

EFFECTS OF STAKEHOLDER INVOLVEMENT ON PERFORMANCE OF  
TELEMEDICINE PROJECTS IN NAIROBI COUNTY: A CASE OF ACCESS  
AFYA

by

Karan Renold Christie

A thesis presented to the School of Business and Economics

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MASTER OF BUSINESS ADMINISTRATION  
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## APPROVAL

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AFYA

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In accordance with Daystar University policies, this thesis is accepted in partial fulfilment of the requirements for the Master of Business Administration degree.

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## DECLARATION

EFFECTS OF STAKEHOLDER INVOLVEMENT ON PERFORMANCE OF  
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AFYA

I declare that this thesis is my original work and has not been submitted to any other college or university for academic credit.

Signed: \_\_\_\_\_

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## ACKNOWLEDGEMENTS

First and foremost, I express my deepest gratitude to the Lord Almighty for the gift of life; the opportunity to pursue my master's degree; and for granting me sufficient grace, wisdom, and knowledge throughout my academic journey.

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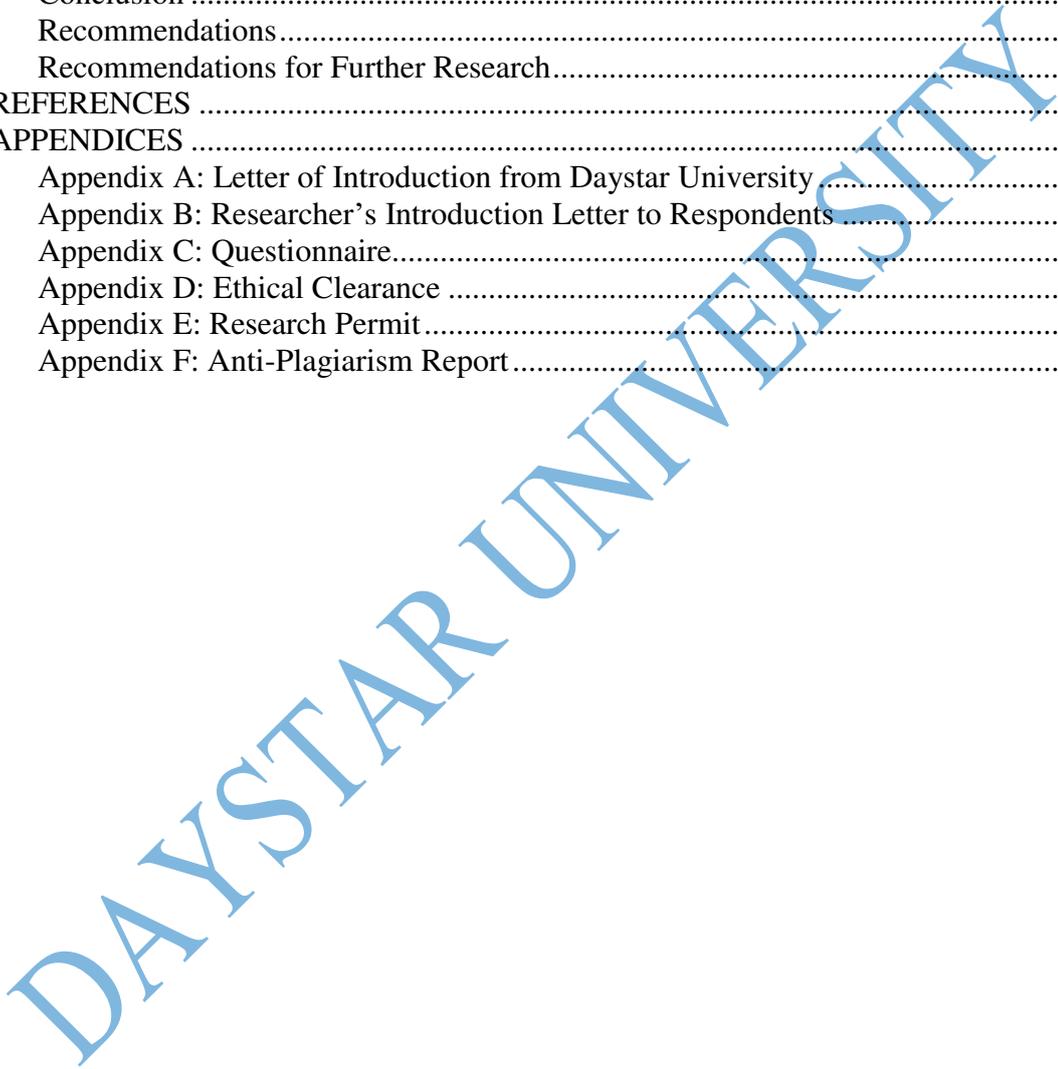
Special thanks to my parents for giving me all the support that I needed and for standing and walking with me throughout my academic journey.

For anyone else that I may have not mentioned, I would like to say thank you and may God bless you.

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## LIST OF ABBREVIATIONS AND ACRONYMS

EMR	Electronic Medical Record
ICT	Information Communication and Technology
MOH	Ministry of Health
PHC	Primary Healthcare
PMI	Project Management Institute
SPSS	Statistical Package for the Social Sciences
WHO	World Health Organization

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## ABSTRACT

The purpose of this study was to establish the effects of stakeholder involvement on the performance of telemedicine projects in Nairobi County, with a specific focus on Access Afya. The study sought to determine the extent of stakeholder involvement in telemedicine projects, determine the measures of the performance of telemedicine projects, and investigate the effects of stakeholder involvement on the performance of telemedicine projects. Descriptive research design was used and the target population was 50 employees of Access Afya working in the medical, IT, management, and quality assurance departments. A census survey was conducted and data was collected via a questionnaire. The data was analyzed using the Statistical Package for the Social Sciences (SPSS), version 22. On the extent of stakeholder involvement in the telemedicine project, 65%, 36%, and 27% of the respondents agreed that the healthcare organization, the government, and the telemedicine solution provider, respectively, were involved. On the assessment of measures of project performance, 38% of the respondents agreed that the projects were completed in time, and 35% agreed that the projects were completed within budget. Also, 41% of the respondents expressed their satisfaction with telemedicine services. A positive correlation was found between stakeholder and healthcare organization, government, telemedicine solution provider, and performance of telemedicine projects with Pearson correlation coefficient,  $r=0.574$ , statistically significant,  $p=0.000$ ; Pearson correlation coefficient,  $r=0.596$ , statistically significant,  $p=0.000$ ; and Pearson correlation coefficient,  $r=0.553$ , statistically significant,  $p=0.001$ , respectively. This indicated that stakeholder involvement affects telemedicine projects. The study recommends that healthcare organizations should be fully involved, work closely with the government,

and ensure that the telemedicine solution providers are well involved in the telemedicine projects.

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## CHAPTER ONE

## INTRODUCTION AND BACKGROUND OF THE STUDY

## Introduction

The term telemedicine was first conceived around the 1970s. It means “healing at a distance” (Strehle & Shabde, 2006, p. 956) and uses Information and Communications Technology (ICT) to ensure that patients can access healthcare services (Strehle & Shabde, 2006). Telemedicine is a combination of both the software and the hardware tools deployed at both the patient’s and doctor’s end, which are then connected through a medical health records database repository. This enables medical consultants to access detailed clinical history and vital parameters of the patient, and provide consultation in real-time. All the vitals’ data that is collected is stored in a repository which can be accessed by the medical consultant for effective treatment (Flodgren, Rachas, Farmer, Inzitari, & Shepperd, 2015).

Telemedicine presents significant benefits not only to remote regions but also to the overall population. It guarantees better healthcare coverage to people located in remote areas, facilitates the reduction of health inequalities including lowering infant and maternal mortality, and helps in balancing and aligning public and private healthcare providers (Ghani, Jaber, & Suryana, 2015). Telemedicine application has many far-reaching benefits as it helps to boost operational efficiency and to lower the cost of operations.

As facilities are available at telemedicine centres for primary care, patients do not need to go for tertiary care thereby cutting cost and reducing time for the patient and workload on the secondary and tertiary care hospitals. Additionally, the electronic medical record (EMR) for each individual is effectively maintained (Dallan et al.,

2015). Telemedicine guarantees control of expenditure, effective utilization of funds, and bridges the gap between doctor panel and patients to ensure better health coverage. It is arguably one of the most significant health services in Kenya, not only for its technological advancements but also from the social and cultural perspectives as it facilitates easier access to healthcare particularly for remote communities (Kimani, 2017). Telemedicine plays a major role in providing useful medical solutions to potential challenges faced in the healthcare domain in the 21<sup>st</sup> century. It is first critical to comprehend the meaning of primary healthcare services which will help comprehend the significance of telemedicine.

Primary Health Care (PHC) is a basic right for each Kenyan and it is the backbone for a rational healthcare system (Kenya, Ministry of Health [MOH], 2014). The PHC is focused on improving healthcare for the people. It is the first level of contact for individual patients, their families and communities; and it aims at bringing health closer to people. Remote areas in Kenya have faced challenges in receiving primary healthcare, with one of the major challenges being lack of access (Okoth, 2013).

According to the Project Management Institute (PMI, 2017), a project is a temporary endeavour undertaken to create a unique product or service. A telemedicine project involves the implementation of telemedicine systems to facilitate access to healthcare services. Indeed, some companies in Kenya such as World Health Partners, Safaricom, ConnectMed, and Merck have implemented telemedicine projects to address primary healthcare challenges in remote areas in Kenya.

Despite the implementation of telemedicine projects, telemedicine has had poor performance: an indication that there is a problem requiring attention. Some of the factors that affect telemedicine projects include the provision of human resources, infrastructures, adoption of telemedicine system, and funding. However, the

involvement of the stakeholders cannot be disregarded in telemedicine projects. The stakeholders' capability for recognition and for overseeing the project improves the odds of its (the project) success hence organizational performance. According to the PMI (2017), a project stakeholder has been defined as "an individual, group, or organization that may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a project, program, or portfolio" (section 1.6). The number of stakeholders varies in relation to the project type (Moodley, 2002). The involvement of the stakeholders happens at various levels in a project.

Stakeholder involvement in a telemedicine project's performance is critical in terms of the project's time, cost, and customer satisfaction. Hence, any project that needs to improve its functioning and be successful ought to involve stakeholders. Infragate characterized stakeholders as people or organizations who are effectively engaged in a project (as cited in Ndunda, Paul, & Mbura, 2017). Therefore, the researcher investigated the 'effects of stakeholder involvement on the performance of telemedicine projects in Nairobi County'.

#### Background to the Study

The beginning of telemedicine can be dated back to when the electronic gadget emerged in the public eyes (Hatzakis, Haselkorn, Williams, Turner, & Nichol, 2003). In the view of Gagnon et al. (2012), telemedicine is a significant development at the social, cultural, and technological fronts. Using this innovation, society has the capability of improving the quality and convenience of healthcare services while reducing medical expenditures. Hence, introducing telemedicine as a tool to support the delivery of healthcare services requires organizations and the health system as a whole to undertake various modifications which have to be considered in the course of project implementation (Gagnon et al., 2012).

Expansive systematic reviews provide evidence of telemedicine benefits in several medical classifications such as teleradiology, telehomecare, and teledermatology (Gagnon et al., 2012). Several studies have supported the use of telemedicine over traditional services. Also, other studies have reported benefits of telemedicine to the continuity of patient care and coordination of clinical activities between various healthcare stages (Gagnon et al., 2012).

For remote areas, telemedicine is considered as a tool that could have a positive effect on several dimensions of healthcare services delivery. An example would be the application of telemedicine in the prompt delivery of focused services to persons in remote regions, facilitate education access to physicians, and save experts and patients' costs of travelling (Gagnon et al., 2012). Furthermore, "as telemedicine technologies become more integrated into the health care system, they could increasingly contribute to the reorganization of medical workforce supply and exert a profound influence on physician practice, especially in remote areas" (Gagnon et al., 2012, p. 2).

#### Stakeholder Involvement

Stakeholders play an important role in projects. Telemedicine projects include the following stakeholders: patients, healthcare organizations, government, solution providers, insurance providers, researchers, and educators (Austin & Boxerman, 2003). Healthcare organization, government, and telemedicine solution providers were the considered stakeholders for this research since they are directly involved in telemedicine. Healthcare organizations are mostly viewed as essential stakeholders as they are the primary beneficiaries of the telemedicine systems. Telemedicine projects were instinctively meant to accomplish user acceptance, endorsement, and consequent efficient project implementation (Holgersson, lenljung, & Söderström, 2015).

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## Project Performance

A telemedicine project requires having a wide range of skills ranging from time management, technology, conflict resolution, contracts management, project quality, and networking (Frigenti & Comminos, 2002.) Managers and sponsors need to adopt a project management approach where they outline the project objectives, create a suitable working environment, and clearly outline the project requirements. This should focus on the time scale, technical approach, resources, and the technology required for project completion (Berkun, 2005). It is important to incorporate these factors to guarantee a good performance of the telemedicine project. The performance of projects is measured using cost, time, quality, and satisfaction (Nyikal, 2011).

## Stakeholder Involvement and Project Performance

The involvement of stakeholders in a project plays a critical role in the project's success. Liang, Yu, and Guo (2017) noted that stakeholders have a powerful influence on project performance, particularly for large projects that have mixed stakeholders. Thus, comprehending stakeholders' effects is important for project implementation and performance. According to Njogu (2016), stakeholders are important in projects. They help to determine if a project succeeds or fails. Every project needs involvement from its various stakeholders. Despite its significance and implementation in various parts of the world, telemedicine is still relatively new in Kenya and its importance has not been recorded despite attempts from different organizations. For this reason, this researcher explored 'the effects of stakeholder involvement on the performance of telemedicine projects in Nairobi County'.

### Access Afya Profile

Access Afya is an organization that is running a top-notch, affordable primary healthcare in Nairobi's rural areas. Its model is a chain of quality-assured sites and low-cost micro-clinics. These sites operate in the slums, are run by a local care team, and are stocked and ready to work with a wide range of primary healthcare needs through telemedicine. Such needs include, among others, diagnosing and treating infectious diseases, family planning, and first aid. They work in the community through field health programs, which use subscription models to deliver proactive and preventative care in natural community gathering places.

### Statement of the Problem

Through the years, telemedicine has evolved into becoming a key component of healthcare provision in Kenya. On a global scale, telemedicine is among the most recent and rapidly evolving technologies in healthcare.

Despite progressive advancements in healthcare systems, Africa is still behind in providing telemedicine in remote areas. Nevertheless, efforts have been put in place to find effective solutions aimed at facilitating the improvement of health and the incorporation of telemedicine. During the last two decades, very few countries in Africa have implemented measures towards promoting telemedicine projects. Among the pioneers is South Africa, which despite having a slow response to technology in healthcare initially, recent reports have indicated that it has put in place positive steps due to high demand for these services in the country.

