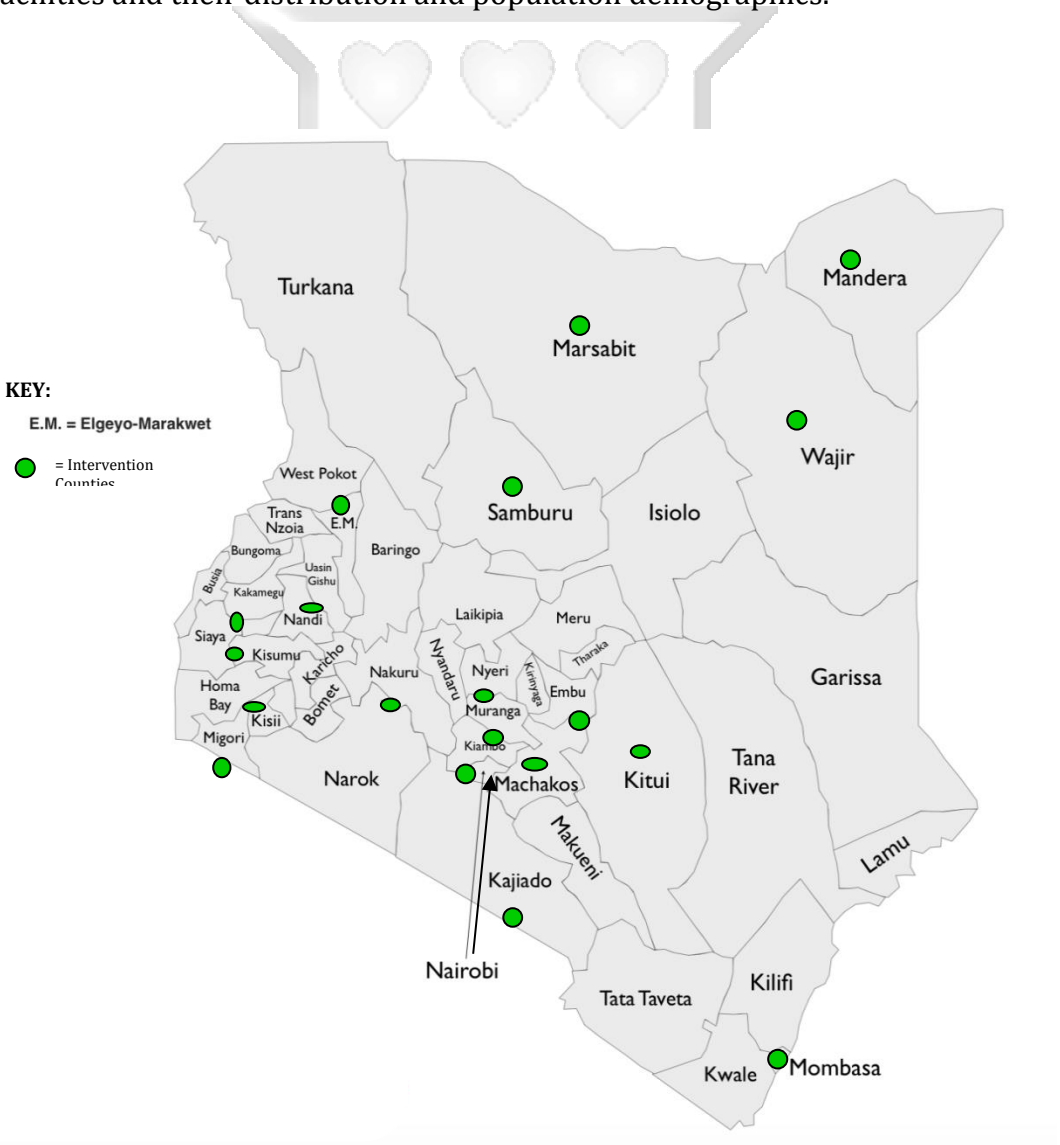

Figure 3.2: Distribution Map of 19 Counties in Kenya (Source: Commission on Revenue Allocation, 2011)

There were total of 165 county health leaders from 19 counties who had been trained through the LeHHO program between the years (2010-2016) as summarized in (Table 3.2). The leaders were trained to acquire and practice leadership knowledge, and skills to be used for health system performance improvement in their respective workplaces. Training participants was divided into groups (cohorts) for purposes of efficient management of classes, with group1 referred to as Cohort one (1), and the last group being Cohort six (6). Training targeted one cohort per year. Participants in each cohort were then clustered into teams, with each team representing, where possible, participants from the same County of health institution.

During the training, the 165 participants were clustered into 52 institutional health system performance improvement project-based teams. Each team had identified a project and committed to implementing an institutional the project as a catalyst towards improving the health system performance as informed by their county or institutional strategic plans. They had identified a desired measurable result (DMR) which was SMART (Specific; Measurable; Achievable; Realistic and Time Bound) as the output from successful implementation of the project. Out of the 52 projects, 39 were chosen as described in section 3.3.3 below for purposes of this study.

Table 3.2: Leadership Participant's from LeHHO Program Cohort (1- 6).

Group	*Year*	*Public Sector*	*Private Sector*	*Faith Based & NGO*	*Total*
Cohort 1	(2010-2011)	12	2	1	15
Cohort 2	(2011-2012)	22	-	9	31
Cohort 3	(2012-2013)	30	1	-	31
Cohort 4	(2013-2014)	25	1	9	35
Cohort 5	(2014-2015)	17	7	1	32
Cohort 6	(2015-2016)	11	6	1	21
Graduates by 2016		**117**	**17**	**31**	**165**

Source: Strathmore Business School (IHM) Executive Education Program Report (2016).

3.4.2: Sampling Criteria

For sampling, three criteria informed the case project-teams selection. First, it was ensured that the teams were a good representation for the public, private and faith-based health facilities within the 19 counties in Kenya. Second, the teams had identified and started the implementation and documented priority project progress. Third, there was at least one or more trained team member still working in the same organization post-training. Within each of the facility teams, the units of analysis forming the basis of data gathering were the project team leaders or team representatives from the project teams. Interviews were undertaken, to gain an in-depth understanding of participant's perspectives and experiences on knowledge transfer at their facilities, as an institutional performance improvement initiative.

The study participants were identified through the training institutional projects team reports retrieved from the Strathmore programs shared files. All the project-team leaders and representatives were sent letters via email as an initial invitation to participate in the study. For "control" facilities, sampling criteria included being located in the same county and broadly of similar size, and not having any teams that had undergone the LeHHO leadership training or an equivalent training during the same period of interest.

3.4.2.1: Inclusion Criteria for Participants in the Study

Leading High-Performing Healthcare organizations Program (LEHHO) alumni who had received a letter of invitation to participate (Annex 1) and consented to participate (Annex 2) and the neighboring control facilities' managers within the same county who did not attend LEHHO program.

3.4.2.2: Exclusion Criteria for Participants in this Study

Alumni of other Strathmore University Business School healthcare executive education program and County health institutions where alumni were posted to control group institutions post-training.

3.4.3: Sample Size

The appropriate sample was established through the proportionate stratified random sampling technique. The target population was health care managers affiliated with the 52 project-based teams drawn from three (3) strata namely public, private and faith-based health facilities (Table 3.3). The Yamane model was used to determine the study's sample size from the target population (Yamane, 1967). It has a confidence level of 92%.

The Yamane model (1967)

$$n_s = \frac{N}{\{1+N(e^2)\}}$$

Where:

n_s -Sample size

N -Population size

e -Precision level (at 0.92 confidence interval, e=0.08)

Given N= 52, then;

$$n_s = \frac{52}{\{1+52(0.08^2)\}}$$

$$n_s = \frac{52}{\{1.3328\}}$$

n_s = 39 participants

Table 3.3: Proportionate Stratified Sampling

Stratum	**Population N**	**(b) is % (proportion) of N (52)**	**(c) Sample size (b/100*** n_s (39)
Public health facility teams	31	59.6	23
Faith-based health facility teams	14	26.9	10
Private health facility teams	7	13.4	6
Total	**52**	**100%**	**39**

Source: Survey Data (2018)

3.4.4: Matching the Intervention and Comparisons Teams

The trained teams were self-selected based upon interest in participating in the LeHHO intervention. In the absence of random assignment, intervention health facilities were matched with comparison health facilities that did not receive the intervention. The matching of health facilities was done retrospectively by an independent research manager who did not have prior knowledge to the intervention. The intervention facilities were non-randomly matched with health facilities within the same County. The matching used a multiple criteria approach included the type of facility, using categories established by the government, geography physical location and facility size. Supplementary matching criteria were type of facility, using categories established by the government HMIS starting from private to referral hospitals).

Even though the matching of private and faith-based health facilities adhered to the laid criteria, there was a challenge, in matching the public health facilities due to the complexity in the organization of health services in Kenya under a devolved system. It was not possible to match some public health institutions performing centralized functions such as the regulatory bodies and Ministry of Health. However, the data collected were very vital in comparing whether there was a notable significant improvement in the selected indicators not only within the same institution over time but also when compared with other health facilities which are informed by the same Country Strategic Plan. A total of 32 intervention facilities were successfully matched, and hence the seven unmatched institutions were filtered out during impact analysis. Additional matching criteria were type of facility, using categories established by the government. Table 3.4 shows the number and health systems performance indicators of interest in form of desirable measurable results for both intervention teams and matched comparisons.

3.4.5: Institutional Improvement Projects

The study compared outcomes of team's institutional improvement projects for the LeHHO program (intervention) participants against the comparison groups (control) within the same County setting that did not participate in the program. The outcome of interest encompassed measures of a key indicators addressed by each of 39 intervention teams Table 3.5. The sampling unit for the research was

the institutional project while the sample respondents were the team leaders representing each project teams. Since the training did not cover the entire counties, nor all the workers within a given county facility a comparison team consisting of 32 comparison facilities were non-randomly selected and paired against the case institutional projects within the same county totalling to 71 facilities. Measurements of health system performance indicators were taken from both intervention and comparison groups at three time periods: before the LeHHO program as (baseline), nine months later at the end of the LeHHO program (endline), and approximately 24-60 months after the LeHHO ended to assess if the results were sustained (post intervention). Table 3.4 presents summary of the 39 institutional improvement projects for the intervention and comparison health facilities.

Table 3.4: Institutional Improvement Projects (39) from the Public (PU), Private (PR)And Faith-Based (FB)

Intervention Institutions (Trained) (N=39_	Control Institutions (Non-Trained) (N=32)	Project's Desired Measurable Result (DMR) set out to achieve by the end of the training	Health Systems (WHO-Pillar)	Indicators Measured
Ahero County Hospital (PU)	Nyandiwa hospital (PU)	Increase the antenatal 4th visit by pregnant women from 69% - 75% by 31st December 2016	Service Delivery	No. of pregnant women attending 4th visit
Mombasa County Hospital (PU)	Tudor district hospital (PU)	Have a fully automated inventory management system for pharmaceuticals, non -pharmaceuticals, kitchen and x-ray departments at CPGH by December 31st, 2013	Health information system	No. of Fully automation of the selected departments and utilization rate
Elgeyo Marakwet County Hospital (PU)	Chebyiemit hospital (PU)	Have functional theatres and laboratories in Elgeyo Marakwet County Hospital in place by July 28th, 2014 and, increased skilled deliveries from 185 to 200 per month.	Service Delivery	No. of skilled deliveries
Embu County Hospital (PU)	Consolata hospital (FB)	Develop and operationalize the procurement standard operating procedures (SOP)s by 15th July 2014	Leadership and Governance	100% complete Procurement SOP and training on utilization
JOORTH/Kisumu County (PU)	Homabay hospital (PU)	Increase skilled deliveries from 240 to 350 per month by 30th November 2014.	Service delivery	No. of skilled deliveries
Kakamega County Hospital (PU)	Jumuia hospitals (PU)	Reduce the average length of hospital stay is reduced from 9 days to 5 days by 30th November 2013.	Service delivery	No. of hospital days of stay
KEMSA (PU)	-	Reduce order turn-around time for order processing from the current 10 days to 5 days by the end of September 2012.	Service delivery	No. days for processing orders

Intervention Institutions (Trained)	Control Institutions (Non-Trained)	Project's Desired Measurable Result (DMR) set out to achieve by the end of the training	Health Systems (WHO- Pillar]	Indicators Measured
Kenya Medical Training College Bungoma (PU)	-	Equip KMTC Bungoma and Msambweni with two Skills-labs complete with models and materials for effective training of nurses by 31st December 2011.	Human resources	No. of complete skills-labs installed
Kenya Medical Training College Nairobi (PU)	The Nairobi Women's hospital (PR)	KMTC candidates to receive exam results within 24 hours after release by 28th March 2012.	Health information system	100% complete automation of exam results dissemination
Kenyatta National Hospital (PU)	Mbagathi Hospital (PU)	Improve the turn-around time at Accident and Emergency department at KNH from 4-2 hours by 30th November 2013.	Service delivery	No. of hours spent by patients at accident and emergency
Machakos County Hospital (PU)	Kathiani district hospital (PU)	Reduce the number of decisions being referred by the Medical Superintendents of County Hospitals to the Executive from 100% to 26% by 31st October 2015.	Leadership and governance	No. of referral decisions making
Mandera Hospital (PU)	Takaba district hospital (PU?)	Increasing the number of deliveries under skilled attendance from 150 to 170 per month in the next five months (by 30th November 2015).	Service delivery	No. of skilled deliveries
Maralal sub-county Hospital (PU)	Maralal medical hospital (PU)	Increase skilled deliveries from 37 to 50 per month by 30th November 2015.	Service delivery	No. of skilled deliveries
Ministry of Health & Ophthalmology (PU)	-	Explicit communication guidelines within the health sector. Communication between National and County governments by 30th November 2014.	Leadership and governance	100% completed guideline and training of stakeholders
Medical Practitioners and Dentist Board (PU)	-	Develop and operationalize a module for printing of annual licenses and certificates for practitioners and health institutions by 10th September 2012.	Health information system	Complete automation and printing of licenses

Intervention Institutions (Trained)	Control Institutions (Non-Trained)	Project's Desired Measurable Result (DMR) set out to achieve by the end of the training	Health Systems (WHO- Pillar]	Indicators Measured
Nairobi Health Management Board (PU)	Imara health center (PU)	Begin providing comprehensive care services at Mukuru-Kwa-Njenga Health Center in Nairobi by September 2012.	Service delivery	100% equipped and utilized health facility providing comprehensive care services
Nairobi University (PU)	Kenyatta University (PU	Accuracy and completion from 60- 90% of prospective patient records by the end of July 2014.	Health information system	%. of accuracy and completion of patient records
Nakuru County Hospital (PU)	Nakuru medical hospital (PU)	Client satisfaction increased by 7% from the current 83% to 90% by 31st October 2013.	Service delivery	%. Of client satisfaction
Nyeri County Hospital (PU)	Mukurweini (PU)	Pilot on Electronic medical records of inpatients in 2 wards (1 high and 1 low patient turnover ward) in Nyeri PGH by 31st October 2013.	Health information system	100% automation of electronic medical records and utilization in the inpatient for selected wards
Pharmacy and Poisons Board (PU)	Clinical Officers Council (PU)	Develop a computer system that will reduce data access time from one month to one minute by 30th September 2012.	Health information system	100% installation and utilization of electronic data access
CHS: Tegemeza CDC funded (FB)	Elizabeth Grazer foundation (FB)	Develop and implement quality assurance manual for operations by end of October 2015	Leadership and governance	100% completed quality assurance manual and staff trained
Christian Health Association of Kenya (FB)	-	Have a process for collecting and analyzing staff exit data by December 2011	Human resources	100% implementation of staff exit data collection

Intervention Institutions (Trained)	Control Institutions (Non-Trained)	Project's Desired Measurable Result (DMR) set out to achieve by the end of the training	Health Systems (WHO- Pillar)	Indicators Measured
Kenya Episcopal Conference (FB)	-	25 Diocese Health Coordinators in place & 25 Diocese Health Coordinators trained in DHIS 2 by 30th December 2011.	Human resources	No of health coordinator trained
Kijabe Mission Hospital (FB)	Oasis Mission hospital (FB)	Full laboratory automation in Kijabe Mission Hospital by September 2014 and have it accredited by June 2017.	Information system	100% complete automation of the laboratory and staff trained
Tenwek Mission Hospital (FB)	Jamaa Mission hospital (FB)	Increase debt collection by 10% from the current 68% to 78% by end of November 2013	Health Finance	10% increase in debt collection
MEDS (FB)	-	Achieve over 90% of clients' orders processed within 2 days in light of the existing challenges, by 30th December 2011.	Medical products and technology	No. of order processing days
Mewa Hospital (FB)	St. Luke hospital (FB)	Hospital information system in place and staff trained by 30th June 2014.	Health information system	100% automation of the entire hospital and staff trained
Sabatia Eye Hospital (FB)	Coptic hospital Vihiga (FB)	Increase bed capacity by 20 beds by 30th August 2014.	Service delivery	No. of beds at inpatient
Supkem (FB)	Kenya muslim charitable society (FB)	Develop and Disseminate Governance Guidelines to 20 Muslim Owned Health Facilities to sustain continuous progress by 30th October 2014.	Leadership and governance	100% complete and disseminated governance guideline to facilities
Tawfig Hospital (FB)	Oasis Medical Centre (FB)	Develop and implement human resource development strategy manual	Human resources	100% completed board manual and sensitization of the relevant workforce

Intervention Institutions (Trained)	Control Institutions (Non-Trained)	Project's Desired Measurable Result (DMR) set out to achieve by the end of the training	Health Systems (WHO- Pillar)	Indicators Measured
Fountain Healthcare (PR)	Hope World Widen (PR)	Develop and implement Board Charter and implement it by 30th October 2015.	Leadership and Governance	100% completed board manual and sensitization of board members
Karen Hospital (PR)	Aga-Khan Nairobi (PR)	Reduce waiting time at the Pediatric unit from 3-4 hours to 1½ hours.	Service Delivery	No. of waiting hours at the pediatric unit
Mariakani Hospital Nairobi (PR)	South B hospital (PR)	Fully automated and operationalized outpatient records by August 31st, 2014.	Health information system	100% automation of outpatient records and training
Nairobi Women's Hospital (PR)	Avenue Hospital (PR)	Increase growth in outpatient numbers from 250 patients per day to 350 patients per day (24% growth) by October 31st, 2015.	Service delivery	No. of outpatients per day
Scandinavian Care AB (PR)	Texas Cancer Centern (PR)	Establish cancer centers in developing markets operating to Scandinavian standards by 30th November 2014.	Service delivery	No. of newly established cancer center

Key

CPGH= Coast Provincial General Hospital
DHIS= District Health Information System
JOOTRH= Jaramogi Oginga Odinga Teaching and Referral Hospital
KEMSA= Kenya Medical Supply Authority
KMTC= Kenya Medical Training College
KNH= Kenyatta National Hospital
MEDS= Mission for Essential Medicines Supply
PGH = Provincial General Hospital

Table 3.5: Summary of Health Systems Indicators Assessed

Health System Pillar	Indicators
Service Delivery	No. of pregnant women attending 4th visit No. of skilled deliveries No. of hospital days of stay No. days for processing orders No. of hours spent by patients at accident and emergency No. of days to close complaints 100% equipped and utilized health facility providing comprehensive care services %. of client satisfaction No. of beds at inpatient %. of quality scores of interest and accreditation No. of waiting hours at the pediatric unit No. of outpatients per day No. of newly established cancer center %. of accuracy and completion of patient records
Leadership and Governance	100% complete procurement SOP and training on utilization No. of referral decision making 100% completed governance guideline and training of stakeholders 100% completed quality assurance manual and staff trained 100% complete and disseminated governance guideline to facilities 100% completed board manual and sensitization of board members
Health information system	No. of fully automated departments and utilization rate 100% complete automation of exam results dissemination 100% complete automation and printing of doctor's licenses 100% automation and utilization of electronic medical records in the inpatient for selected wards 100% installation and utilization of electronic data access 100% complete automation of the laboratory and staff trained 100% automation of the entire hospital and staff trained 100% automation of outpatient records and training
Medical products and technology	100% complete automation of the pharmacy department and training on utilization 100% complete model of rational drug use in all 47 counties No. of order processing days
Human resources	No. of complete skills-labs installed 100% implementation of staff exit data collection No. of health coordinator trained 100% completed board manual and sensitization
Finance	10% increase in debt collection

3.5: Data Collection Methods

3.5.1: Data Sources

The study involved two main phases of data collection. Phase one focused on the intervention teams, while phase was the comparison teams. Both the primary as well as secondary data were utilized in the study. A questionnaire, in- interview guide and observation guide were used to collect the primary data. The questionnaires (Annex 3) comprised of closed-ended questions which sought to provide more structured responses as a snapshot of the study's' tangible outcomes. The in-depth interview questions (Annex 4) explored additional and in-depth information that is not captured in the close-ended questions. Observation checklist using the challenge model (Annex 5) and action plan was used to ascertain some of the project tangible outcome results.

Data for intervention teams was done between August and December 2018, and their main sources of study data were questionnaires and semi-structured formal interviews. In the first phase, desktop review was conducted on the trained team to gather data for the projects baseline and endline indicators. Documentation relating to the project including the teams action plans and end of training experience sharing presentations were analysed. The secondary data sources included program brochure, success stories publications, annual reports, and Strathmore University Business School and Management Sciences for Health website documents. This was followed with administration of questionnaires to the trained teams regarding to their project's implementation journey post-training. Next, follow-up telephone calls were made to confirm participation and then, book interview appointments for those who had expressed willingness to contribute to the study.

The researcher then conducted field interviews (September to December 2018) in the 39 health facilities. The focus was the institutional improvement projects implemented by teams during the LeHHO program training. Data collection during this phase involved physical observation of the institutional improvement projects. An observation grid developed from the team's challenge models and action plans were used to verify the 'current' status of the projects. Some of the observed data included infrastructure, guidelines and manuals, records, implemented systems. The process entailed the recorded and transcribed face-to-face interviews with 39 project team leaders. The interview questions focused on; the current status of their projects in comparison with baseline and endline indicators, and factors that might have influenced the failure and successfully implementation and sustainability of the projects. During these meetings with the project teams or representatives, the researcher observed the physical status of projects and teams report on their implementation plan against the endline report.

Data for comparison areas were collected in October 2018 by the principal investigator with assistance from the National and County HMIS officers with confirmation of comparison facilities key informants for the same three time periods of the study (baseline, endline, and postline). The HMIS Officers extracted data from service delivery registers for the health facilities of interest for the three time periods of the study. The remaining unavailable data in the HMIS were collected through telephone interviews with the health managers in the comparison health facilities. A total of 17 (44%) of the intervention teams had quantifiable service delivery indicators measured in the Government of Kenya Health Management Information System (HMIS) for which comparison data could be collected for health sector indicators and SOPs Manual (Ministry of Health, 2017). The time series data on changes in project indicators for intervention teams were compared with data in the same indicators in the HMIS and from the interviews for the comparison facilities.

3.5.2: Description of Questionnaire

In the study, data was collected via a questionnaire method as part of the data collection methods. The questions were divided into five parts to answer the five research questions explicitly proposed in the study. The first segment consisted of demographic questions. The second segment comprised of questions on leadership priority project desired measurable result (DMR) for the baseline, endline and at the post-training period. The answers to the segment provided answers to the second research question "*What is the implementation and sustainability status of the institutional improvement projects for the selected county facilities between the years 2010-2016?"* and the fourth research question regarding the and impact of the institutional improvement projects on health systems performance raised in the first chapter *" How has the leadership training impacted on the implementation of the priority institutional improvement projects as compared to non-trained teams within the same County?"*

The third section had ten questions on the role of coaching on improvement of organizational priority challenge projects; the fourth section had questions that would determine the role of work climate on application of learned knowledge at the workplace using a twelve-questions Work Climate Assessment (WCA) tool (Management Sciences for Health, 2007). The fifth section consisted of questions about factors affecting knowledge transfer; the Learning Transfer System Inventory (LTSI) tool with sixteen was used (Chatterjee et al., 2018). The responses from section three, four and five are related to the research question three "*What factors contributed to the achievement or non-achievement priority institutional improvement projects Desired Measurable Results (DMR) at the workplace*?" The fifth section consisted of questions on factors that influence sustainability of transferred knowledge at the work environment using the leadership transfer sustainability tool consisting of four questions.

The responses towards this section would give answers to the research question "What factors influenced the sustainability of the attained results across different health system contexts in the selected counties?" Based on previous research, the questionnaires used for this analysis were drawn from the literature review. The survey questionnaire has been used as the key instrument for collecting data, as it brings many benefits; "a) the questionnaire have potential encouraging the disclosure of information and remove errors that arise because of the bias of the respondents, b) it is the most effective and fair way to collect data compared to telephone or group interviews, because respondents can answer questions without revealing their identity and, c) The questionnaire can be answered without pressure, at the ease of the respondents" (Megel & Heermann, 1994).

3.5.3: Description of Interview Guide

In order to gather the qualitative data for the research question one, three and five, in-depth interview guides were developed with semi-structured questions (Annex 4). The qualitative data were derived from the 39 case health facility teams who were purposively sampled to include; 23 public, 10 faith-based and six privates identified through the LeHHO program 2011-2016 program reports.

3.5.3.1: Research Question One

"How has the leadership training enabled health managers identify and address the priority institutional improvement projects?"

This section consisted of semi structured questions on; a) healthcare leadership challenges, b) the role of LeHHO program in enabling participants face these challenges, c) the nature of the institutional improvement priority challenge selected and the consequences of not addressing the challenge and, d) participants proposed sustainable solutions for tackling related challenges at the work place (Annex 6).

3.5.3.2: Research Question Three

"What factors could have facilitated or hindered the implementation of the institutional improvement projects following the leadership?"

For this research question, 'knowledge transfer' was described as "the extent of successfully implemented priority projects and realized project's indicators goals; with the aim of improving health systems performance in different counties in Kenya". The responses to questions in this section (Annex 4) gave additional answers to the research question sub-question: "What factors fostered or impeded knowledge transferability on the implementation of the prioritized projects at the workplace? and the sub-question "What are the programs' alumni recommended contextual knowledge transfer strategies for enhancing knowledge transfer during and after the training?" Based on the narrative reports from the 39 team-based projects, 33 of the 39 projects were successfully implemented following the LeHHO training, as defined by the team's challenge goal indicator set as a baseline at the beginning of the training.

The project deliverables were defined by tangible assignments or products output required of project teams with the intention of removing key performance bottlenecks in their facilities through ownership and accountability. Examples of the projects desired measurable results (DMR) goals prioritized by the teams are: *a) have functional theatres and laboratories in Y County Hospital in place by July 28th, 2014 and increase skilled deliveries from 185 to 200 per month and, b) have a fully automated laboratory in X Mission Hospital by September 2014 and have it accredited by June 2015).* The teams were expected to record the project desired measurable result in a challenge model format which indicates the 'current situation' and the 'expected outcome' in nine-month time. The identified project's indicators of interest were recorded in an action plan and monitored throughout the training period. Project teams were expected to present their projects progress to the rest of the class at every module. The presentation session enabled participants to stay committed and accountable to the project, but at the same time, they receive feedback from other

healthcare managers. The final project results were presented during the experience sharing workshop, attended by diverse healthcare stakeholders.

