DETERMINANTS OF QUALITY OF HEALTHCARE DELIVERY IN DEVOLVED SYSTEMS: CASE STUDY OF LAMU COUNTY, KENYA

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DECLARATION

This project is my original work and to the best of my knowledge has not been presented for an award in any University."

Signature: ……..……. Date…….

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C/153/OL/CTY/28567/2018

Declaration by the Supervisor

This project has been submitted for review with my approval as the duly appointed University Supervisor.

Signature……. Date……

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DEDICATION

I dedicate this project to my mother, Monicah Wangui Kimani whose values has enabled me to make great achievements. My Wife, Salome Wanjiku my sons, Jayden Kimani Mburu and Brayden Kimani Mburu and my daughter Jewel Wangui Mburu for their encouragement and moral support.

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ABREVIATIONS AND ACRONYMS

AIDS	acquired Immunodeficiency Syndrome
EMMS	Essential Medical Supplies and Medicines
HIV	Human Immunodeficiency Virus
HRH	Human Resource for Health
ICT	Information Communication Technology
KNBS	Kenya National Bureau of statistics
NACOSTI	National Commission for Science, Technology and Innovation
SPSS	Statistical Package for Social Sciences
TQM	Total Quality Management
USA	United States of America
WHO	World Health Organization
NFI	Normed Fit Index
GFI	Goodness-of-fit Index
EMSM	

OPERATION DEFINITION OF TERMS

The listed terms and concepts were used in the meaning given in this study:

Devolution: An act of granting authority to a subnational or local government from the central government of a sovereign state

New Public Management (NPM): A method for managing public institutions and agencies at both subnational and national levels, both in government and public service.

Productivity: A measure of the amount of output per unit of input from production processes.

Total Quality Management: A process for improving quality and performance so that customers' expectations are met or exceeded.

ABSTRACT

Devolved government is a form of administration that is permitted by Article 6 of the Kenyan Constitution. Its two political and administrative arms, the Legislature, and the Executive, are divided among the 47 counties. Devolution contributes to this goal by delegating control, authority, and representation to local levels. The passage of numerous bills by Parliament to lay the groundwork for implementation and adoption has aided in the realization of devolution's goals. Kenya's healthcare statistics paint an unsettling picture due to a lack of medical facilities, personnel, equipment, and supplies. In order to receive healthcare, patients may use over-the-counter medications, conventional medical services, or private healthcare facilities, while others may succumb to this circumstance. The purpose of the current study is to identify the variables influencing the provision of medical care services, with particular reference to Lamu County, Kenya. In particular, the study aimed to ascertain how government funding, the degree of service delivery quality, the institutional framework for health services, and the usage of information and communication technologies affect health care delivery in Lamu County. The study was guided by agency theory and stakeholder theory. A descriptive research design was used for this investigation. The 143,920 individuals that comprise the study's target group were both hospitalized patients and hospital-based healthcare workers. To select 399 respondents, a straightforward random sampling approach was used. The necessary sample size was calculated using the Yamane formula and a level of confidence of 95%. The researcher collected data using a semi-structured questionnaire. The researcher used the "Drop and Pick Later" data collection method to allow respondents sufficient time to respond to the study's questions. A pilot study consisting of ten respondents who were not included in the final poll was done. The reliability of the study was determined by calculating Cronbach's alpha, and an alpha of 0.7 or above indicated that the instruments were reliable. The research permits were sought from various authority in order to uphold ethical consideration. A combination of descriptive analysis and content analysis was utilized for analysis of the data collected. Descriptive analysis was used to investigate the quantitative elements, such as the size of the human resource, health facilities, the working hours, and the demographics of the respondents. On the other hand, content analysis was used to examine the theoretical conclusions of the research. The studied data was illustrated using frequency data tables, pie charts, and bar graphs. The study also came to the conclusion that the distribution of resources has a big impact on how well health services are delivered in Kenya. The study recommends that in order to enhance the delivery of healthcare services, both National and County should implement a set of deliberate and proactive processes, rules, and structures that support board size.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Kenya's health vision aims to deliver adequate and affordable health care to all residents at the highest reasonable standard. The quality-of-service delivery in the public health sector has experienced considerable alterations worldwide, including (among other things) the reorganisation of healthcare delivery systems to shift the emphasis to preventative and promotive healthcare (Ministry of Health. 2013b).

In an investigation involving 700 healthcare stakeholders, including patients, policymakers, providers, and managers of healthcare services, Donabedian (2016) discovered that healthcare service delivery is characterised by timeliness, availability, affordability, confidentiality, accessibility, and responsiveness. The United States, for example, is known to have excellent levels of quality health care, despite financial and insurance issues among individuals (Docteur & Berenson, 2015; Adams, Mounib, Pai, Stuart, Thomas & Tomaszewicz, 2016).