Kenya has improved its development in the health sector during the past decade. The sector has become more conducive and the government is working closely with stakeholders to develop eHealth policies and introduce healthcare systems such as

telemedicine to address the health care challenges in the country. Several organizations such as Merck, World Health Partners, AMREF, and Safaricom Ltd have taken advantage of the enabling environment by implementing telemedicine projects (Qiang, Yamamichi, Hausman, Miller, & Altman, 2012). However, most of these projects have not been successful and have failed to create the desired impact. Despite the positive effects of the telemedicine project, its uptake is still low amongst the patients and healthcare professionals in organizations (Khalifa, 2013). As observed by Choi, Park, Choi, and Yang (2019), telemedicine fails to be accepted as a system due to the low receptivity by stakeholders.

Although telemedicine has been implemented in Kenya, there is still a high disease rate in the country's remote regions. More than 75% of the population in the remote areas cannot access primary healthcare despite the implementation of the telemedicine projects and often have to commute over a long distance to acquire health services (Okoth, 2013). This has led to an increase in morbidity rates and consequently increased mortality rate.

The doctor to patient ratio in Kenya still stands at one (1) physician to every 6,355 people (Brownie, 2018). This means that telemedicine has not bridged the patient-doctor gap, implying that the telemedicine projects have not been successful. Mbugua (2016) examined the factors affecting telemedicine adoption amongst clinicians in Kenya and determined that the clinicians resisted use of telemedicine, hence the need to create awareness amongst them. The MOH (2014) indicated that as Kenya strives to improve the healthcare system, there remains a threat from major diseases. The World Health Organization (WHO) reported that "Kenya is one of the 57 countries in the world facing severe health workforce challenges and is amongst the 36 countries within sub-Saharan Africa" (as cited in Kenya, MOH, 2014, p. 1).

Nyamu (2016) stated that health organizations' collaboration helps in the success of telemedicine projects. Though stakeholders have a vital part in telemedicine projects' success, there is inadequate empirical evidence on what impacts the involvement of stakeholders has on the outcome of 'telemedicine projects in Nairobi, Kenya'. There are, however, researches done on stakeholder involvement in project performance for different cases. The lack of studies in this area could affect telemedicine projects in Kenya leading to an increased morbidity rate. Given this, the researcher investigated 'the effects of stakeholder involvement on the performance of telemedicine projects in Nairobi County'.

#### Purpose of the Study

The purpose of this study was to investigate the effects of stakeholder involvement on the performance of telemedicine projects in Nairobi County.

#### Objectives of the Study

The objectives of this study were as follows:

1. To determine the extent of stakeholder involvement in telemedicine projects in Nairobi County.
2. To determine the measures of the performance of telemedicine projects in Nairobi County.
3. To investigate the effects of stakeholder involvement on the performance of telemedicine projects in Nairobi County.

#### Research Questions

1. To what extent are stakeholders involved in telemedicine projects in Nairobi County?

2. What are the measures of performance of telemedicine projects in Nairobi County?
3. What are the effects of stakeholder involvement on the performance of telemedicine projects in Nairobi County?

#### Justification for the Study

In the Kenya health sector, telemedicine systems are meant to improve healthcare amongst Kenyans. The proponents of telemedicine projects argue that such projects contribute to more equitable healthcare. For example, reaching geographically and socially excluded populations towards better service delivery of health services and reduction of the escalating costs of healthcare provision (Cornford & Klecun-Dabrowska, 2003). Stakeholder involvement influences telemedicine projects' outcomes significantly. However, despite telemedicine implementation, the project has not created the desired impact.

About previous studies focusing on what impacts stakeholder involvement has on the outcome of telemedicine projects, this researcher observed a deficiency. Most of the literature focusing on telemedicine has not given focus to individual projects' performance. Focus has also not been given to stakeholders' key contribution in these kinds of projects. Moreover, most of the studies done on this aspect have been carried out in Europe, America, and Asia, and consequently, this researcher saw the need to conduct a study on the Kenyan context.

#### Significance of the Study

The study was considered significant to telemedicine solution providers, the Kenya government, and healthcare organizations. This is because its findings would enable these organizations to, among other things, understand and appreciate how

stakeholder involvement influences telemedicine projects' performance; and assess ways for enhancing the same through the application of effective strategies, policies, and management practices.

It was also hoped that the study would provide background information to research organizations and scholars needing to carry out further studies in this area.

The findings would also be of help to individual researchers in the identification of gaps in the current area of study.

#### Assumptions of the Study

The assumptions by this researcher regarding this study included but were not limited to the following:

1. That employees within the selected organization would be cooperative during the data collection process.
2. That stakeholder involvement was a factor affecting telemedicine projects' performance for the selected organization.

#### Scope of the Study

Stakeholder involvement crucially influences telemedicine projects' performance. This study centered on the various ways stakeholder involvement affects Access Afya's performance. The target population was Access Afya employees who had implemented a telemedicine solution. By the time of this study, only a few companies had effectively implemented telemedicine projects, hence the reason Access Afya was selected.

#### Limitations and Delimitations of the Study

The possibility of some respondents being unwilling to provide full information out of fear of disclosing confidential information. To address this, the researcher assured the

respondents that the information they would provide would be held in confidence, and also sought approval from Access Afya's management.

There was also the likelihood of some respondents only providing general information instead of the specific information that would be helpful to the study. To mitigate this, the researcher opted to alternate closed and open-ended questions in order to obtain the necessary responses from the respondents.

Also, by the time of this study, only a few companies had effectively implemented telemedicine projects, hence the reason Access Afya was selected.

Further, the Access Afya employees had worked for less than five years since it was a new project.

#### Definition of Terms

**Telemedicine:** The use of ICT to provide clinical health care services remotely (eVisic, n.d.). This study used the same definition.

**Information Communication and Technology:** Technology applied in support of the gathering of information, the handling, delivery and utilization of the same (Beckinsale & Ram, 2006). The same definition was applied in this study.

**Stakeholder involvement:** Interest groups' involvement in the making of decisions as well as in the planning of projects in an organization (Freeman, 2004). This definition was used in this study.

**Project stakeholder:** Refers to "an individual, group, or organization that may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a project (PMI, 2017, section 1.6). The term was used in the same context in this study.

**Healthcare organization:** Has been described by Zakus and Bhattacharyya (2007) as "the formal and informal organization interactions or conversions of these resources

in the provision of direct services to individuals and populations to help them maintain good health status or improve their health status ..." (p. 278). This study used the same definition.

Government: Refers to the constitutional method of administering or regulating a community or a nation (Brogan, n.d.).

Telemedicine solution provider: The ICT organization which provides telemedicine software to the healthcare organization (WHO, 2016).

Project performance: The total value of a project in regard to its influence, benefit to its recipients, efficacy in implementation, productivity, and viability (Ibbs & Kwak, 2000).

Project implementation: "used to mean technical implementation, namely ensuring that system development is completed and that the system functions adequately in a technical sense" (Kræmmergaard, & Rose, 2002, p. 200)

Socioeconomic factors: Described as a gauge of an individuals' joint fiscal and social status and is usually optimistically correlated with enhanced wellbeing healthwise (Ayoub, Gosling, Potter, Shanahan, & Roberts, 2018). This study used the same definition.

### Summary

In this chapter, the researcher has introduced the study and given a background of both stakeholder involvement and telemedicine. The problem statement and the objectives that the study sought to meet have also been given. Also discussed in the chapter are the questions the study endeavoured to answer, as well as the reason for and the expected impact of the study. The next chapter captures the literature review.

## CHAPTER TWO

### LITERATURE REVIEW

#### Introduction

This chapter consists of the framework that underpinned the work theoretically, the general literature review, empirical review, and the conceptual framework. The theoretical literature shows the theories that were used in examining stakeholders involvement in telemedicine projects' performance. The review of the general literature encompasses the involvement of the stakeholders (independent variable), how telemedicine performance is measured (dependent variable), and the moderating variable. The review of empirical literature captures prior researches on stakeholder involvement and projects' performance.

#### Theoretical Framework

Stakeholder theory, the theory of performance, and diffusion of innovation theory underpinned the study.

#### Stakeholder Theory

During the mid-90s, the stakeholder approach to strategy was developed. In the description of Freeman, a stakeholder is "any group or individual who can affect or is affected by the achievement of the organization's objectives" (as cited in Gomes, 2006, p. 78). Through the evolution of this theory, Freeman (2004) modified the definition of stakeholder and referred to as those groupings critical to the performance and continued existence of an organization.

Bridoux and Stoelhorst (2014) indicated that there are four basic premises of stakeholder theory. First, a project has a relationship with stakeholders who are

influenced by the decision they make. Secondly, the theory's concern is on the relationship's nature in terms of the outcomes and processes. Thirdly, the intrinsic value of all stakeholders and not one's interest in the group is assumed to rule over others, and lastly, the theory places its focus on the decision made by the management. This shows that the lack of stakeholders' involvement affects the performance of projects.

Deriving from Freeman's theory, Cleland (1986) defined stakeholders in a project as persons or firms who either are under or past a project manager's authority and have a stake as regards whether the project outcome is getting affected. The theory informs on how each stakeholder in telemedicine projects needs to be well aligned with the objectives, decision making, and interests; and how this affects the outcome.

There are two categories of stakeholder theory, namely descriptive and normative (Friedman & Miles, 2006). The normative theory describes how stakeholders and project managers should behave and see the organization objectives based on moral principles (Friedman & Miles, 2006), whereas descriptive theory describes how the stakeholders and project managers should act based on how they view their roles (Freeman, 1999). The key categories of stakeholders include employees, clients, government, and shareholders (Friedman & Miles, 2006). The stakeholder theory was considered significant to this study as it outlines stakeholder involvement's significance in telemedicine projects' outcome.

The stakeholder theory's approach helps to understand the organization and its surroundings (Oakley, 1991). This adds value to the organization as it strives to achieve its goals and vision rather than the sole aim of maximizing profits (Mansuri & Rao, 2004). According to Patton (2008), the stakeholder model proposes that any interested party engages in an enterprise for benefits and has defined priorities over

other interests. However, associated organization, employees, potential clients, and the local public need to be factored in (Peluchette & Karl, 2007). Stakeholders must work in unity to achieve project success. This theory implies that stakeholders realize that they have a part in the project and hence have an expectation which leads to the adoption of a certain type of behavior. Such behavior could be either destructive or constructive, thus affecting the performance of a project.

#### The Theory of Performance

According to Elger (2007), performance is similar to a voyage whereas the location reached in the voyage is the degree of performance or status in a project. The theory of performance consists of six basic principles that assert that performance entails producing a beneficial outcome, and that a performer can entail a unit of persons or an individual involved in a concerted endeavor. These basic principles are the level of knowledge, skills, identity, context, personal factors, and fixed factors (Elger, 2007).

Concerning performance enhancement, three maxims have been recommended. These include the mentality of the performer, engagement in an atmosphere that is boosting, and participation in a contemplative exercise. The theory of performance emphasizes the key indicators in measuring project success and how these can influence the performance of a telemedicine project (Elger, 2007).

#### Diffusion of Innovation Theory

The diffusion of innovation theory was developed by Rogers and is purported to be among the first theories in the social sciences (Lundblad, 2003). The theory was developed to explain how, over time, a concept gains momentum and ultimately spreads through a particular social system or a specific population. The ultimate result is that people can embrace a new behavior, or product by being a part of the social

system. Lundblad (2003) defined adoption as a means through which a person changes how they carry out their ideas such as acquiring new behaviors or buying new products. The underlying idea regarding a concept's acceptance is that one needs to perceive it as new and this way, diffusion can take place.

Kaminski (2011) highlighted five main factors that are instrumental in influencing how an innovation is adopted, with each factor influencing the different adopter categories. These factors include relative advantage, compatibility, complexity, trialability, and observability (Kaminski, 2011). The first factor is fair advantage. To a certain extent, the innovation is considered to be more significant and essential than the product or idea that it is replacing. Compatibility pertains to the consistency of the innovation having the customer expectation, while complexity relates to the difficulty of the use or comprehension of the innovation (Mustonen-Ollila & Lyytinen, 2003). Trialability is the degree to which trials can be used to assess the innovation before it is incorporated into society and observability relates to the capacity of the innovation to yield distinct results (Grigsby, Anderson, Freedland, Clouse, & Lustman, 2002). Researchers use this theory to explain how telemedicine projects gain momentum with time.

The diffusion of innovation theory is renowned for how it categorizes people as innovators, adopters, majority, and laggards (Rogers as cited in Sahin, 2006). However, it is also prudent to note the communication channels and the characteristics of innovations. According to the co-citation analysis, the theory has been dominant in knowledge translation, and, as a result, has been considered as the most common theory incorporated in telemedicine research (Wade et al., 2015). Similarly in telemedicine projects, if the users and patients are acquainted with telemedicine, they are bound to find it easier and are likely to be more receptive.

## General Literature Review

In this section, literature on stakeholder involvement, project performance, and the impacts that involvement of stakeholders has on projects' performance is reviewed.

### Stakeholder Involvement in Telemedicine Projects

In ehealth (telemedicine) systems, stakeholders include patients, healthcare organizations, government, solution providers, insurance providers, researchers, and educator (Austin & Boxerman, 2003). For this study, healthcare organizations, government, and telemedicine solution providers were discussed since they are directly involved in telemedicine projects.

The first stakeholders are the healthcare organizations who provide healthcare services such as telemedicine, to patients. The second group is the government who is a key player. The government's role is to have legislation, policies, and frameworks in place which should be adopted by the healthcare organizations in an enabling environment. The government is also responsible for the provision of funds and a budget, and for creating a working environment to enable the smooth running of telemedicine services. Lastly, is the telemedicine solution provider. They ensure that information is transmitted in real-time using a software.

### Healthcare Organization

Healthcare organizations are key in telemedicine projects. They provide the necessary infrastructure, human resources, and marketing to ensure the success of telemedicine projects.

### Infrastructure provision

Developed countries have the necessary resources that help in the investment and development of infrastructure and as a result, they have succeeded in benefiting significantly from technological advancements including telemedicine. On the other hand, developing countries, particularly in Africa, are still lagging in infrastructure despite making some relative changes in the recent past. The difference in how fast technological progress has increased in the economic disparity that exists between first world and third world countries.

Despite progressive advancements in telemedicine and eHealth practices, Africa is still lagging in terms of infrastructure. Nevertheless, efforts have been put in place to find effective solutions aimed at facilitating the improvement of health and the incorporation of telemedicine in Kenya. Chavez, Littman-Quinn, Ndlovu, and Kovarik (2016) observed that Africa could benefit from solar energy to power telemedicine equipment in remote areas. Poor infrastructure in healthcare organizations has also made it difficult for further advancements in medical technology, telemedicine included.

Adoption of infrastructures such as servers, good internet connectivity, and technology can help an organization in improving the performance of telemedicine projects. Primarily, the internet has been instrumental in ensuring the transfer of the information regarding e-commerce and trade, along with educational information from digital libraries. The internet came as an effective solution to most of the communication problems that Kenyans encounter. While there are several sources of public information including mass media, educational institutions, telephone services, and public libraries, the internet presents readily-available and updated information

regarding different aspects of the society. Therefore, it presents an effective solution and a boost to telemedicine communication.