The research questionnaire (Annex 4) was structured to start with introductory general questions such as participant's current responsibilities and their general impression and experiences, during and after the training. The interviews then progressed to more mapped questions and probes on the implementation status of the projects post-training. The probes questions focused more on factors which could have led to success or failure in the implementation of the projects at the workplace. The interviewer also sought information on work-environment specific enablers and barriers of knowledge transfer, and how these factors could be reinforced or mitigated for better results. We specifically focused on their experiences during project implementation, which consequently presented opportunities for immediate knowledge application and linked classroom with the work environment challenges.

To mitigate potential bias and ensure consistency during the interview, the interview questionnaire was piloted with four project teams who were not included in the study sample. The exercise was done jointly by the principal investigator and a research assistant. The selection of the research assistant was not only informed by her technical expertise but also, we ensured she had no prior knowledge of the program or interaction with the program alumni. In total, 39 in-depth face-to-face interviews were conducted. Again, the first four interviews were jointly undertaken by the principal investigator and the research assistant at the respondent's health facilities, and rest (35 interviews) were undertaken singly by the research assistant. Each interview session lasted between 45 minutes to 75 minutes with a mean of 46 minutes. The interviews were recorded using portable recorders and supplementary notes were taken during the interview (Gillham, 2005). Daily debrief was done by AM and TC to monitor any emerging issues or concerns that needed urgent attention.

3.5.3.3: Research Question Five

"What factors could have influenced the sustainability of the positive results attained after the leadership training in the health institutions?"

For this research question, 33 respondents from the (20 public, 9 faith-based and 4 private) health facilities who had successfully implemented their institutional improvement projects as reported by Chelagat and colleagues (Chelagat et al., 2019), participated in the study. The results of the study revealed that the implementation success rate was 85% (Chelagat et al., 2019). This implies that 33 out of the 39 projects prioritized were successfully implemented as a result of LeHHO training output. All the project-team leaders and representatives were sent letters via email as an initial invitation to participate in the study. Follow-up telephone calls were made to confirm participation and book interview appointments for those who had expressed willingness to contribute to the study. Interviews were conducted using a semi-structured interview guide between August and December 2018.

For this section, the researcher combined two different methods; the sustainability analysis process (SAP) approach was adopted and combined it with a process analysis method (PAM) to map out the team's project sustainability status summary. The process consists of three stages; a) describe each team's priority challenge desired measurable result, b) validate the current situation prior to the project implementation (baseline), c) confirm the project reported indicators at the end of the 9-month leadership training (end-line). The process output was a project matrix with the goal of the project, stated as the 'desired measurable result', the baseline and end-line indicators per health facility type (public, private & faith-based).

The second stage of sustainability analysis consisted of identifying the existence of non-declined team's project indicators over time (post-line). This information was collected through in-depth interviews (Annex 4) and physical observation of the project's outputs. In-depth interviews and observations contributed to a better understanding of participant's perspectives and experiences and the relationship

between the sustainability of the results and the contextual factors that influence sustainability of the institutional performance improvement initiative. A project is categorized as successfully implemented when the project-based teams, implemented the action plan activities and the Desired Measurable Result (DMR) agreed upon at the beginning of the training was achieved by the end of the 9-month leadership training and is documented in the project report against the baseline indicators. Sustainability occurs when the positive implementation results are maintained 2-5 years post-training.

A qualitative design was considered ideal for studying sustainability outcomes because in-depth interviews provide insight into why some projects were sustained while others were not and promote understanding on differential processes occurring across context. A structured guide for key informant interviews starting with introductory general questions and a checklist inform of a Challenge Model and project action plan (Annex 5) were used to observe the indicators of interest over time. The guide and checklists were pilot-tested through cognitive interviewing as suggested by Collins and revised as needed prior to the study (Collins, 2003). Participants were asked about their role and experiences in implementing maintaining or scaling-up the priority challenge projects into their facility operation, and their opinion on sustainability drivers and inhibitors in their context. The interviewers explored additional information on how these factors could be reinforced or mitigated for better results. The researcher specifically focused on their experiences during project implementation, which consequently presented opportunities for immediate knowledge application and linked class with the work environment challenges.

3.5.4: Measuring Instrument

The Likert scale tests both positive and negative answers to survey questions, hence referred as a bipolar scaling method (Rogers, 2007). It is very common and was commonly used by many researchers to assess participants ' perceptions and attitudes, since the approach is simple to use. The Likert scale comes under a simple

ordinary standard of measurement since the survey participants' responses have a ranking order, which is calculated as a cumulative number of Likert items ' responses on the Likert scale. The answers can be depicted in various graphical charts which also include bar charts (Rogers, 2007).

A Likert-type scale assumes that the experiment rate is linear, from strongly agree to disagree or above expectation to below expectation and supposition that attitudes can be assessed. Participants are offered pre-coded answers are neutral and neither agree nor disagree (Brown, 1988). For this research, all the survey questions were measured by using the three-level Likert scale, but unique to every survey question section ranging from: (below expectation, above expectation and don't know); (low, medium and high); and (least important, important, and very important). Using a three-point Likert scale (Annex 3), the participants to were enquired to rate and comment on the questionnaire. Question was designed to rate the coaching role on achievement of organizational improvement project, work climate, conditions affecting knowledge transfer, and factors influencing sustainability of achieved results at the work environment. Each question was calculated based on the respective score. The median, mode and percentage of each question was used as a criterion for assessing the research questions.

3.6: Data Analysis

Completed questionnaires were first crossed checked and edited for completeness and consistency then captured electronically and the quantitative information collected was entered into SPSS 20. A two steps statistical analysis was performed using; a) descriptive statistics analysis, b) linear regression and t-test and, c) impact were calculated using means and mean differences (difference in mean differences). Descriptive statistics analysis such as mean, standard deviations and frequencies were derived from the baseline, endline and posttest measure of the priority project indicators for the treatment and control group.

The second step was an examination of the impact of leadership development training on the selected projects' health systems performance indicators using the t-test and linear regression. It was hypothesized that undertaking the leadership development program would be associated with the attainment of the priority project goal. The hypothesis was tested by performing independent sample t-test Comparison of the Baseline and Endline implies in the two categories. The standard bivariate strategy was used to test for differences in the outcome variable (improve health system performance) between the program (treatment) group and the comparison (non-treatment) group at pretest and again at post-test to determine whether the relative statuses of the groups changed. The Chi-square was used to test the relationship between the two variables (training and performance) and its significance was at ($p \leq 0.05$).

For the qualitative data, based on the prior informed consent obtained from the participants, the digitally recorded interviews were transcribed verbatim into word documents as suggested by Gillham, (2005) using NVivo 10. program for coding. The use of theory as an iterative process between data collection and analysis has been applied in this research study. A thematic framework approach to analysis was used to analyse emerging themes in relation to relevant literature and framework (Green, 2013). Braun and Clarke (2006) state that thematic analysis specifically relates to the process of identifying, examining and recording patterns in data sets that are related to a specific research question and describe a specific phenomenon. Thematic analysis was an appropriate methodology to identify key themes and address the research question. Additionally, the approach permits for the analysis of a bulky amount of data from several participants to be analysed and synthesised into a meaningful account. It provides a structured methodology for identifying key themes within a data set and is not overly constrained by aligning with any one epistemological position (Boyatzis, 1998).

The transcripts were clustered to public, private and faith-based facilities, and then analysed separately per health sector. It is important to note that the process itself followed Braun and Clarke's (2006) six phases of thematic analysis. First, each transcript was read independently, and the emerging codes and themes were analysed. Miles et al. (2013) describe Coding as a data condensation task that enables retrieval of most meaningful material inform of codes, which prompts deeper reflection on the data's meanings. Second, coding included reading the original, transcribed, comprehensive data and "what's this about?" in order to determine which parts of the coding structure to apply (Spencer et al., 2003). Even though the initial codes were deductively drawn from the research questions, emerging codes from the iterative transcriptions were drawn inductively through line by line coding. To ease comparison, matrices of all identified codes were generated among the health managers, project type and across the health sectors. Third, data were classified and organised according to emergent key themes and subthemes such as different types of work environment factors. This includes looking for patterns of convergence or divergence and noting similarities and inconsistencies between accounts (Gioia & Hamilton, 2012).

Fourth, reviewing of potential themes in relation to the coded extracts and the entire data set was done in order to generate a thematic „map" of the analysis. Fifth, refining the specifics of each theme, and the overall story the analysis was done in order to generate clear definitions and names for each theme. Lastly, the researcher did selection of vivid, compelling relating back of the analysis to the research question and literature, producing a scholarly report. A summary matrix (Table 4.26) display a vast array of condensed material on knowledge transfer and sustainability information to enable "at-a-glance" format for reflection, verification, conclusion drawing, and other analytic acts (Miles et al., 2013). The summarized matrix further presented a snapshot of a cross-case analysis for the public, private and faith-based health facilities with highlights on similarities and differences across the contexts.

Illustrative quotes representing a range of health manager's views were highlighted to elucidate each theme for reporting. The study findings are presented according to Brien's and colleagues' SRQR guidance for reporting qualitative research (Brien et al., 2014).

3.7: Regression Model

Linear regression and Multibliple regressio were used to test test whether the leadership development training positively influenced the health systems performance.

3.7.1: Linear Regression

The first model was intended to analyze only the impact of the training (independent variable) on performance measures of the health system performance indicators (dependent variable). The general equation of the model will be a multiple regression as stated below;

$$\gamma = c + B_1 X_1 + e_t$$

$$\gamma = improved\ health\ system\ performace\ indicators\ (dependent\ variable)$$

$$X_1 = 1\ for\ trained\ and\ 0\ for\ non-trained\ (independent\ variable)$$

$$c = constant$$

$$B_1 = regression\ coefficient$$

$$e_t = error\ term$$

3.7.2: Multiple Regression Analysis

The relationship between the independent and independent variable could not exclusively be explained thus model 2 introduced an additional independent variable 'baseline health system performance indicator before the training. Thus, from model 1, as mentioned below, as an auxiliary description of the relationship between the independent variables and dependent variable, a multiple regression model was developed. Multiple regression analysis was conducted to determine the effect of training, taking into account the basic data for indicators of concern prior to training.

$$\gamma = c + \beta_1 X_1 + \beta_2 X_2 + e_t$$

$Where\ \gamma = health\ sytstem\ performance\ (dependent\ variable),$

X_1

$= health\ system\ performance\ indicators\ at\ baseline\ (independent\ variable),$

$X_2 = 1\ for\ trained\ and\ 0 for\ non - trained\ (independent\ variables).$

$$c = constant$$

$$\beta_1\ and\ \beta_2 = regression\ coefficients$$

$$e_t = error\ term$$

3.7.3: Impact Analysis

The "impact" is described as the difference in outcome between what was observed with the treatment (the "fact") and what would have been observed in the absence of the treatment (the "counterfactual"). To estimate the impact of the training the following stepwise calculation will be undertaken; a) means and mean differences and b) use of regression method to estimate difference-in-difference (DID) structural model below by (Krueger & Card, 1994; Larson & Hutchinson, 2010). a) Measuring impact using means and mean differences, in other words, the impact is the difference in mean differences as represented in the equation and figure below.

(Impac) = (Mean difference treatment between treatment follow up and) − (Mean difference comparison between follow up and baseline)

Impact = Y^{TF} (D=1) - Y^{CF} (D=0)

Whereby:

Y^{TF} (D=1)

3.8: Research Quality

The foundation of a good research is the trustworthiness (reliability and validity) of the data to make decisions; otherwise a good decision cannot be made (Kimberlin & Winterstein, 2008). According to Christmann & Van Aelst (2006) the reliability and validity of the study is equal to the quality and actuality of its behavior. Kimberlin & Winterstein (2008) note that the key indicator of the quality of a measure is the proper measurement of reliability and validity of the research. Therefore, was imperative to consider the quality of the measures in this research through its reliability and validity. The reliability refers to a measurement that supplies consistent results with equal values (Blumberg et al., 2005). It measures consistency, precision, repeatability, and trustworthiness of a research (Chakrabartty, 2013). In quantitative research, reliability refers to the consistency, stability and repeatability of results, that is, the result of a researcher is considered reliable if consistent results have been obtained in identical situations but different circumstances. But, in qualitative research it is referred to as when a researcher's approach is consistent across different researchers and different projects (Twycross & Shields, 2004).

In this study, Inter-rater reliability done to ascertain the extent to which the way information being collected is being collected in a consistent manner (Keyton et al., 2004). Cronbach alpha was used to evaluate the reliability of the measures of this study and as it was deemed suitable and widely used in social sciences (Nunnally & Bernstein, 1994]. Cronbach alpha is an indicator describing the variance of single items in the data using the equation;

Where: $\alpha = \frac{N.\bar{c}}{\bar{v}+(N-1).\bar{c}}$

N = the number of items.
$\bar{c}$ = average covariance between item-pairs.
$\bar{v}$ = average variance.

In this study, the indicator is used to test the reliability of the inter-items. The suggested minimum value of .70 (Hinkin et al., 1997).

Validity is often defined as the extent to which an instrument measures what it asserts to measure (Blumberg et al., 2005). Validity of a research instrument assesses the extent to which the instrument measures what it is designed to measure (Robson, 2011). Validity of research is an extent at which requirement of scientific research method have been followed during the process of generating research findings. It is a compulsory requirement for all types of studies (Oliver, 2010). In quantitative research validity is the extent to which any measuring instrument measures what it is intended to measure (Thatcher, 2010). But, in qualitative research it is when a researcher uses certain procedures to check for the accuracy of the research findings [Creswell, 2014]. Qualitative research is based on the fact that validity is a matter of trustworthiness, utility, and dependability (Zohrabi, 2013).

Validity can be measured from different angles. External validity is one aspect of validity. This applies to how well a study's findings can be generalized beyond the research sample. Internal validity indicates the causal relationships of the buildings to provide an answer to the research question (Hinkin et al., 1997). Content validity approach was adopted for this study as it is interested in assessing current performance rather than predicting future performance. Content validity therefore refers to the extent to which the questions on the instrument represent all possible questions that could be asked about the content or skill [Creswell, 2005]. The more the scale items represent the domain of the concept being measured, the greater the content validity (Shekaran & Bougie, 2010).

In order to ensure a trustworthy thematic analysis, the researcher addressed Lincoln and Guba's (1985) criteria for evaluating trustworthiness; (i) credibility of the findings based on the research design, subjects and context, (ii) Transferability of the findings in another context, (iii) consistency and replicability od data finding with the same subject or in a similar context and (iv) degree of neutrality or extent to which the findings of the study are shaped by the respondents and not researcher bias, motivation or interests.

To ensure the validity and reliability for this thesis, findings in both the focus groups and interview came from the research questions that were created based on previous found research within the literature review. Tests for validity and reliability that can be carried out as informed by Hussey & Hussey (1997).

3.9: Ethical Considerations

Ethics includes making a judgment on right and bad actions (Kerridge & Lowe, 2005). The approval to carry out the research was obtained from Strathmore University School of Graduate Studies, Institutional Review Board (IRB), Strathmore University Business School (Annex 7) and Ministry of Health at central and country Government by a research license received from NACOSTI (Annex 8) before embarking on data collection. The researcher used five key ethical concepts. This included preventing harm, participants ' privacy, voluntary participation and right of withdrawal, informed consent of the participants, maintaining confidentiality and anonymity of the participants (Saunders et al., 2015). The institutions were sent a formal letter requesting consent for the study and gain their support. The purpose of the study was explained to the participants and the stakeholders, and any direct, indirect benefits and risks involved disclosed to them. Informed consent was obtained from all individuals who participate in the study. Additionally, they were assured that their participation in the study was voluntary and entitled to pull out their participation without consequence (Appendix 5). Confidentiality was assured and information collected will remain kept in locked storage facilities and were assessed by study personnel only when necessary for working on the study. No identifiable data or information will be released to anyone.

3.10: Summary

Multi-methodology is feasible because it offers a more comprehensive view and because the necessity makes very clear demands on a general methodology during the different phases of the study (Brewer and Hunter, 2006; Creamer and Schoonenboom, 2018). Through an examination of a set of literature in detail on multi-methods studies, it is important for researcher to also be reminded that the approach is deemed demanding. However, it is more effective to choose the right tool for the job at hand. Multi-methodology approach lends itself appropriate for this research because it can be used when you want to build from one phase of research to another or one objective builds to the next one. It is crucial for the researcher to first want to explore the data qualitatively to identify help in the development an instrument or to identify concepts/variables to test in a later quantitative study or phase of a single study (Creswell & Clark, 2011). Researchers engage in multi-methods study when they want to construct a quantitatively driven design, a qualitatively driven design, or an interactive/equal-status design. It worth noting that each of methods come with advantages and disadvantages (Öhlén, 2011).

CHAPTER FOUR

RESULTS

4.1: Introduction

The preceding Chapter provided a detailed description of the research methodology used and the rationale behind that choice. The purpose of this Chapter is to present the results from the 39 interviews undertaken with team leaders of healthcare management teams in public, private and faith-based institutions and undertook healthcare leadership development training (LeHHO). The results are presented in two parts: PART ONE presents the research questions, reliability analysis of the instrument, internal consistency, inter-total correlations, descriptive statistics, response rate, diagnostic test, regression, correlation and hypothesis testing, and summary. PART TWO provides the key research findings presented as five sub-studies aligned to the research questions.

PART ONE

4.2: Introduction (Part 1)

In this section, a detailed description of the research questions and a range of data analysis output for the study are presented in ten sub-sections.

4.2.1: Research Questions

The goal of the study was to evaluate the effect of leadership training on performance of the health system in selected Counties in Kenya. Centered on the foundation laid in Chapter one and theoretical and empirical literature examined in Chapter Two, the research questions addressed in this study were: a) Research question **ONE**: *How has the leadership training enabled health managers identify and address the priority institutional improvement projects*? b) Research question **TWO**: *What is the*

implementation and sustainability status of the institutional improvement projects for the selected county facilities between the years 2010-2016? c) Research question **THREE**: *What factors could have facilitated or hindered the implementation of the institutional improvement projects following the leadership training*? d) Research question **FOUR**: *How has the leadership training impacted on the implementation of the priority institutional improvement projects as compared to non-trained teams within the same County? e)* Research question **FIVE**: *What factors could have influenced the sustainability of the positive results attained after the leadership training in the health institutions*?

4.2.2: Reliability Test of the instrument

Reliability is defined as "the degree to which an instrument measures the same way each time it is used under the same conditions with the same subject" (Bryman and Cramer, 2005). The survey questionnaire used four scales in this analysis to assess the constructs proposed in the conceptual framework for research (Figure 2.3) Sustainable leadership development, work climate, learning transfer system inventory, and leadership knowledge transfer sustainability. To ensure constructs meaning are accurately and consistently captured by the measurement scales, calculation of internal consistency and inter-total correlation was done to test the scale reliability as summarized in Table 4.1.

4.2.3: Internal consistency

Internal consistency is defined as "the degree to which responses are consistent across the items (variables) within a single measurement scale" (Kline, 2005). Cronbach's alpha is considered the most common reliability coefficient for estimating internal consistency based on the average inter-item correlation. Cronbach's alpha reliability coefficient generally ranges between 0 and 1 (Bryman & Cramer, 2005). The closer the value is to 1, the greater the internal consistency of the items (variables) in the scale. Cronbach's alpha above 0.70 is therefore widely considered as an acceptable indicator of internal consistency, while values between 0.60 to 0.70

are at the lower limit of acceptability (Bryman & Cramer, 2005; Creswell, 2009; Pallant, 2005).

Table 4.1 provides a Cronbach alpha for the four scales: The impact of Team Coaching in Leadership Development was calculated using 10 questions and the scale had a high internal consistency, as defined by Cronbach's alpha value of 0.86. The second construct Work Climate had 11 items in the scale, also showing fairly low internal consistency with a Cronbach's alpha value of 0.62. Learning Transfer System Inventory had 14 items with the internal consistency of Cronbach's alpha value of 0.82. Finally, Leadership Knowledge Transfer Sustainability which was measured using four items had a Cronbach's alpha value was 0.60 signifying reliability of relatively low internal quality for the sample.

Table 4.1: Reliability Statistics of the Constructs

Construct's Measurement Scale	Cronbach's Alpha	N of Items
Effect of Team Coaching in Leadership Development	0.864	10
Work climate Assessment	0.624	11
Learning Transfer System Inventory	0.821	14
Leadership Transfer Sustainability Tool	0.605	4

While Work Climate and Leadership Transfer Sustainability Tool both had Cronbach's alpha values below 0.70 suggesting lower limit acceptability of internal consistency. It is worth noting that the values of Cronbach alpha are very sensitive to the size of objects or where the data has a multidimensional structure (Bryman & Cramer, 2005; Pallant, 2005). Consequently, the inter-total correlation for the items must be well-thought-out.

4.2.4: Inter-total Correlations

Inter-total correlation is described as "a correlation between a variable and the composite scores of all the variables that form the construct measure" (Nunnally & Bernstein, 1994) Briggs & Cheek (1986) suggest inter-total correlation analysis to purify the measure for reducing excess output of more conceptually definable variables. The results summarized in Tables 4.2 to 4.5 show that the inter-total correlations for all the model constructs were reliable.

Table 4.2: Inter-total Correlation of Effect of Team Coaching in Leadership Development

Variable description (N =10 Items)	Cronbach's Alpha if Item	Cronbach's α	Status
Team Coaching effectiveness in knowledge transfer	0.843		
Coach's ability to relate to the institutional environm	0.837		
Coaching impacting on organizational results	0.861		
Coach's support clarity of priority project	0.843		
Effective of coach support to achieve project goals	0.817	0.860135	Reliable
Effective of challenge model as a guiding tool	0.845		
Coaching impacting on personal life	0.863		
Coaching impacting on an organization	0.844		
Return on investment of coaching session	0.852		
Length of a coaching session	0.858		

*Compared with Cronbach's Alpha of Effect of Team Coaching in Leadership Development.

Table 4.3: Inter-total Correlation of Work Climate

Variable description (N =11 Items)	Cronbach's Alpha if Item Deleted*	Cronbach's α	Status
The job description is accurate	0.623	0.624	Reliable
The organization values my work	0.610		
The organization provides me with adequate tools	0.563		
The organization has good feedback systems	0.585		
We all pay attention to how we are working togethe	0.620		
We have an organizational plan guiding activities	0.656		
All staff understands team members capabilities	0.573		
All staff seek to understand the needs of our clients	0.544		
All staff take pride in our work	0.585		
Our workgroup is known for its quality work.	0.602		
Our workgroup is productive	0.623		

*Compared with Cronbach's Alpha of Work Climate

Table 4.4: Inter-total Correlation of Learning Transfer System Inventory

Variable description (N =14 Items)	Cronbach's Alpha if Item Deleted*	Cronbach's α	Status
Learner readiness	0.817	0.821	Reliable
Performance self-efficacy	0.813		
Motivation to transfer learning persistently	0.816		
Transfer effort-performance expectations	0.795		
The expectation that changes in job performanc	0.822		
Feedback/performance coaching	0.801		
Supervisor/manager support	0.815		
Supervisor sanctions	0.813		
Peer support.	0.800		
Resistance/openness to change	0.833		
Opportunity to use learning	0.805		
Personal capacity for transfer	0.796		
Perceived content validity of training	0.804		
Transfer design of the training	0.796		

*Compared with Cronbach's Alpha of Learning Transfer System Inventory

Table 4.5: Inter-total Correlation of Leadership Knowledge Transfer Sustainability

Variable description (N =4 Items)	Cronbach's Alpha if Item Deleted*	Cronbach's α	Status
Presence of champion (change agent)	0.721	0.605	Reliable
Number of change agents in an organization	0.497		
Alignment of the training to day to day operations	0.441		
Buy-in across the organization's hierarchy	0.388		

*To be compared with Cronbach's Alpha of Leadership Knowledge Transfer Sustainability

4.2.5: Descriptive Analysis

The study response rate, respondents' characteristics and summarized responses for the adopted variables median and mode are presented in this section.

4.2.5.1: Response Rate

The field study was conducted at 39 health facilities housing 39 project teams from the public, private and faith-based organizations in 19 counties in Kenya trained in "LeHHO' program between years (2011-2016). A total of 39 project team leaders were sent a soft copy of the closed-ended questionnaire and they were requested to fill the questionnaires in September 2018. The initial survey response rate was 64%. A follow-up survey prompt was sent to non-respondents, hard copy questionnaires were sent through mailing postage response envelope resulting in a response rate was 100%. On the other hand, the face-to-face interview response rate was 100%. The response rate was therefore considered sufficient to make inferences and draw conclusions from the research data as suggested by Mugenda & Mugenda (2003).

4.2.5.2: Demographic Characteristics of Participants

The demographic characteristics of the respondents who were drawn into the study were analyzed based on gender, age, the highest education level (Table 4.6). In total, 39 respondents filled the questionnaires and participated in the in-depth interviews resulting in a 100% response rate of the purposively sampled study respondents.

Table 4.6: Analysis of Background Information

Item	Category	Frequency (No)	Percentage (%)
Sex	Male	16	41%
	Female	23	59%
Age Category	26-35yrs.	1	10%
	36- 45yrs.	13	33%
	46-55yrs.	19	49%
	>55yrs.	3	8%
Highest Education Level	Bachelor's degree	12	31%
	Master's degree	23	59%
	Doctoral degree	1	3%
	Others	3	8%

Table 4.6 shows a fair gender representation of the survey sample of the LeHHO program alumni. The predominant age range among the research participants is between 46-55 years, an indication that a significant number of the participants are of mature age. This is a representative of LeHHO participants across six cohorts based on the Institute of Healthcare Management report (2011-2016). The age distribution may also suggest the need for emphasizing and institutionalization of coaching and mentorship to ensure leadership is practiced at all levels. A majority (59%) of the participants had a master's degree, consistent with the fact that a majority were adult students who would be expected to have at least tertiary level of education. This also reflects the fact that Kenya's healthcare managers recruitment and promotion practices are based on the attainment of higher educational qualifications.

4.2.5.2: Health Sector Institutional Representation

A total of 39 team-based projects were purposively selected, of which 23 (59%) were from public sector teams, 10 (26%) were from the faith-based and NGO sector, and 6 (15%) were from the private sector (Figure 4.1).

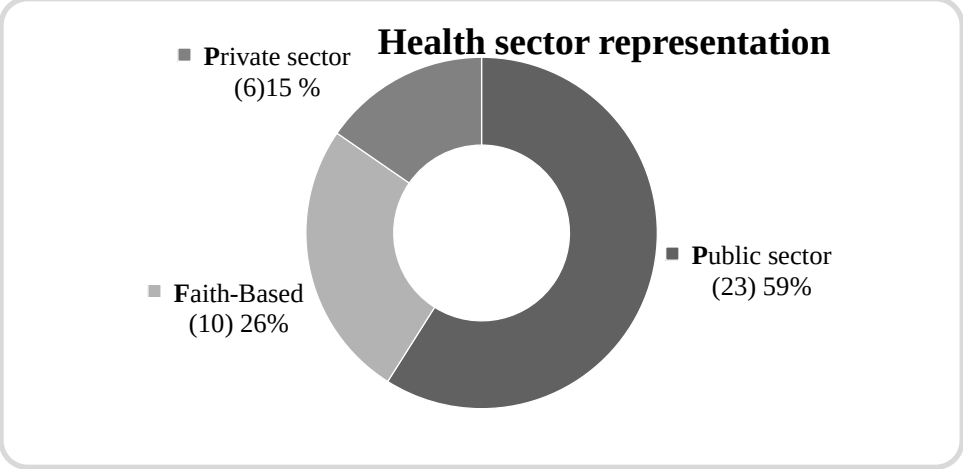

Figure 4.1: Health Sector Representation (Public, Faith-based and Private)

4.2.5.3: Measuring Effectiveness Team Coaching in the Leadership Development Program

Effectiveness of team coaching in leadership development was measured using indicators comprising of coach's effectiveness, the effect of team coaching on the project, personal life and organizational performance. The descriptive statistics indicators are presented in Table 4.7.