Ali (2014) looked into the elements that affect healthcare quality in Iran. The study found that patient and provider personal traits, as well as elements of the healthcare organization, system, and surrounding environment, all had an impact on the quality of healthcare delivery. In their assessment of how to improve the provision of health services and organizational performance in health systems, Sarah, Leslie, Chhitij, Peter, and Elizabeth (2012) found that policy levers like financing strategies and payment schemes, as well as regulatory reforms, had an impact on the delivery and quality of services.

Rajendra (2017) conducted research to investigate the effect of human resource management on healthcare firms in terms of service quality, customer happiness, and employee job satisfaction. The study discovered that effective human resource management enhances the quality of healthcare organizations and increases the efficiency of hospital staff. In a study conducted in low- and middle-income countries, Nicole et al. (2020) identified governance, information production, and health information system resources as potentially influential factors. Both contextual variables and performance-based finance were found to be influential.

Most Sub-Saharan African countries are unable to provide acceptable quality and comprehensive healthcare coverage due to limited resources and economic factors (WHO, 2016). For example, healthcare in South Africa ranges from the most basic primary care provided by the government to specialized and high-tech therapies delivered in public and private facilities. Healthcare quality has suffered as a result of inequitable resource distribution, underfunding, poor administration, and failing infrastructure (Watts, 2017).

Miriti (2017) investigated the influence of devolved government service delivery on health care delivery in Meru County. According to the author, devolution has improved access to healthcare services in terms of availability, pricing, accessibility, and acceptability. Gimoi (2017) assessed the impact of devolution on health care systems in Nairobi County Health Facilities. The study discovered that the condition of medical equipment had improved, and new equipment had been obtained.

Tsofa (2017) evaluated the effects of Kilifi County government health staff and supplies management. The study discovered that, like other county-level duties, administrative roles for essential medical supplies and medicines (EMSM) and health

workforce (HRH) were progressively being devolved prior to the construction of relevant structures and sufficient ability to carry out these activities. As a result, increased worker remuneration delays occurred, as did the disruption created by politics and HRH administrative responsibilities, as well as uncertainty about HRH administrative tasks. National and municipal governments lacked clarity on their actions, tasks, worker strikes, mass compliance, and key roles.

Kenya has more than 4,700 health facilities designed to improve public health care delivery. Several health facilities have implemented Quality Management Practices to enhance the quality of the supplied services. The national government of Kenya has attempted to strengthen health care by transferring responsibility for health services to county governments (World Bank Group, 2018). This study seeks to evaluate the factors of healthcare service delivery in Lamu County's health sector.

1.2 Statement of the Problem

Regardless of where they dwell, every Kenyan person is entitled to decent healthcare. Service delivery indicators in the Kenyan health sector include accessibility, timeliness, availability, cost, confidentiality, and responsiveness. Globally, the quality of service delivery in the public health sector has seen significant alterations. As a result of advancements in the healthcare industry, various issues occur, including the obsolescence of working skills, insufficient resources, and patient satisfaction. This immediately influences service delivery quality and responsiveness (Ndavi, Ogola, & Kizito, 2009). The distribution of health-related human resources with specialised education remains a difficulty. The health services provider-to-population ratio of 1.69/1000 for all cadres of health care is indicative of the sector's severe labour shortage (Rosenberg & Weissman, 2013). Healthcare management in Kenya has been transferred to County Governments under the new constitution. Thus, the execution of

the health care criteria in several counties has presented several obstacles (Forman, 2010). Service model systems have been established in Lamu County to achieve competitiveness. These improvements include the introduction of modern medical equipment, increased budgetary investment for health, recruitment of additional human resources for health, enhanced health infrastructure, the introduction of health information systems and automation, and the provision of health insurance for the uninsured. However, despite these advancements, the health industry continues to suffer customer complaints, public outrage, and persistent supplier payment defaults. It directly influences the quality of service hospitals to provide, causing people to seek alternatives such as more responsive private healthcare facilities (Ministry of Health. 2013a). The number of recorded deaths attributable to carelessness and substandard health services has grown over time (Andel, Davidow, Hollander & Moreno, 2012). Lamu County has no health facility that scored above 60% for quality of health care service delivery (Lamu County Health Delivery Report, 2018). Despite this, relatively little assessment of the determinants of healthcare service delivery in the healthcare sector of Lamu County has been conducted.

1.3 Specific Objectives

The following were the study objectives.