Researchers in development have commended the Internet as an effective equalizer that would help developing countries to improve the transfer of information internationally. Telemedicine system requires good connectivity to operate. Major telecommunication companies in Kenya including Safaricom, Airtel, and Telkom have, with some success, worked to bridge the gap of communication between the remote and urban areas of the country. However, some of the areas that would have benefited significantly from telemedicine still face a communication challenges. These areas have outdated communication technologies, making it difficult for them to access internet services that are essential in telemedicine.

Dallan et al. (2015) maintained that in the healthcare industry, the internet is still an untapped resource that could ultimately improve communication and quality of healthcare across the country. It should also be noted that in comparison to all other countries in Africa, “Kenya has the world’s 14th-fastest mobile internet speed... [and] beats the United States, ranked 28th with an average speed of 10.7 mbps, and South Korea, home to the fastest average speed in fixed internet connection” (Kuo, 2017, paras. 1&2). Therefore, there is a need to emphasize on this strength and incorporate it accordingly in providing healthcare services.

Healthcare organizations should invest in technology. About telemedicine projects, the availability or absence of technology influences whether telemedicine can be used in different regions. Kenya and developing countries, in general, are lagging with regard to technology, and there some remote areas in these countries that are yet to encounter modernization. As a result, it may be challenging to introduce telemedicine to these communities as the projects would require extensive financial and

infrastructural investment. Additionally, the technologies that are often affordable in these countries are mostly substandard, and hence cannot completely accomplish the tasks that they were intended for.

Ghani et al. (2015) also opined that the process of procuring technological devices can be particularly challenging due to the mismanagement of finances by government leaders and healthcare administrators. Consequently, the limited availability of technological devices results in the poor implementation of telemedicine and ultimately, reduces the people's accessibility to primary healthcare. It is also important to consider the technological challenges associated with telemedicine. Complex systems may result in malfunction and even lead to system failure, as a result, affecting the patients.

#### Human resources

A healthcare organization needs to invest in capable human resources to ensure the success of telemedicine projects. Telemedicine specialists are resources who are well equipped in the operation of telemedicine systems. For effective execution of telemedicine projects, there is need for a focus on adequate human resources in terms of skill level and size. Limited manpower presents a significant challenge for many projects.

Despite significant efforts in increasing employment opportunities, graduates might require further training so that they can acquire additional skills, and, at times, they have to depend on their basic education. Wyche and Olson (2018) were of the view that sustainable development requires the incorporation of technical skills targeted at increasing the work quality and it cannot be provided with the basic educational levels. It is important to integrate technical skills with employee flexibility in order to

successfully guarantee the establishment of a workforce that can perform different tasks efficiently.

In Kenya, the number of healthcare professionals with telemedicine skills and practice is relatively limited. While many have encountered telemedicine in a theoretical context, they have not been placed in an environment where they would have to apply these concepts. According to Brownie (2018), the physician to population ratio in Kenya stands at one (1) physician for every 6,355 people. As such, medical professionals barely have the time to venture into other activities with the large population of patients in their hands. In other cases, it could be difficult for healthcare facilities to mandate telemedicine training for all professionals who would be involved in the system. For adults, training is dependent on whether people have the desire to learn and how the training would improve their competence.

Regarding the management of projects, the leader of the project ought to have significant experience in the management of health projects. Kerzner (2017) pointed out that for a project manager, some of the main competencies include decision-making, critical thinking, communication, change management, and problem-solving. Incorporating these aspects in project management helps to achieve the intended project, while guaranteeing employee satisfaction, increased productivity, and improvement in the way telemedicine services are provided (Kerzner, 2017).

There are several resources required by an organization in the execution of telemedicine projects. These include the technical personnel, technological devices, and power supply. Having discussed the personnel, this section will focus on the technological devices as well as other indirect resources required in telemedicine. In developing countries, the main telemedicine devices used include telemedicine kiosks and a telemedicine kits.

Telemedicine kiosks are portable kiosks commonly equipped with the necessary mobile devices required in a potential telemedicine visit. Typically, these kiosks are quite costly, and, in Kenya, companies have made attempts to procure or develop them in remote parts of the country. A telemedicine kit, on the other hand, is a medical kit that comprises some equipment that would be required for medical purposes in remote regions, and a small computer used for communication and inputting patient information.

Most telemedicine services which center on clinical diagnosis and care management are usually available in the developed countries. Also, gadgets such as diabetes check, blood pressure and heart monitors are increasingly being used in the monitoring of patients located in remote places. In pay earning countries and in areas with constrained infrastructure, telemedicine systems are primarily used to link healthcare providers with specialists, referral hospitals, and tertiary care centers. Even though minimal effort telemedicine systems have demonstrated to be supportable, medically friendly, achievable, and versatile despite the networks, these systems are not received on a noteworthy scale because of an assortment of constraints.

#### Product marketing

Marketing plays an important role in the performance of telemedicine projects. Mokhtar and Wan-Ismail (2012) noted that marketing is one of the critical success factors in the organization's expansion and eventual endurance. As such, it is placed among businesses' key facets. Marketing can be described as the process an organization goes through in building up the idea of a product or service, actualizing the thought, deciding the correct evaluating model, choosing the advancement road and settling on the dissemination channels (Mokhtar & Wan-Ismail, 2012). The

objective is to get the end client to devour the item, prompting deals, execution, and benefit.

Schramm-Klein and Morschett (2006) explained that the primary goal of marketing activities is to make sure that the customers are satisfied, in turn, becoming regular clients; and build customer loyalty. Schramm-Klein and Morschett outlined three dimensions of marketing performance: stimulation and creation of demand, which lead to an increase in companies' revenue; promoting endeavors that inspire the clientele to purchase the organization's products, hence increasing in sales; and customer performance, which relates to the impact of marketing on the loyalty of clients. This would result in long-lasting clientele relationships and value in the company (Schramm-Klein & Morschett, 2006)

Marketing of telemedicine products is essential since it creates awareness to the patients. With this, the patients tend to become more receptive and acknowledge the products. The patients' lack of knowledge regarding telemedicine products can lead to resistance. A study done by Dayal et al. (2016) indicated that patients were skeptical about using telemedicine as they did not quite understand how it worked. Nearly half of these consumers reported that they would be less comfortable during a telemedicine visit in comparison to an in-person visit, and two-thirds said that they were unsure whether the services would be covered by their insurer. Only a minority of consumers who use telemedicine stated that they do so primarily for its convenience and shorter wait times (Dayal et al., 2016).

There is a need to change this mindset while encouraging the public on the values that this technological advancement presents to the improvement of healthcare. Healthcare organizations should market telemedicine services to achieve better performance.

The Kenya Government

Healthcare access by people in the remote areas in Nairobi, Kenya is still a challenging issue propagated by insufficiency of medical practitioners in the region. The national eHealth strategy reported that under vision 2030, one of the goals for Kenya is the facilitation of affordable and quality medical care to all citizens regardless of their location. One way of achieving this was through telemedicine, which was noted to be one of the key interventions that the country could incorporate as part of the eHealth strategy (Zieliński, Gennatas, Zhou, & Seeley, 2010).

Most of the people inhabiting the remote areas of Nairobi have little or no access to healthcare facilities. More specifically, specialist doctors are only located in some of the major towns including Eldoret and Nairobi. As a result, patients requiring specialized care might not access it in time.

#### Telemedicine policy

The Government of Kenya introduced the 'Kenya national eHealth policy 2016-2030', which aims to achieve the highest standard of healthcare through the incorporation of telemedicine technology. The policy outlines how the government is exploring effective strategies that could be used in eHealth systems. These include 'mhealth', 'Health information systems', and 'telemedicine' (Kenya, MOH, 2014). The policy emphasizes the importance of patient-centered care and equitable access to quality healthcare services using ICT technologies.

However, telemedicine being a relatively new field, the government is yet to implement effective regulations to guarantee that this technology is used effectively and that it achieves its intended purpose. Another important aspect to factor in is the government involvement in facilitating the creating of telemedicine projects in the country. Under this policy, the government outlines its objectives aimed towards

guaranteeing that technology is incorporated in healthcare effectively to improve healthcare in the country and ensure that all Kenyan citizens have access to quality care despite their geographical locations.

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### Telemedicine framework

Adoption of a telemedicine framework is crucial for any telemedicine projects. There are several telemedicine frameworks. This study will examine two of these frameworks. The first one is by Ouma and Herselman (2008) which incorporated e-health implementations models such as 'telemedicine for remote areas'. It was created based on the difficulties experienced in clinics in remote regions and it consists of components for execution as discussed below.

The first component is training. Elementary training is required for most employees who do not have computer skills. Infrastructure foundation, which is the second component, allows ICT services to be accessible in remote regions. The third component is cross-areas linkages, indicating that administration services need to work inseparably to help manage a portion of the country's segment issues. Skilling, the fourth component - the provincial medical clinics need to contract experts to keep up their frameworks or bolster them in skilling of staff (Ouma & Herselman, 2008). The fifth component, network infrastructure - the need for procurement of sufficient computers with good network accessibility for the remote hospitals. The last component is the government - government policies should be adopted to support the use of systems within hospitals. The government is supposed to come up with legislation which would encourage quick adoption of telemedicine in the health sector (Ouma & Herselman, 2008). The shortcoming of this model is that it is exclusively centered on the country's remote regions, thus cannot be embraced for telemedicine ventures in the urban zones (Ouma & Herselman, 2008).

The second framework proposed in this study is by Drury (2013) and it is composed of five categories, namely the 5Cs, to enlighten on the advancement of e-Health in developing countries. These include the background of poverty - realizing the

'millennium development goals'; the health-related information offered to staff in the health sector, and in what manner this can be converted from paper to digital formats, provision of wireless connection; connectivity in and amongst health facilities that sustain the communication of knowledge on health and information management for building the personnel; the ability plus sustenance; and community development, through the conveyance of information to allow better health-related decisions (Drury, 2013)

The government can adopt a hybrid framework approach which can be used by healthcare organizations for telemedicine projects in Nairobi, Kenya.

#### Healthcare funding

As indicated by a report distributed by 'the Kenya national e-health strategy 2016', the lack of ICT framework and hardware, inadequate human resource and abilities, and low financing to open human services is a portion of the difficulties confronting telemedicine execution. By and large, the measure of cash (as a level of its GDP) the Kenyan government dispenses to medicinal services is little contrasted with that allotted by driving adopters of telemedicine in Africa.

Subsidizing Kenyan telemedicine ventures to be actualized by open medicinal services segments may not be achievable due to underfunding of the wellbeing part by the government. This is because of a low GDP esteem. Be that as it may, with the endeavours to execute the Kenyan vision 2030 (), the government zero-rated tax (Government of Kenya, 2013). To give ventures a manageable eHealth framework, for example, telemedicine, the legislature will actualize the accompanying mediations: develop rules on budget, and subsidize telemedicine frameworks at national and district levels; encourage open private associations to a hotspot for

intrigued partners to enhance government speculations and financing; develop and execute an eHealth venture plan (Government of Kenya, 2013).

#### Telemedicine Solution Provider

Involvement of a telemedicine solution provider has a key part in the performance of telemedicine projects. For the successful implementation of telemedicine, adoption of project management practices using the right telemedicine technology and providing proper training to the user is required. This will lead to better performance.

#### Project management practice

The telemedicine solution provider is usually part of the implementation stage of telemedicine projects. During the execution planning phase, it is important to factor in the strategic vision of the healthcare organization. Studies have revealed that some of the best practices in project management have been adhered to in telemedicine.

Peters, Blohm, and Leimeister (2015) presented data based on a qualitative multiple data set, where the telemedicine model was characterized uniquely. The study established the management of project initiation processes and the impact this has on telemedicine projects' performance, through five distinct telemedicine business models (Peters et al., 2015). Specifically, research in project implementation planning, specific to telemedicine health provides inputs to vital components of project initiation and how the same affects the various business models.

In the telemedicine context, the planning process is supposed to involve technology and its applicability within a given area (Sligo, Gauld, Roberts, & Villa, 2017). The implications of the study pointed to the importance of paying attention to the approach chosen when one wants to generate valuable knowledge from an innovative telemedicine project (Sligo et al., 2017). The study also illustrated that in the planning

process, it is essential to explore the underlying processes of the socio-technical interaction (Sligo et al., 2017). Doing so should involve highlighting different telemedicine interventions and achievements as ongoing innovations to guarantee learning from the performance and failures.

#### Agile methodology

The agile methodology involves short project cycles to concentrate on consistent improvement for the development of a product. The telemedicine solution provider should adopt agile methodology for the implementation of telemedicine solutions. Originally, the agile approach was designed and developed to cater for the software sector to facilitate the streamlining and improvement of the project cycles in an effort to rapidly identify and adjust for potential defects (Dhir, Kumar, & Singh, 2019). This methodology provides a way for developers and teams to deliver a better product, in a faster manner, through short iterations. As more companies transform into the digital era, agile is a perfect approach for those looking to change how they manage telemedicine projects and operate as a whole. The framework can help ensure a company-wide process and methodological alignment.

For healthcare settings, especially when implementing a telemedicine project, agile methodology should be considered for the organization and monitoring of key processes. The methodology is presented as an adaptive manner that highlights the project manager, key benefactors, and the team. In so doing, it facilitates the discovery and elaboration of functions and their requirements in situations where this work has substantial ambiguity (Serrador & Pinto, 2015). Agile methodology ensures delivery by the project team early in the project's lifecycle, hence the return on investment is increased.

### Client training

The telemedicine solution provider should provide proper training to the healthcare organization where the telemedicine system is implemented. A study by Raza et al. (2017) determined that the factor affecting telemedicine project is limited training. More specifically, medical professionals require some form of training on telemedicine in the operation of technological devices, videoconferencing, and training. Before deployment, it is also important for employees to undergo training. This can be particularly challenging for the country's healthcare professionals as they would not have the required time to partake in training.

Telemedicine needs to be recognized and accepted by both the patient and the medics. Employees have revealed a 'dread of the obscure' regarding dealing with computers: that telemedicine will prompt employment misfortune, or a worry that the bedside nearness of counseling doctors in nearby emergency clinics will decline. Telemedicine requires changes in the existing workflow in the organization.

Studies have reported that the resistance towards telemedicine ranges from the medics to the patient. According to Burnes, Hughes, and By (2016), lack of adopting of changes poses limitations in the implementation of the telemedicine projects and this is exacerbated by both the high cost of the technology and the lack of funds available for telemedicine. Training will ensure a smooth transition in using the telemedicine system and success.

### Telemedicine technology

The telemedicine solution provider should ensure that the current and relevant technology is used in the implementation of telemedicine solutions. In the context of telemedicine, Combi, Pozzani, and Pozzi (2016) defined health information technology as devices used in the storage, sharing, or analysis of health information

which comprises of components such as online patient portals and practice management systems. In line with this, Bird, McAuley, and McMahon (2016) described telemedicine as software and hardware technologies used in the provision of clinical care, health education, or health information across a distance.

There are several technologies incorporated in telemedicine, all targeting to serve different purposes aimed at improving the provision of healthcare. These technologies are primarily found in developed countries, although some of them have successfully been instituted as a result of grants and donations from NGOs and other health organizations across the world.