Table 4.7: Perceived Effectiveness of Integrating Team Coaching in Leadership Development Training

Effectiveness leadership development & team coaching	N	Median	Mode
Team coaching effectiveness in knowledge transfer	39	3.00	3.00
Coach's ability to relate to the institutional environment	39	3.00	3.00
Coaching impacting on organizational results	39	3.00	3.00
Coach's support clarity of priority project	39	3.00	3.00
Effective of coach support to achieve project goals	39	3.00	3.00
Effective of challenge model tool to project goal	39	3.00	3.00
Coaching impacting on personal life	39	3.00	3.00
Coaching impacting on an organization	39	3.00	3.00
Return on investment of coaching session	39	3.00	3.00
Length of a coaching session	39	2.00	3.00

Table 4.7 presents median and mode score on the 3-point Likert scale adopted for the study approximates to 3.00 which is (above expectations) for nine out of ten of the team coaching effectiveness items. These findings disclosed that there is concurrence amongst respondents that incorporating institutional improvement projects and coaching into leadership training triggers the immediate application of knowledge to the work environment. Length of coaching session however had a median of 2.00 which is (below expectations) on the 3-point Likert scale.

4.2.5.4: Work Climate

Work climate was measured using indicators comprising of perceived work climate and workgroup's quality and productivity. The descriptive statistics for the work climate are presented in Table 4.8.

Table 4.8: Summary of Perceived Work Climate and Workgroup's Quality and Productivity for Different Institutional Teams

Work climate	N	Median	Mode
Work important contribution to organization	39	1.00	1.00
The job description is accurate	39	1.00	1.00
The organization values my work	39	1.00	1.00
The organization provides me with adequate tools	39	1.00	1.00
The organization has good feedback systems	39	1.00	1.00
We all pay attention to how we are working together	39	1.00	1.00
We have an organizational plan guiding activities	39	1.00	1.00
All staff understands each other's capabilities	39	2.00	1.00[a]
All staff seek to understand the needs of our clients	39	1.00	1.00
All staff take pride in our work	39	1.00	1.00
Our workgroup is known for its quality work.	39	1.00	1.00
Our workgroup is productive	39	1.00	1.00

Table 4.8 indicates the median and mode for the 11 out of 12 work-climate items is as 1.00, which is represent 1(agreement) on the 3-point scale, suggesting that the nearly all respondents generally accepted that work-related activities in a healthcare institution. These findings suggest that suggesting that nearly all the respondents agree that their work is important and contributes to the overall vision and purpose of the organizations. However, the item on "all staff understands each other's capabilities' had a lower median of 2 (disagree) on the 3-point scale suggesting that majority of the respondents perceived that not all staff understands each other's capabilities.

4.2.5.5: Knowledge Transfer to Work-environment

Knowledge transfer factor to the work-environment was analyzed using indicators like motivation scale, work environment scales, and ability scales. The descriptive statistics for knowledge transfer to the work-environment are presented in Table 4.9.

Table 4.9: Summary of Perceived Factors Influencing Knowledge Transfer from Class to Work-environment

Knowledge Transfer to work-environment	N	Median	Mode
Learner Readiness	39	3.00	3.00
Performance Self-Efficacy	39	3.00	3.00
Motivation to Transfer learning persistentl	39	3.00	3.00
Transfer Effort-Performance Expectations	39	3.00	3.00
The expectation that changes in job perfor	39	3.00	3.00
Feedback/Performance Coaching	39	3.00	3.00
Supervisor/Manager Support	39	3.00	3.00
Supervisor Sanctions	39	2.00	2.00
Peer Support.	39	3.00	3.00
Resistance/openness to Change	39	2.00	2.00
Opportunity to Use Learning	39	3.00	3.00
Personal Capacity for Transfer	39	3.00	3.00
Perceived Content Validity of training	39	3.00	3.00
Transfer Design of the training	39	3.00	3.00

The median and mode summative answer for 12 out of 15 knowledge transfer factors on the 3-Likert point scale used in the analysis is about 3.00 (high importance), indicating that knowledge transfer to the work environment is very relevant in the healthcare institutions. However, the median and mode for the resistance/openness to change and supervisor sanctions was average 2.00 (important) suggesting that individual responses to the two items was not as highly valued as key knowledge transfer factors in their work environment.

4.2.5.6: Knowledge Transfer Sustainability

Knowledge transfer sustainability at work environment was measured using indicators comprising of the presence of change agents, several change agents in an organization, alignment of training to work daily operations and buy-in across the organizational hierarchy (Table 4.10).

Table 4.10: Summary of Perceived Factors Influencing the Sustainability of Transferred Knowledge at Work environment

Sustainability of transferred knowledge	N	Median	Mode
Presence of champion (change agent)	39	3	3
Number of change agents in an organization	39	3	3
Alignment of the training to day to day operations	39	3	3
Buy-in across the organization's hierarchy	39	3	3

Table 4.10 presents median and mode score for items on the sustainability of knowledge transferred at work environment as 3 (very important) on the Likert 3-point scale adopted for the study. This is an indication that the respondents agreed collectively on sustainability factors (presence of champion, number of change agents, alignment of training to day to day operations and buy-in across the organization's hierarchy); as the most important sustainability factors affecting knowledge transfer sustainability inform of project's indicators.

4.2.6: Diagnostic Tests

"Violations of multiple regression analysis assumptions can lead to undependable levels of confidence and tests of significance" (Chatterjee & Hadi, 2012). The diagnostic test is critical for testing assumptions which are a critical prerequisite for researchers using multiple regression analysis.

4.2.6.1: Sampling Adequacy Test

The Kaiser-Meyer-Olkin measure (KMO) and the Bartlett sphericity test were conducted to determine the research sample adequacy. Observation on the acceptable sampling adequacy threshold degree is 0.5, and the closer the value to 1 the better (Williams, Onsman & Brown, 2012). Bartlett's Test of Sphericity analysis was done to check if the samples are from populations with similar variances. Table 4.11 provides a description of the KMO tests and Bartlett tests.

Table 4.11: Meyer-Olkin Measure (KMO) and Bartlett's Test

Scale	Kaiser-Meyer-Olkin measure (KMO) of Sampling Adequacy	Bartlett's Test of Sphericity		
		Approx. Chi-square	Df	Sig
Team coaching	.767	187.582	45	0.000
Work climate	.575	90.753	66	0.023
Knowledge Transfer	.616	207.322	91	0.000
Organizational sustainability	.602	25.728	6	0.000

The findings in Table 4.11 show sampling adequacy values range from 0.575 and 0. 767, which is within the acceptable sampling adequacy threshold degree value of 0.5-1.0. Bartlett's test of sphericity measures was constant. The significance of the calculated probability below the 0.05 threshold, thus confirms that the research sample was enough for additional analysis.

4.2.6.2: Test of Normality

The Shapiro-Wilk test was used to detect deviations from average due to skewedness or kurtosis, or both, to test normality of data. Shapiro-Wilk test examines whether data is distributed normally against null hypothesis (H0) and whether a normal distribution is not observed by the sample. Its statistic, therefore, ranges from 0 to 1

and with a calculated probability (p-value) < 0.05. The Shapiro-Wilk test results are set out in Table 4.12.

Table 4.12: Shapiro-Will Statistics

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Integrated leadership training	0.234	38	0.000	0.730	38	0.000
Work climate Assessment	0.139	38	0.060	0.910	38	0.005
Learning Transfer System Inventory	0.200	38	0.001	0.905	38	0.004
Leadership Transfer Sustainability	0.236	38	0.000	0.784	38	0.000

a. Lilliefors Significance Correction

Table 4.12 shows that the estimated probability values of the four research variables ranged from 0.000 for comprehensive leadership training to 0.005 for work climate. The estimated probability values were greater than 0.05 and therefore at a confidence point of 95%. Therefore, the sample does not employ natural distribution as proposed by Razali and Wah (2011).

4.2.7: Regression

To address research question four on the effect of leadership growth on the success metrics described in chapter three for different selected health systems. Study hypotheses were tested using regression analysis. In addition, multiple diagnostic tests including sample adequacy, normality, linearity and multicollinearity tests were drawn to assess the sample suitability for correct inferences and conclusions.

4.2.7.1: Results of T-test and Regression

Table 4.13 illustrates the summary results of before and after t-test of differences in the leadership training program within (dependent) pretest and posttest scores between two groups (independent). The independent t-test on pretest scores between two groups indicates that health system performance indicators for five out of six Health System (HS) pillars from the experimental (trained) group was significantly different from the control group before the training. The training had a positive effect on success metrics for HS with posttest performance indicators for three pillars: - service delivery, Leadership and Governance (LG), and Information- showing significant differences between the two groups ($p<.05$). The t-test for dependent samples indicated a difference between pretest and posttest results for service delivery within the experimental group and the control group with a confidence interval of less than .10 ($p < .10$). However, there was no significant difference between pretest and posttest scores for service delivery of the control group.

Table 4.13: T-test Results

	Experimental		**Control**		**Pretest**		**Posttest**	
	t Stat	**P value**	**t Stat**	**P value**	**t Stat**	**P value**	**t Stat**	**P value**
Variable	*t-test (dependent samples)*				*t-test (independent samples)*			
Service delivery	21.2787	0.0035	8.2714	0.0926	55.3436	0.1983	46.2807	0.0257
LG	1.1516	0.0277	-		5.7600	0.9362	3.1174	0.0216
Human resource	(0.6913)	0.1797			(0.5303)	0.4386	(0.5303)	0.1213
Information	2.4047	0.0180			9.1609	0.4822	5.7600	0.0202
Finance	-	-	-	-	-	-	-	-
Medical products	-	-	-	-	-	-	-	-

4.2.7.2: Linear Regression

Two models of regression analysis were used to test whether the leadership development training positively influenced the health systems' performance indicators linked to the implemented institutional improvement projects. The first model was intended to solely examine the impact of the training (independent variable) on health system performance indicators (dependent variable). Table 4.14 depicts the regression results of model 1.

The general equation of the model will be a multiple regression as stated below;

$$\gamma = c + B_1 X_1 + e_t$$

$$\gamma = improved\ health\ system\ performace\ indicators\ (dependent\ variable)$$

$$X_1 = 1\ for\ trained\ and\ 0\ for\ non-trained\ (independent\ variable)$$

$$c = constant$$

$$B_1 = regression\ coefficient$$

$$e_t = error\ term$$

Table 4.14: Regression Statistics

Multiple R	0.41
R Square	0.16
Adjusted R Square	0.15
Standard Error	79.428
Observations	5
	62

ANOVA	*df*	*SS*	*MS*	*F-statistic*	*F-Significance*
Regression	1	74,660.5202	74,660.5202	11.83	0.0011
Residual	60	378,533.0484	6,308.8841		
Total	61	453,193.5685			

	Coefficients	*Standard Error*	*t -Statistic*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	32.9032	14.2658	2.31	0.025	4.3674	61.4390
Training (X_1)	69.4032	20.1749	3.44	0.001	29.0475	109.7589

The accuracy of model 1 is estimated by analysis of variance in terms of F-statistic (p<.05), where F significance (.001) is <.05. This is a confirmation that Model 1 is significant. in addition, we tested p-value for coefficients Y-intercept (.025) and X_1 (.001). The corresponding values were less than (<.05) hence an affirmation that the two factors are statistically significant. The coefficient β_1 (69.4032) is a positive value different from 0, for this reason, it is statistically significant for Model 1. The t-statistic for Y-intercept was tested and t= (2.31) and for X_1= (3.44) with a confidence level less than .05 (p<.05), therefore they are statistically significant. These analyses confirm that, as an end result, the leadership development training had a substantial and verified impact on health system performance indicators based on the selected priority projects. This key finding is further supported by our hypothesis with a confidence level of p <05.

4.2.7.3: Multiple Regression Analysis

The association between the independent and independent variables could not exclusively be explained thus model 2 introduced an additional independent variable 'baseline health system performance indicator before the training. Hence from model 1, a multiple regression model was constructed to further explain the relationship between the independent variables and variable dependent, as described below. Multiple regression analysis was carried out to determine the effect of the preparation, taking into account the of the baseline data for the indicators of interest before the training. Table 4.15 presents a summary of the regression results for model 2.

$$\gamma = c + \beta_1 X_1 + \beta_2 X_2 + e_t$$

$Where\ \gamma = health\ sytstem\ performance\ (dependent\ variable),$

X_1

$= health\ system\ performance\ indicators\ at\ baseline\ (independent\ variable),$

$X_2 = 1\ for\ trained\ and\ 0 for\ non - trained\ (independent\ variables).$

$c = constant$

$\beta_1\ and\ \beta_2 = regression\ coefficients$

$e_t = error\ ter$

Table 4.15: Regression Statistics

Multiple R	0.9163
R Square	0.84
Adjusted R Square	0.84
Standard Error	35.1012
Observations	62.0000

ANOVA

	df	*SS*	*MS*	*F-statistics*	*F-Significance*
Regression	2.0000	380,500.19	190,250.10	154.4124	0.0000
Residual	59.0000	72,693.37	1,232.09		
Total	61.0000	453,193.57			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	2.4082	6.5948	0.3652	0.7163	(10.7879)	15.6044
Training/o training	50.0897	8.9996	5.5658	0.0000	32.0816	68.0978
Pretest	1.1057	0.0702	15.7553	0.0000	0.9652	1.2461

The variance analysis estimated in terms of F-statistic high accuracy of Model 2, where F-significance was (.00) which is < .05. The p-value for the independent variable (X-intercept) X_1 is (.00) and therefore they are statistically significant. The R Square (R^2 = 0.84) and close to 1.0, this is an indication of the high variability of the variables X_1 and X_2. The coefficients β_1 (50.08) and β_2 (1.10) and are significant, meaning the two independent variables X_1 and X_2 influenced the dependent variable as confirmed by the confidence interval of (p <.05). Model 2 demonstrated a high value of the multiple R (.91) and R^2 (.84) indicating that the leadership training together with the baseline results prior the training had a considerable effect on the endline after the training, and is confirmed by 84% of the variance in the health system mean indicator of the trained managers. Results supported the hypothesis that the leadership development program has had a positive impact on the 6 health system pillars performance indicators based on the health system performance improvement project selected and implemented by health managers during the training ales results.

The two models demonstrated the positive impact of the leadership program on selected project indicators because the outcome indicators scale means of the trained teams are higher than for the non-trained managers. Even though, the introduction of the additional independent variable clearly showed a reduced correlation between independent and dependent variables which could be attributed to situational factors such as devolution, type of project and others; the results still demonstrated a positive effect of training on health systems performance indicators.

4.2.8: Correlation and Hypothesis Testing

Table 4.16: Correlations Between Leadership Development and Improved Health Systems Performance Indicators

		Implemented Projects	Team Members	Remaining Members	Training curriculum	work climate	Board
Implemented Projects	R	1					
	P value						
Team Members	R	-0.032	1				
	P value	0.847					
Remaining Team Members	R	-0.200	.572**	1			
	P value	0.222	0.000				
Training curriculum	R	.465**	-0.033	0.062	1		
	P value	0.003	0.843	0.709			
work climate	R	.323*	0.167	-0.092	-0.089	1	
	P value	0.045	0.310	0.576	0.591		
Board	R	.373*	-0.034	0.183	.426**	0.038	1
	P value	0.019	0.838	0.264	0.007	0.819	

**. Correlation on level 0.01(2-tailed) is significant.

*. Correlation on level 0.05(2-tailed) significant

The findings of the correlation study (Table 4.16) validate alternate research hypotheses H1, H3, and H4, indicating there is a constructive and significant relationship between curriculum design, work environment and organizational board character and implementation of institutional improvement projects.

However, the research did not support the alternative H2 inference, which implies that there is a clear and important association between institutionally trained and improved interventions in the health system in selected counties, thus supporting the null hypothesis (Table 4.17).

Table 4.17: Hypothesis Finding from Correlations Analysis

Hypothesis	Findings	Results
H1	r = .465**, p = .003	Supported
H2	r = -0.200, p =0.222	Not supported
H3	r =.323*, p = .003	Supported
H4	r = .373*, p = .019	Supported

4.2.9: Summary

Using a thematic framework, data was categorized and structured according to main themes, principles and emerging categories. Finally, the data were summarized and synthesized to extract meaning and present evidence discussion citing some responses word for word where necessary and development of conclusions. Figure 4.2 presents a summary analysis of qualitative data.

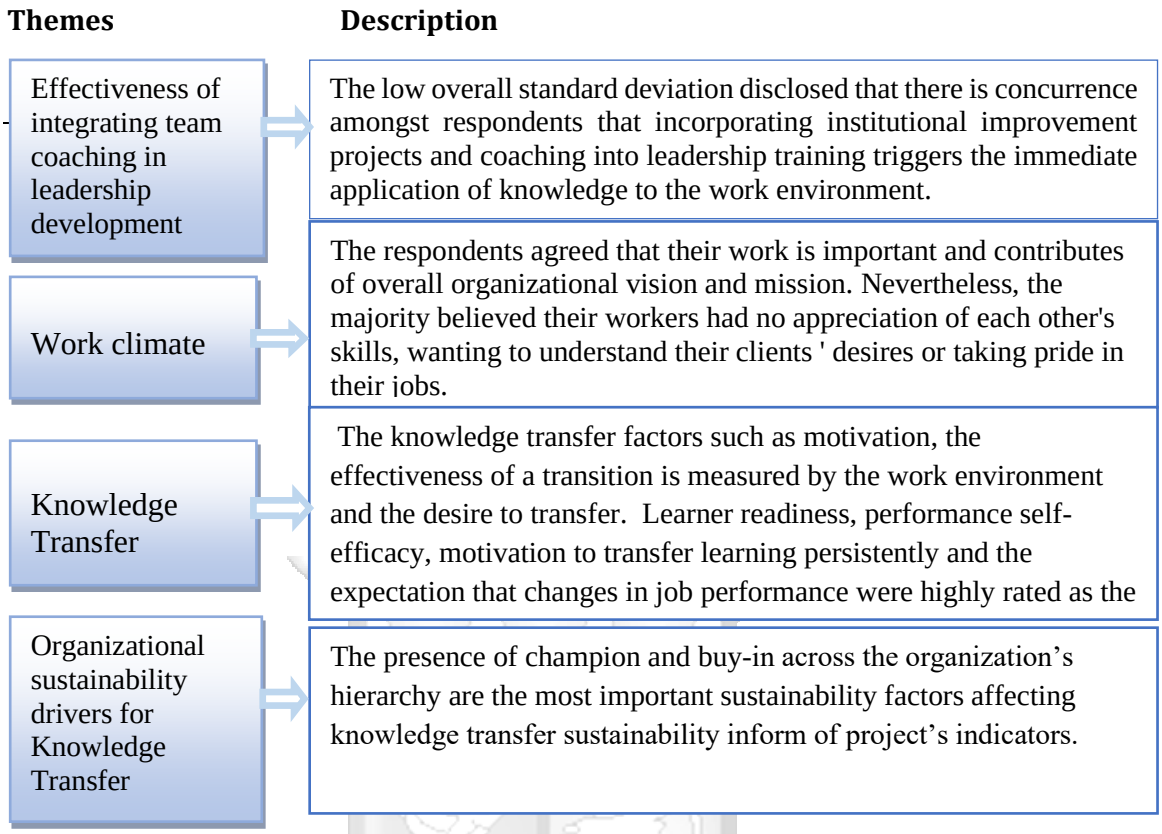

Figure 4.2: Analysis Summary

Figure 4.2 shows that sustained development of leadership competencies through an integrated leadership and team coaching of health workers results in improved health system performance. Notably, the positive results achieved through the implementation of priority projects were sustained over a period of 60 months. A positive work climate was considered as the great success factor that encourages teamwork and transfer of knowledge from the classroom to the workplace through the implementation of priority projects. Moreover, additional factors such as responsive curriculum, team coaching, presence of champion and buy-in across the organization's hierarchy, individual ability and motivation to transfer, and need for change were found out to be the strongest enablers of knowledge transfer in Kenya's healthcare context. Such results are consistent with other research indicating that sustainability can be affected by: program design; financial support; organizational structure; powerful champions; evidence of effectiveness; use of data for continuous

improvement; training and maintenance of program; human resource (Gustafsson et al., 2003; Shediac-Rizkallah & Bone, 1998).

PART TWO

4.3: Introduction (Part 2)

The structure of this part of the study results is as follows. First, study one (4.3) outlines the team's leadership challenge addressed as goals for performance improvement in the private, public and faith-based institutions to cross-cutting the health systems performance pillar (information, financing, human resource for health, medicines and technology, and service delivery). Second, study two (4.4) presents the quantitative findings on the implementation and sustainability status of the priority projects addressed during the LeHHO program. Third, the qualitative findings on factors that contributed to the achievement or non-achievement of the Desired Measurable Results (DMR) for the selected institutional improvement projects is presented under study three (4.5). Fourth, the quantitative findings on impact of the priority challenge projects implemented on the relevant health system performance indicators and compared with the non-treatment group are presented in in study four (4.6). Lastly, the qualitative findings on factors that influenced the sustainability of the attained results across different health system contexts in 19 counties are presented in study five (4.7).

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4.4: STUDY ONE. The Healthcare Leadership Challenges Addressed by the Management Teams as Priority institutional Health System Performance Improvement Projects

In this study we present findings per data type; a) the type of priority challenges identified by different health teams in 19 counties in Kenya (Qualitative data), b) categories of the priority projects addressed as aligned to the World Health Organization (WHO) Health system pillars (quantitative data) and, c) health systems performance indicators addressed (quantitative data) (Chelagat, et al., 2019).

4.4.1: A scan of Priority Challenges Faced by Different Health Teams in 19 Counties in Kenya (Qualitative Data)

The findings were themed using the WHO framework for measuring health system performance based on the six (6) core components or "building blocks". The building blocks are; a) Service delivery, b) Leadership and Governance, c) Health workforce, d) Health Information, e) Health Financing and, f) Medical products and Technology (World Health Organizations, 2010. Leadership and governance and health information systems are cross-cutting elements that form the basis for the overall policy and control of the other parts of the health system network. Financing and the workforce are key components of input, while medical products / technologies and service delivery represent immediate outputs from system. By defining these elements, the framework provides structure for this complex system enabling indicators and measurement methods to be defined for monitoring and evaluation (WHO, 2010). Additionally, two unique themes; a) National and County politics and, b) immediate promotions during training Team-based coaching, are discussed.

Human Resources for Health: Projects focusing on Human Resource for Health (HRH) development were the least successful in terms of implementation. Some of barriers to implementation are captured in the following views shared by some of the participants in the projects:

> *'...the big challenge is how do you motivate a low remunerated staff, working long hours, with limited resources to have the right attitude and perform well?' (Participant from a Public health facility).*

> *'...retention of human resource is our nightmare after hiring, training, and resources have been invested; nurses are pouched by large government and private hospitals...' (Participant from a Faith-based facility).*

Additionally, the respondents felt that even with successful training and implementation of best practices, it is not possible to sustain them if there is a lack of adequate expertise.

> *'...even with the implementation of management systems, without skilled human resources, the system will be less effective and sustainable... inadequately trained personnel in projects means a lot of resources will end up being invested in retraining and coaching others instead of performing...' (Participant from a Private health facility).*

Medical Products and Technology: Medical Products and Technology Supply Chain Management was reported as a key challenge among the leading public and faith-based corporations that are required to purchase, store and distribute drugs and medical supplies for approved public health programmes.

> *'...chain of supply is an impending challenge most of the time due to unplanned and delayed orders in different periods of time by the county government. Some periods*

may experience influx of orders and some point low number of orders...' (Participant from a Faith-based facility).

'...our biggest concern is that even though we are a referral and teaching hospital attending to many patients, dispensing "nothing' had become the order of the day due to constant stock-outs. The disturbing state of affairs became very consistent to a point that we were hitting newspaper headings due to frustrated patients...' (Participant from a Public health facility).

Leadership and Governance: Today's healthcare environment is undergoing rapid changes in fundamental ways and the healthcare leaders are hardly prepared for this kind of volatility. This calls for mindsets and skills shift among the healthcare leaders. The devolution of Kenya's health system resulted in more uncertainties and challenges that demand leaders who understand the broader healthcare ecosystem and have the skill sets needed to lead their teams effectively during the change process.

'...Devolution of health services was a major disaster since it was done all at once. It is a dynamic society that needs new knowledge to fit in the new agenda of universal health care...policies are constantly changing and in this case devolution of services, whereby the majority of health workers were resistant to adapting to these changes...' (Participant from a Public health facility).

Ineffective communication of inspired shared vision was a great obstacle. Inadequate communication results in poor alignment and mobilization of teams to work towards a common goal by embracing diversity and complementarity spirit.

'...I had a challenge in communicating and tagging along with other departments into the project when required to...this was due to the position that I hold which is more technical than managerial...' (Participant from a Public health facility).

Another key challenge experienced when implementing new initiatives towards improvement of service delivery in the faith-based facilities was the role of the board in bringing the projects and strategic goals from paper to reality.

> *'...Inadequate support from senior management on projects implementation is tragic, if the project is not in the board's priority list, then it is good as dead...' (Participant from a Faith-based facility).*

Health Information: Even with a struggling economic climate, many health facilities are investing in technology to increase hospital efficiencies, turn-around time and reduce costs. Apart from promoting efficiency and quality data, technology promotes improved patient care in a healthcare continuum by capturing patient data from registration to diagnosis and to post-discharge.

> *'...Laboratory automation has streamlined our operations resulting in quick patient diagnosis from two (2) days to two (2) hours contributing to effectiveness and cost savings for the hospital due to lean staff required to operate the equipment...' (Participant from a Faith-based facility).*

Electronic Medical Record (EMR) refers to the collection of patient data digitally to ensure quality data. The data of interest may include patient name, age, weight, height, vital signs, medical history and others. EMR is therefore recognized for supporting effective decision making, quality assurance, research and surveillance. Based on evidence from the successful projects, participants described the output of automation as a game-changer in service delivery.

'...Before piloting the electronic medical record in two inpatient wards, we were already battling litigation issues in court due to malpractice. This was attributed to the difficulty in accessing complete patient data leading to reduced accuracy in diagnosis and hence compromised patient care. Many patients lost confidence while at the same time we incurred a lot of time loss...' (Participant form a Public health facility).

Health Financing: Kenya's current constitution devolved healthcare to the 47 counties with the goal of enhancing equity in resource allocation and improving health service for all. Some of the challenges faced by healthcare managers under the devolved health sector such as disparities in salaries, poor pay, lack of job security, inadequate medical supplies and staff in health facilities were attributed to inadequate funding. To guarantee quality and affordable healthcare for all Kenyans, health financing is one of the health systems pillars that needs to be strengthened as part of the effort towards meeting the government's commitment on the provision of 100% Universal Health Coverage (UHC) for all households by 2022. The leadership program alumni alluded to the fact that without inspired leadership, sound management, and transparent governance, no amount of money is going to fix a broken health system. This was reflected by the minimal number of selected priority catalyst projects. Only one (1) out of thirty-nine (39) priority projects were on health financing and in the faith-based institutions.

'...What was keeping me awake was the amount of inpatient debt not collected. Before the leadership training and our priority project, the hospital managed to collect 68 percent debt from in-patient whereas in the case of out-patient we collected 78 percent. After scanning and prioritizing data collection in our department, we are now doing great with an average of 94% debt collection...' (Participant from a Faith-based facility).

Some of the health finances challenges reported were responsible for unimplemented projects.

> *'...there are scarce resources to cater to clients' needs and getting materials and resources to bring everyone on board in projects and deliver quality health care services...' (Participant from a Public health facility).*

National and County Politics: Kenya's health sector is a frontline sector particularly important for Kenya's devolution. Citizens tend to judge the government's effectiveness using health sector performance hence devolution's realization relies profoundly on constant political will at all levels of the Kenyan government.

> *'...political effects that are constantly running county institutions is a major challenge...there are high expectations from the leaders by the members of the public, which in-turn causes conflicts since resources are limited to meet the community's expectations....when patients miss drugs from the hospital, the governor is on speed dial asking why there are no drugs in the hospital...' (Participant from a Public health facility*).

Another respondent from the public health institution reported*;*

> *'...I encounter general challenges at the workplace but regularly we face a conflict of interest in decision making among the decision-makers due to the attachment of personal interest to institutional management. Separation of management roles and political roles is a challenge and this affected prioritization of catalyst projects due to political changes at management level...' (Participant from a Public health facility).*

Even with optimistic participants from the politically unstable areas, insecurity was identified as a significant obstacle to attaining the expected indicators.

> *'...some areas experience endemic political instability. Any politics tends to flare insecurities among communities thus impacting on health care service delivery...' (Participant from a Faith-based facility).*

Immediate Promotions during Training*:* Due to the positive impact of transformation leadership training, most of the participants were promoted to new roles and some were posted to different sectors. This was a positive outcome of the training indicating that the participants were able to demonstrate improved leadership skills deemed crucial in the job market. On the negative side, it meant that change agents (champions) could be leaving the institution prematurely before the change is implemented and realized. Several teams reported the departure of a champion from the team as a barrier to the successful implementation and sustainability of catalyst projects results.

> *'...translation of many projects from paper to reality was a big challenge, considering some team members were falling out of projects due to promotions or change of jobs before implementation. This had a profound effect on successful implementation, sustainability and scaling-up of the challenge project...' (Participant from a Public health facility).*

4.4.2: Priority Health System Performance Improvement Projects that Addressed Specific Health System Pillars (Quantitative Study)

The study findings identified healthcare challenges in the private, public and faith-based institutions to cross-cutting the health systems performance pillar (information, financing, human resource for health, medicines and technology, and service delivery) (World Health Organization, 2010). The 39 team-based projects were clustered according to the WHO health system building blocks (WHO, 2010). The projects are summarized in Figure 4.3. Service delivery was the leading challenge

across all the sectors at 44%, Health information constituted 21% of the projects, leadership, and governance 15%, human resources 10%, medical products 8% and health finance 3%.

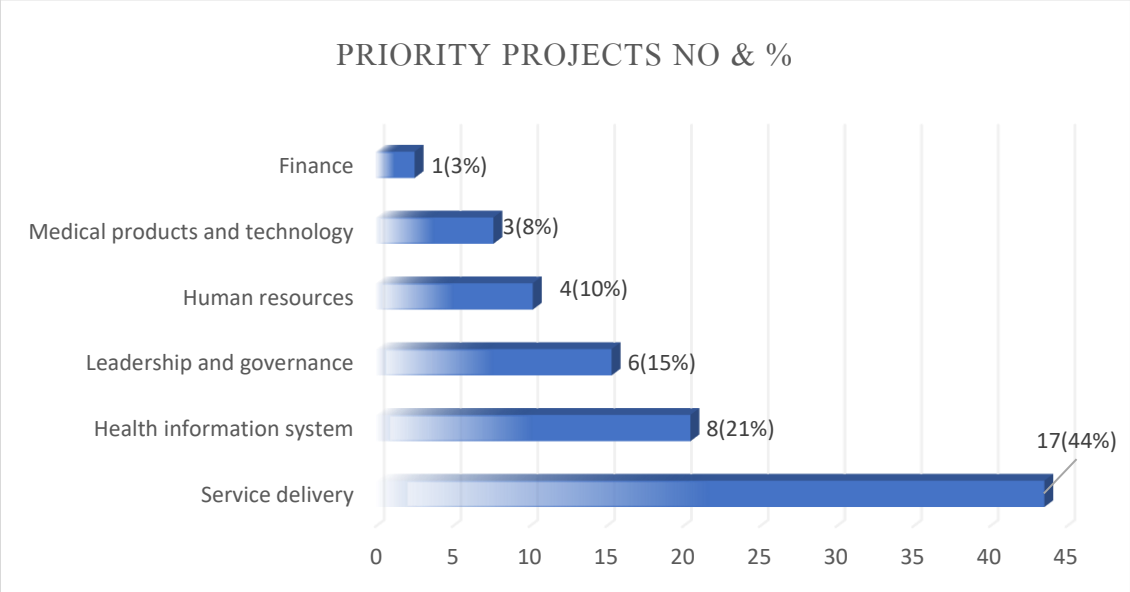

Figure 4.3: Priority Projects Aligned to the (WHO) Health System Pillars

4.4.3: Health Systems Performance Indicators Addressed

The priority projects addressed different components of the health system performance indicators (Figure 4.4), with the main focus being on quality improvement.

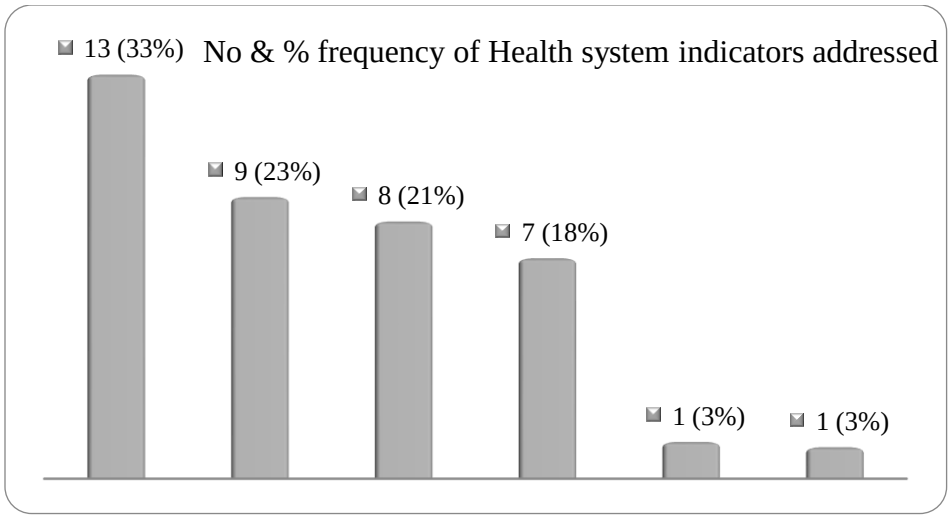

Figure 4.4: A Breakdown of Health Systems Performance Indicators Addressed

4.4.4: Summary

The findings indicate that service delivery which is influenced by the human resources for health is a persistent health system performance challenge in Kenya. Other challenges included information, leadership, and governance, medicines and technology and finance. National and County Politics and low staff retention at management level are the new themes that emerged in this study. Policymakers need to, therefore, consider the contextual factors that influence while designing and implementing health system improvement interventions in the counties. Additionally, as much as leadership development training is resulting in the improvement of specific health system indicators, great attention needs to be focused on the improvement of human resources engagement and development because it greatly influences overall health system performance and outcome at the population level.

4.5: STUDY TWO. Implementation and Sustainability Status of the Priority Projects Addressed During the LeHHO Program

4.5.1: Introduction

This section presents the qualitative findings of the research objective two and the discussions of the results as set out in the research methodology.

4.5.2: Implementation and Sustainability Status

In this study, "Sustainability' was described as "the extent to which institutional project teams maintained the positively attained project results with 24-60 months post the leadership training. A total of=39 projects were prioritized by the teams as aligned to their strategic plan, out of which 33 (85%) achieved the desired measurable results (DMR) by the end of the training (9th month). A total of 29 (88%) of the implemented were sustained post-training. This indicates the need for adoption systemic process that enables the integration of new knowledge at the work environment to ensure sustainability and scaling-up of best practices. For all 39 teams from different health facilities the average rate for selected health systems performance improvement indicators was 38% at the baseline, 93.4% at the endline, and 87.7% post leadership development intervention. This shows that on average, the teams improved their desired measurable result indicators which were sustained for some teams for at least 24-60 months post intervention (Figure 4.5).

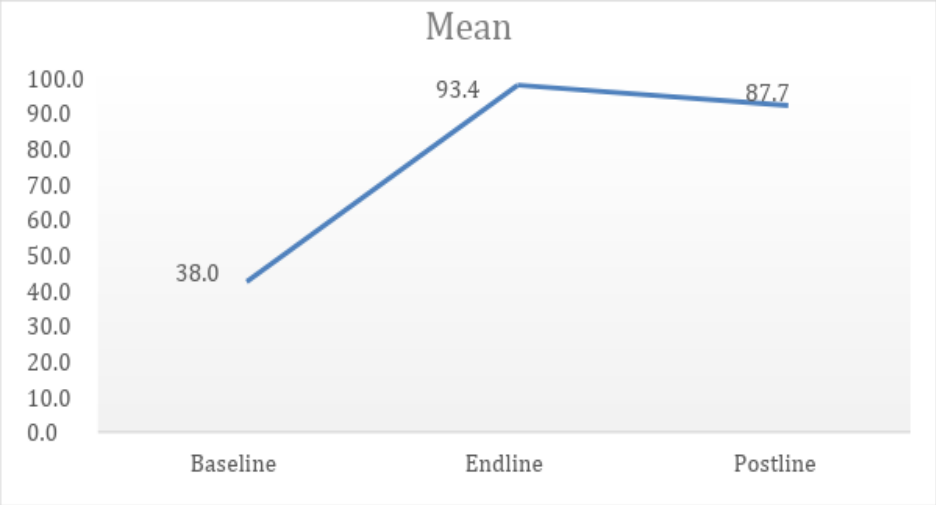

Figure 4.5: Means for the Baseline, Endline, and Postline Indicators for the Projects Desired Measurable Result

4.5.3: Test of Two Sample Assuming Unequal Variances

It was hypothesized that the application of leadership, management and governance (LMG) practices through priority challenges projects would. This would be beneficial impact on efficiency of the health care system. This is possible through the achievement of Desired Measurable Result (DMR) and priority project goal attainment. The quantitative data for the baseline, endline and postline indicators were analyzed using paired-sample t-tests. A significance level of .05 was set for the tests. Paired t-tests comparing baseline and endline revealed that participation in the LMG program was associated with significant increases in priority project goal attainment P=0.00186. The p-value for endline and post line was at P=0.76557 hence no statistical significance (Table 4.18).

Table 4.18: Test of Two Sample Assuming Unequal Variances

	Baseline	*Endline*	*Postline*
Mean	37.98649	93.44595	87.67567568
Variance	4487.09	6393.497	7359.114114
Observations	39	39	39
Hypothesized Mean Difference	0		0
Df	70		72
t Stat	-3.23408		0.299298428
P(T<=t) one-tail	0.000932		0.382787307
t Critical one-tail	1.666914		1.666293696
P(T<=t) two-tail	0.001864		0.765574614
t Critical two-tail	1.994437		1.993463567

4.5.4: Summary

The purpose of Study two was to analyze the implementation and sustainability status of the priority projects addressed during the LeHHO program**.** The results also show that sustained development of leadership competencies of health workers results in increased efficiency of the health system as regards service delivery. The results support previous findings from other studies (Kwamie et al., 2014; Mansour et al., 2010; Peterson et al., 2011; Seddiq et al., 2014).

4.6: STUDY THREE. Factors that Contributed to the Achievement or Non-achievement of the Desired Measurable Results (DMR) for the Selected Institutional Improvement Projects

4.6.1: Introduction

This section presents the qualitative findings of the research objective number three and the discussions of the results as set out in the research methodology. For this study, 'knowledge transfer' was described as "the extent of successfully implemented priority projects and realized project's indicators goals; with the aim of improving health systems performance in different counties in Kenya". The objectives of the present study were to investigate the healthcare manager's perceptions on factors that facilitate or impede knowledge transfer at their workplace, with intentions of recommending possible strategies or informing policies for enhancing the transfer. In this study, two key contributions are made towards these objectives. First, the study explored, summarized and presented context-specific transfer enablers and barriers in diverse health systems settings. Second, it identifies and brings to light proposed definite solutions for optimal transfer based on the participant's experiences.

To elude ambiguity in measuring knowledge transfer, the study used a rigorous yet practically sound and relevant learning transfer measure. It focused on the action of transferring leadership development knowledge through practice and implementation of selected workplace priority challenge projects addressed by different teams. The projects provided practical relevance and most pertinent effectiveness measures regarding the training curriculum content and transfer design. The study, therefore, sought to answer the following research questions: a) what factors fostered knowledge transferability on the implementation of the prioritized projects at the workplace? b) what factors impeded knowledge transferability on the implementation of the prioritized projects at the workplace? and; c) what are the programs' alumni recommended contextual knowledge transfer

strategies for enhancing knowledge transfer during and after the training? (Chelagat, et al., 2019).

4.6.2: Factors Influencing Knowledge Transfer in the Healthcare Context

The findings indicate that there were two broad categories of project completion rates; projects that were completed on time and those that were not completed on time. For those projects that were completed on time, five main transfer themes enablers that illustrated the experiences of the managers emerged. Three of these themes were consistent and largely reflected the established categories represented in the literature for major transfer influences such as Baldwin's and Ford's conceptual model. The themes were; a) training design, b) trainee characteristics and, c) work environment. These results are in general agreement with significant standing findings in the area of training knowledge transfers. Additionally, two unique themes; a) Team-based coaching and; b) occurring opportunities emerged. Further analysis revealed new sub-themes such as attitudinal shift, power, position, and political good-will. Events such as devolution of health services to the counties, endemic strikes in public health systems and political elections were categorized as the sub-themes in the occurring opportunities. Table 4.19 displays a summary of enablers according to health facility type.

Table 4.19: Enablers of Knowledge Transfer per Health Sector

Facility Type facilities	Public Health facilities	Faith-based facilities	Private Health
Main Theme	**Sub-Theme**		
Training design	Relevant content Peer-cross learning visits Experiential training curriculum	Applicable knowledge to workplace Problem-based learning	Case methodology Impact-oriented training
Trainee characteristics	Attitudinal shift Improved communication skills Self-awareness	Improved leadership competencies Personal leadership	Ability to lead a team Self-leadership
Work environment climate	Teamwork Buy-in across the institution Power and position Political good-will	Teamwork Buy-in by management and board	Board members approvals
Team-based coaching	Inspired hearts through team coaching	Coaching support	Coaching focused on results attainment
Occurring opportunities	Devolution of resources	Endemic strikes in the public sector Political good-will such	Endemic strikes in the public sector Political good-will such as public and private partnerships (PPP)

Enabler 1: Training Design

In all three settings (public, private and faith-based facilities), managers identified the quality of the training design as the most critical factor influencing knowledge transfer in the work environment. The relevance of curriculum content and team-based coaching that followed classroom-based training facilitated the timely implementation of the projects. Baldwin and Ford found out that some of the critical training design factors include; the training curriculum or content, the learning approach, and the structure of the training activities (Timothy & Kevin, 1988).

"...the training curriculum was very relevant to my personal and workplace needs, the training enabled us to identify a real challenge that was specific to our organizational need ... under-delivery was not an option" (Participant from a Public health facility).

Curry et al. (2012) cited that "when trainers realize that they are being evaluated by the amount of transfer that occurs, their training strategies will change and they will strive to transfer knowledge, rather than simply to entertain trainees" (Curry et al., 2012). This observed among the managers as illustrated in these quotes;

"LeHHO program is an impact-oriented training which ensures that classroom learning, and acquisition of new skills alone is not adequate, but it should be demonstrated through practice and application of knowledge (...). We learned to objectively analyze challenging situations then develop an actionable plan which in-turn catalyzed the success of our project..." (Health manager at a private facility).

It is evident from these comments that training effectiveness is determined by the thoroughness of the need assessment and the transfer intervention approaches prior, before, through the training and subsequently after the training.

Enabler 2: Trainee Characteristics

Studies have found individual trainee characteristics such as personality traits, motivation level and ability to apply learned knowledge and expectations from the training to be associated with a transfer of knowledge post-training. Data from this study highlighted three trainee characteristics that are deemed significant predictors of transfer of knowledge to workplace challenges: a) Motivation level; b) ability to apply knowledge and; c) training expectations. These enablers were echoed across represented project teams during the interviews;

"... my ability to lead a team was a great enabler, as the head of human resources...I learned to communicate effectively and listen more to my team members, thus we formed a highly effective team which was unstoppable." (Participant from a Public health facility).

"...I am a trained doctor, and the only language I know is the technical language ...(this is the problem, how do I fix it?)....the training enabled me to learn more about myself, now that I have self-awareness, I am confident that I can lead an effective team because I am a better leader who can enable others to face challenges..." (Participant from a Public health facility).

Enabler 3: Work Environment

Most of the healthcare managers described their work environment climate including, support by board members and buy-in across the institution as a significant learning transfer enabler. Power and position were a uniquely emerging sub-theme; those trainees who were in top leadership positions were able to facilitate the timely implementation of projects. Another unique contextual enabler was political goodwill; in those counties where there was political support from the county government, projects were implemented on time;

.

"...teamwork fostered positive work climate and effective communication during project implementation...being at the position of governance in our county enabled me to influence our juniors' buy-in on a shared vision. Additionally, we had all the necessary resources from human resources to finances." (Participant from a Public health facility).

Participants reported the political aspiration towards quality and accessible healthcare for all Kenyans as a key enabler for learning transfer. One participant noted that one of the key concerns for many county governors was the provision of

quality healthcare services. This was a critical measure by the followers to measure their leader's worthiness for their votes.

> *"...the political good-will for the public and a private partnership was a great enabler for our project...it increased access and utilization of outpatient and inpatient services....this was made possible due to the launch of National Health Insurance Fund (NHIF) cards for private-sector health services cover." (Participant from a Public health facility).*

Enabler 4: Team-based Coaching

The growing body of literature on coaching as an instrument for leadership development describes leadership coaching as a positive development of leadership and has become a commonly used tool for leadership development (Day, 2000). Coaching, therefore, is a means of supporting a team to improve performance, and the processes through reflection and dialogue (Grant, 2014). The team coach offers an unbiased view of the team and encourages discussions that encourage the team to adapt its ways of working together in the service of its mission (Peters & Carr, 2013b). Even though team coaching embedded in the training is delivered only in four sessions through the entire training, participants associated the coaching sessions with the success of their projects. This is evident in the following quotes;

> *"Our lecturers and coaches motivated us even when we felt we will not achieve the project goals....the training really challenged and inspired us...consequently we inspired our nurses and other staff at the maternity, antenatal department, thus contribution to effective community mobilization." (Participant from a Public health facility).*

> *"...leadership knowledge and skill in business management gained from health care management course enabled us to work effectively as teams resulting in successful project implementation at workplace.... the coaching sessions significantly increased the effectiveness of the program in that our coach*

visited our work environment and kept the connection even after the implementation of the project." (Participant from a Faith-based facility).

Enabler 5: Occurring Opportunities

Riding on existing gains and opportunities were cited as key enablers. Participants alluded to the saying 'Success is when preparation meets opportunity'. Participants felt that their ability to scan their work environment and prioritize a challenge to be addressed as a catalyst project enabled them to consciously look at the gains and resources within their means. Ironically, some of the opportunities included industrial strikes, devolution and an increased number of trained managers within the organization. Absence of industrial disputes during the implementation period facilitated completion of the implementation of projects in the private sector facilities, compared to some public facilities that were affected by nurses' strikes;

"...nurse's strike was an opportunity for the private sector due to increased patient load...our project enabled us to establish and operationalized digital medical record for both inpatient and outpatient to ensure fast turn-around time...we wouldn't have prioritized the need if it was business as usual with low patient load..." (Participant from a Public health facility).

"...Devolution brought decision making and services closer to the people, therefore, health management teams are able to reach out to the county management team for support, and this worked... devolution works well also for patients in that they are now only a phone call away from airing their grievances to the county governor whenever their healthcare needs are not met..." (Participant from a Public health facility).

"...our team had one major enabler that led to the successful implementation of our institutional improvement project, 'devolution of the health systems'...devolved funds from the central government to county-level made it

easy to access adequate resources to carry out projects..." (Participant from a Public health facility).

"...our institution has heavily invested in capacity building of health managers... we are consistently paying fees for a minimum of four participants every year to attend the LeHHO training...each team has been able to implement a new project...this has accelerated the implementation of the strategic plan priorities leading to more gains than anticipated..." (Participant from a Faith-based facility).

4.6.3: Factors that Impeded Implementation of the Prioritized Projects at the Workplace Per Sector

For those projects that were not completed on time, the following were the main unique contextual barriers: a) inadequate management support in provision of necessary resources for implementation; b) inadequate team and staff support; c) high staff-turn over; d) misalignment of board's verses manager's priorities; e) missing technical expertise required to implement the projects; f) endemic strikes by healthcare workers; g) negative politics and; h) poor communication management. Table 4.20 presents a summary of the knowledge transfer barriers according to the health facility type.

Table 4.20: Impeders of Knowledge Transfer Per Health Sector

Institution Type	Impeding factors
Public health facilities	Management buy-in and support Poor communication skills Human resource constraints (recruiting, training and retaining). Inadequate relevant expertise Endemic industrial action by nurses and
Faith-based health facilities	Devolution (moving of staff) contributed to high staff-turnover in both public and faith-based facilities Lack of board members support Lack of coaching post-training
Private health facilities	Political interference Poor prioritization

Impeder 1: Inadequate Management Support in the Provision of Necessary Resources for Implementation

Those teams that did not have trainees in senior management positions did not get adequate management support to implement the projects.

> *"The buy-in by the management was a great challenge... I was the only trained manager from my institution and no one in my department or other related department was willing to get involved.... the board approved the project, however, there was a challenge in working together with other staff." (Participant from a Public health facility).*

Impeder 2: Inadequate Team and Staff Support

The inability to influence teams and the rest of the staff greatly affected the success rate of project implementation.

> *"Our project was on improving staff retention...however devolution worsened the process because some staff left for county health facilities after the*

devolution of health care services... most of the transferring staff were unwilling to fill the exit form that would help identify challenges encountered..." (Participant from a Faith-based facility).

Impeder 3: High Staff Turnover and Poor Retention

It was reported by the public and faith-based facilities that the rate of staff turnover was a great impediment to the implementation of the projects. In those teams where there was high staff turnover following the training, the implementation of projects was delayed.

"... our organization as whole accepted changes for the improvement of services ...we achieved the project goal by automating the patient medical records management system, however, it is worth mentioning that utilization dropped by 35%, 6 months after implementation (...). Despite positive changes, our biggest challenge is staff retention; we train our nurses and are immediately absorbed in the big public or private hospitals." (Participant from a Faith-based facility).

Impeder 4: Misalignment of Institutional Board's Verses Manager's Priorities

A subgroup of respondents identified misalignment of priorities managers priorities with the boards' and the existing resources as a key challenge. Where there was a misalignment between Board and Management priorities, then implementation was delayed.

"...even though the pressing priority need was establishing a human resources policy manual resources as a strategy towards recruiting, engaging and retaining our staff especially nurses; our board members did not support operationalization of the developed policy document... our project was just not in the list of board's priorities...so we have shelved our manual until when the time is right." (Participant from a Faith-based facility).

Impeder 5: Missing Technical Expertise Required to Implement the Projects

Some projects required technical expertise that was not readily available at the facilities, thus delaying the implementation of the projects.

> *"...let's say our greatest challenge was inadequate expertise....our project was anchored on technology, but the IT personnel in our institution lacked adequate capacity and relevant expertise to implement the project... this was worsened by scope creep, because automation involved different department and yet I was the only manager attending the training, this caused a major impediment from the onset of the project..." (Participant from a Public health facility).*

Impeder 6: Endemic Strikes by Healthcare Workers

Public health facilities were characterized by constant health worker strikes due to poor working conditions, staff shortage, and low salaries.

> *"Industrial action by nurses and doctors was a big challenge and we couldn't achieve our projects' DMR, which was focusing on increasing antenatal 4th visit by pregnant women... without the frontline health services staff, our hospital became 'ghost town' ... our project remained on paper and was never actualized..." (Participant from a Public health facility).*

Impeder 7: Negative Politics

The challenge of promises for new development in exchange for a vote compounded by scarce and mismanagement of resources due to corruption was cited as a key barrier.

> *"Failure to actualize our project was hinged on political interference and prioritization (...). The project involved working with county governments....even though some county boards shot down the projects, those who accepted lacked*

the will and commitment to prioritize and allocate the necessary resources." (Participant from a Public health facility).

Impeder 8: Poor Communication Management

Inadequate communication skills and people management was constantly reported as a key barrier to teamwork hence poor project results.

"... I realized our biggest challenge is not lack of adequate resources but how we communicate with one another...I hold a technical rather than managerial position and tagging along with other departments into my project from initiation was critical..." (Participant from a Public health facility).

4.6.4: Suggestions on Context-specific Best Practices and Strategies for Enhancing the Leadership Development Training Transfer

The managers felt that their experiences during the training have equipped them with new knowledge and skills. To optimize transfer and the training outcome in diverse health systems in Kenya, the program alumni proposed the following strategies: a) effective allocation and efficient utilization of resources especially the financial and human resource; b) prioritization of intervention in alignment with organizational priorities, resources and staff input; c) effective communication among partners for buy-in; d) longitudinal coaching post-training and; e) training the pre-existing workplace teams.

Strategy 1: Effective Allocation and Efficient Utilization of Resources (Financial and Human Resource)

Poor allocation and utilization of resources such as finance and human resources were identified as a key challenge in healthcare management**.**

"Addressing human resources for health challenges such as recruitment, engagement, and retention of personnel especially the nurses is the best way

towards tackling implementation issues and promote sustainability and scaling up of good practices." (Participant from a Public health facility).

Strategy 2: Prioritization of Intervention in Alignment with Organizational Priorities, Resources, and Staff Input

Managers recommended that the ultimate measure of transfer should not focus on the project implementation results only, but other areas of improvement within the institutions which could be also attributed to leadership training.

"We failed to implement our project; however, I benefited greatly from the personal coaching and wish they could be explored more (...). My suggestion on how to improve the training to support the actualization of projects is through the provision of assistance on how to select the 'right' project that fits institutional needs....involving all the stakeholders and departments from the onset of training...this can be achieved with the support of the training institution." (Participant from a Faith-based facility).

Strategy 3: Effective Communication Among the Key Stakeholders

Evidently, communication among partners and within institutions especially during the change process is critical. The shared vision should be well-articulated and communicated to all stakeholders to ensure adequate buy-in and support during implementation.

"Communication and buy-in was a major impediment to the success of our project (...). I suggest that Strathmore Business School going being a training institution and champions of leadership and governance, to act as a bridge in such projects in order to attain good-will from the county management." (Participant from a Public health facility).

Strategy 4: Longitudinal Coaching

Another important finding from this study is that the respondents were concerned with the coaching engagement duration.

> *"Coaching sessions were definitely effective and very recommendable...but I would say they were ended 'prematurely' at the end of the training when some action plans implementation had just started (...). I, therefore, pose this question to Strathmore Business School, "How can you partner closely with our institutions to ensure continuity and institutionalization of coaching sessions beyond the training period?" (Participant from a Faith-based facility).*

Strategy 5: Training Pre-existing Workplace Teams

Another proposed area of possible intervention was an emphasis on team recruitment from the same institution to ensure continuity of knowledge, speedy buy-in and continuous implementation of the activated projects.