Telemedicine technologies include “remote patient monitoring...[also known as] self-testing, [and it] is a means of monitoring a patient health information at a distance” (Chiron, n.d., para. 5). As noted by Scott and Mars (2015), this technology is instrumental in simplifying patient compliance while reducing the costs associated with frequent monitoring. In this sense, healthcare practitioners can effectively monitor their patients across distances without incurring the costs of transportation. The technology is commonly used in the management and treatment of various chronic illnesses including diabetes, cardiovascular disease, and asthma. Ideally, the physician establishes the technical devices in the patient’s home and keeps track of the patient through telephones or video calling.

Another telemedicine technology is store-and-forward which, according to Scott and Mars (2015) is arguably the oldest form of technology in telemedicine. This technology relates to the transmission of data and images among providers. Though telemedicine comprises an audio-video session and additionally encompasses the collection of patients’ information and sending the same securely through the cloud. This technology provides a platform where providers can collect patient data, analyze

it, and hence make a conclusive assessment. This is the main way in which healthcare practitioners communicate among themselves as well as how they communicate with their patients. More specifically, real-time communication occurs when the physician and patient are far away.

In developed countries, physicians use video-enabled devices along with telephones for audio communication. However, in developing countries, the primary form of communication is through mobile devices due to technological limitations. In the United States, more than 100,000 telemedicine consults are carried out on a monthly basis (Maeda, Clark, Pellikka, & Siljander, 2010). In the developed countries, the majority of the infrastructure has already been developed and is active. Therefore, it is anticipated that soon, remote healthcare services will become the standard in the society. In developed countries, this technology is anticipated to replace the need for home care management. It also enables medical professionals to monitor their patients in any given city through wearable technology.

Another important technology to note is the tele-trauma centers that have been instrumental in saving lives across the globe, resulting in a decline in the rate of morbidity. More specifically, wireless connections in developed countries have ensured that victims have a better opportunity for their overall recovery (Khanal, Burgon, Leonard, Griffiths, & Eddowes, 2015). Another important point to note is that telemedicine has also ensured that patients can receive treatment promptly. This technology has facilitated the availability of existing doctors into the site where they are needed. Telemedicine solution providers need to adopt the technology.

#### Telemedicine Project Performance

Flanagan and Norman (2003) indicated that project performance is achieved when a project is completed within the required cost and time; and with the required quality

standards, functionality, and safety to the surroundings. Project performance consists of enterprises which maximize profitability, minimize the risks related to projects objectives' attainment, and stops the occurrence of perilous incidents (Kululunga & Kuotcha, 2010). Project performance can be considered successful if the projects' accomplishment happens in the scheduled budget and time; the goals are reached; and the satisfaction of stakeholders is ensured (Otim & Alinaitwe, 2013). Telemedicine projects' performance is determined by the projects' uptake level; completion within planned time and budget; and stakeholder satisfaction.

Besides, project managers are key to the successful performance of telemedicine projects. They should possess both technical and soft skills relating to team management, among other skills (Garbharan, Govender, & Msani, 2012). Availability of human resources is another critical factor in a project. It is essential to develop a resource management plan in conjunction with all stakeholders to avoid diverting of budgeted funds during the project's implementation.

#### Level of telemedicine uptake

It has been pointed out that as telemedicine projects are implemented as an indicator of the outcome, there is need for clarity to the stakeholder regarding the performance of such projects. The level of telemedicine uptake is measured by indicators such as the number of repeat patient consultations, fewer hospital visits, increase usage of telemedicine by the physician, and decline in disease rate for people living in rural areas. In every circumstance, an examination with non-telemedicine alternative will be required. The result from such is required for the evaluation of administrative information and quality of health services. Although telemedicine has been piloted in Kenya, it has not been proven to be sustainable (Wootton, 2001).

### Meeting budgets

Despite the heavy financial investments required to implement a telemedicine project, telemedicine provides significant financial benefits to all involved stakeholders, who include healthcare organizations, the government, patients, and non-government organizations. In project management, the project is expected to be finalised within the stipulated budget. The methods used to achieve the management of costs include direct labour costing, estimation of cost, use of cost accounting, cash flow, profit-sharing, and budgeting the cost of work done.

Meeting the budget poses a challenge to the system as well as to the performance of telemedicine in Kenya. Project costs such as maintenance, transport, salaries to local staff can be difficult with inadequate project funding. Also, compelling proof needs to be provided to support the cost-effectiveness of telemedicine, while the monetary ramifications of such strategies may not be known. Despite this, the healthcare organization can ensure that they are within budget.

Upon implementation of a telemedicine solution, a healthcare organization can cut cost in the following ways: utilization of remote analysis services and collaborative working by experts (Emery, 2015). This enables the cutting of costs since the low volume of providers will have a wider time coverage. Telemedicine also partly facilitates employment beyond geographical borders. Considering the inflated cost of service provision to inpatients particularly in the remote areas, some of the funds can be channelled to outpatients, and this cuts the cost incurred by the healthcare organization. It is also important to note that mHealth tools and technologies help to cut the cost of chronic diseases (Bashshur et al., 2019).

Avoiding such crises reduces costs and enhances care quality. There are also financial benefits related to home-based care services facilitated by televisits with primary care

physicians. These visits reduce the unnecessary (and expensive) use of emergency room visits. By offering online appointments, the providers can reduce their volume of wasted capacity. Numerous providers may either continue or stop providing services to the patient based on their schedule. As this would limit income, providers can offer remote patients the same services at a subsidized cost. This in turn diminishes system costs by empowering the patients to receive services at reduced costs. Healthcare organizations should be efficient in managing finances to improve the performance of telemedicine projects.

#### Meeting timelines

Adherence to a project's timeline helps in achieving project performance. Project timeline helps to track to ensure that the project is completed in time. Zwikael and Globerson (2007) stated that the implementation phase puts the project into action. It consists of four sub-phases, namely execution, monitoring and control, testing, and moving to production (live). The PMI (2013) has suggested that the implementation stage requires closely-coordinated effort with customers to guarantee that the task is conveyed on schedule. A project schedule is created which entails the timelines for the tasks.

According to Perdicoulis (2013), a work breakdown structure (WBS) of a project indicates crucial routes to achieve milestones. In the telemedicine project, it is important to factor the tasks, milestones, and the resources required. There are several ways to track projects in terms of work breakdown structure, sequence view, dependency, and resource view (Perdicoulis, 2013).

The sequence view entails the stages and tasks in a proper sequence that defines the process (Perdicoulis, 2013). The project process is a timed sequence of tasks and milestones with special stages or outcomes of the project. For projects involving

alternative parallel tasks, is a good way to discover the shortest or fastest pathways, also known as ‘critical paths’. This is known as ‘PERT’, or ‘project evaluation and review technique’ (Perdicoúlis, 2013). Thirdly, the dependency view shows an alternative view of the project process, together with the associated resources, which is known as a ‘Gantt chart’ (Perdicoúlis, 2011). Dependencies between tasks and milestones should be neither ignored nor exaggerated. Lastly, the resource view associated with a project can be marked in various specialized diagrams (Perdicoúlis, 2013). From the types of project timeline views illustrated above, a healthcare organization can adopt the resource view where each resource is allocated and tracked to achieve better performance.

A project’s scope also plays an important role along with the timeline. Definition of the project’s scope is a crucial part of the initiation phase of the implementation process of any project. For telemedicine projects, it is important to define the deliverable and milestone to be achieved. Project scope should be developed which establishes controls, defines the ongoing changes, and is assessed against benefits (Gwaya, Masu, & Wanyona, 2014).

Kerzner (2017) observed that the scope can be managed using PERT, which is probabilistic and enables computation of “risk” in project completion; the Gantt chart and Milestone Checklist, for example, use of excel template. For better performance of telemedicine, projects’ stakeholders should make certain the project’s completion is timely and within the range.

#### User satisfaction

Satisfaction is key in the measuring of telemedicine projects’ performance. Telemedicine user satisfaction determines the success of the project (Jha & Iyer, 2006). User satisfaction plays a crucial part in the telemedicine project performance.

Raza et al. (2017) determined that the factors affecting telemedicine integration comprise limited training and practice by the system users. Telemedicine system users should be well trained. Upon telemedicine implementation, the primary users will provide telemedicine service to patients. For the services to be effective, the users should have hands-on training regarding the telemedicine system. This will build confidence amongst the users and better services will be given to the patient, hence better performance. Dissatisfaction caused by the use of a telemedicine system will lead to resistance from the users resulting in poor uptake, and in turn, poor performance.

The satisfaction of the patient is the extent to which patients are content with telemedicine services. Patient satisfaction, quality provides information to providers, effective care and empathy regarding telemedicine (Abdulrahim & De Coster, 2018).

Over the years, there has been a response to the concept of patient satisfaction and patient experience. Typically, medical professionals often measure patient satisfaction using the score-based system and after a telemedicine episode of care, along with characteristics of the care environment. As Khanal et al. (2015) pointed out, some major priorities need to be considered in the delivery of telemedicine care. These include patients' safety, promoting effective communication, coordination, promoting prevention, working with communities, and making quality care more affordable. To incentivize healthcare organizations to implement these goals, developed countries typically have come up with ways to reward innovation for how these strategies are implemented across the health ecosystem.

The quality of care in Kenya is relatively low in comparison to some other leading countries in healthcare in Africa including South Africa and Egypt. Through the years, the quality of patient care in Kenya has been relatively poor particularly in the

remote regions. It has been acknowledged for generations now that quality systems are never cheap or free but certainly, take up substantial resources (including financial resources). As such, changes in the economy could make quality pursuit either affordable or not depending on the size, growth rate, and the many health issues that have an economic element. Clients or patient involvement in modern care has been the latest trend.

#### Stakeholders Involvement' Effects on Projects' Performance

A study by Keogh, Fourie, Watson, and Gay (2010) showed how stakeholder involvement affects performance in the development of the curriculum, revealing that stakeholder involvement is crucial in projects as it plays an important role in achieving performance. Beringer, Jonas, and Kock (2013) acknowledged that stakeholders and management behavior is vital to performance. This shows that management behavior will lead to good decision making, leading to a better outcome, while the lack of stakeholder involvement may affect project performance, resulting in project failure.

Performance indicators concentrate on the project impact over a certain period (Njogu, 2016). According to Hammad (2013), for a project to be successful, it has to be on schedule, achieve its goals and objectives, and be completed within the budgets (project triangle). These critical factors determine the success of any projects. Stakeholders' evaluate projects' performance varyingly contingent on their (stakeholders) anticipations regarding time, cost, and satisfaction. This shows that the lack of stakeholder involvement will affect performance.

#### Socioeconomic Factors

Spector and Brannick (2011) described moderating factors as a measure of the impact of a variable on other variables. Damanpour and Schneider' (2009) submitted that a moderating factor affects the magnitude of the relationship between the two variables. Moderating variables provide accurate estimates of the relationship between the variables (Spector & Brannick, 2011). For this study, the socioeconomic factor was the moderating variable which showed the association between stakeholder engagement and performance of telemedicine projects. Ayoub et al. (2018) termed socioeconomic factors as measures of both social and economic status and as positively related to better health. In this context, literacy level and financial status of the patients, both of which affect telemedicine projects' performance, will be examined.

#### Literacy level

Literacy level has a key part in telemedicine projects' performance. In countries where the basic literacy is not sufficient, the population awareness towards healthcare systems is relatively low. Serban and Iorgan (2016) noted that poor awareness of modern technologies, for instance, telemedicine and their use in delivering healthcare seems to be a big barrier in developing countries. People in Kenya do not seem to have much knowledge of the benefits offered by telemedicine. Even physicians are short of telemedicine knowledge and are not updated.

Poor awareness level creates fears and resistance toward telemedicine and creates hurdles in the adoption and development of the same by the patients. Age also plays an important role. Many older physicians do not feel comfortable dealing with telemedicine technology since its an ICT based approach. Some patients, particularly older ones, are hesitant concerning the new technology (Serban & Iorgan, 2016). Also, many healthcare professionals are not comfortable working with computers and

modern gadgets and consider technology extra work for them. They also fear that telemedicine may lead to job loss or to a reduction in their bedside presence.

#### Financial status

The financial status of the patient also impacts the performance of telemedicine projects. A study conducted by Kimani (2017) determined that remote inhabitants in Kenya often fail to receive the necessary care due to the costs associated with accessing care including travelling, accommodation, and medical costs. People living in marginalized areas where they earn a minimum wage may not afford telemedicine services offered by the healthcare organizations. Financial status varies from one patient to another. This can hinder patients from acquiring telemedicine services due to financial constraints.

#### Empirical Literature Review

This entails similar researches conducted in the past. Mengesha, Garfield, Kebede, and Musa (2013) researched on 'stakeholder analysis of Ethiopian telemedicine projects, with a focus on Black Lion hospital, Addis Ababa'. The study used a case study approach using structured interview questions and focused on stakeholder analysis. The initiators and beneficiaries were identified as the two categories of stakeholders and their vested interest was found to be telemedicine. The study revealed that the stakeholders influenced the use of the telemedicine systems and expected optimal use of telemedicine for improved success (Mengesha et al., 2013).

Mbugua (2016) investigated the factors influencing the adoption of telemedicine amongst clinicians. The descriptive research approach was used. The population comprised 700 doctors and nurses at the Aga Khan University Hospital, and the sample consisted of 10 nurses and 95 doctors who were selected from the two strata

using systematic random sampling. The study revealed that the adoption rate of telemedicine is low amongst clinicians in Kenya (Mbugua, 2016).

While reviewing the literature, this researcher established a deficiency with regard to 'perceived usefulness and ease of use for the adoption of telemedicine'. The study concluded that the dimensions of perceived ease of use have an important role in explaining the telemedicine adoption rates amongst clinicians in Nairobi. It was recommended that telemedicine implementation teams should ensure that medics such as clinicians are fully involved in the project, as this will ensure that their requirements are met.

Nyamu (2016) used a conceptual research framework to examine 'organizational factors that may influence organizations collaboration in facilitating telemedicine deployment in developing countries'. A questionnaire was distributed in 50 private and public hospitals located in Eastern Kenya. The findings showed that Kenyan hospitals collaborate with other organizations mainly to reduce budget restraints suffered during the technological innovation process (Nyamu, 2016). Further, it was revealed that organizational affiliation might enhance their ability to adopt telemedicine. The organizational affiliation was observed to significantly influence the organization's resources, or innovation acceptance, innovative capacities, as well as agility and collaborative innovation aspects. It was recommended that further research be conducted using telecommunication companies, healthcare product manufacturers, research organizations, and academic institutions (Nyamu, 2016).

Njogu (2016) assessed "the influence of stakeholder's involvement on project performance of Nema automobile emission control project in Nairobi County, Kenya". It was a descriptive approach survey, whose population was 181 Nema staff (Njogu, 2016). Stakeholder involvement in the identification, planning,

implementation, and monitoring phases of the automobile emission control project positively impacted the project's performance (Njogu, 2016). Consequently, The study recommended that the management of Nema should boost stakeholder involvement in the indicated phases of the project given the resultant drop in operation cost, carbon release rate; and increased client contentment (Njogu, 2016).

Doshi, Chad, Archer-Myles, and Krzyzanowska (2017) examined "the perspectives of stakeholders on the use of telehealth towards improving ambulatory care for chemotherapy patients in a large urban cancer centre". The study was done at Toronto's "Princess Margaret Cancer Centre", using 'semi-structured interviews' on of 21 interviewees who included hospital administrators, nurse managers, nurses, physicians, pharmacists, patients, and telehealth and technology experts (Doshi et al., 2017). One of the key results of the study was that "provider-initiated proactive calling of chemotherapy patients was...the most valuable and feasible potential change according to all stakeholders (Doshi et al., 2017, abstract). Further, Doshi et al. concluded that "simple telehealth initiatives such as proactive calls can improve outpatient care for chemotherapy patients, and may reduce ED burden" (abstract). The research offers fundamental guidelines for the establishment and execution of anticipatory systems at institutions offering cancer care (Doshi et al., 2017).

A mixed-methods study by Bollig et al. (2017) looked at 'the views and experiences of stakeholders regarding the use of telemedicine towards the improvement of palliative care in rural areas'. The study showed how stakeholders can help in the implementation of telemedicine in the future. Kangethe (2018) used a survey design to investigate 'telemedicine as a disrupter in healthcare management in Kenya'. The population comprised of 40 selected hospitals in Nairobi and the target was hospital management with one manager chosen from each hospital. Therefore, the target

population was 440 respondents (Kangethe, 2018). Identified through convenience sampling, the sample was 120 respondents, which was 20% of the 400 patients. The study findings revealed that there was service effectiveness on the use of telemedicine facilitates in delivering of health care interventions and consultations in Nairobi County (Kangethe, 2018).

The home exercise program and telephonic exercise monitoring are some of the telemedicine aspects that enhance the effectiveness of the delivery of healthcare. Telemedicine brings significant reductions in hospital and travel costs. It significantly lowers outpatient and emergency visits and there is a significant reduction in mortality. The findings led to the conclusion that telemedicine improves the accessibility of healthcare in Nairobi County.

Parimbelli et al. (2018) looked at the awareness of stakeholders regarding the risks, safety, legal implications, and liability of telemedicine projects. The study leveraged on the experience gained during two international telemedicine projects. Two workshops were organized where the topic was discussed in round tables with system developers, researchers, physicians, nurses, legal experts, healthcare economists, and administrators (Parimbelli et al., 2018). It was concluded that patients are more willing to adopt telemedicine systems to improve care. An essential step towards broader adoption of these systems consists of increasing their compliance with existing regulations and better defining responsibilities for all the involved stakeholders (Parimbelli et al., 2018).

Mandala (2018) evaluated 'the influence of stakeholder's involvement in project management on the performance of road construction projects in Kenya'. The study specifically looked at the sub-county of Bondo in the county of Siaya. Descriptive research was used and the target population was 48,002 residents of Bondo sub-

county and 30 projects managers in road construction projects in the sub-county (Mandala, 2018). The involvement of stakeholders in stakeholders' involvement in identification, initiation, planning, implementation, and monitoring and evaluation phases of the project crucially impacted the performance of road construction projects in Bondo sub-county. The study recommended that project managers should involve stakeholders in the various aspect of project identification such as phase review (Mandala, 2018).

Choi et al. (2019), with a focus on the interests of physicians, utilized the 'Delphi technique' to assess the resistance to telemedicine by stakeholders. The study proposed a strategy to minimize conflicts and improve acceptance. It was done among 190 telemedicine professionals who were recommended by 485 telemedicine-related personnel in South Korea. The stakeholders were categorized into four groups, namely policy-making officials, physicians, patients, and industrialists. The conclusion was that the physicians were most opposed to the adoption of telemedicine (Choi et al, 2019). The main causes of such opposition were found to be the lack of a medical services delivery system and the threat of disruption for primary care clinics. Very little consensus was observed among the stakeholders, except on the following points: the need for expansion of the national health insurance budget by the government, and the need for enhancement of physicians' professional autonomy to facilitate smooth agreements (Choi et al., 2019)

The empirical literature review has revealed that there is limited research on how stakeholder involvement impacts telemedicine projects' performance. Nevertheless, similar researches are found, hence the need for this study. This research was expected to contribute to project management and healthcare.

### Conceptual Framework

A conceptual framework, in the view of Mugenda and Mugenda (2003) is a theorized model that identifies the notions under research and their connections. It demonstrates the researcher’s blend of literature and explains a phenomenon (Mugenda & Mugenda, 2003). Further, it links the independent variables to the dependent variable. A conceptual framework in research aims to ensure that readers can see the relationship between the variables at a glance.

Figure 2.1 illustrates the conceptual framework of this study.

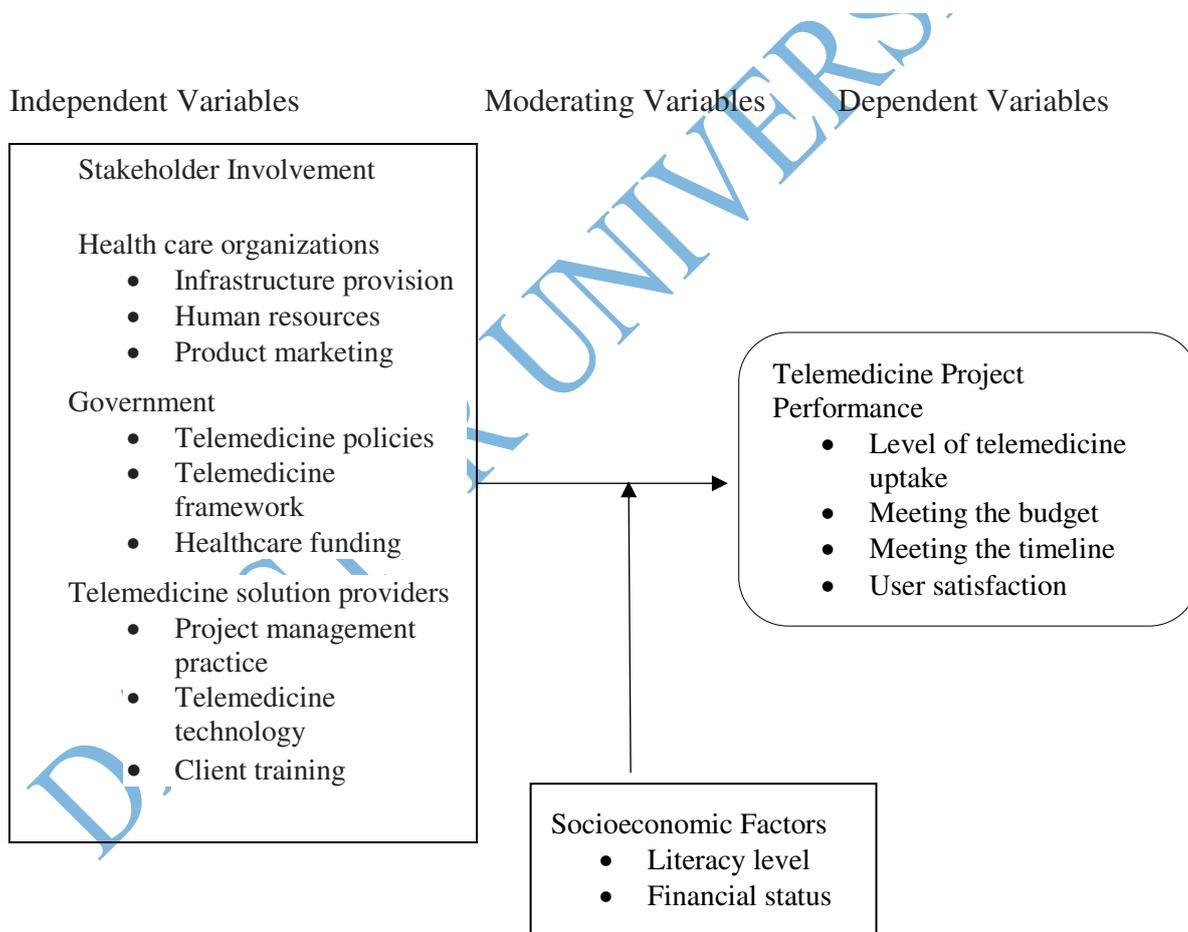


Figure 2.1: Conceptual Framework  
Source: Author (2020)

## Discussion

Telemedicine projects' performance represented the dependent variable, whereas stakeholder involvement represented the independent variable. Healthcare organizations should provide the necessary infrastructure, have the right human resources, and market the telemedicine products. The second stakeholder is the government. The government comes up with telemedicine policies which help the organization to implement the telemedicine projects. It designs frameworks governing the implementation of telemedicine and allocates funds towards health systems' implementation.

Lastly, the telemedicine solution provider is responsible for the implementation of the telemedicine project. Adoption of project management practices using the right telemedicine technology and providing proper training to the user ensures a successful project.

The moderating variables were socioeconomic factors such as literacy and financial status of the patient and how the same influence the uptake of telemedicine products. The dependent variable was 'telemedicine project performance'. It was measured by the level of uptake of telemedicine, meeting budgets and timelines, and stakeholder satisfaction.

## Summary

In summation, this chapter has captured the theoretical, general, and empirical reviews of literature relevant to this study; and the conceptual framework. The literature review looked at both the global perspective and local perspectives regarding the impact stakeholder involvement has on telemedicine projects'

performance. The following chapter presents the research methodologies utilized in executing this research.

DAYSTAR UNIVERSITY

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### Introduction

This chapter gives a description of the research methodology by which the study was executed. The research design utilized and its value to the study are highlighted. The sampling method used, the identified sample, the process of collecting data, and the plan of analysing it are also discussed.

#### Research Design

Creswell and Creswell (2017) defined research design as procedures and methods used in the analysis of the specified variables within a study. It is the most important part of any research as it determines how the variables are tested and how the study achieves its intended goal. Various research designs are available to a researcher, and they include exploratory, causal, and descriptive. This study adopted a descriptive research design.

According to Creswell and Creswell (2017), a descriptive research design is essential in quantitative studies as it provides significant insight into the individual, events, or characteristics to be tested. For this study, this design was used to gain a clear comprehension of the impact stakeholder involvement has on telemedicine projects' performance in Nairobi, Kenya. As recommended by Wang (2015), this design was considered to be more effective as it would provide a broad description of the subject of study, thereby reducing potential bias in data collection.

Kothari (2008) stated that a research design provides the adhesion that holds the research together. The descriptive research design was preferred for this study because it ensures a complete description of the situation, making sure that there is

minimum bias in the collection of data (Kothari, 2008). This particular research was designed to assess telemedicine performance as a phenomenon. As such, this design provided significant insight into the different stakeholders, based on how their involvement affects telemedicine projects' performance.

### Target Population

The target population comprises components that successfully meet the inclusion criteria used in a study (Creswell & Creswell, 2017). For this study, the population was drawn from employees of Access Afya. The total employees were 50 as provided by their human resource department of the organization. Because of the size of the study population, the study used census method because it is suitable for smaller populations (less than 200). Census also eradicates sampling inaccuracy and gives data on all persons in the population (Kothari, 2008). The census approach was used, and the questionnaires were rolled out to all the respondents from the organization.

Table 3.1 shows the target population for the study.

*Table 3.1: Target Population*

Department	Designations	Target
Medical	Medical Officers	3
	Clinical Officers	22
	Nurses	1
	Pharm-tech	8
IT	IT	3
Administration	Administrators	5
Management	MD	3
	Managers	5
Total		50

### Data Collection Instruments

A data collection instrument is used in research to refer to a tool that specifies and objectifies of the data collecting process (Mugenda & Mugenda, 2003). Instruments are usually written and may be given directly to the respondents or may provide an

objective description of the collection of certain types of data. Mugenda and Mugenda (2003) asserted that a researcher needs to develop instruments with which to collect data. The most commonly used instruments are questionnaires, interview schedules, observational forms, and standardized tests.

Primary sources were used for data collection in this study. Kothari (2008) described a questionnaire as a list of questions written in a defined order on a form or forms, and has items or questions each designed to address research objectives and questions. The respondent was expected to read, understand, and answer the questions.

The study used a structured questionnaire where close-ended questions were administered, thus saving the respondents' time. The questionnaire was in the form of Likert scale and questions were based on numerical ranges. Cooper and Schindler (2011) pointed out that Likert scales are used as a form of rating scale because they are reliable and give an acceptable data volume compared to other scales. This study used a researcher-developed questionnaire that tried to delineate the socio-demographic indicators of the respondents such as gender and work experience.

#### Data Collection Procedures

The researcher obtained the requisite approvals after the supervisors' consent to the initial proposal to facilitate the collection of the data. The researcher had sought approval from the Ethics Review Board (ERB) of Daystar University. A research permit was also acquired from the National Commission for Science, Technology and Innovation (NACOSTI) before the research was carried out. Enough copies of the self-administered questionnaire were handed over to the respondents together with accompanying letters from the university and NACOSTI to assure respondents that their confidentiality would be maintained.

The questionnaire copies were distributed to the respondents at their desks and places of their convenience and a time was agreed on, when the researcher would collect the filled questionnaire copies. The letter of informed consent was collected immediately the respondents appended their signatures. To ensure the anonymity of the respondents, the informed consent letter was detached from the questionnaires.

### Pretesting

According to Cooper and Schindler (2008), a pretest is an evaluation of certain questions, format, question sequence, and instructions prior to the main survey. The aim of pretesting is to ensure the accuracy and appropriateness of the research design and instruments. Neuman (2014) maintained that the importance of the pretest cannot be overemphasized as one will always find ambiguous questions and questions which turn out not to be relevant for eliciting the sort information, among other errors. Through a pre. One can identify potential weaknesses in design and implementation. Sekaran and Bougie (2016) reinforced that pretesting is required for testing the reliability and validity of the instruments.

Mugenda and Mugenda (2003) argued that a questionnaire should be tried out in the field as soon as it has been approved. The questionnaire should be pretested on a selected sample which is different from the real research sample. The procedure used in pretesting of the questionnaires should be similar to that to be used in the actual data collection. According to Cooper and Schindler (2008), one percent of the sample should constitute the pretest, taking into consideration the time, cost, and practicability of the exercise.

In this study, 10% of the sample, which was five (10% of 50) were designed as the main data. The pretest was conducted at Nairobi Women's Hospital (NWH) on a sample different from the sample used in the actual study. The NWH was used

because they have used telemedicine in the past in terms of teleradiology. The pretest helped the researcher to determine whether the respondents were able to read and understand the questions, answer all questions, and the time taken to answer the questions. The pretesting data was not used in the actual study.

### Validity and Reliability of the Research Instruments

#### Validity

Validity is the level to which results derived from the analysis of the data correspond to the objectives of the study (Mugenda & Mugenda, 2003). The researcher used both content and construct validity in the study. Construct validity means that the test measures the abilities that should be measured, while content validity means the test measures appropriate content.