> *"I would recommend strict adherence to team recruitment from each facility to ensure that each team member contributes to the project implementation and the sustainability of the project results in the event that some members are transferred to other institutions." (Participant from a Public health facility).*

4.6.5: Summary

Although unknown billions of dollars have been invested in leadership training as a health system strengthening initiative in Africa and at a country level such as Kenya, there is little evidence on transfer and the influencing factors at the workplace. The purpose of this study was to explore the health manager's perceptions on factors that facilitate or impede knowledge transfer at the workplace, with intentions of informing possible strategies or policies to enhance the transfer. The study findings revealed that for the trained managers to optimally utilize the learned knowledge and skills, the following contextual constraints should be addressed: a) inadequate

management support in provision of necessary resources for implementation; b) inadequate team and staff support; c) high staff-turn over; d) misalignment of board's verses manager's priorities; d) lack of technical expertise required to implement the projects; f) endemic strikes; f) negative politics and; f) poor communication management.

These findings, therefore imply that for effective knowledge transfer to occur in project-based experiential learning in healthcare organizations, the following factors should be well-thought-out; a) when intervening to improve the health systems performance, a needs-driven curriculum based on formative assessment must be espoused so that it is receptive and capable of responding to the different contextual needs, b) the need for a robust stakeholder's engagement from multiple domains in order to design the strongest training that drives practices during change, c) effective allocation and efficient utilization of resources especially, the financial and human, d) improvement of work climate to encourage open communication and teamwork, e) training real-world work teams together to ensure team stability and sustainability of the attained results and, f) incorporating longitudinal coaching beyond the training as a leadership tool through institutionalization. Such insights have important implications for the approach in training real-world work teams while reinforcing performance improvement at the workplace. Studies like this one can provide meaningful information to help struggling health systems and health managers address their own health services challenges and as a result, trigger attainment of the health goals such as reducing reduced maternal and under-five mortality. This study adds to the extremely limited body of knowledge transfer literature among health-care managers in Kenya and sub-Saharan Africa in leadership development.

4.7: STUDY FOUR. Impact of the Priority Challenge Projects Implemented on the Relevant Health System Performance Indicators and Compared with the Non-treatment Group

4.7.1: Introduction

The aim of the study was to assess the effectiveness and impact of the leadership development training on the health system performance through the implementation of institutional improvement priority projects and compared with non-trained managers. A retrospective quasi-experimental design was adopted to empirically estimate the effectiveness of leadership development training and its attributed impact on health system performance indicators. Hypothesis testing of causal relationships was done with consideration of the leadership development training as a predictor variable for possible change and priority project indicators outcomes as an effect. Pretest, posttest control-group design was utilized to find out whether the leadership development program positively contributed to the improvement of health systems performance indicators compared with the non-trained manager. The second section provides further review of the effects on health care delivery metrics of priority challenge initiatives and contrasted with the non-treatment group. The third section describes the respondent's views on the effectiveness of the integration of team coaching into the leadership development program. The final section presents a summary and discussion answering the research question.

4.7.2: Research Outcomes & Procedures

Implementation of priority projects by project teams, and health systems performance indicators were the two main outcome variables of interest. It was envisioned that the effectiveness of the program in achieving its intended purpose would be reflected on the implementation status of the priority projects selected and demonstrate a positive indicator score as compared to the non-trained healthcare managers. Approval to carry out the research was obtained from the relevant research ethical review bodies to guarantee the integrity of the study and data collection. The purpose of the study was explained to study participants with

disclosure of any direct, indirect benefits and risks involved. All persons who took part in the study have received and obtained informed consent. They also were informed that their participation was voluntary and that they had the right to withdraw when they wished to without facing any penalty. Confidentiality was assured and no identifiable data or information will be released to anyone.

For the intervention group, baseline data were collected during their registration to the program, endline data was collected at the end of the nine-months training and the posttest was done between August and October 2018. The study utilized both primary and secondary data. Primary data were collected using a questionnaire, in-depth interview guide, and the project's challenge model as the observation checklist. The questionnaires comprised of closed-ended questions which sought to provide a more structured response as a snapshot of the priory projects tangible outcome (were the priority projects implemented? if yes, what are the impacts on health systems performance indicators addressed?). Data for control teams were collected by the principal investigator with assistance from the National and County health management information systems' officers.

4.7.3: Classification and Implementation Status of Priority Challenge Projects

The current study objective aimed to evaluate the effectiveness and impact of leadership training on health system performance indicators from the implemented priority projects. The World Health Organisation (WHO) framework for measuring health systems performance was used to identify the indicators and measurement strategies for monitoring and evaluating the priority projects implemented. Table 4.21 provides concise statistics for the six main elements "building blocks" of a well-functioning health care system (leadership and governance, health information systems, finance, human resources, medical products/technologies, and service delivery). A total of 31 projects and aligned to their strategic plans were prioritized by the teams. We clustered the projects according to the WHO health system building blocks (World Health Organization, 2010) for analysis. Service delivery was the most chosen challenge (research) area by the public, faith-based and private sector and

human resources, finance, and medical products were the least chosen challenge areas. Service delivery had the highest score of 5%, Health information was 23% of the projects, leadership, management, and governance (LMG) 19%, human resources 6%, medical products, and health finance was 3%. Out of the 31 projects implemented, 29 (93.5%) achieved their desired measurable results (DMR) by the end of the training (9th month).

Table 4.21: Challenge Projects Category and Implementation Status

	Health Sector				
Health System Pillar	No & % (project area)	Public	Faith-based	Private	DMR achieved
Service delivery	14 (45%)	8 (57%)	4(31%)	2(50%)	13(92.3%)
Information	7(23%)	4(29%)	2(15%)	1(25%)	7(100%)
LMG	6(19%)	1 (7%)	4(31%)	1(25%)	6(100%)
Human resource	2(6%)	_	2(15%)	_	1(50%)
Finance	1 (3%)	_	1(8%)	_	1(100%)
Medical products	1 (3%)	1 (7%)	_	_	1(100%)
Total	31(100%)	14(100%)	13(100%)	4(100%)	29(93.5%)

Table 4.22 presents the pretest and posttest means for health system performance indicators for all 6-health system (HS) pillars of the experimental group which was higher than those of the control group. These findings present the differences between trained and non-trained manager pre-training. The highest pretest score of the treatment group was service delivery (M = 82.32, SD = 89.20) and the lowest mean was for the medical products (0.00). The highest pretest score for the control group was service delivery as well (M = 50.36, SD = 75.17) whereas the lowest score was for the human resource, finance and medical products (M = 0.00). These findings reveal that there was a significant difference in the posttest scores for both treatment and control groups. In summary, the highest posttest for the treatment group was service delivery (M = 122.04, SD = 117.97), with human resource scored as the lowest (M = 62.5, SD = 53.03).

Table 4.22: Pretest and Posttest Means and Standard Deviation for Treatment and Control Groups

	Treatment Group				Control Group			
	Pretest		Posttest		Pretest		Posttest	
Variables	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Service delivery	82.32	89.20	122.04	117.97	50.36	75.17	62.14	104.84
LMG	12.33	30.21	78.33	34.88	8.33	20.41	8.33	20.41
Human resource	10.00	14.14	62.50	53.03	0.00	0.00	0.00	0.00
Finance	68.00		78.00		0.00		0.00	
Information	11.71	30.11	98.57	3.78	14.29	37.80	14.29	37.80
Medical products	0.00		100.00		0.00		0.00	

The means for the pretest and posttest for the six health system pillars performance indicators are graphically summarized in Figure 4.6.

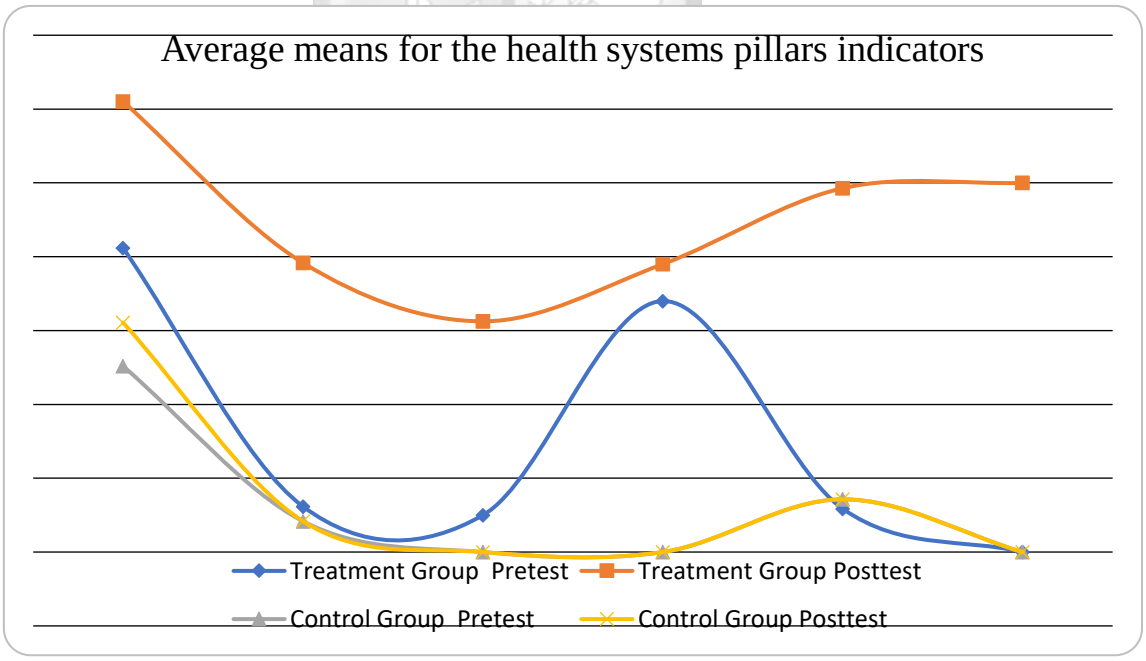

Figure 4.6: Average Means per Health System Pillar Indicator

4.7.4: Impact Analysis

The impact is defined as the difference in outcome between what was observed with the treatment (the "fact") and what would have been observed in the absence of the treatment (the "counterfactual") (Larson & Hutchinson, 2010). To estimate the impact of the training the following stepwise calculation was undertaken; a) means and mean differences and, b) use of regression method to estimate Difference in mean Differences (DID) structural model below by Krueger & Card (1994) and Larson & Hutchinson (2010). Measuring impact using means and mean differences, in other words, the impact is the difference in mean differences as represented in the equation and figure below.

$$[\text{Impact}t] = \begin{bmatrix}\text{Mean difference for treatment} \\ \text{between posttest and pretest}\end{bmatrix} - \begin{bmatrix}\text{Mean difference for control} \\ \text{between posttest and pretest}\end{bmatrix}$$

$$= [(89.91-30.73) - (14.13-12.16)]$$

$$\text{Impact} = Y^{TF}(D=1) - Y^{CF}(D=0)$$

Whereby:

$Y^{TF}(D=1)$ is: Mean averages of observed outcome for intervention group

$Y^{CF}(D=0)$ is: Mean averages of counterfactual outcome for non-intervention

$$\text{Impact} = (Y^{TF}(1) - Y^{CF}(0) \geq 1$$

$$Y^{TF}(1) = 59.18$$

$$Y^{CF}(0) = 1.96$$

Impact =57.2, therefore ≥1

4.7.5: Answering the Research Questions

The purpose of the study was to assess the effectiveness and impact of leadership development training on the health system performance indicators through the implementation of institutional improvement priority projects. The first research question explored whether the training enabled participants to prioritize and

successfully implemented the priority improvement projects. The pretest and posttest mean for all six-health system (HS) pillar indicator measures of the trained (experimental) group were higher than those of the non-trained (control) group. The t-test results revealed that training had a positive effect on the six HS pillars measurements in that posttest scales revealed significant differences between the two groups for the 3 HS pillars (service delivery, LMG & information) .05 ($p<.05$). The second research question purposed to investigate whether the leadership development training had any impact on the health systems performance indicators addressed by a trained team of managers. Linear regression analysis confirmed the improvement of HS indicator scales; hence we can substantiate that LeHHO program contributes positively to the improvement of health system performance indicators through the implementation of priority challenge projects.

4.7.6: Impact of Priority Projects on Health Service Delivery Indicators and Compared with Non- treatment Group

In order to ascertain changes attributed to leadership training, data was collected from 15 intervention and matched with 14 comparison institutions within the same county (Chelagat et al., 2020) Consideration on the selection of the intervention and comparison health facilities was based on the service delivery coverage and informed by the same county strategic plan. 15 intervention facilities were purposively selected and matched on with the comparison facilities within the same County (Table 2.23). The filled-in Challenge Model report documents were retrieved from Strathmore Business School Institute of Healthcare Management database. The comparison team indicators data were collected in October 2018 with the assistance of health management information system officers from Kenya's ministry of health (MOH). The data was only on the health service delivery indicators corresponding with the baseline, endline, and post-training for the intervention group project period. Data were entered, cleaned and analyzed on Microsoft Excel and the significance of test calculated using the statistical package SPSS version 20. Descriptive statistics and paired-sample t-test analyses were used to show the relationship between dependent variables and the independent variable.

Table 4.23: Number of Interventions and Comparison Hospitals Service Delivery Indicators by the Health Sector

Indicator	Health sector	N & % (intervention hospitals)	N & % (comparison Hospitals)	Total N & %
Skilled deliveries by birth attendants.	Public	4 (26.6%)	4 (28.6).7%)	8 (27.6%)
Full immunization of children	Public	1 (6.6%)	1 (7.1%)	2 (6.9%)
Increased outpatient & inpatient utilization	Private, public & faith-based	4 (26.6%)	3 (21.4%)	7 (24.1%)
Reduce outpatient turn-around time (TAT)	Private, public & faith-based	2 (13.3%)	2 (14.3%)	4 (13.8%)
Others (increase quality and customer satisfaction	Private, public & faith-based	4 (26.6%)	4 (28.6%)	8 (27.6%)
Total		15 (100)	14 (100)	29 (100%)

4.7.7: Contribution of Integrated Challenge Model Training Approach Towards Achievement of the Desired Measurable Results (DMR)

In this study, the hypothesis was that there is a significant impact of integrated leadership challenge model and coaching approach on the achievement of desired measurable result (DMR) and priority project goal attainment. A total of 15 service delivery improvement projects were prioritized by the teams as aligned to their strategic plan. Out of these,14 (93.3%) projects achieved the desired measurable results (DMR) by the end of the training (9th month). A total of 13 (80%) of the implemented projects were sustained over time, the post-training data represented the state of indicators of interest at the time of the study data collection (August 2018). The trend of means from baseline, endline and post-training measures for the 15 projects was (70.4, 102.1 & 119.8), while the comparison teams means were (42.9, 54.6 & 58.7) respectively. The comparisons of the means are summarized in Figure 4.7.

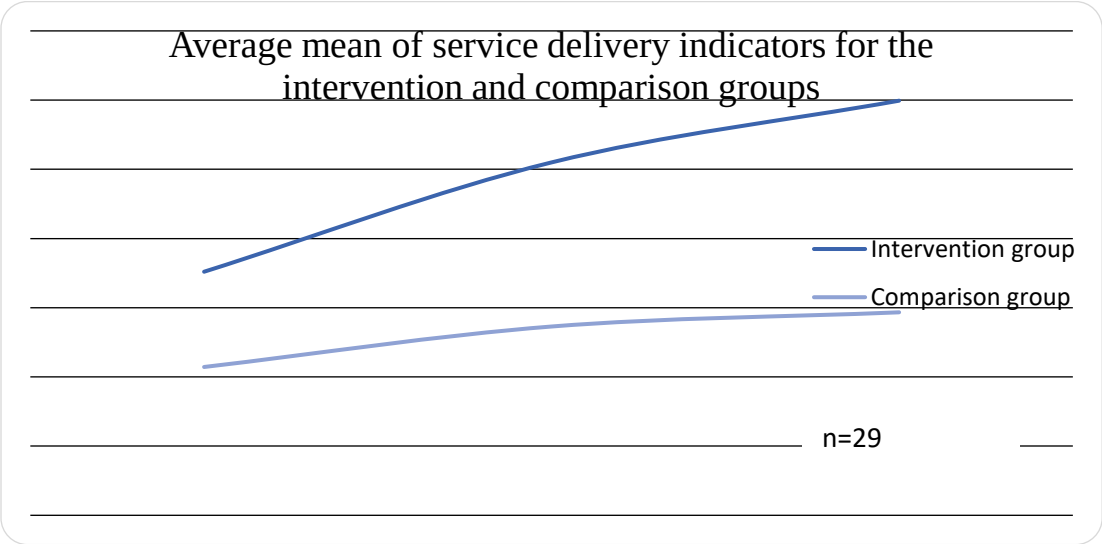

Figure 4.7: Average Means of Health Service Delivery Indicators for the Intervention and Comparison Groups

Data were further analyzed using paired-sample t-tests and are summarized in Table 4.24. A significance level of .05 was set for the tests. Paired t-tests comparing baseline and endline revealed that participation in the LeHHO program was associated with significant increases in priority project goal attainment (P=0.006). The p-value for endline and post-training for the intervention group was at (P=0.473) thus not statistically significant. The p values for the comparison group for the baseline, endline, and post-training are (0.203 and 0.047) respectively.

Table 4.24: Paired-sample T-test Comparing Baseline, Endline, and Postline

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Comparison group								
Baseline-endline	-11.00000	31.92625	8.24332	-28.68017	6.68017	-1.334	14	.203
Endline-post-training	-5.20000	9.26745	2.39285	-10.33215	-.06785	-2.173	14	.047
Intervention group								
Baseline-endline	-37.20000	44.52640	11.49667	-61.85790	-12.54210	-3.236	14	.006
Endline-post-training	-6.03333	31.70763	8.18687	-23.59243	11.52577	-.737	14	.473

4.7.8: Effectiveness of Integration of Team Coaching to the Leadership Development Program

Overall findings of this study indicate that 92.3% of the study participants reported that the achieved project results were highly attributed to the challenge model team coaching approach, while 64.1% said the overall training without the implementation of the project was effective in helping them address their workplace challenges. In summary: a total of 87.2% reported that the coaching process had an additional impact on improving their personal life; 82.1 % responded that their coach was able to relate well with the coaching agenda and link it with classroom learning; 79.5 % held that the coach helped them clarify and prioritize their institutional priority project; 74.4% of the participants reported that their coaches were effective in supporting the knowledge transfer from classroom to work environment; and 76.9% admitted that using the challenge model as a knowledge transfer and coaching tool contributed to the effectiveness of the overall training objective which is to develop leaders who can create high performing teams and achieve tangible results.

The evaluation of coaching return on investment (ROI), as well as the contribution of coaching alone, was at 61.5%. Some key areas of that raised concerns were the duration of coaching during and after training. This was rated at 48.7%; participants' opinion was that despite a well-designed curriculum to suit the needs of the County health management team, the model did not factor in post-training support such as mentor-coaching. Taken as a whole, the achieved service delivery results were slightly sustained among the intervention group facilities while there was no significant difference in the comparison team facilities (Figure 4.8).

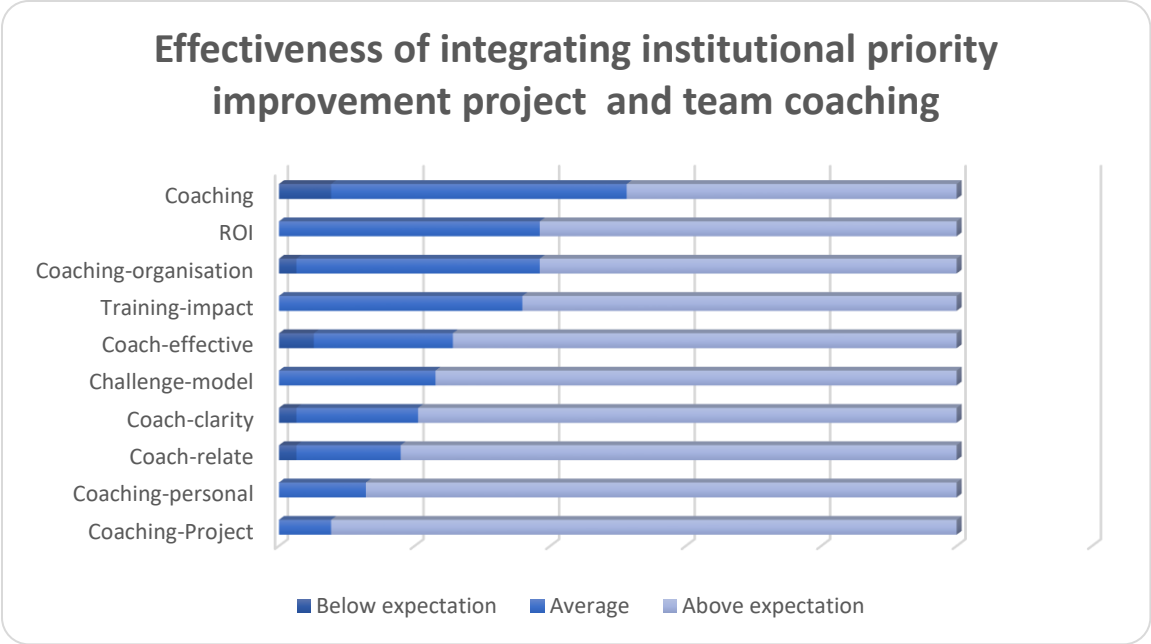

Figure 4.8: Overall Evaluations of Integration of Institutional Priority Improvement Projects and Team Coaching

4.7.9: Summary

The results show that the sustained development of leadership competencies of health workers results in improved health system performance in terms of service delivery. The results support previous findings from other studies on leadership development in Africa. The results also suggest that incorporating institutional improvement projects and coaching into leadership training leads to the immediate application of knowledge into Health System performance improvement.

4.8: STUDY FIVE. Factors that Influenced the Sustainability of the Attained Results Across Different Health System Contexts in 19 Counties

4.8.1: Introduction

The need to improve the health system performance in the last decade through evidence-based programs and practices has gained heightened research attention. Yet, in many interventions, effort and evidence of sustainability and scaling up are least discussed. Studies have examined the implementation and short-term outcome efforts; slight inquiry has been done in concentrating on long-term factors that influence the sustainability of projects. This study addresses this research gap and provides insights into the lessons and suggests policy implications. Qualitative research was undertaken using semi-structured interviews with 33 purposively selected healthcare managers who successfully implemented a team-based institutional improvement project at the end of a leadership development training. The prioritized projects were undertaken within 20 public, nine faith-based and four private health facilities in 19 counties in Kenya. The reported project's implementation success rate was 85%. A thematic framework approach was used for data analysis. The study objective aimed at exploring the specific sustainability drivers for project-based experiential learning in Kenya's health sector.

The objectives of the present study were to investigate the project's sustainability status and inquire about the healthcare manager's perceptions and experiences on factors that facilitated or constrained the sustainability of knowledge transfer at the workplace, with intentions of informing possible strategies or policies to enhance the transfer. This study makes two key contributions towards these objectives. First, it explores, summarizes and presents context-specific sustainability transfer facilitators and constraints in diverse health systems settings. Second, it highlights the lessons learned and policy implications for the National, County and organizational long-term plans for the innovative learning implementations in low-resource settings.

For this study, 'knowledge transfer' was described as "the extent of successfully implemented priority projects and realized goals", with the aim of improving health systems performance in different counties in Kenya. 'Sustainability' on the other hand was described as "the extent to which institutional project teams maintained the positively attained project results with 24-60 months post the leadership training". The study focused on the action of transferring and sustainability leadership development knowledge through practice and implementation of selected workplace priority challenge projects addressed by different teams. The projects provided practical relevance and most pertinent effectiveness measures regarding the training curriculum content and transfer design. The study sought to answer the following research questions:

a) What is the sustainability status of the 33 successfully implemented team projects within 24-60 months post leadership development training?
b) What factors facilitated or constrained the sustainability of the implemented priority project indicators post-training at the workplace?
c) What are the lessons learned and policy implications for the National, County and organizational long-term sustainability plans in low-resource settings?

4.8.2: The Sustainability Status of the Successfully Implemented projects Post-training

Two broad contextual categories of project sustainability rates are reported in this study; projects that were sustained within the 2-5 years post-training and those that were not sustained. The sustainability status of the 33 successfully implemented team projects within 2-5 years post the leadership training was 84.8%. Out of the 20 successfully implemented projects for public health facilities, 15 were sustained for a period of 2-5 years (Figure 4.9). One of the nine successfully implemented projects for the faith-based health facilities failed to sustain. Interestingly, all the projects implemented for the private health facility teams were sustained. The sustainability variances in the different contexts reflect the varying needs and concerns in the different health facilities.

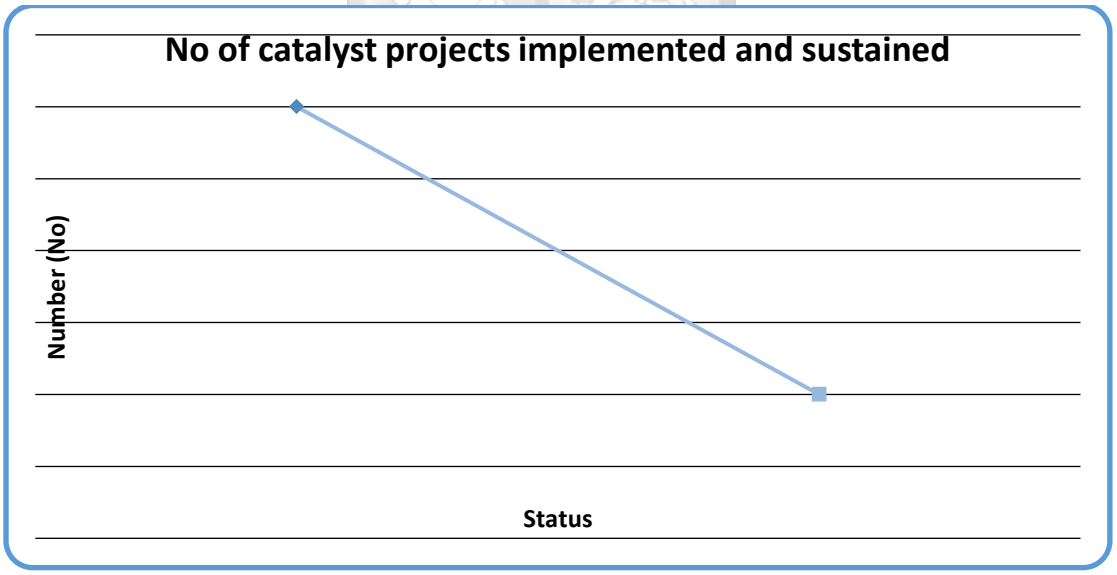

Figure 4.9: Implementation and Sustainability Status of the Catalyst Projects at the End of Training and (2-5) Years Post-training

4.8.3: Factors that Facilitated the Sustainability of the Implemented Priority Project Indicators Post-training at the Workplace

Seven main themes that illustrate sustainability key drivers emerged; program design, stakeholder's buy-in, quality of the board members, communication management, the institutionalization of a coaching culture, presence of the change champion, devolution and political good-will. Whilst LeHHO program design was customized to Kenya's health systems' needs through stakeholder alignment meetings, there were sector-specific drivers that were experienced in one sector as compared to others. The quality of board members, communication management, and institutionalization of coaching culture was the significant cross-cutting drivers' related sustainability of project results in all the health sectors; Program design was highly rated as a key sustainability driver for the public health facilities, stakeholder-buy for the faith-based and private health facilities. Overall, stakeholder's buy-in was the most mentioned cross-cutting enabler in all the health sectors. Even though communication rated low as the first key driver identified by the mangers, further analysis shows that it was the most mentioned (90%) across the sectors. Human resource shortage and attrition were mentioned as the number one key inhibitor of sustainability across the sectors. It is also worth noting that devolution and political interference were mentioned as the key drivers and inhibitors among the public health facilities only. Table 4.25 presents the enablers and barriers identified as the main influence on sustainability.