Construct validity was achieved by splitting the questionnaire into various divisions whereby each division dealt with a specific objective of the study apart from the first section that tackled the demographic profile of the respondents. On the other hand, the content was achieved by closely examining the questionnaire to check for the relevance of the questions in terms of their objectivity, meaning, and clarity. Besides, supervisors were given a copy of the questionnaire to ensure that it was valid enough to meet the study objectives. Based on the findings from the pretesting and the evaluation of the questionnaire by the supervisors, the questionnaire was adjusted after which the data collection exercise commenced.

#### Reliability

Reliability refers to a measure of the degree to which research instruments yield consistent results (Mugenda & Mugenda, 2003). For this study, Cronbach's alpha coefficients ( $\alpha$ ) was used to determine the reliability of items on the multiple Likert

scale. The higher the ( $\alpha$ ) coefficient the more reliable the questionnaire. As a rule of thumb, the acceptable range of Cronbach alpha coefficient value is between 0.70 and 0.90 or higher depending on the type of research. For descriptive research, Cronbach's alpha with a coefficient of 0.70 or more is acceptable in the study. Table 3.2 provides the Cronbach's alpha value which was above 0.70, hence acceptable.

*Table 3.2: Reliability Test*

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.728	.758	34

#### Data Analysis Plan

Kothari (2008) stated that data analysis is a process that commences soon after data has been collected and completes with the extrapolation and processing of the results. Just before the analysis commenced, the data that was collected via the questionnaire was examined for completeness then entered into the Statistical Package for the Social Sciences (SPSS), version 22 for analysis. The responses were categorized into various classes referred to as categorical variables.

Since the purpose of this study was to give a maximum description of the situation as it is, a simple descriptive analysis was done. The data was categorized and arranged to determine how both variables related. The study used descriptive statistics. The data was then presented using frequency tables, graphs, and statistics, and then followed by interpretation.

Pearson correlation analysis was used to examine the level of the relationship between the two variables. Generally, correlation values may range from 0 to  $\pm 1.0$ . A value of 0 indicates that there is no form of relationship between both variables, while a

correlation of  $\pm 1.0$  indicates that there a positive or negative relationship (Cooper & Schindler, 2014).

### Ethical Considerations

An ethical researcher requires integrity, honesty, and respect to the research organization. Informed consent is when the participants of the study are informed on the purpose of the study and how their information shall be used.

With this in mind, a consent form was drafted and distributed to the involved participants one month before beginning to collect data. The researcher collected the consent forms before handing out the questionnaires. It was voluntary for the research participants to respond to the questionnaire. This ensured that the data was not biased.

Another important aspect that was considered was the privacy of the research participants. Participants are more inclined toward sharing more honest information when they know that their personal information is protected by the researcher. With this in mind, the researcher ensured that the questionnaires were anonymous and that the participants were not required to share their personal information in any way.

### Summary

In this chapter the researcher has provided insight into how the study was done, highlighting the research design, the population sample, data collection methodology and the sampling design used. The next chapter comprises the following: presentation of the data, analysis and interpretation of the data, and a summary of the key findings.

## CHAPTER FOUR

## DATA PRESENTATION, ANALYSIS AND INTERPRETATION

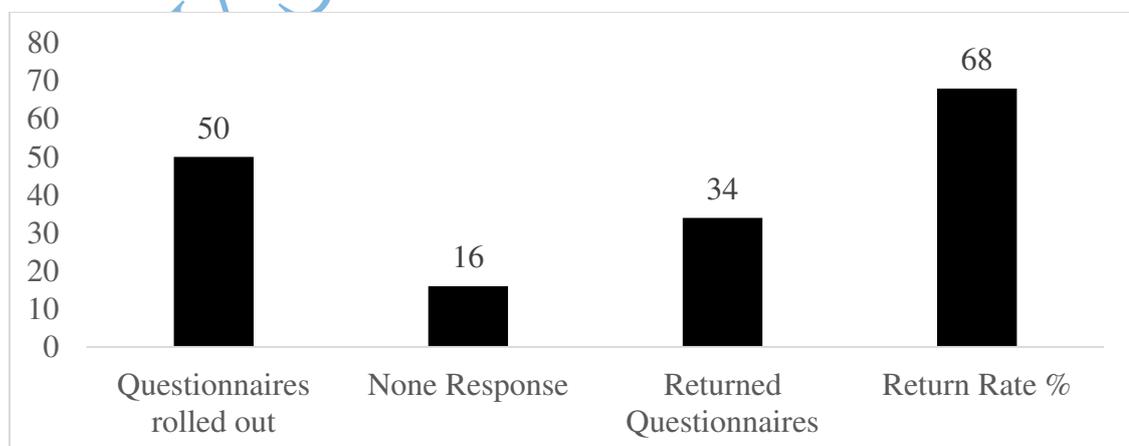
## Introduction

The presentation of data, its analysis, and explanation are captured in this chapter in line with the study objectives. The SPSS, version 22 was used for data analysis and descriptive and inferential statistics were conducted. The statistics were described in the form of frequency and percentages, while inferential statistics were in the form of Pearson Correlation analysis.

## Analysis and Interpretation

## Response Rate

Fifty questionnaires were distributed to the respondents from which 34 were returned duly completed, giving a percentage return rate of 68%. This percentage was deemed sufficient for data analysis as supported by Mugenda and Mugenda (2003) who asserted that 50% return rate is valid for the data analysis process. The results were as displayed in Figure 4.1.

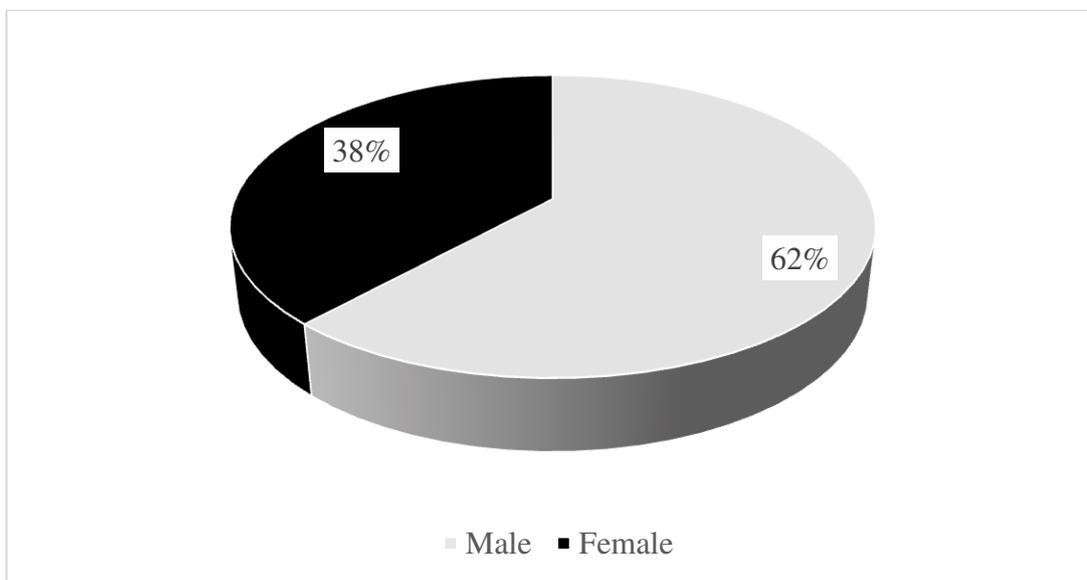


*Figure 4.1: Response Rate*

### Respondents' Demographics

This section analyses the respondents' demographic data, that is, gender, duration, age and educational level. The results are presented in Figure 4.2.

#### Distribution of respondents by gender



*Figure 4.2: Distribution of Respondents by Gender*

The male respondents were 62% while their female counterparts were 38%. From the findings, it can be deduced that the male gender encompasses the highest number of employees at Access Afya. This is an indication that the organization gives preference to male persons, hence a pointer to gender bias.

#### Distribution of respondents by age

*Table 4.1: Respondents' Age*

Age Category	Frequency	Percent
20-30 years	15	44.1
31-40 years	18	52.9
41-50 years	1	2.9
Total	34	100

A total of 52.9% of the respondents were aged between 31-40 years, with 44.1% aged between 20-30 years, and 2.9% aged between 41-50 years. The last categories had no respondents who were 50 and above. These results infer that Access Afya had hired staff of various age brackets. Correspondingly, Kithaka (2014) observed that age is a key aspect in institutions because it reveals staff who fall within an optimal age bracket to drive the organization's objectives and mission towards its strategic goals and targets.

#### Distribution of respondents by education level

*Table 4.2: Respondents' Education Level*

Education Level	Frequency	Percent
Diploma	21	61.8
Bachelor's Degree	10	29.4
Postgraduate	3	8.8
Total	34	100

The respondents with diploma level of education were the majority (61.8%), followed by the bachelor's degree holders (29.4%), and lastly postgraduate degree level (8.8%). No respondent had a doctorate degree. It was established that most of the respondents were educated hence fit to run organizational affairs.

#### Distribution of respondents by period of service at Access Afya

To establish whether the employees were experienced, the study sought their duration at Access Afya. Figure 4.3 captures the results.

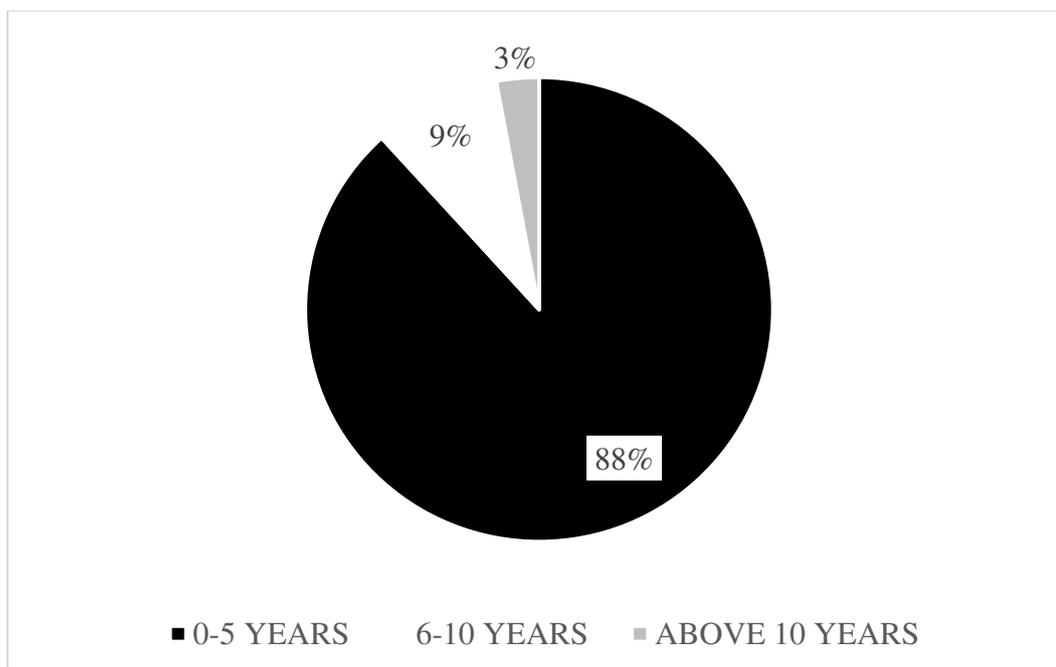


Figure 4.3: Respondents' Period of Service at Access Afya

It was observed that 88% of the respondents had worked with the organization for a period of 0-5 years, while 9% had worked for 6-10 years. Those who had worked with the organization for more than 10 years were 3%. It can therefore be said that most of the respondents had worked with the organization for a period of 0-5 years as indicated in Figure 4.2. This shows that the respondents were fairly new to the organization since it was a new project

Distribution of respondents by department at Access Afya

Table 4.3 outlines the distribution of the respondents based on their respective departments at Access Afya.

Table 4.3: Respondents' Department at Access Afya

Departments	Frequency	Percent
Medical	20	58.8
Administration	5	14.7
IT	3	8.8
Management	6	17.6
Total	34	100

It was observed that 58.8% of the respondents were from the Medical department.

The respondents from the Management department were 17.6%, while those from the Administration and IT departments were 14.7% and 17.6% respectively. It can thus be said that most respondents were from the Medical department as indicated in Table 4.3: This was essential for this study.

#### Findings and Analysis by Research Objectives

In this section, the study presented the results for all the objectives that guided the study.

##### Stakeholder involvement

To establish the extent of the stakeholder involvement in the telemedicine project, the respondents were asked to indicate their level of agreement with various statements relating to healthcare organizations. The findings are shown in Table 4.4.

Table 4.4: Stakeholder Involvement Level in Telemedicine Project

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
<b>Involvement of Health care organization</b>												
Health care organization was involved in telemedicine projects	0	0.0	3	8.8	9	26.5	15	44.1	7	20.6	34	100
There are adequate infrastructure in our organization to support telemedicine projects	3	8.8	7	20.6	11	32.4	8	23.5	5	14.7	34	100
There are adequate human resources for telemedicine projects	0	0.0	6	17.6	10	29.4	13	38.2	5	14.7	34	100
Telemedicine services were advertised to the patients	3	8.8	7	20.6	11	32.4	8	23.5	5	14.7	34	100
<b>Involvement of the Government</b>												
Government was involved in telemedicine project	3	8.8	6	17.6	14	41.2	9	26.5	2	5.9	34	100
There are government frameworks to support telemedicine projects	1	2.9	8	23.5	16	47.1	9	26.5	0	0.0	34	100
There are government policies to support telemedicine projects	1	2.9	6	17.6	23	67.6	3	8.8	1	2.9	34	100
Government provided funds for the telemedicine	6	17.6	9	26.5	15	44.1	4	11.8	0	0.0	34	100

project

Involvement of the telemedicine solution provider

Telemedicine solution provider were involved in the telemedicine implementation	0	0.0	6	17.6	19	55.9	8	23.5	1	2.9	34	100
Project management practices were adopted while implementing the telemedicine solution	0	0.0	4	11.8	14	41.2	13	38.2	3	8.8	34	100
Latest telemedicine technology were used in the implementation	0	0.0	5	14.7	16	47.1	11	32.4	2	5.9	34	100
Proper training was given to the users	2	5.9	4	11.8	13	38.2	12	35.3	3	8.8	34	100

The findings captured Table 4.4 show the level of response to each statement involving the healthcare organization. The study established that 44% of the respondents agreed, 7% strongly agreed, 26% were neutral, and 9% disagreed with the statement that the healthcare organization was involved in the telemedicine project.

It was further established that 24% agreed, 15% strongly agreed, 27% disagreed, 9% strongly disagreed, and 32% remained neutral on the statement that there was adequate infrastructure in their healthcare organization to support telemedicine projects.

Also, 38% of the respondents agreed, 15% strongly agreed, 18% disagreed, and 29% were neutral on the statement that there was adequate human resource for telemedicine project.

Furthermore, 24% agreed, 15% strongly agreed, 21% disagreed, 9% strongly disagreed, while 32% remained neutral on the statement that telemedicine services were advertised to the patients. These findings reveal that there is a significant extent of involvement of the healthcare organization in telemedicine projects. The findings concur with Nyamu (2016) who established that healthcare organizations' involvement is crucial to telemedicine projects.