Table 4.25: The Number One Key Enabler and Barrier to the Sustainment of the Project's Positive Results as Identified by Different Project Teams

Institution Type	Key enablers to sustainability	Key barriers to sustainability
Public (n=20)	Program design (6) Stakeholder's buy-in (4) Quality of the board members (3) Institutionalization of a coaching culture (2) Presence of the change champion (2) Devolution and Political good-will (2) Communication management (1)	Devolution and political interference (2) Human resource shortage (2) Mis-alignment of the project goals to teams' day to day operations (1)
Faith-based (n=9)	Stakeholder's buy-in (3) Quality of the board members (2) Coaching (2) Communication management (1)	Human resource shortage (1)
Private (n=5)	Stakeholder's buy-in (3) Communication management (1)	

The themes and sub-themes are further categorized into both universally and sector-specific recognize factors that facilitated the sustenance of institutional priority project post-LeHHO training. These results are in general agreement with the common emerging themes reported earlier by scholars such as (Gustafsson et al., 2003; Shelton et al., 2018), which include; design of the program, available resources, existing organizational structure, availability of powerful change champions, evidence-based output, and continuous improvement using data. From the context perspective, four unique themes emerged as a sustainability enabler at the workplace; a) quality of board members, b) institutionalization of coaching culture, c) communication management and, d) devolution and political good-will. Further analysis led to the emergence of new sub-themes for each driver identified by context. Table 4.26 summarizes the essence of the perceived sustainability drivers with respect to the health sector context.

Table 4.26: Key Sustainability Drivers for the Implemented Priority Projects per Health Sector

Main Themes	Sub-themes	Public Health Facility	Faith-based health facility	Private Health facility	Illustrative Narratives
Program design	Rigorous recruitment	Yes	Yes	-	*'".initially I thought the program was designed for public health sector only, however utilization of case studies and challenge model approach enabled us to speak to each other across health sectors and we realized that we are struggling with similar problems and collaboration was the only way out....we are now looking at public and faith-based facilities as partners and not competitors especially when dealing with referral system...the program enabled us to sit in one room and facilitated debates such as "Kenya's Health Agenda Initiative" which was initiated by program alumni...."* (Health manager at a private facility). *"...the senior management was part of the training program hence it was easy to influence the rest of the staff to implement the project...our institution also has an established systematic way of handling challenges such as record department, this made our implementation and sustainability of project indicators seamless..."* (Health manager at a public health facility). *"...LeHHO program is an impact-oriented training which ensures that classroom learning, and acquisition of new skills alone is not adequate, but it should be demonstrated through practice and application of knowledge (...).* (Health manager at a faith-based facility) *"...the training curriculum was very relevant to my personal and workplace needs, the training enabled us to identify a real challenge that was specific to our organizational need ... under-delivery was not an option"* (Health manager at a public health facility). *"...leadership knowledge and skill in business management gained from health care management course enabled us to work effectively as teams resulting in successful project implementation at workplace.... the coaching sessions significantly increased the effectiveness of the program in that our coach visited our work environment and kept the connection even after the implementation of the project."* (Health manager at a private facility). *"...I am a trained doctor, and the only language I know is the technical language ...(this is the problem, how do I fix it?)....the training enabled me to learn more about myself, now that I have self-awareness, I am confident that I can lead an effective team because I am a better leader who can enable others to face challenges..."* (Health manager at a public health facility).
	Team recruitment	Yes	Yes	Yes	
	Program curriculum	Yes	Yes	-	

Stakeholder's buy-in	Ministry of health and county government	Yes	Yes	Yes	*"Our recruitment to the program was done from the top management level even though we had not expressed interest for the training...after the first module we realized why we were chosen to attend the training and not delivering the expected results was not an option... we had to do a lot of lobbying at all levels in the organization to ensure that all key stakeholders involved in our chosen projects were on board and willing to support us to not only implement but scale-up the project after the training... we nominated the most resistant team members to be project leads and we kept updating the top-management on the progress, challenges and support need throughout the implementation and scaling-up phase...'* (Health manager at a private facility). *"...teamwork among the trained team and the rest of the staff was a great facilitator...this was demonstrated through ownership of the project and extended support from the board of governors..."* (Health manager at a faith-based facility). *"...we were advised to choose projects which we can implement with the limited available resources available but with high impact...we mobilized senior management support, community health workers and health partners for support....we noted that it is not possible to reach out to pregnant mothers in the village without the involvement of the community health worker....we were lucky to get donors to pay stepped for the community health workers, we are able to sustain the results after the buy-in from county government to support community health workers stipends."* (Health manager at a public health facility). *'...teamwork fostered positive work climate and effective communication during project implementation...being at the position of governance in our county enabled me to influence our juniors' buy-in on a shared vision. Additionally, we had all the necessary resources from human resource to finances.'* (Health manager at a public health facility)
	Senior management	Yes	-	-	
	Other key stakeholders	Yes	-	-	
Board members	Alignment to board members strategic objectives	Yes	Yes	Yes	*"Two of the team members were board members this was a great plus to our team since they understood the program demands and expectations which resulted to good governance and availability of necessary resources to sustain projects positive results... through the boards' support we were able to enroll more managers to the LeHHO training hence more positive outcomes at the organizational level."* (Health manager at a faith-based facility)
	Good governance	Yes	Yes	Yes	
	Competent and trained board	Yes	Yes	Yes	
Communication management	Top management communication	Yes	Yes	Yes	"*During our experience sharing workshop in the LeHHO module, our biggest was, 'what did we know before?' The greatest eye-opener was learning the art of effective communication...we discovered that given that we are working in challenging environment, less jovial and with patients whose patience is tested constantly, the only way to create a positive environment for both staff and patients was adapting*
	Team communication	Yes	Yes	Yes	
	Social Media				

		Yes	-	-	*effective communication skills and emotional intelligence... these are competencies not trained in the medical school yet very crucial especially when managing and leading health facilities in a resource-scarce environment."* (Health manager at a public health facility). *"...use of social media as a communication platform has transformed our level of performance for the better... before social media, many malpractices and poor quality of health services provision were never reported and no one was held accountable...initially social media worked against us but after going through a leadership training, we realized change of mindset was inevitable, we decided to take responsibility of any bad publicity to up our game and also use the same social media to communicate our key achievement"* (Health manager at a faith-based facility). *"... I realized our biggest challenge is not lack of adequate resource but how we communicate with one another...I hold a technical rather than managerial position and tagging along with other departments into my project from initiation was critical..."* (Health manager at a public health facility).
Institutionalization of a coaching culture	Coaching chain Scaling-up of project goals Communication as a leadership tool	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	*"In addition to leadership and management skills acquired in LeHHO class, team coaching introduced to our board members during the training created a unified vision; consequently, they were able to influence other management and staffs to contribute to the vision of the project...."* (Health manager at a public health facility). *"The tangible impact achieved from implementation of catalyst projects inspired the management to seek support from the Strathmore coaches to offer institutional support with the aim of institutionalization of coaching culture through training of departmental managers... we have scaled-up coaching practice as a leadership development approach across all levels in the organization...we avoid telling staff what to but instead we challenge, support and provide them with feedback...we have grown in 3 folds. Our participation in the training started when we had one facility only, now we have opened nine branches across the country."* (Health manager at a private facility).
Presence of the change champion	Vision bearers Change agent's retention	Yes Yes	Yes Yes	Yes -	*"...our organization had invested heavily in the capacity building of the management team and heads of departments...we, therefore, had a pool of LeHHO alumni within our organization; hence it catalyzed implementation of priority challenge projects in different departments contributing to overall organizational performance improvement."* (Health manager at a faith-based facility)

Devolution and political good-will	Accountability Decentralized power Resource mobilization Collaborations through partnerships	Yes Yes Yes Yes	- - - Yes	- - - Yes	*"Devolution cascaded decision making and services closer to the people, therefore, health management teams are able to reach out to the county management team for support and this worked (...). Devolution works well also for patients in that they are now, only a phone call away from airing their grievances to the county governor whenever their healthcare needs are not met...this kind of accountability has stretched us to be consistent with our health service provision."* (Health manager at a public health facility). *"Political good-will facilitated our project progress, being at governance position, we could access the resource, influence buy-in, and support from hospital management...we motivated nurses, maternity & antenatal department staff and also we successfully mobilized community through community health workers' engagement."* (Health manager at a public health facility). *"...our team had one major enabler that led to the successful implementation of our institutional improvement project, 'devolution of the health systems'...devolved funds from the central government to county-level made it easy to access adequate resources to carry out projects..."* (Health manager at a public facility).

Sustainability Drivers

Main Themes	Sub-themes	Public Health Facility	Faith-based health facility	Private Health facility	Illustrative Narratives
Human resource constraint	Nurses and doctors strike	Yes	-	-	*"...the project target indicators on improving customer satisfaction in the outpatient and inpatient department were successfully achieved by the end of the training session...however, customer satisfaction rates declined steadily...tracing back we attributed the degeneration to lose of change champions... all the three trained managers left the institution within the three years after the training..."* (Health manager at a public health facility). *"...we accepted change on improvement of services...my team worked together as change agents and we co-opted a non-trained manager to be the project manager so that we can transfer the ownership to key departments...it worked well for us because even with some team members leaving the institution, our project was not significantly impacted...despite the positive changes, our performance plummeted as a result of 'mass-exodus; of frontline workers especially nurses... we do all the recruitment and training and before we could 'reap the fruits'...they move to private or big public hospitals..."* (Health manager at a faith-based facility). *"...let's say our greatest challenge was inadequate expertise....our project was anchored on technology, but the IT personnel in our institution lacked adequate*
	Inadequate human resources	Yes	Yes	-	
	High staff turnover	Yes	Yes	Yes	

					capacity and relevant expertise to implement the project... this was worsened by scope creep, because automation involved different department and yet I was the only manager attending the training, this caused a major impediment from the onset of the project..." (Health manager at a public health facility).
Inability to translate policy from paper to people	Poor implementation	Yes	-	Yes	*"...our project involved development and operationalization of human resource policy manual, and we were able to achieve the project's first phase of implementation which was to develop an approved policy manual...however, our project stalled and our manual was never operationalized to-date, but was shelved until unknown time... one of the key reasons for the delay was that the phase of the project was not part of the board members' priorities..."* (Health manager at a faith-based facility). *"The buy-in by the management was a great challenge... I was the only trained manager from my institution and no one in my department or other related department was willing to get involved.... the board approved the project, however, there was a challenge in working together with other staff "* (Health manager at a public health facility). *"...Communication and buy-in was a major impediment to the success of our project (...). I suggest that Strathmore Business School going being a training institution and champions of leadership and governance, to act as a bridge in such projects in order to attain good-will from the county management."* (Health manager at a public health facility
	Lack of resources such as funds	Yes	Yes	-	
	Poor prioritization	Yes	Yes	Yes	
Misalignment	The broad scope of work	Yes	-	-	*"...I am a practicing pediatrician and I attended the training alone. I championed a project on quality improvement and accreditation for the whole hospital... it was a great struggle but I was able to mobilize team and successfully implemented the project... my concern is that I am back to my full workload and I see my patients throughout my working hour...the anticipated implementation phases of our project have stalled because my day to day work is not directly aligned to quality improvement department..."* (Health manager at a public health facility
	Silo working	Yes	Yes	-	
	Poor working climate	Yes	-	-	
Devolution	Resource allocation	Yes	-	-	*"Failure to actualize our project was hinged on political interference and prioritization (...). The project involved working with county governments.... even though some county boards shot down the projects, those who accepted lacked the will and commitment to prioritize and allocate the necessary resources."* (Health manager at a public health facility). *"Even though we have workplans for each year, we are forced to prioritize health service needs based on the environment. Challenges that are happening in public sector also trickles down to non-governmental health service providers like us."* (Health manager at a faith-based health facility).
	Poor planning	Yes	Yes	-	
	County politics	Yes	-	-	

Politics	Negative politics Corruptions	Yes Yes Yes	Yes - Yes	Yes - Yes	*"...every newly elected political leader takes over leadership with a bag of promises to fulfill to their voters...this positive gesture comes with misdirection of funds from the existing projects implemented by the outgoing politician because each leader is focusing on implementing their own promised projects without leveraging on the existing gains and milestones....for example our catalyst project was to ensure zero stock-out of essential medicines and we received support from the governor on the same, however the positive results were not sustained since the new governor's priorities was expansion of infrastructure such as building new health facilities."* (Health manager at a public health facility).

These themes suggested why some projects were thriving and are further described with quotations from healthcare managers to illustrate each sub-theme. The emerging themes and sub-themes underscore the context-specific fundamental elements deemed necessary for the sustainability of knowledge transfer.

Driver 1: Program Design

The program design nature of LeHHO program was widely recognized by the interviewees as a key enabler in all health sectors. The build-in knowledge sustainability approach, such as; sector need-driven curriculum, selective team recruitment, challenge-based driven learning blended with team coaching, was highlighted as key enablers. Using the words of senior Ministry of Health manager: 'the program was co-designed by different key healthcare industry players with different health sector challenges in mind.' The description was accentuated by other interviewees; *'..initially I thought the program was designed for public health sector only, however utilization of case studies and challenge model approach enabled us to speak to each other across health sectors and we realized that we are struggling with similar problems and collaboration was the only way out....we are now looking at public and faith-based facilities as partners and not competitors especially when dealing with referral system...the program enabled us to sit in one room and facilitated debates such as "Kenya's Health Agenda Initiative" which was initiated by program alumni....' (Participant from a Public health facility).* The findings revealed that leadership development through teams was recognized as a positive approach in capacity building of the human resources for health.

Driver 2: Stakeholder's Buy-in

In some contexts, stakeholder buy-in resulted in a positive work climate for a successful change process aligned to the achievement of institutional strategic plan, vision and mission. Some interviewees noted that their ability to influence key stakeholders to support their prioritized catalyst project during and after the training was a great enabler for transfer and maintenance of positive gains resulting from the implementation of the projects. *'...teamwork among the trained team and the rest of*

the staff was a great facilitator...this was demonstrated through ownership of the project and extended support from the board of governors...' (Participant from a Faith-based facility). The finding that team training across different levels of organizational leadership was an apparent key enabler of sustainability in all contexts of health provision.

Driver 3: Communication Management

Over 90% of the interviewees perceived their transformed communication capacity enabled them to start looking at each from different lenses. They reported that their main breakthrough during the training was the creation of a positive work climate that was easily attainable through effective communication and appreciation of each staff member as a team. Remarkable, the use of social media was highlighted as a key game changer for accountability in the space of health service delivery as demonstrated in the following quotes; "*During our experience sharing workshop in the LeHHO module, our biggest was, "what did we know before?" The greatest eye-opener was learning the art of effective communication...we discovered that given that we are working in a challenging environment, less jovial and with patients whose patience is tested constantly, the only way to create a positive environment for both staff and patients was adapting effective communication skills and emotional intelligence... these are competencies not trained in the medical school yet very crucial especially when managing and leading health facilities in a resource-scarce environment." (Health manager at a public health facility).* The respondent's report suggests that effective communication management is a key enabler of a positive work environment that, in turn, supports thriving initiatives through team cohesion towards a shared vision.

Driver 4: Quality of Board Members

The ability of board members to add value to the existing organizational resources through inspired leadership, sound management and good stewardship, was highlighted as a key enabler. At the board level, there was a perception that focusing on training the board members first before the rest of the managers resulted in a competent, and aligned board, leading to effective knowledge transfer and

generalization at the workplace and improved health facility governance; *"Two of the team members were board members this was a great plus to our team since they understood the program demands and expectations which resulted to good governance and availability of necessary resources to sustain projects positive results... through the boards' support we were able to enroll more managers to the LeHHO training hence more positive outcomes at the organizational level." (Health manager at a faith-based facility).* There was a widespread consensus among the health managers who cited that building the board's capacity on leadership and governance was a key enabler in ensuring that the institutional improvement projects are not only implemented but sustained.

Driver 5: Institutionalization of a Coaching Culture

Several interviewees perceived the support on the institutionalization of coaching culture especially among the line managers as a key recipe for the continuance of positive results achieved as a result of project implementation. Embedding coaching as a leadership and communication tool generated a pool of coaches at workplace resulting in a strong and consistent coaching chain for scaling-up of the project goals within different departments; *"In addition to leadership and management skills acquired in LeHHO class, team coaching introduced to our board members during the training created a unified vision, consequently they were able to influence other management and staffs to contribute to the vision of the project...." (Participant from a Public health facility).*

Driver 6: The Presence of the Change Champion

Several interviewees perceived the support on the institutionalization of a coaching culture, especially among the line managers as a key recipe for the continuance of positive results achieved as a result of project implementation. Embedding coaching as a leadership and communication tool generated a pool of coaches at workplace resulting in a strong and consistent coaching chain for the sustenance of the project goals within different departments;

"...our organization had invested heavily in the capacity building of the management team and heads of departments...we, therefore, had a pool of LeHHO alumni within our organization; hence it catalyzed implementation of priority challenge projects in different departments contributing to overall organizational performance improvement." (Health manager at a faith-based facility). Team recruitment to the leadership training was suggested as an effective strategy in ensuring that the trained managers (change champions) are retained in the same institution in the case of transfers or retirements, which was cited as a common attrition factor in Kenya's health sector.

Driver 7: Devolution and Political Good-will

There was a consistent reporting from the public, private and faith-based health facilities managers on the impact of devolution of health systems to the 47 Counties even though more impact was felt in the public health facilities. Critical health service provision issues such as accountability, decentralized power, resource mobilization and collaborations through partnerships were cited as key by-products of devolution of the health services; *"Devolution cascaded decision making and services closer to the people; therefore, health management teams are able to reach out to the county management team for support and this worked (...). Devolution works well also for patients in that they are now, only a phone call away from airing their grievances to the county governor whenever their healthcare needs are not met...this kind of accountability has stretched us to be consistent with our health service provision." (Health manager at a public health facility).* The effect of devolution on the implementation and sustainability of institutional improvement projects were largely cross-sectoral because devolution promoted cross-sector partnership in different counties in Kenya.

4.8.4: Factors that Constrained the Sustainability of the Implemented Priority Projects Indicators Post-training at the Workplace

In this section, the researcher addressed the question, "Under what conditions were the catalyst projects positive results unsustainable?" Four key themes emerged as common to healthcare managers from the public and faith-based health facilities' workplace experiences on factors that hindered maintenance of the catalyst projects results over time: a) Human resource constraint; b) inability to translate policy from paper to people; c) Mis-alignment of project goals with teams' day to day operations, d) devolution and political interference. We describe these key themes with a commendable excerpt from healthcare managers to point-up each theme.

Inhibitor 1: Human Resource Constraints

Despite the significant emphasis on human resource capacity building through training as a resolution to human resource challenges, constraints to effective strategies, human resource retention are many. Our study participants emphasized the inadequate human resources for health as a binding constraint to the improvement of health systems performance, especially in the current devolved health system in Kenya. The comment was evidently reflected by a couple of exciting management systems improvement projects such as automation of hospital patient and procurement systems, which are now performing at 50% capacity and in some departments 0% due to high staff turnover. It was evident that some projects which were not sustained as a result of; championing team members, information technology team, or nurses exiting the institutions. These sentiments were common only in public and faith-based health facilities. Our participant noted the following; ***'...****we accepted change on the improvement of services...my team worked together as change agents and we co-opted a non-trained manager to be the project manager so that we can transfer the ownership to key departments...it worked well for us because even with some team members leaving the institution, our project was not significantly impacted...despite the positive changes, our performance plummeted as a result of 'mass-exodus; of frontline workers especially nurses... we do all the recruitment and training and before we could 'reap the fruits'...they move to private or big public*

hospitals...' (Health manager at a faith-based facility). There was widespread reporting on the effect of human resource constraints on the sustenance of the positive results from the implemented project, especially for the public and faith-based health facilities**.**

Inhibitor 2: Inability to Translate Policy from Paper to People

Even though the inability to translate policy from paper to people was not mentioned as the first key barrier, one facility manager participants perceived that investing in getting a full board members buy-in and support from the initiation of the project would be beneficial in cultivating sustainability culture for all projects implemented; *'...our project involved development and operationalization of human resource policy manual, and we were able to achieve the project's first phase of implementation which was to develop an approved policy manual...however, our project stalled and our manual was never operationalized to-date, but was shelved until unknown time... one of the key reasons for the delay was that the phase of the project was not part of the board members' priorities...' (Health manager at a faith-based facility).* These findings relate to the earlier mentioned enabler (quality of board members), in that without inspired leadership and transparent governance, it is not possible to sustain the health systems improvement initiatives.

Inhibitor 3: Misalignment of the Project Goals to Teams' Day-to-Day Operations

The perceived importance of application of leadership practices at the work environment in the case of this study was sufficient to inspire change agents to identify and initiate the implementation of the catalyst project but not adequate to sustain within the institutional existing structure and operations. This could be attributed to the intense resources requirements to sustain the projects. It is common in many healthcare institutions where practicing doctors are part of the hospital management team. Hence implementation of leadership and management project is possible as long as the trained managers are working under the reduced clinical workload. However, when the training comes to an end that the project is fully integrated into the organization, the sustainability of results quickly declines due to

change in priorities; *'...I am a practicing pediatrician and I attended the training alone. I championed a project on quality improvement and accreditation for the whole hospital... it was a great struggle. Still, I was able to mobilize a team and successfully implemented the project... my concern is that I am back to my full workload. I see my patients throughout my working hour...the anticipated implementation phases of our project have stalled because my day to day work is not directly aligned to quality improvement department...' (Health manager at a private health facility).*

Inhibitor 4: Devolution of Health Services

Even though devolution was earlier cited as a key enabler of project sustainability, some teams contrasted this perception. The devolved health system encouraged a lot of the health workforce transfers from one county to another, therefore creating gaps in some facilities. Additionally, the first phase of devolution ensured that all necessary resources were prioritized and timely, however many counties were not able to sustain the promise hence resulting in a decline in performance; *'Even though we have workplans for each year, we are forced to prioritize health service needs based on the environment. Challenges that are happening in public sector also trickles down to non-governmental health service providers like us.' (Health manager at a faith-based health facility.*

Inhibitor 5: Political Interference

A couple of interviewees from both the public and private sectors cited politics at the County level as a key deterrent to the sustainability of projects; *"...every newly elected political leader takes over leadership with a bag of promises to fulfill to their voters...this positive gesture comes with misdirection of funds from the existing projects implemented by the outgoing politician because each leader is focusing on implementing their own promised projects without leveraging on the existing gains and milestones....for example, our catalyst project was to ensure zero stock-out of essential medicines and we received support from the governor on the same; however, the positive results were not sustained since the new governor's priorities was expansion of infrastructure such as building new health facilities……we, therefore, commissioned*

another project to align with the governors agenda" (Health manager at a public health facility).

4.8.5: Lessons Learned and the Policy Implication

While it is great to report that LeHHO program s' objectives were adequately met, it is more important to explore what facilitated or constrained its intended goals so that it can be considered in future training and project implementation. Based on observations of healthcare manager's experiences the following eight lessons were drawn: First, constant application of leadership and management practices in teams supported by coaching, on the real workplace challenge leads to sustainable health system performance improvement; Second, leadership capacity building is a systemic process which involves the trainers, trainees, and the organizations key stakeholders and therefore buy-in and support by all stakeholders is imperative; Third, the study reveals that despite the great strides undertaken to improve health systems performance, human resources constraints still undermines the gains of these interventions.

Fourth, alignment of the training practices to key stakeholders priorities is critical for both knowledge transfer and sustainability at organizational level; Fifth, health organizations capacity building strategy should start with training of board members and team training to ensure inspired common vision at all levels; Sixth, an effective leadership program should focus not only imparting knowledge but also inspire the heart and encourage application of knowledge through action and teamwork; Seventh, even though coaching is a relatively new leadership development concept, training institutions should build a compulsive evidence-based case that will convince the partnering organisations why coaching should not only be embedded in leadership training but also within the transfer organisations and; Eight, devolution of health services should be supported by strong sustainability policies such as resource mobilization and accountability.

4.8.6: Summary

This study assessed the sustainability of desired measurable outcomes over time while comparing with the set threshold for project indicators to ascertain their sustainability within the period (2-5) years post-training. Based on the results of this study for the team-based projects under study, we drew the following conclusion: a) sustainability is not easily obtained if it is not impeded in the entire project cycle; but, when the program sustainability is well thought through and embedded in the training curriculum co-owned by the training institution and the healthcare industry stakeholders, the probability of sustainability of training gains are very high; b) even with an effective program and sustainability plan, external factors such as political interference and human resources engagement warrant consideration and; c) transformational leadership, transparent politics, stakeholder communication, and accountability can provide as special motivators for health facility managers to improve service delivery performance that are sustainable. This calls for continuous adaption of innovative problem-solving strategies in corresponding institutions through the integration of best practices into organizations' operations. This paper contributes to the nascent literature on knowledge transfer sustainability strategies.

CHAPTER FIVE

DISCUSSION

5.1: Introduction

The central aim of this study was to assess the impact of leadership training on health system performance in selected Counties in Kenya and explore what factors facilitated or impeded successfully implementation and sustenance of leadership development practices through institutional improvement projects. The specific objectives were to: a) describe the healthcare leadership challenges addressed; b) analyze the implementation and sustainability status of selected priority institutional improvement projects; c) explore factors that contributed to the achievement or non-achievement priority institutional improvement projects; d) assess the impact of the priority institutional improvement projects through the base-lined health system performance indicators as compared to non-trained teams within the same county and; e) explore factors that influenced the sustainability of the attained results across different health system contexts. In this chapter, the researcher presents conclusive thoughts through discussion of the key findings of the five sub-studies to illuminate clarity on how the findings relate to the highlighted literature in chapter two. A summary of the discussion and the study limitations are also addressed in the chapter.

5.2: Discussion of Key Findings

The **first** research objective was to assess how has the leadership training enabled health managers identify and address the priority institutional improvement projects. Through document review, surveys and interviews, the researcher was able to draw several key insights from the findings in the results chapter that relates to the first objective. The survey revealed that health leadership challenges in the public, private and faith-based institutions are different. These disparities are seen in the health sectors and governance context. Hence in order to improve the quality of health delivery, the healthcare managers are challenged to consider innovative

approach such as leadership development to address such challenges (McAlearney, 2010; Stoller et al., 2013 & Stoller, 2008). Though the survey data presented service delivery pillar as the most addressed leadership challenge during the training for all the sectors, the interview data on the other hand identified the human resources for health as a persistent health system performance challenge in Kenya. Consistent with Willis-Shattuck et al. (2008) research findings on attracting, recruiting and retaining qualified personnel, particularly nurses posed a major human resource challenge. Interestingly, the projects focusing on human resources for health were the few and the least successful during implementation reflecting other research on service delivery improvement in Kenya (Seims et al., 2012).

Difference was also seen in the leadership and governance pillar, this include lack of communication structures, poor alignment, unclear shared vision within the public health facilities. Poor communication structures and professionally dominated models of leadership (Nzinga et al., 2018). Resources shortage in terms health information medical products and technology, and financing were observed in public and faith-based health facilities as compared to private for-profit health facilities. Although most private facility teams addressed projects on technology, it was observed that they were building on the existing systems as compared to their public health facilities. For instance, structural characteristics such as board members, budget allocations, availability of medical and non-medical commodities and physical space are considered necessary for effective delivery of health services as reflected. The complexity of Kenya's devolution framework led to services disruption due to poor transition management (Barker et al., 2014). English et al. (2004), the performance and quality of Kenyan public sector hospitals are often poor due to resource and structural limitations.

These findings are in line with what other studies on health systems strengthening interventions have shown. The effectiveness of a health system depends on the leadership capacity withing the organization. Nzinga et al. (2009) & English et al. (2011) commented that the poor performance of hospitals in Kenya and other LMICs

is often attributed to poor leadership at operational, yet such leadership is often situated in a complex healthcare context that undermines leaders' abilities to act. Although the literature has shown that significant difference in context, structures and resources across the sectors exist (Kwamie et al., 2014; Seddiq et al., 2014; Seims et al., 2012), this study has shown that public and faith-based health facilities tend to have common challenges despite the difference in structure. The researcher was interested in understanding what health managers thought were the pressing leadership challenges that influence their ability to provide quality health care.

The **second** objective was to find out the implementation and sustainability status of selected priority institutional improvement projects for LeHHO program alumni. From the observation and interviews, health managers across the sectors reported successful implementation rate of 85% of the prioritized projects achieved the desired measurable results (DMR) by the end of the training (9th month). Moreover, 88% of the 60 implemented were sustained 60 months post-training. These findings are consistent with Ciccone et al. (2014) & Seims et al. (2012) which has shown that the modes of leadership and management may influence health outcomes such as life expectancy at birth, child mortality, maternal mortality. Just as in this study Seims et al. (2012) results showed significant increases in health-service coverage at the district level in the intervention teams compared to the comparison teams. Similarly, there were significant increases in the number of client visits at the facility level in the intervention group versus comparison facilities.

Other studies in developing countries have shown that strengthening the leadership and management skills of health teams, through team-based approaches focused on selected challenges, contributed to improved health service delivery outcomes and these improvements were sustained at least for six month (Kwamie et al., 2014; Mansour et al., 2010; Peterson et al., 2011 & Seddiq et al., 2014). The findings indicate that selection of catalyst projects according to priority areas for health system performance improvement within the county or an organization's strategic priorities coupled with creating a shared vision around the challenge, triggers the

immediate application of knowledge to the work environment. The projects provided a foundation for direct leadership impact evaluation and led to measurable outcomes, while coaching creates a positive and sustainable progress for individual team leaders, team members and the company the team represents (Abbott and Rosinski, 2007; Anderson et al., 2008, & Athanasopoulou & Dopson, 2018).

A study by Salas et al. (2008) concluded that the evidence in changes in health systems strengthening through leadership training and team training approach is associated with positive changes in health service delivery. One strength of this research was that it provided an opportunity to probe the role of "The Challenge Model" team coaching, and training to enable managers to address their work challenges without considering the implementation of priority projects selected within different health system contexts in Kenya.

The **third** objective was to explore factors that contributed to the achievement or non-achievement of Desired Measurable Results (DMR) from priority institutional improvement projects at the workplace. Through face to face interviews health managers' experiences and perceptions on factors that facilitate or impede knowledge transfer at the workplace were explored. The study identified five major enabler themes that illustrate the experiences of the managers emerged. Three of these themes were consistent and largely reflected the established categories represented in the literature for major transfer influences such as Baldwin's and Ford's conceptual model (Baldwin & Ford, 1988). The differences that affected the ability to transfer knowledge through successful project implementation were primarily issues within the: a) training design; b) trainee characteristics and; c) work environment. These results are in general agreement with significant standing findings in the area of training knowledge transfers (Burke & Hutchins, 2007; Timothy & Kevin, 1988; Tracey et al., 1995 & Velada et al., 2007). While these studies reported similar transfer factors to those identified in our study, environment, trainee characteristics, and training design were elucidated in their study as key concerns.

Pham et al. (Pham et al., 2013; Thi et al., 2011) reported similar concerns on the mediating role of transfer strategies in relation to transfer design and transfer of knowledge. Pham et al. (Pham et al., 2013) identified study place key players of transfer training strategy as trainees, training providers, and employers; consequently, their results identified work environment factors such as supervisory support, job autonomy and preferred support to be significantly associated with the training transfer. Based on this analysis, the findings suggest that transfer can be improved if enablers and barriers are further unpacked. Other related studies (Georgenson, 1982; Ford, 1997; Mills et al., 1990; Kimathi, 2017; World Health Organisations, 2010) on transfer did not involve participants from the health sector, especially from sub-Saharan Africa. Nevertheless, these studies, in accord with the findings from our study, suggested various crucial strategies prerequisites for transfer such as work environment factors, trainee characteristics, and training design, and these drivers were also confirmed in our study.

Additionally, further analysis led to the emergence of new sub-themes such as attitudinal shift, power, position, and political good-will. Two unique themes were team-based coaching and occurring opportunities. This echoes findings from Grant (2014) and Peters & Carr (2013) which suggest that team coaching has the potential of influencing team performance. Events such as devolution of health services, endemic strikes in public health systems and political elections were categorized as the sub-themes in the occurring opportunities theme. Thus, in the successful project teams, there was a conjunction of favorable factors that provided a conducive environment within which knowledge, skills, behaviors, and projects could be assimilated into team operations. This result is in line with Pham and colleagues (Pham et al., 2013) and other studies (Rouiller & Goldstein, 1993; Saks & Belcourt, 2006; Tracey et al., 1995; Velada et al., 2007; Wen & Lin, 2014).

The Teams who failed to implement their priority projects reported the following constraints: a) inadequate management support in provision of necessary resources

for implementation; b) inadequate team and staff support; c) high staff-turn over; d) misalignment of board's verses manager's priorities; e) lack of technical expertise required to implement the projects; f) endemic strikes; g) negative politics and; h) poor communication management.

The **fourth** objective evaluated the Impacts of the priority institutional improvement projects on the base-lined health system performance indicators as compared to non-trained teams within the same county. Dopson et al. (2019) proposed a future longitudinal, processual and comparative case-study-based approach in tracking a desired strategic change or organisational transformation. The findings on the pretest and posttest indicator scale for the trained managers for all the six HS pillars indicator scale revealed significant positive improvement compared to the non-trained indicator means. Additionally, linear regression analysis revealed that those who were trained attained significant positive health systems performance indicators than those who were untrained. The regression method to estimate DID structural model used to calculate the 'fact' and 'counterfactual' revealed that training had a positive impact on the intended outcome with impact value ≥1. Thus, the study supports both hypotheses that trained healthcare management teams had a significant difference in the implementation status of priority projects and, hence had a significant impact on health system performance indicators compared with non-trained managers. The results support previous findings which reported leadership development as a valuable experience for health managers and teams as they were able to attain short-term outcomes because the novel approach supported teamwork, initiative-building, and improved prioritisation (Mansour et al., 2010; Peterson et al., 2011; Kwamie et al., 2014; Seddiq et al., 2014).

The **fifth** objective was to explore the health manager's perceptions on the status of their institutional improvement project and highlight specific institutional enablers and barriers to the sustainability of the successfully implemented project post leadership development training. The study further explored the contextual sustainability factors for the public and private health facilities in Kenya, with the

intention of synthesizing how different factors interact with each other in diverse health system contexts. The thematic construct which emerged suggest that sustenance of positive institutional improvement projects indicators across the health sectors are facilitated by seven important mechanisms; a) program design, b) stakeholder's buy-in, c) quality of the board members, d) institutionalization of a coaching culture, e) presence of the change champion, f) devolution and political good-will and, g) Communication management. Regardless of the health sector type, the findings suggest that even with a well-designed program, stakeholder's buy-in is a critical factor to consider in all health institutions to ensure the sustainability of change initiatives. Other similar studies (Egbu et al., 2005; 2003; Shelton et al., 2018) has shown that the common emerging themes on factors affecting program sustainability include; a) the design of the program, b) available resources, c) existing organizational structure, d) availability of powerful change champions, e) evidence-based output and, f) continuous improvement using data. This findings build further on Hargreaves & Fink (2004) who suggested that sustainable improvements are not fleeting changes that disappear when their champions have left, instead, it spreads beyond individuals in chains of influence that connect the actions of leaders to their predecessors and successors.

The findings principally reflect the perspective diverges from the growing body of literature on knowledge transfer sustenance about the interaction of sustainability elements and context. The synthesis of sustainability drivers using this approach places emphasis on how healthcare leaders can influence the work environment and the sustainable health workforce capacity building in different health system contexts. One of the unique contributions of this study is a glimpse into the effect of devolution of health services, the role of the board, politics, and institutionalization of a coaching culture in ensuring improved health service provision in Kenya.

The current study complements a recommendation by Shelton and colleagues who proposed the need to approach sustainability by focused not only on the routinization of a new set of practices into organizations' routine operation but

addressing sustainability in the context of change over time (Shelton et al., 2018). This study further delineates the four fundamental sustainability inhibitors which were evident among the non-sustained project's outcome; a) human resources constraints, b) misalignment of project goals with teams' day to day operations, c) inability to implement policies and, d) devolution of health services and negative politics. Most of these constraints were reported in the public health facilities and were attributed to the no-sustenance of the projects post the training period. These findings extend the work of (Gustafsson et al., 2003; Shelton et al., 2018), which draws attention to the fact that even with pieces of evidence on factors affecting program sustainability, a synthesis on how different sustainability enablers interact with each other in diverse health systems is deficient. The findings also support on Buchanan et al. (2005) review findings which suggests that sustainability is dependent on multiple factors, at different levels of analysis: substantial, individual, managerial, financial, leadership, organizational, cultural, political, processual, contextual and temporal.

This study further disaggregates the sustainability drivers into different health service delivery contexts in Kenya by examining how each theme and sub-themes are represented in different health sectors (public, private and faith-based health facilities). The quality of board members, communication management and institutionalization of coaching culture were the significant cross-cutting drivers' related sustainability of project results in all the health sectors. An additional contribution of this study is the contextual exploratory examination of the proposed sustainability factors of on health systems strengthening intervention (Gustafsson et al., 2003; Shelton et al., 2018). Specifically, in the era of immense investment in the health system strengthening, new reforms such as the devolution of the health services and the felt influence of national and county politics, in driving health agenda in Kenya. It is worth noting that these findings differs from Iwelunmor et al., (2016) findings which recognized ecological and technological upheavals as obstacles that have affected the sustainability of interventions in sub-Saharan Africa.

Further than these simple associations, this study presents suggestions based on lessons learned, on how the key stakeholders including policy makers can innovatively enhance sustainable generalization of learned knowledge and skills at work place such as; a) constant application of leadership and management practices on the real workplace challenge which in turn leads sustainable health system performance improvement, b) Key stakeholder engagement for buy-in and support, c) effective human resources engagement, (d) alignment of the training practices to the key stakeholders needs, e) health organizations capacity building strategy should start with training of board members and team training to ensure inspired common vision at all levels, f) an effective leadership program should focus not only imparting knowledge but also inspire the heart and encourage application of knowledge through action and teamwork, g) even though coaching is a relatively new leadership development concept, training institutions should build a compulsive evidence-based case that will convince partnering organizations why coaching should not only be embedded in leadership training but also within the transfer organizations and, h) devolution of health services should be supported by strong sustainability policies such as resource mobilization and task-shifting.

Although there is a complex link devolution and political good-will as one of the sustainability drivers across the context, there is a single, strong connection between leadership development and community empowerment through joint decision making and ownership to enhance the culture of commitment, transparency and accountability by all. In fact, when leadership capacity building is done to target all the cadres in an organization, the chances of sustaining the positive outcomes are very high than training the frontline workforce alone. By itself, the practice of team leadership development centered on the application of priority projects based on institutional projects is a crucial sustainability driver; this is because the approach creates and empowers more leaders inspired to face one challenge at a time. Indeed, Hargreaves (2007) simply puts it that, 'sustainable leadership is distributed leadership'. This implies that the training institutions in partnership with health service providers and other key stakeholders should design not only customized

programs for different staff cadres, but should focus on unifying the overall institutional agenda, which is the improvement in health service delivery performances. Consideration of organisational context is important when trying to sustain complex interventions, as it seems to influence the gap between short- and medium-term outcomes (Kwamie, et al., 2014).

5.3: Summary

Building strong and sustainable health systems, there, requires innovation, including innovative education for health workers (World Health Organisations, 2010). Based on this evidence, understanding how to facilitate the development of effective leadership for health is more crucial than ever (Goleman et al., 2002; Ladegard & Gjerde, 2014). The first objective of the study sought to identify and describe the healthcare leadership challenges addressed by the healthcare teams. The study revealed that priority challenge in the 19 counties included issues concerning the provision of quality health services delivery, leadership and governance, hospital information management system, human resources for health, supply chain and health financing. In addition, the study illustrated that even though human resources for health is a persistent health system performance in all health sectors, only a few teams chose human resources challenge because they felt it was outside their sphere of control and influence.

The results further revealed that by clustering the team's projects according to the WHO health system building blocks (World Health Organisations, 2010); in order of frequency of prioritization, service delivery was the leading challenge across all the sectors, followed by health information, leadership and governance, human resources, medical products, and health finance. Further findings gathered qualitatively revealed that, other salient challenges such as National and County politics and instant promotion post-training to other sectors as an impending challenge to sustainable health system performance. It is therefore critical that policymakers consider the contextual factors that influence health system performance when designing and implementing health system improvement

interventions in the counties. Additionally, as much as leadership development training is resulting in the improvement of specific health system indicators, greater attention needs to be focused on the improvement of human resources engagement and development especially at policy level because it greatly influences overall health system performance and outcome at the population level.

The second objective was to assess the implementation status of the priority improvement projects housed in 39 facilities in 19 counties in Kenya. Generally, three-quarters of the selected projects were successfully implemented by the end of 9-month leadership training. These improvements were sustained for 60 months after the training. These findings are therefore an indication of the importance of adopting a systemic process that enables the integration of new knowledge at the work environment to ensure sustainability and scaling-up of best practices. The study provides evidence that an intervention underpinned by challenge driven learning and team coaching can enhance a variety of health outcome variables.

The third objective of this study sought to establish the enablers and barriers to transferability and implementation of the prioritized projects at the workplace in different county facilities. The focus of the objective was to explore whether training transfer is achievable at health institutions and further pinpoint critical transfer factors for the leadership training within the healthcare context. Toward this end, the study found some clarity to the ongoing training transfer literature, and exhibits that transfer of leadership knowledge through practice and implementation of catalyst projects is often positively influenced by a variety of predictor variables; training design, work environment climate, trainee characteristics, team-based coaching and, leveraging on occurring opportunities. The findings reveal that unless training interventions are informed by a need-driven curriculum customized to real-world work teams, the potential knowledge and skill transfer can be thwarted. The findings suggest the need for robustly engaging the key stakeholders while designing and implementing the training.

The fourth objective of this study was to evaluate the efficacy and influence of leadership development training on success metrics for the health system through the implementation of priority initiatives for systemic change. Linear regression results revealed that the trained managers achieved highly significant desired measurable results than the non-trained managers. Consequently, the study supports the presupposed hypotheses that the application of leadership, management and governance practices through priority challenges projects have a positive effect on health system performance. As a result, the program is deemed to be achieving its intended purpose, which is to equip leaders with knowledge, skills, and practice to improve health system performance under the devolved system of government.

The fifth objective intended to determine whether improvements gained by the implementation of health system improvement projects by alumni, were sustained post-training. The sustainability of institutional improvement strategies such as projects implemented post-leadership training in public and private health facilities depends on the quality of board members, communication management and institutionalization of coaching culture. These findings are pertinent for planning and implementing similar health systems strengthening intervention in low-income countries.

5.4: Study Limitations

While this study was carefully designed to reach its aims, our study findings should be interpreted considering the highlighted limitations worth consideration in the future research. First, even though the study utilized the quasi-experimental design with the baseline, endline and post-training data, the matching of the control groups were done retrospectively after the program implementation. It is therefore recommended that based on the current study findings, that future studies should consider a more rigorous design with a randomly assigned intervention and comparison group at the beginning of the program. Second, the setting and point of data source were exclusively from the Strathmore University healthcare leadership program's leadership development intervention. Therefore, it is not possible

explicitly to conclude that generalization of knowledge occurred as a result of the implementation of leadership development practices alone.

Third, there was a variance in size and scope of the of the comparison health facilities within the same County, however, the selected health facilities were deemed suitable as they are informed by the same County strategic plan. Fourth, the program evaluation was undertaken by a team from the same institution, which was part of the program implementation consortium; hence measures had to be put in place during data collection and analysis to mitigate the potential conflict of interest. Fifth, the use of a 3-point Likert scale to measure the attitudes, beliefs and opinions of the healthcare managers was a key limitation in this study. Chang (1994) noted that a few-points Likert scale may not sufficiently capture the breadth and complexity of responses due to information loss. Cummins & Gullone (2000) review suggested that scale points had no effect on criterion-related validity, and hence expanding the scale point beyond 5 or 7 might increase the sensitivity without affecting reliability.

Sixth, the study does not seek to demonstrate causation but how leadership training could have positively contributed to improved health performance. The study, therefore, looked at the improvement of health system performance through the implemented institutional improvement priority projects as a catalyst chosen by institutional teams as informed by the county or institutional strategic plans. The project served as a knowledge transfer and skill acquisition practice, while the team coaching anchored challenge model approach was used as a problem solving and monitoring and evaluation tool for tracking the indicators towards the achievement of the Desired Measurable Result (DMR). Seventh, the effect of time lag across the cohorts, the study was conducted among the healthcare managers over the last six years; hence there was a high possibility of changes in leadership and team composition and political interferences and lack of adequate resources after the training across the sector that could have contributed to data limitations thus under-powering the results. However, the researcher followed-up with transferred managers and, restructured the research questions accordingly to cater for different

time series. The teams' previously completed challenge models were also used as a checklist during the interview process.

Eight, the study cut across the six cohorts of participants trained in the six-year period. This limits the findings to the program cohorts and should be generalized with caution. For example, projects which were implemented during the devolution of health systems period received immense goodwill and resources as compared to projects implemented outside devolution season. Nineth, self-reporting was a possible limitation in terms of self-awareness and biases of participants. The individual managers on the pre-existing view and bias for both quantitative and qualitative data could be limited by the fact that it rarely can be independently verified. To minimize its implication, verification was, therefore, be sought from the program coordinators and when possible and appropriate multiple data collection methods were used.

Tenth, evaluation means that consideration must be given to, geographical location and number of narratives to be written, these restrictions also mean that not all aspects of all institutional improvement were physical assessed especially in far to reach counties. Other pragmatic issues that hindered diversity visits to verify projects included financial and human resources constraints. However, the researcher instead randomly selected a smaller sample size rather than the whole study population without interfering with the validity and reliability of the data collected. Lastly, the health sector policies and caliber of boards that can make or break the work of the trained managers could have slowed and discouraged participant's interests and motivation to bring the projects into life. The declared limitations were therefore kept at the forefront and considered in all phases of this study. It is against these that any conclusions and recommendations must be considered and framed. Every effort was made by the researcher to address these issues, but some could be beyond the scope and control of the researcher.

CHAPTER SIX

CONCLUSION AND RECOMMENDATION

6.1: Introduction

The chapter presents the overall study conclusion drawn from the previous discussion chapter and, the recommendations for the improvement of the leadership development program for sustainable health system performance in different Counties in Kenya.

6.2: Conclusion

Health system performance in Kenya remains poor despite the devolution of health service to the 47 counties in the year 2013. The main issue is poor health systems leadership. Research evidence shows that addressing health system leadership improves health outcomes. This study sought to assess the impact of leadership development training on the health system performance indicators through the implementation of institutional improvement priority projects. The projects were based in 39 health facilities (23, public, 10 faith-based/NGO sector, and 6 private hospitals) in 19 Counties in Kenya. Based on the research findings, significant conclusions were inferred from this study.

The first objective of this study sought to identify and describe the healthcare leadership challenges addressed by the healthcare teams. The main conclusion from this study is that the greatest challenge lies in the devolution of health service delivery in Kenya, leading to diverse county health systems performance. Inadequate leadership performance affects performance of the other five health system blocks (pillars). The second objective of this study was to determine the implementation status of the priority improvement projects housed in 39 facilities in 19 counties in Kenya. The principal result of the study was that, implementation and sustainability of priority health systems performance improvement projects was statistically

significant post-training compared to baseline. The third objective was to determine the enablers and barriers to transferability and implementation of the prioritized projects at the workplace in different county facilities. The study identified training design, work environment climate, trainee characteristics, team-based coaching and, leveraging on occurring opportunities as the key enablers for knowledge transfer to the work environment.

The fourth objective was to determine the impact of leadership development training on the health system performance indicators through the implementation of institutional improvement priority projects. The findings revealed that the trained managers achieved highly significant desired measurable results than the non-trained managers. The study, from a practical point of view, deliberated on integrated challenge-based driven methods to boost the transmission of newly learned leadership skill and knowledge through practice. The findings are important in providing guidance on innovative learning approaches that triggers immediate knowledge transfer by solving pressing challenges in the health sector.

The fifth objective to determine whether improvements gained by the implementation of health system improvement projects by alumni, were sustained post-training. It specifically aimed at exploring the specific sustainability drivers for project-based experiential learning in Kenya's health sector, with the intention of synthesizing how different factors interact with each other in diverse health system contexts. Based on the results for the team-based projects under study, we drew the following conclusion: a) sustainability is not easily obtained if it is not embedded in the entire project cycle; but, when the program sustainability is well thought through and embedded in the training curriculum co-owned by the training institution and the healthcare industry stakeholders, the probability of sustainability of training gains are very high; b) even with an effective program and sustainability plan, external factors such as political interference and human resources engagement warrant consideration and; c) distributed leadership, transparent politics, stakeholder communication, and accountability can provide as special motivators for health

facility managers to improve service delivery performance that are sustainable. This calls for continuous adaption of innovative problem-solving strategies in corresponding institutions through the integration of best practices into organizations' operations.

6.3: Contribution of the Study to Knowledge

The study assessed the impact of leadership development training on the health system performance in selected counties in Kenya. Even with prior empirical studies that established that leadership development has a significant impact on service delivery improvement, It has been noted that these preceding studies concentrate majorly on issues before the devolution of the health system, some also focused on one health system pillar, or frontline personnel only and some focused on vertical programs. In addition, these studies had several significant limitations concerning methodology and context. The current study, therefore, contributes to the empirical literature by demonstrating that incorporating institutional improvement projects and coaching into leadership development training leads to the immediate application of knowledge resulting to significant improvement of the health system performance indicators in the Kenyan Counties.

The research further adds to the current body of scientific literature and contributes to the debate at the heart of training and development researchers on factors that influence transfer and maintenance of knowledge from class to work environment. The study findings, therefore, brings together a series of integrated evidence-based approaches to enhance the transfer of leadership, management, and governance practices through a team coaching conversation for inspired commitment to problem-solving. The integrated model of study has important implications for health policy makers, human resources practitioners and researchers in training and development institutions. In addition, the essential factors used in this study include the challenge model, team coaching, work climate, real-world problems and projects and sustainability enhance the conceptualization of experiential leadership framework.

Despite a growing array of well-designed, leadership development and coaching studies, more comprehensive evaluations containing correct criteria that link theory and practice are required in leadership development. The study thus contributes to theoretical literature by providing the basis for empirically testing the theoretical suggestion used in formulating the research hypotheses. The study, therefore, addressed the proposed research gap on the need to determine parameters for more acceptable result such as the use of more individualized criteria focusing on progress toward specific self-set goals as a unit measure for measuring leadership impact. The study supports the proposition of Dwyer that leadership can be learned through action learning approach where participants learn to apply a set of leading, managing and practices to address their real workplace challenges over time (Dweyer et al., 2013).

In addition, the study supports the theoretical proposition of Leadership Management and Governance (LMG) approach which operates on a framework that measurement of leadership, management and governance capacity is not an end itself; rather, working on leadership, management and governance skills is a means of improving work climate, management and governance system, and eventually strengthening health service. Moreover, the study also upholds the suggestion of Theory of Change (ToC) on how and why an intervention works and can be empirically checked by measuring indicators on the hypothesized causal pathway of impact for every planned phase, by defining the long-term goals then chart backward to discover required preconditions. It also provides a straightforward description of the processes of change by which the intervention results in an effect on the real world by analyzing how the intervention interacts with context.

The research findings from this study indicated that training knowledge transfer can be improved through the implementation of strategies that work context as a part of a whole complex health system. The respondents further viewed the complexities on the timing of training and availability of adequate human resources as highly relevant

transfer factors. The emerging factors confirm the health system complexity, especially in a resource-scarce setting. Further exploration of these factors may enable a better outcome for the transfer of learning in healthcare institutions. This research, therefore, offers new insights perceived relevant by respondents especially emerging factors that seem under-researched in the training transfer literature. The research findings support the need to engage health professionals, training institutions, healthcare institutions and County government in the design and implementation of leadership training in healthcare institutions to improve health system performance under the decentralized system of government. In addition, the lessons learned by healthcare managers in their institutional project's implementation journey provides insight into ways for better planning and implementation of other projects and strategies that can be used to ensure long-term project sustainability in the healthcare context.

6.4: Implication for Policy and Practice

The results of this study have important implications for policies and activities which can be developed for the purpose of strengthening health systems' performance through experiential leadership development and coaching in different county health systems in Kenya. First, the findings reveal that unless training interventions are informed by a need-driven curriculum customised to real-world work teams, the potential knowledge and skill transfer can be thwarted. Therefore, the Central and County governments, together with partners such as training institutions, donors, and human resources for health practitioners should consider enhancing practices encouraging positive transfer and sustainability of training in work environment. Such factors include good leadership and governance, positive human resource for health engagement, co-creation of a responsive and experiential learning curriculum, positive work climate and effective communication.

Second, communication among partners and within institutions especially during the change process is critical. The shared vision should be well-articulated and communicated to all stakeholders to ensure adequate buy-in and support during

implementation of health systems improvement programs. Third, institutional work climate was found to influence the implementation of priority improvement projects beyond the classroom. Work climate is therefore imperative in performance improvement as it facilitates teamwork, effective communication, articulation of vision and mission, ownership and accountability among the team members. County health management teams should enhance positive work climate which is a key determinant of performance improvement. Work climate shapes individuals' attitudes, behavior, and culture when facing different challenges in health service delivery. Particularly, addressing the endemic industrial action of health workers across the county, even with effective training, availability of adequate resources, health institutions will not function optimally if the health worker issues are not addressed explicitly.

Fourth, collaboration among training institutions and county health management teams is crucial starting from the commissioning of the training and after the training to ensure the trained health workforce is supported and held accountable for implementation, sustainability and scaling up of priority improvement projects back at work environment. Post-training support strategies such as post-training coaching or mentor-coaching of trained managers should be considered during curriculum design. Lastly, the study findings strongly bring forward the critical role of board members in ensuring the viability of priority projects in the work environment. Politics was found to have either a positive or negative influence on the transfer of knowledge through the implementation of projects at health facilities. The new evidence shines a light on the critical role of alignment and buy-in by management and county health management teams at the early phase of training.