The level of response for government involvement in telemedicine projects was as follows:

On whether the government was involved in telemedicine projects, 41% of the respondents were neutral, 18% disagreed, 27% agreed, 9% strongly disagreed, and 6% strongly agreed.

In addition, 41% were neutral, 27% agreed, 24% disagreed, and 3% strongly disagreed on the statement that there are government frameworks to support telemedicine projects.

Regarding whether there were government policies to support the telemedicine projects, 68% of the respondents were neutral, 18% disagreed, 9% agreed, 3% strongly agreed, and 3% strongly disagreed.

Lastly, 44% of the respondents were neutral, 27% disagreed, and 18% strongly disagreed on the statement that the government provided funds for telemedicine projects. The findings imply that there is a positively inclined involvement of the government in telemedicine projects.

The level of response for telemedicine solution provider involvement in telemedicine projects was as follows:

On whether the telemedicine solution providers were involved in telemedicine

projects, 60% of the respondents were neutral, 24% agreed, 18% disagreed, and 3% strongly agreed.

In addition, 41% of the respondents were neutral, 38% agreed, 12% disagreed, and 9% strongly agreed on the statement that project management practices were adopted while implementing telemedicine project.

On the statement that the latest telemedicine technologies were used in the implementation of the telemedicine project, 47% of the respondents were neutral, 32% agreed, 15% disagreed, and 6% strongly agreed.

Lastly, 38% of the respondents were neutral, 35% agreed, 12% disagreed, and 9% strongly agreed on the statement that proper training was given to the user.

These results show that there is a neutral stand inclined towards the positive with regard to telemedicine solution providers' involvement in telemedicine projects.

Measures of telemedicine project performance

The respondents were required to indicate their level of agreement and disagreement on the measure of telemedicine project performance, and the results were as displayed in Table 4.5.

*Table 4.5: Measure of Telemedicine Project Performance*

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Measures of Telemedicine Project Performance												
The uptake of telemedicine is high amongst the patients	4	11.8	8	23.5	15	44.1	7	20.6	0	0.0	34	100
The telemedicine project undertaken by our organization are always completed in time	1	2.9	6	17.6	14	41.2	9	26.5	4	11.8	34	100
The telemedicine projects undertaken by our organization are always completed in budget	1	2.9	5	14.7	16	47.1	10	29.4	2	5.9	34	100
The stakeholders (users and patient) are satisfied with the telemedicine system and services provided.	0	0.0	3	8.8	17	50.0	12	35.3	2	5.9	34	100

According to the results captured in Table 4.5, 44% of the respondents remained neutral, 24% disagreed, 21% agreed, and 12% strongly disagreed on the statement that the uptake of telemedicine was high amongst the patients. The study shows that the uptake of telemedicine is relatively low. This is supported by Wootton (2001) who stated that telemedicine projects uptake is low, hence cannot be sustained.

On the statement that telemedicine projects undertaken are always completed in time, 41% of the respondents were neutral, 26% agreed, 18% disagreed, 12% strongly agreed, and 3% strongly disagreed. This indicated that there is a positive inclination towards the telemedicine projects being completed within the required time.

Furthermore, 47% of the respondents were neutral, 29% agreed, 15% disagreed, 6% strongly agreed, and 3% strongly disagreed on the statement that the telemedicine projects undertaken are always completed within budget. From this, it can be deduced that there is a positive inclination towards telemedicine projects finishing within budget.

In response to the statement that stakeholders (users and patients) are satisfied with the telemedicine system and services, 50% of the respondents were neutral, 35% agreed, 2% strongly agreed, 9% disagreed, and 6% strongly agreed. This implies that there is a positive inclination on user satisfaction in telemedicine projects

Effects of stakeholder involvement on the performance of telemedicine projects

The relationship between stakeholder involvement and the performance of telemedicine projects is described followed by the correlation analysis between both variables. Table 4.6 shows this relationship.

*Table 4.6: Stakeholder Involvement and Performance of Telemedicine Projects*

	Frequency	Percent
Yes	31	94
No	2	6
Total	34	100

As the findings displayed in Table 4.6 show, 94% of the respondents said 'YES' while 6% said 'NO' to the question "Do you think stakeholder involvement affects performance of telemedicine projects?". This response shows that stakeholder involvement affects the performance of telemedicine projects.

Table 4.7 shows ‘the effects of 'stakeholder involvement on the performance of telemedicine projects’.

*Table 4.7: Effects of Stakeholder Involvement on Performance of Telemedicine Projects*

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Involvement of health care organization in telemedicine projects enhances its performance	0	0.0	0	0.0	2	5.9	15	44.1	17	50.0	34	100
Proper infrastructure provision enhance telemedicine performance	0	0.0	0	0.0	1	2.9	10	29.4	23	67.6	34	100
Skilled human resources helps in better performance of telemedicine projects	0	0.0	0	0.0	2	5.9	14	41.2	18	52.9	34	100
Proper telemedicine marketing improves performance	0	0.0	0	0.0	3	8.8	13	38.2	18	52.9	34	100
Involvement of government in telemedicine projects enhances its performance	0	0.0	2	5.9	4	11.8	19	55.9	9	26.5	34	100
Government policies helps to determine telemedicine project performance	1	2.9	0	0.0	4	11.8	17	50.0	12	35.3	34	100
An established framework enhances telemedicine project performance	0	0.0	0	0.0	3	8.8	13	38.2	18	52.9	34	100

Government funds enhances performance of telemedicine projects	2	5.9	9	26.5	4	11.8	9	26.5	10	29.4	34	100
Telemedicine solution provider played an important role on performance of telemedicine projects	0	0.0	0	0.0	7	20.6	17	50.0	10	29.4	34	100
Involvement of telemedicine solution provider during the implementation phase enhances telemedicine project performance	0	0.0	0	0.0	3	8.8	20	58.8	11	32.4	34	100
Adoption of project management practices enhances telemedicine project performance.	0	0.0	0	0.0	4	11.8	21	61.8	9	26.5	34	100
Clients training enhance telemedicine project performance	0	0.0	0	0.0	1	2.9	13	38.2	20	58.8	34	100
Telemedicine technology enhances telemedicine project performance	0	0.0	0	0.0	1	2.9	16	47.1	17	50.0	34	100

As seen in Table 4.7, 50% of the respondents strongly agreed, 44% agreed, and 6% were neutral on the statement that involvement of healthcare organizations in telemedicine projects enhances the performance of the projects.

Regarding whether proper infrastructure provision enhances telemedicine performance, 68% of the respondents strongly agreed, 29% agreed, and 3% were neutral.

Furthermore, 53% strongly agreed, 41% agreed, and 6% were neutral on the statement that skilled human resources help in better performance of telemedicine projects.

Also, 53% strongly agreed, 38% agreed, and 9% were neutral on the statement that proper telemedicine marketing improves performance. This shows that an increase in the involvement of healthcare organizations leads to an increase in performance.

On the statement that involvement of government in telemedicine projects enhances the performance of the projects, 60% agreed, 27% strongly agreed, 12% were neutral, and 6% disagreed.

Further, 50% agreed, 35% strongly agreed, 12% were neutral, and 3% disagreed that government policies help to determine telemedicine project performance.

On whether an established framework enhances telemedicine project performance, 53% agreed, 38% strongly agreed, and 9% were neutral.

It was revealed that (30%) strongly agreed, 27% agreed, 12% were neutral, and (6%) strongly disagreed with the statement that government funds enhance the performance of telemedicine projects. This implies that an increase in the involvement of the government may increase the performance of telemedicine projects.

Also, (50%) agreed, (30%) strongly agreed, and (21%) were neutral on the statement that telemedicine solution providers played an important role in the performance of telemedicine projects.

On whether the involvement of telemedicine solution providers during the implementation phase enhances telemedicine project performance, (59%) of the respondents agreed, (32%) strongly agreed, and (9%) were neutral. Furthermore, (62%) agreed, (27%) strongly agreed, and (12%) were neutral on the statement that

adoption of project management practices enhances telemedicine project performance.

With regard to whether client training enhances telemedicine projects' performance, 59% strongly agreed, 38% agreed, and 3% were neutral.

Finally, (50%) agreed, 47% strongly agreed, and 3% were neutral on the statement that telemedicine technology enhances telemedicine projects' performance. This shows that an increase in the involvement of telemedicine solution providers increases the performance of telemedicine projects.

### Correlation Analysis

To determine the linear association between the independent and the dependent variables, Pearson correlation analysis was used, and the results are shown in Table 4.8.

Table 4.8: Correlation Analysis

		Effects of Stakeholder Involvement on Performance of Telemedicine Projects in Nairobi County			
		Performance	Government	Telemedicine Solution Provider	Health Care Organization
Performance	Pearson Correlation	1	.596**	.553**	.574**
	Sig. (2-tailed)		.000	.001	.000
	N	34	34	34	34
Government	Pearson Correlation	.596**	1	.300	.248
	Sig. (2-tailed)	.000		.085	.157
	N	34	34	34	34
Telemedicine Solution Provider	Pearson Correlation	.553**	.300	1	.430*
	Sig. (2-tailed)	.001	.085		.011
	N	34	34	34	34
Health Care Organization	Pearson Correlation	.574**	.248	.430*	1
	Sig. (2-tailed)	.000	.157	.011	
	N	34	34	34	34

\*\*Correlation is significant at 0.01 (2-tailed).

\*Correlation is significant at 0.05 (2-tailed).

As outlined in Table 4.8, in connection to the relationship between the independent and the dependent variables, healthcare organization was found to have a positive correlation with telemedicine project performance and also statistically significant at 1% ( $r=0.574$ ,  $p\text{-value}=0.000$ ). In agreement, Nyamu (2016) established that the involvement of healthcare organizations affects the performance of telemedicine projects.

The results also revealed that the government was positively correlated with telemedicine project performance and also statistically significant at 1% ( $r=0.596$ ,  $P\text{-Value}=0.000$ ).

Furthermore, the telemedicine solution provider was found to be positively correlated with the telemedicine project performance and also statistically significant at 1% ( $r=0.553$ ,  $P\text{-Value}=0.001$ ). The results could infer that an increase in the stakeholder involvement may increase telemedicine project performance.

Socioeconomic Factors

Table 4.8 illustrates the extent to which moderating factors enhance the relationship between the independent and the dependent variables (stakeholder involvement and performance of telemedicine projects).

Table 4.9: Socioeconomic Factors

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Socioeconomic Factors												
Patient's literacy level	1	2.9	0	0.0	4	11.8	8	23.5	21	61.8	34	100

Patient's financial status	0	0.0	3	8.8	15	44.1	7	20.6	9	26.5	34	100
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The results in Table 4.10 demonstrate that 62% of the respondents strongly agreed, 24% agreed, 12% were neutral, and 3% strongly disagreed on the statement that patients' literacy level enhances the relationship between the two variables (stakeholder involvement and performance) in the telemedicine projects. The findings agree with Serban and Iorgan's (2016) argument that patient's literacy level will affect the performance of telemedicine projects.

It was also revealed that (44%) of the respondents were neutral, (26%) strongly agreed, (21%) agreed and (9%) strongly disagreed with the statement that patients financial status enhances the relationship between stakeholder involvement and the performance of telemedicine projects.

#### Summary of Key Findings

1. The study established that the healthcare organization was more involved in telemedicine projects with 65% of the respondents in agreement, compared to the government (at 38%), and telemedicine service providers ( at 27%).
2. An assessment of the project performance revealed that 33% of the respondents disagreed with the statement that the level of uptake of telemedicine was high amongst the patients, 38% agreed that the projects were completed in time, 35% agreed that the projects were completed within budget, and 41% agreed that the stakeholders were satisfied with the telemedicine system and services provided.
3. On the 'the effects of stakeholder involvement on the performance of telemedicine projects', the results indicated a positive correlation between

healthcare organizations and project performance of telemedicine projects. (Pearson Correlation Coefficient,  $r=0.574$ ). The relationship was found to be statistically significant ( $p\text{-value}=0.000$ ) which was less than 0.01. There was also a strong positive correlation between government involvement and performance of telemedicine projects (Pearson Correlation Coefficient,  $r=0.596$ ). The relationship was found to be statistically significant ( $p\text{-value}=0.000$ ) which was less than 0.01. Also, there was a positive correlation between healthcare organizations and project performance of telemedicine projects (Pearson Correlation Coefficient,  $r=0.553$ ). The relationship was found to be statistically significant ( $p\text{-value}=0.001$ ) which was less than 0.01. This implies that as stakeholder involvement increases, the performance of telemedicine projects increases.

4. Most of the respondents (86%) agreed that the patient's literacy level affects the relationship between stakeholder involvement and the performance of the telemedicine projects.
5. Also, 47% of the respondents agreed on the statement that patients' financial status affects the relationship between stakeholder involvement and the performance of telemedicine projects.

#### Summary

In this chapter, a detailed data analysis using SPSS, version 22 has been provided. The analysis was done in line with the objectives that the study endeavoured to meet. Tables and figures were used to present the results. Discussions of the key findings, conclusions of the study, as well as the recommendations will be presented in the next chapter.

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## CHAPTER FIVE

### DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

#### Introduction

This chapter presents a discussion of the research findings in line with the research objectives; conclusions made from the study; recommendations; and suggestions for further research.

#### Discussions

##### Stakeholder Involvement

In connection with stakeholder involvement, 65% of the respondents agreed that healthcare organizations were involved in telemedicine. This infers that healthcare organizations' involvement is important in projects. Healthcare organizations generally recruit and empower employees and this results in better project performance. A study by Kiih (2015) found that empowering employees acts as a motivating factor, thereby improving work rates. This agrees with Nyamu (2016) who stated that organizations' involvement is vital to the success of telemedicine projects.

On whether the government was involved in telemedicine projects, 36% of the respondents agreed. This is in line with Kenya, MOH's (2014) assertion that there are legislations in place to support the telemedicine projects. However, the framework needs to be well established for countrywide implementation. The success of the telemedicine projects requires guidelines given by the government. This will facilitate better implementation and improved performance of the projects.

Furthermore, 27% of the respondents agreed that telemedicine solution providers were involved in telemedicine projects. This implies that there is inadequate involvement of telemedicine solution providers. Project management approach,

training, and technology used by the telemedicine solution providers will ensure a successful project implementation which will contribute to improved performance. Incorporation of project management practices in an organization is vital to the project (Peters et al., 2015).

#### Measures of Performance of Telemedicine Projects

Concerning measures of the performance of the telemedicine project, 33% of the respondents disagreed that the telemedicine uptake level is high among the patients. This agrees with Khalifa (2013) who determined that the uptake is low among the patients. This suggests that the organizations need to put more efforts towards improving the uptake of telemedicine projects amongst the patients.

On whether the telemedicine projects were completed within the time frame, 38% of the respondents agreed, while 41% were neutral. The implication here is that some of the projects were completed within time. On whether the telemedicine projects were completed within the budget, 35% of the respondents agreed, an indication that some projects were completed within the time. In another study, Serrador and Turner (2014) found that many public projects in Europe were completed within time. Based on this, it can be deduced that to a large extent the organizations employed resources based on needed skills. In addition, a study by Anyango (2016) discovered that recruiting of employees based on skills and expertise enhances the performance of projects.

On the statement that the stakeholders were satisfied with the telemedicine project, 41% of the respondents agreed, thus suggesting the need for slight improvement regarding telemedicine service satisfaction. This is supported by Jha and Iyer (2006) who established that satisfaction (users' and patients') of telemedicine determines the performance of the project.

### Stakeholder Involvement and the Performance of Telemedicine Projects

Regarding whether stakeholder involvement affects the performance of the telemedicine projects, the majority (94%) of the respondents agreed. The study also established that stakeholder involvement was positively correlated with the performance of the telemedicine projects at Access Afya. This, therefore, inferred that increased stakeholder involvement could result in enhanced performance of telemedicine projects.

### Conclusion

The study concluded that the extent of stakeholder involvement varied in different telemedicine projects. Healthcare organizations were more involved than the government and the telemedicine solution providers. Also, a relationship was found between the independent and the dependent variables (involvement of the stakeholder and the performance of the telemedicine project). This is supported by the fact the correlation analysis found that the involvement of the stakeholder had a positive and significant correlation with the performance of the telemedicine projects in Access Afya.

### Recommendations

The following are the recommendations of the researcher based on study findings: Concerning the involvement of the stakeholders, it was observed that the healthcare organization was fully involved in the telemedicine projects, followed by the government, and the telemedicine solution provider who was least involved. It is recommended that the organization should be fully involved, work closely with the government, and ensure that the telemedicine solution providers are also well involved in the project. The healthcare organization should have proper infrastructure,

motivate employees since the employees are fairly new to the organization, and market telemedicine services.

Healthcare organizations should liaise with the government to ensure that the government is involved and that frameworks and policies are put in place for effective roll-out of telemedicine projects throughout the country. Healthcare organizations should ensure that telemedicine solution providers are involved in each stage of the project during the implementation.

Regarding measures of project performance, the study recommends that Access Afya adopts and embraces a project management approach; provide specific project training to staff; avail adequate human and financial resources; and also have risk-mitigating measures so that projects can achieve the intended purpose, be completed within schedule and within the budget, and be of the required quality standards (Peters et al., 2015). Besides, the organization needs to create awareness and sensitization regarding the telemedicine solutions towards improving the uptake of the same.

About the stakeholder involvement on the performance of telemedicine projects, it is recommended that the organization continues leveraging on the stakeholders as they (stakeholders) positively influence telemedicine project performance. This would improve telemedicine project performance in the future. Also, the organization needs to explore other different stakeholders who would contribute towards the project hence improve telemedicine performance.

#### Recommendations for Further Research

This study investigated ‘the effects of the stakeholder involvement on the performance of telemedicine projects in Nairobi County’. A study can be conducted to determine the role of risk management on the performance of telemedicine

projects. This is because all projects are susceptible to risks, hence such a study would help in recommending various mitigation measures to avoid risks and improve performance.

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## APPENDICES

## Appendix A: Letter of Introduction from Daystar University

2<sup>nd</sup> March 2020

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

**RE: KARAN RENOLD CHRISTIE ; STUDENT NO: 09-0021**

Karan is a fully registered student in the School of Business & Economics at Daystar University. He has completed his course work towards a Masters of Business Administration (MBA) in Project Management. He is now working on the research for his thesis.

Karan's thesis topic is:

*"Effects of Stakeholder Involvement on Performance of Telemedicine Projects in Nairobi County."*

The purpose of my writing is to request that you give Karan the necessary assistance to enable him to complete this important academic exercise.

We assure you that any information collected will be used strictly for academic purposes and will remain absolutely confidential. Upon completion of the research, his thesis will be available at our library.

We appreciate your support for our student towards the successful completion of his thesis research.

Yours sincerely,

  
**Dr. Samuel Muriithi,**  
**HOD, COMMERCE,**

HEAD OF COMMERCE  
DEPARTMENT  
DAYSTAR UNIVERSITY  
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"...until the day dawn and the  
daystar  
cross in your hearts"  
2 Peter 1:19 KJV

DA

## Appendix B: Researcher's Introduction Letter to Respondents

Dear Respondent:

My name is Karan Renold Christie, a student at Daystar University pursuing Master of Business Administration in Project Management. As part of the requirements of my program, I am currently conducting a research on the effects of stakeholder involvement on the performance of telemedicine projects in Nairobi County. To achieve this, you have been invited to participate in this academic research by filling out the questionnaire. Your response will be treated with high confidentiality, according to research ethics and will only be used for academic purposes. Feel free to write your name and answer all questions at free will. The results obtained from the survey will be presented in summary form and will not disclose any individual or company information. Thank you very much for your time, and your collaboration is highly appreciated. For more information, please email me on [karanchristie@daystar.ac.ke/karanchristie@gmail.com](mailto:karanchristie@daystar.ac.ke/karanchristie@gmail.com) or call me on +254723210699.

Thanks and Regards,

Karan Christie

Appendix C: Questionnaire

Section A: Demographic Information

1. Kindly indicate your gender.  [ ] Male  [ ] Female
  
2. What is your age bracket? 
  - [ ] 20-30 years  [ ] 31-40 years  [ ] 41-50 years  [ ] Above 50 years
  
3. What is your highest level of Education?  
  - [ ] Diploma  [ ] Bachelor Degree  [ ] Post Graduate  [ ] Doctorate
  
4. For how long have you worked in your organization? 
  - [ ] 0-5 years  [ ] 6-10 years  [ ] above 10 years
  
5. Please indicate the department under which you work.
  - [ ] Medical  [ ] Administration  [ ] IT  [ ] Management

Section B: Project stakeholder involvement

6. Please indicate with a tick in the relevant column your agreement on the following statement regarding stakeholder involvement. Rate on a 5- point scale where: 1- Strongly disagree, 2-Disagree, 3-Neutral, 4- Agree, 5- Strongly agree

Statement	1	2	3	4	5
<b>Health care organization involvement</b>					
Health care organization was involved in telemedicine projects					
There are adequate infrastructure in our organization to support telemedicine projects					
There are adequate human resources for telemedicine projects					

Telemedicine services were advertised to the patients					
<b>Government involvement</b>					
Government was involved in telemedicine project					
There are government frameworks to support telemedicine projects					
There are government policies to support telemedicine projects					
Government provided funds for the telemedicine project					
<b>Telemedicine solution provider involvement</b>					
Telemedicine solution providers were involved in the telemedicine implementation					
Project management practices were adopted while implementing the telemedicine solution					
Latest telemedicine technology were used in the implementation					
Proper training was given to the users					

Section C: Telemedicine project performance

7. Please indicate with a tick in the relevant column your agreement on the following statement regarding measures of telemedicine project performance. Rate on a 5- point scale where: 1- Strongly disagree, 2-Disagree, 3-Neutral, 4- Agree, 5- Strongly agree

Statement	1	2	3	4	5
<b>Telemedicine project performance</b>					
The uptake of telemedicine is high amongst the patients					
The telemedicine project undertaken by our organization are always completed in time					
The telemedicine projects undertaken by our organization are always completed in budget					
The stakeholders (users and patient) are satisfied with the telemedicine system and services provided.					

Section D: Stakeholder involvement on performance of telemedicine projects

8. a) In your opinion, do you think stakeholder involvement affects performance of telemedicine projects?  No  Yes

If Yes:

b) Please indicate with a tick in the relevant column your agreement on the following statement regarding project stakeholder involvement on performance of telemedicine projects. Rate on a 5- point scale where: 1- Strongly disagree, 2-Disagree, 3-Neutral, 4- Agree, 5- Strongly agree

Statement	1	2	3	4	5
Involvement of health care organization in telemedicine projects enhances its performance					
Proper infrastructure provision enhance telemedicine performance					

Skilled human resources helps in better performance of telemedicine projects					
Proper telemedicine marketing improves performance					
Involvement of government in telemedicine projects enhances its performance					
Government policies helps to determine telemedicine project performance					
An established framework enhances telemedicine project performance					
Government funds enhances performance of telemedicine projects					
Telemedicine solution provider played an important role in the performance of telemedicine projects					
Involvement of telemedicine solution provider during the implementation phase enhances telemedicine project performance					
Adoption of project management practices enhances telemedicine project performance.					
Client training enhances telemedicine project performance					
Telemedicine technology enhances telemedicine project performance					

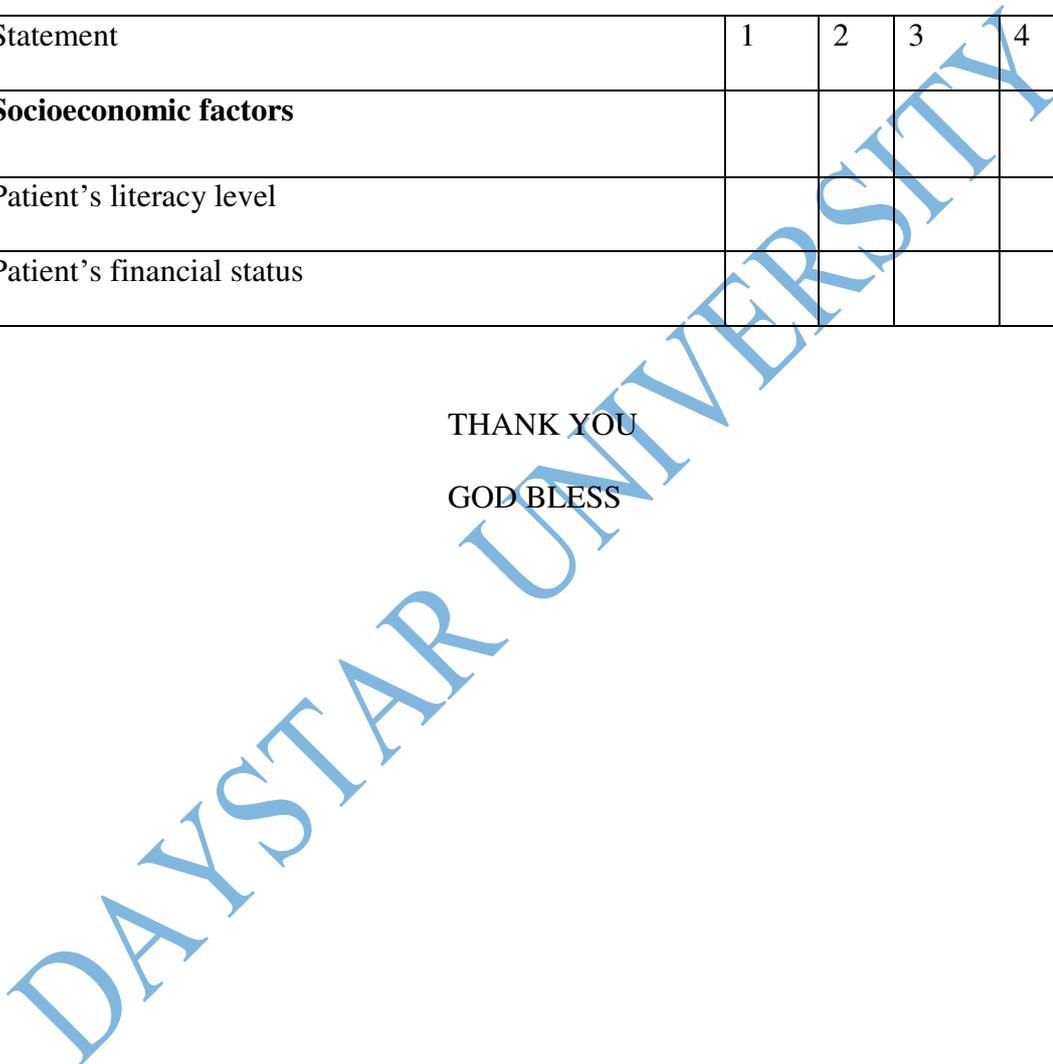
Section E: Socioeconomic factors

9. To what extent would you say the following factors enhances the relationship between stakeholder involvement and performance of telemedicine projects in Nairobi County. Please indicate with a tick in the relevant column your agreement. Rate on a 5- point scale where: 1- Strongly disagree, 2-Disagree, 3-Neutral, 4- Agree, 5- Strongly agree

Statement	1	2	3	4	5
<b>Socioeconomic factors</b>					
Patient's literacy level					
Patient's financial status					

THANK YOU

GOD BLESS



## Appendix D: Ethical Clearance

**VERDICT – APPROVAL WITH COMMENTS**

Daystar University Ethics Review Board

Our Ref: **DU-ERB/04/02/2020/000397**Date: 4<sup>th</sup> February 2020

To: Karan Renold Christie

Dear Karan,

**RE: EFFECTS OF STAKEHOLDER INVOLVEMENT ON PERFORMANCE OF TELEMEDICINE PROJECTS IN NAIROBI COUNTY.**

Reference is made to your ERB application reference no. 170120-01 dated 17<sup>th</sup> January 2020 in which you requested for ethical approval of your proposal by Daystar University Ethics Review Board.

We are pleased to inform you that ethical review has been done and the verdict is to revise to the satisfaction of your Supervisors and Head of Department before proceeding to the next stage. As guidance, ensure that the attached comments are addressed. Please be advised that it is an offence to proceed to collect data without addressing the concerns of Ethics Review board. Your application approval number is **DU-ERB-000397**. The approval period for the research is between **4<sup>th</sup> February 2020 to 3<sup>rd</sup> February 2021** after which the ethical approval lapses. Should you wish to continue with the research after the lapse you will be required to apply for an extension from DU-ERB at half the review charges.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used.
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by Daystar University Ethics Review Board.
- iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to Daystar University Ethics Review Board within 72 hours of notification.
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to Daystar University Ethics Review Board within 72 hours.
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of a signed one page executive summary report and a closure report within 90 days upon completion of the study to Daystar University Ethics Review Board via email [duerb@daystar.ac.ke].

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) <https://oris.nacosti.go.ke> and other clearances needed.

Yours sincerely,

  
Mrs. Purity Kiambi,  
Secretary, Daystar University Ethics Review Board

Encl. Review Report



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[www.daystar.ac.ke](http://www.daystar.ac.ke)

"...until the day dawn and the daystar  
arise in your hearts"  
**2 Peter 1.19 KJV**



Appendix E: Research Permit




**REPUBLIC OF KENYA**

**NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION**

Ref No: **496180**

Date of Issue: **16/March/2020**

**RESEARCH LICENSE**



**This is to Certify that Mr., Karan Christie of Daystar University, has been licensed to conduct research in Nairobi on the topic: EFFECTS OF STAKEHOLDER INVOLVEMENT ON PERFORMANCE OF TELEMEDICINE PROJECTS IN NAIROBI COUNTY for the period ending : 16/March/2021.**

License No: **NACOSTIP/20/4303**

**496180**  
 Applicant Identification Number

  
**Director General**  
**NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION**

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## Appendix F: Anti-Plagiarism Report

## Karan Christie thesis - 5.8.2020

## ORIGINALITY REPORT

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# Karan Christie thesis - 5.8.2020

*by* Karan Christie



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