6.5: Implication for Further Study

This study sought to assess the impact of leadership development training on the health system performance indicators in selected counties in Kenya. It also searched for to establish factors which influence the transfer of knowledge at the workplace and sustainability of positive results post-training. The study population comprised

senior healthcare management teams drawn from 19 counties in Kenya who had undergone the 9 months leadership training (LeHHO program) at Strathmore University Business School between years 2011-2016. The study respondents were from the public, private, faith-based and non-governmental health institutions. The results and conclusions in this case are limited to the LeHHO program and the alumni only.

A multi-method study design comprising of (a retrospective quasi-experimental and qualitative design) was adopted to empirically estimate and support the attributed impact of integrated leadership and coaching training on selected health system performance indicators. The researcher utilized questionnaires comprised of both close-ended self-reporting questionnaires and open-ended interview questions aimed at providing structured responses to the study's outcomes. The comparison team quantifiable indicators data were collected in October 2018 with the assistance of health management information system officers from Kenya's Ministry of Health (MOH).

Being quasi-experimental research, the study did not consider the random sampling of intervention and comparison group before the intervention which may as well contribute to sampling bias. Replicative research is therefore recommended where both intervention and comparison groups are randomly sampled with measurement of identified indicators at baseline and at the end of the training period. Future work should concentrate on confirmation of the results and conclusion of this study by undertaking a comparative leadership training such as Kenya School of Governance which is providing similar training for the County Health Management Team (CHMT). In addition, the limitation of findings generalization to priority project only, the additional impact can be assessed at the individual level in future researchers using leadership competency assessment pre-training and post-training. In addition, more work should be carried out to analyze the role of the moderating and mediating variables between training transfer and health system improvement in different county health systems context.

6.6: Summary

Based on the research objectives, the main conclusion from this study is that sustainable development of leadership competencies of health workers results in improved health system performance in all the six health system pillars. The results support previous findings from other studies on leadership development in Africa. The results also suggest that incorporating institutional improvement projects and coaching into leadership training leads to the immediate application of knowledge into Health System performance improvement. Therefore, low and middle-income countries like Kenya need to invest on leadership and coaching training for health workers, together with the strengthening of other health system pillars (information, financing, human resource for health, medicines and technology and service delivery) for sustainable health systems performance improvement to be realized.

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APPENDICES

Appendix A: Institute of Healthcare Management LeHHO Program Cover Letter

Date:

Dear Alumni of the LeHHO Program,

Enclosed is information about research that I believe benefits the field of health system strengthening through capacity building in leadership development of the healthcare leaders under the devolved health system in Kenya.

Tecla is a doctoral fellow at the Strathmore University School of Graduate and her research interest is in health system performance. The research purpose is to An Assessment of Impact of Leadership Training on Health System Performance in Selected Counties in Kenya and compare with the control facilities within the same (19) Counties represented. The research supervisors are Prof. Gilbert Kokwaro, Dr. Joseph Onyango and Dr. Jim Rice, Institute of Healthcare Management Strathmore University Business School.

Please complete the enclosed three forms: a) researcher's copy of the agreement to participate form, b) demographic form, c) role of coaching as a leadership tool, d) post-training work climate survey form, e) Learning Transfer System Inventory (LTSI) and, f) leadership transfer sustainability form. Return it in the stamped self-addressed envelope or via email on (tkivuli@strathmore.edu). This information will provide important data for further sampling information for Tecla's further analysis and precious feedback to the Institute.

After six years of training healthcare professionals on leadership, the time is right for the Institute to conduct impact analysis. We cannot do it without you.
Thanks so much for all you do!
With all good wishes.

Prof. Gilbert Kokwaro

Director, Institute of Healthcare Management

Strathmore University Business School

Appendix B: Participant Information and Consent Form

Study Title: An Assessment of Impact of Leadership Training on Health System Performance in Selected Counties in Kenya

SECTION 1; INFORMATION SHEET–HEALTH PERSONNEL

Investigator: Tecla C. Kivuli

Institutional affiliation: Institute of Healthcare Management, Strathmore Business School (SBS)

SECTION 2: INFORMATION SHEET–THE STUDY

2.1: What is the study and why is this study being carried out?

The study aims to evaluate whether leadership training at Strathmore University is equipping healthcare leaders with the knowledge and skills required to improve the health systems' performance.

2.2: Do I have to take part?

No. Taking part in this study is entirely optional and the decision rests only with you. If you decide to take part, you will be asked to complete a questionnaire to get information on your preferences for a place of delivery. If you are not able to answer all the questions successfully the first time, you may be asked to sit through another informational session after which you may be asked to answer the questions a second time. You are free to decline to take part in the study at any time without giving any reasons.

2.3: Who is eligible to take part in this study?

Strathmore's' Leading High-Performing Healthcare Organisations Alumni
Health Facilities where priority health projects were implemented
Comparative control facilities within the same county with case

2.4: Who is not eligible to take part in this study?

Other Health care leadership programs alumni at Strathmore

2.5: What will taking part in this study require of me?

You will be approached by the Principal Investigator/ an enumerator and requested to take part in an interview or focus group discussion about aspects of the study. If you are satisfied that you fully understand the goals behind this study, you will be asked to sign the informed consent form (this form) and then taken through the procedure to be followed in focus group discussions. We would like to tape the interview or focus groups so that we can make sure that we capture the thoughts, opinions, and ideas we hear from the group.

2.6: Are there any risks or dangers in taking part in this study?

There are no risks in taking part in this study. All the information you provide will be treated as confidential and will not be used in any way without your express permission. We will also ask participants to respect each other's' confidentiality. No names will be attached to the focus groups and the tapes will be destroyed as soon as they are transcribed.

2.7: Are there any benefits of taking part in this study?

By assessing the effectiveness of the leadership program towards improving organization performance the findings will provide lessons which will inform future program designing and implementation, also insights for the central and county governments on human resources for health development, on critical enablers and barriers to translation of knowledge and skills learned to practice at work. It will also inform the partnering investors on how to better align their activities to national and country government policies of human resources for health improvement. Finally, the findings will be useful to the respective counties in terms of the implementation of county strategic plans.

2.8: What will happen to me if I refuse to take part in this study?

Participation in this study is entirely voluntary. Even if you decide to take part at first but later change your mind, you are free to withdraw at any time without explanation.

2.9: Who will have access to my information during this research?

All research records will be stored in securely locked cabinets. That information may be transcribed into our database, but this will be sufficiently encrypted and password protected. Only the people who are closely concerned with this study will have access to your information. All your information will be kept confidential.

2.10: Who can I contact in case I have further questions?

You can contact me, Tecla Kivuli, at SBS, or by e-mail tkivuli@strathmore.edu or by phone at 0726731618. You can also contact my supervisors, Prof. Gilbert Kokwaro, at the Strathmore Business School, Nairobi, or by e-mail (gkokwaro@strathmore.edu) or by phone (0703034538) or Dr. Joseph Onyango (jonyango@strathmore.edu) or by phone (0720879706).

I, _____, have had the study explained to me. I have understood all that I have read and have had explained to me and had my questions answered satisfactorily. I understand that I can change my mind at any stage.

Please tick the boxes that apply to you;

Participation in the research study

☐ I AGREE to take part in the group discussion

☐ I DO NOT AGREE to take part in the group discussion

Taping of discussions and Storage of information for future use for data analysis

☐ I AGREE to have my contributions to the discussions taped for future data analysis

☐ I DECLINE to have my contributions to the discussions taped for future data analysis

Participant's Signature: _____ Date: _____/_____/_____

DD / MM / YEAR

Participant's Name: _____ Time: ___ /___

(Please print name) HR / MN

I, _____ (Name of person taking consent) certify that I have followed the Standard Operating Procedures for this study and have explained the study information to the study participant named above, and that she has understood the nature and the purpose of the study and consents to the participation in the study. She has been given the opportunity to ask questions which have been answered satisfactorily.

Participant's Signature:

_____

Date: _____/_____/_____

DD / MM / YEAR

Participant's Name:

_____

Time: ____ /____

(Please print name) HR / MN

Appendix C: Quantitative Research Instrument

Section 1: Demographics

Description	During Training	Current
Name of organisation		
Name of respondent		
Position of respondent		
Years worked in the organisation		
Years worked in current position		
Type of organisation		
County		

1. Sex:
   - Male
   - Female
2. Which age category do you belong to?
   - 18-25 yrs
   - 26-35yrs
   - 36- 45yrs
   - 46-55yrs
   - Over 55yrs
3. What is the highest qualification in education?
   - Bachelors degree
   - Masters degree
   - Doctoral degree
   - Others … (Specify)
4. How many other leadership trainings did you attend prior LeHHO Program? No.....

   Please list them down

   i. .....
   ii. .....
   iii. .....
   iv. .....

Section 2: Leadership Priority Project Desired Measurable Result Status

Institutional Improvement Priority Challenge		
Measurement Indicator		
Desired Measurable Result (DMR)		
Baseline Indicator measure	**Endline indicator measure**	**Post-training indicator measure**

Section 3: Role of Coaching Towards Achievement of Organisational Improvement Priority Challenge Project.

Checklist Please complete the following coaching evaluation by rating each item on a scale from 1 to 3 **where:** 1= Don't know 2= Below expectations 3= Above expectations				
1	Overall how would you rate the contribution of leadership training alone on the achievement of project results?	1	2	3
2	How well did the leadership coach relate to your institutional environment?	1	2	3
3	How effective has the coaching process impacted on actual organizational results?	1	2	3
4	How effective was your leadership coach in assisting you and the team to identify your institutional priority project goals and objectives?	1	2	3
5	How effective was your leadership coach at supporting you to achieve your identified priority project goals and objectives?	1	2	3
6	How effective was the challenge model as a guiding tool in the coaching conversations towards achieving desired results?	1	2	3
7	How effective were coaching outcome to your personal life?	1	2	3
8	How effective were the coaching outcome impacting your organization?	1	2	3

9	How would you rate the number of coaching sessions you had?	1	2	3
10	How would you rate the long session of the coaching sessions?	1	2	3

Section 4: Work Climate Assessment

The Work Climate Assessment has two sections: the first contains ten items that measure perceptions of climate and the second contains two items that measure perceptions of the workgroup's quality and productivity.

NO	**Checklist** Please rate each item on a scale from 1 to 3 **where:** 1=Agree 2=Disagree 3=I do not know			
Section A: Climate Perceptions				
1	My work is important for the achievement of the organization's vision	1	2	3
2	My Job description is accurate and up to date in relation to my day to day activities	1	2	3
3	The organization acknowledges and values my work	1	2	3
4	The organization provides me with adequate tools/resources to perform my job	1	2	3
5	The organization has good feedback systems that help me to know how well I am performing	1	2	3
6	We all pay attention to how we are working together	1	2	3
7	We have an organizational plan which guides our activities	1	2	3
8	All staff understand each other's capabilities	1	2	3
9	All staff seek to understand the needs of our clients	1	2	3
10	All staff take pride in our work	1	2	3
Section B: Perceptions of Productivity and Quality				
11	Our workgroup is known for its quality work.	1	2	3
12	Our workgroup is productive.	1	2	3

To complete the survey, each team leader rates the 12 items in the survey according to how he/she feels about each item. Team leaders should ask themselves: "how well does each item describe our workgroup today?"

Section 5: Learning Transfer System Inventory

How would you rate your perception of conditions affecting your knowledge transfer in your work environment*?* *RATING SCALE: 1= Low importance 2= Importance 3 = Very importance*

Trainee Characteristics Scales	**RATING SCALE**: 1= Low importance 2= Importance 3 = Very importance		
Learner Readiness to participate in the program	1	2	3
Performance Self-Efficacy by believing you can change your performance whenever you want.	1	2	3
Motivation Scales			
Motivation to Transfer Learning persistently by applying knowledge and skills learned in the work setting.	1	2	3
Transfer Effort—Performance Expectations.	1	2	3
The expectation that changes in job performance will lead to outcomes valued by the individual.	1	2	3
Work Environment Scales			
Feedback/Performance Coaching with formal and informal indicators on individual performance.	1	2	3
Supervisor/Manager Support to reinforce the use of learning on-the-job.	1	2	3
Supervisor Sanctions. The extent to which individuals perceive negative responses from managers when applying skills learned in training.	1	2	3
Peer Support by reinforcing the use of learning on-the-job.	1	2	3
Resistance/openness to change, the prevailing group norm that discourages the use of skills.	1	2	3
Personal perception by believing applying learned skills will result in a positive outcome.	1	2	3
Personal perception by believing applying learned skills will result in a negative outcome.	1	2	3
Ability Scales			

Opportunity to Use Learning through the provision of resources or task on a job which enables the use of learned skills.	1	2	3
Personal Capacity for Transfer such as time, energy, mental space in work life.	1	2	3
Perceived Content Validity of training content to accurately reflect on the job requirement.	1	2	3
Transfer Design of the training to give trainees' ability to transfer learning to a job application.	1	2	3

Section 6: Leadership Transfer Sustainability Tool

How would you rate the following factors as influence the sustainability of achieved results in the work environment?

RATING SCALE: 1 = Least important 2 = Important 3 = Very important

Sustainability measures	**RATING SCALE:** 1=Least important 2= Important 3= Very important		
Presence of champion (change agent)	1	2	3
Number of change agents in an organization	1	2	3
Alignment of the training competencies and skills to day to day operations	1	2	3
Buy-in across the organization's hierarchy from top management to lower-level staff	1	2	3

Appendix D: Qualitative Research Instruments (In-depth Interview Guide)

Title: An Assessment of Impact of Leadership Training on Health System Performance in Selected Counties in Kenya

Research Question *ONE:*

What are the institutional improvement priority projects identified by different county health management teams as catalysts for improving systems performance?

a) How many staff members have attended the LEHHO program from your institution?
b) How many of the trained team members are still in the institution?
c) What are some of the challenges that you face in your day to day role as a leader in your institution?
d) Did Strathmore leadership training (LeHHO) help you resolve any of the mentioned challenges? *If "yes," please explain and provide at least one concrete example of why it was beneficial. If "no" or "don't know," please try to explain why not.*
e) What was the priority challenge area project did your team choose during the Strathmore leadership training?
f) What was the driving force behind your choice of the challenge?
g) Suppose all the above-mentioned challenges would be within your sphere of control and influence, how would you order your implementation plan based on your institutional order of priorities?

Research Question *THREE:*

What are the major factors that influenced the achievement or non-achievement of the Desired Measurable Results (DMR)?

i) What is the implementation status of the selected priority project's Desired Measurable Results (DMR) post-training and team coaching?

a) Looking back at your institutional improvement challenge priority project, what goal (Desired Measurable Result) did you set out to achieve by the end of the training?
b) Let's revisit your priority project chosen as at now, what are the current status of the desired result (goal) key indicators observed in a relationship your baseline and end-line results?
c) In your opinion, how has the project progressed or regressed in relationship to achieving its intended purpose?

(ii) What are the Major Factors that Influenced the Achievement or Non-achievement of the Desired Measurable Results (DMR)?

a) Let's look at your project once again, what factors enabled you to get where you are the moment? *(Please explain).*
b) What factors hindered you from achieving the desired measurable result? (*Please explain).*
c) What role did the work-environment play towards achievement or non-achievement of your desired measurable results?
d) What role did board members play towards achievement or non-achievement of your priority project desired measurable results?
e) What is your opinion regarding the team size and its influence in the achievement or non-achievement of your priority project desired measurable results?

Research Question FIVE:

What are the major factors that influenced the sustainability of the attained results across different health system contexts in the selected counties?

(i) What is the Implementation Status of the Selected Priority Project's Desired Measurable Results (DMR) Post-training and Team Coaching?

a) Please confirm if this document belongs to your team (show the challenge model and action plan written by the team during the training). *Continue....*
b) Let's revisit your priority project chosen as at now, what is the current status of the desired result (goal) key indicators observed in relationship to your baseline (beginning of the training) and end-line results (end of the training)?
c) In your opinion, how has the project progressed or regressed in relationship to achieving its intended purpose?
d) One of the key objectives of LeHHO program was to ensure the transfer and sustainability leadership knowledge and skills through practice and implementation of selected workplace priority challenge projects addressed at the workplace. Do you consider your project results as sustainable? Please explain why.

(ii) What Factors Facilitated the Sustainability of the Implemented Priority Project's Indicators Post-training at the Workplace?

f) You told me earlier that you were able to implement your project successfully with your team. Now let's look at your implementation journey so far, what factors do you consider as your sustainability key drivers for the results of the project? *(Please explain).*
g) Let's focus deeper on the stated factors, which one were influenced by;
   (i) you as a manager?
   (ii) the leadership program (LeHHO)?
   (iii) your work environment?
   (iv) others

(iii) What Factors Constrained the Sustainability of the Implemented Priority Project's Indicators Post-training at the Workplace?

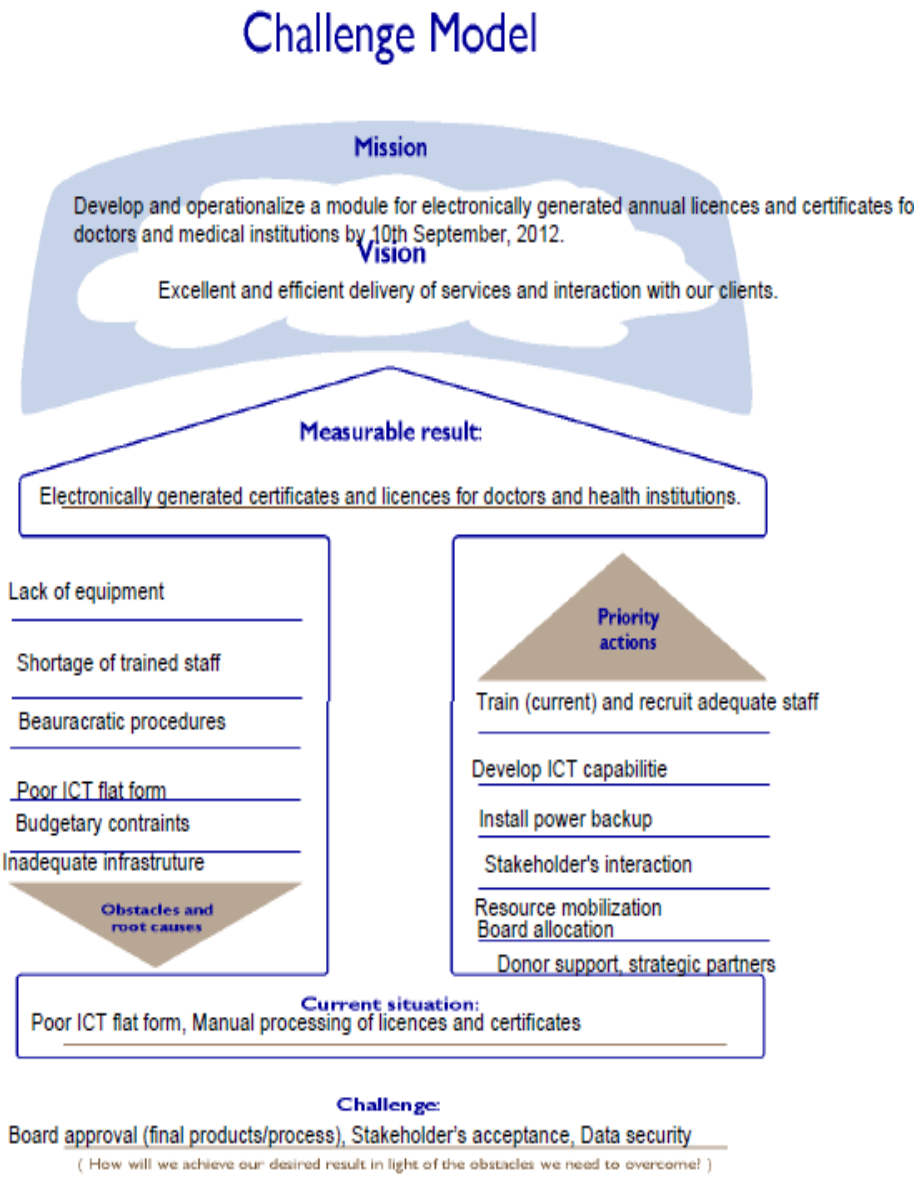
(iv) What are the Lessons Learned and Policy Implications for the National, County and Organizational Long-term Sustainability Plans in Low-resource Settings?

a) If you were would be given a second chance to undertake another similar leadership development training, what would you ensure it is put in place to ensure maximum transfer and the sustainability of learned knowledge through project implementation?

b) "Program sustainability is renowned as a key component of any successful project and therefore spurs investment in educational improvement to ensure the sustainability of stiff-won gains" given this background, what lessons have you learned with your team throughout the project implementation journey as a team?

c) As a leader, what are the potential policy implications that we can draw from your experiences for the National, County and organizational long-term sustainability plans in low-resource settings?

Appendix E: A Filled Sample Institutional Challenge Model



Appendix F: Research Ethical Review Approval and Research Permit

Strathmore UNIVERSITY

18th June 2018

SU-IRB 0243/18

Tecla Cheiagat
P.O. BOX P. O Box 59857-00200
Nairobi
Kenya.

Email: tkivuli@strathmore.edu

Dear Tecla,

REF **Student Number:** 110138 **Protocol ID:** SU-IRB 0243/18
Impact of Leadership Development on Sustainable Health System Performance in Kenya: Assessment of Institutional Priority Improvement Projects using the Challenge Model

We acknowledge receipt of your application documents to the Strathmore University Institutional Ethics Review Committee (SU-IERC) which includes:

1. Study Proposal dated 13 June 2018
2. Participant Information sheet and Consent form dated 13 June 2018
3. Study Questionnaire dated 13 June 2018
4. Study budget dated 13 June 2018
5. CV

The committee has reviewed your application, and your study *"Impact of Leadership Development on Sustainable Health System Performance in Kenya: Assessment of Institutional Priority Improvement Projects using the Challenge Model."* has been granted **approval**.

This approval is valid for one year beginning **18th June 2018** until **17th June 2019.**

In case the study extends beyond one year, you are required to seek an extension of the Ethics approval prior to its expiry. You are required to submit any proposed changes to this proposal to SU-IERC for review and approval prior to implementation of any change.

SU-IERC should be notified when your study is complete.

Thank you

Sincerely,

Amina Salim
Regulatory Affairs Fellow

STRATHMORE UNIVERSITY INSTITUTIONAL ETHICS REVIEW COMMITTEE (SU IERC)
20 JUN 2018
TEL: +254 (0)703 034 000
P. O. Box 59857 - 00200
NAIROBI - KENYA

Appendix G: Research Ethical Review Approval and Research Permit

THIS IS TO CERTIFY THAT:
MS. TECLA K CHELAGAT
of STRATHMORE BUSINES SCHOOL,
58957-200 Nairobi,has been permitted
to conduct research in *All Counties*

on the topic: *IMPACT OF LEADERSHIP DEVELOPMENT ON SUSTAINABLE HEALTH SYSTEM PERFORMANCE: ASSESSMENT OF INSTITUTIONAL PRIORITY IMPROVEMENT PROJECTS USING THE CHALLENGE MODEL*

for the period ending:
17th August,2019

.....
Applicant's Signature

Permit No : NACOSTI/P/18/21001/23609
Date Of Issue : 17th August,2018
Fee Recieved :Ksh 2000

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

CONDITIONS

1. The License is valid for the proposed research, research site specified period.
2. Both the Licence and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
5. Excavation, filming and collection of specimens are subject to further permissions from relevant Government agencies.
6. This Licence does not give authority to transfer research materials.
7. The Licensee shall submit two (2) hard copies and upload a soft copy of their final report.
8. The Commission reserves the right to modify the conditions of this Licence including its cancellation without prior notice.

REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No.A 20063

CONDITIONS: see back page

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/18/21001/23609**

Date: **17th August, 2018**

Tecla K. Chelagat
Strathmore Business School
P.O. Box 59857 - 00200
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Impact of leadership development on sustainable health system performance: Assessment of institutional priority improvement projects using the challenge model,"*** I am pleased to inform you that you have been authorized to undertake research in **all Counties** for the period ending **17th August, 2019.**

You are advised to report to **the County Commissioners and the County Directors of Education, all Counties** before embarking on the research project.

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

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioners
All Counties.

The County Directors of Education
All Counties.

Appendix H: Publications

i. Chelagat T, Onyango J, Kokwaro G, *et al.* (2019). From strategy to action: a qualitative study on salient factors influencing knowledge transfer in project-based experiential learning in healthcare organisations in Kenya. *BMJ Open*, 9:e031100. doi:10.1136/ bmjopen-2019-031100

ii. Chelagat T, Kokwaro G, Onyango J, *et al.* (2020). Effect of project-based experiential learning on the health service delivery indicators: a quasi-experiment study. *BMC Health Service Research,* 20:144. https://doi.org/10.1186/s12913-020-4949-S

Appendix I: Sustainability Drivers and Enablers summary statements

Org Id No	Health System Pillar	Team Members	Remaining Team Members	Priority team's sustainability Facilitators
Pb07	Service delivery	2	2	Curriculum focused on attitude change and appreciation for new ideas
Pb05	Service delivery	3	2	Buy-in across the organization's hierarchy especially nursing team
Pb08	Medical products	3	3	Buy-in across the organization's hierarchy
Pb21	service delivery	3	0	All champions left and results declined
Pb23	Information	3	2	Buy-in and support by board members who were part of trained team
Pb16	LMG	3	2	Timing- Devolution process, our project was part of the National government priorities.
Pb03	Service delivery	3	0	Political good will, the team leader was Minister of Health
Pb20	Information	1	1	Lack of buy-in across the organization's hierarchy, I am a medical doctor and the rest of program team were not interested to support the new project.
Pb02	Information	5	2	Expertise shortage, we have high staff turn-over and no one was left to support the newly implemented inventory system
Pb06	Service delivery	5	1	Champions attrition, some of our team members retired and others transferred.
Pb14	Service delivery	3	2	Application of skills and knowledge acquired during coaching in the project implementation.
Pb18	Service delivery	3	1	Buy-in across the organization's hierarchy
Pb09	Human Resource	3	2	Proper selection of the project
Pb10	Information	3	2	Buy-in across the organization's hierarchy
Pb22	Information	4	4	Staff attrition/expertise
Pb13	LMG	2	0	Buy-in across the organization's hierarchy
Pb01	Service delivery	1	1	Buy-in by hospital, nurse and community health workers
Pb15	Service delivery	1	1	Political good will

Fb05	LMG	1	1	Proper selection of the priority project that has impact on management
Fb04	Human Resource	4	1	Lack of adequate support from hospitals management, staff and donors
Fb1	Health Finance	4	4	Alignment to institutional strategic top priorities
Fb06	LMG	1	0	Timing of the projects was aligned with the organizations' priorities
Fb07	Medical products	2	2	Realistic challenge section for project and coaching
Fb02	service delivery	3	2	Rich pool of champions from different cohorts still in the organization
Pb04	LMG	3	3	Buy-in across the organization's hierarchy & divine intervention
Fb01	Human Resource	2	1	Buy-in across the organization's hierarchy
Fb08	Information	2	1	Buy-in across the organization's hierarchy
Fb11	LMG	1	0	Buy-in by the organization's board members
Fb09	Service delivery	1	1	Buy-in by management and donors to mobilize resources
Pr01	Service delivery	1	1	Alignment of project to champions day to day operations
Pr02	LMG	1	1	Buy-in by Board members
Pr04	Information	5	3	Board member buy-in despite resistance by departments
Pr05	Service delivery	5	4	Ability to lead team towards a shared vision during coaching

Appendix J: Similarity Index Report

Impact assessment 18

ORIGINALITY REPORT

18%	14%	7%	12%
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