1. To analyse how government financing affects the provision of services in the health sector in Lamu County
2. To determine the health sector's service delivery quality in Lamu County
3. To establish the health sector's institutional structure in Lamu County
4. To evaluate the application of information technology in the health sector in Lamu County

1.4 Research Questions

1. What is the level of government funding towards service delivery in the health sector in Lamu County?
2. What is the quality-of-service delivery in the health sector in Lamu County?
3. What is the institutional framework for the health sector in Lamu County?
4. How is the information technology used in service delivery in Lamu County's health sector?

1.5 Justification and Significance of the Study

The health sector is crucial because a healthy nation boosts a nation's socioeconomic prosperity. Since the decentralization of the health function to county governments in 2013, the public health sector has faced numerous obstacles, making it imperative to find solutions.

There are numerous beneficiaries to the study findings, including but not limited to the healthcare sector, the patients, policymakers, and the healthcare workers. The healthcare sectors will benefit from this study by determining how each of the listed independent variables in the objectives affects their service delivery. Similar benefits will be derived by patients and residents of Lamu County as the findings will make them aware of the reasons for the service delivery by the healthcare sector. The information might help them respond appropriately to minimize individual-related barriers to service delivery hence improving service delivery by the healthcare sector in the region. The study will further highlight the variables within the political environment that affect and or determine service delivery by the healthcare sector in Lamu County. It will enable them to find ways to ensure that the political climate does not hinder their ability to provide healthcare services to county residents.

1.5 Assumptions

The study assumed that technology impacted quality of service delivery in the health sector in Lamu County. Lastly, all respondents were considered accessible to the researcher during fieldwork. The participants were expected to give informed consent to participate in this study. All logical and ethical issues about research was adhered to throughout the study.

1.6 Limitations of the Study

The study envisaged several limitations. Some of these included participants who may be reluctant to participate in this research for fear of victimisation. However, the researcher established a good relationship with the respondents to ensure they provide information voluntarily. Because some of the information required may be personal, some respondents were unwilling to engage. To that end, the researcher created confidence by clarifying that the data obtained would only be used for academic purposes. The researcher also presented a copy of the Kenyatta University study authorization letter and the NACOSTI research license, giving respondents confidence to supply the information. Covid-19 was still spreading, and it was difficult during fieldwork to convince authorities and respondents to allow or participate in the study for fear of spreading this pandemic. The researcher used softcopy questionnaires to minimize contacts.

1.7 Delimitations of the Study

The study was conducted in health sectors in Lamu County. The study was delimited to factors affecting quality of healthcare delivered at health sectors in Lamu County. Other delimitations of the study were the adopted theory and methodology used to conduct the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The data from other researchers who have conducted their research in the same area of study were included in this section. The chapter is organized in sections including theoretical review, empirical literature review, research gaps, and conceptual framework.

2.2 Theoretical Review

The research study was guided by Agency theory and Stakeholder Theory.

2.2.1 Agency Theory

In 1976, Jensen and Meckling introduced this theory. The theory is founded on conflicts of interest among various contracting parties, namely shareholders (primary) and corporate management (agents). The principal-agent dilemma (principal-agent research) or governance systems are frequently studied through the agency theory lens (positivist research). In essence, agency theory stems from an economic perspective of risk sharing (Eisenhardt, 1989), which occurs between two parties, principals and agents, despite the fact that each party may have separate problem-solving approaches (Jensen & Meckling, 1976).

The concept of obligation delegation from principle to agent is a key component of agency theory. This is the underlying premise of devolution. Citizens, who are the principals of a society, commit the operation and management of the society to agents through the democratic process. In this case, the agents must make decisions or act in the best interests of their principals (Wagana *et al.*, 2015). This laid the groundwork for Kenya's new constitution to be approved in 2010. The principals sought to assign

agents tasks that would result in higher rewards from their constituents (Buluma & Obande, 2015). To maximize the principal's interests, the agents would be better stewards of the principal's resources. Devolution is a sort of decentralization, or the transfer of power and responsibility for a variety of public operations from the central to lower levels of government, according to Williamson and Mulaki (2015).

Previous research has found that managers and staff prefer to pursue individualistic goals and emphasize their own interests (Bendickson, Muldoon, Liguori, & Davis, 2016; Bosse& Phillips, 2016), depriving the public of the benefits of decentralized services such as health care. People should not only have better access to healthcare, but they should also receive better care from qualified staff and in proper facilities. It would also be in the public's best interest to properly plan for healthcare facilities in order to ensure that healthcare is both affordable and sustainable for society. Delegating authority to a third party demands a constant assessment of the agent's performance to ensure that he or she is operating in the best interests of the principal.

The relationship between the hospital (more specifically the medical specialist) and the patient. The patient (the principal) has a health problem and delegates the problem to the medical specialist (the agent). For the patient, it is hard to judge how well he is treated by the medical specialist. Inside the hospital, the hospital board (the principal) hires medical specialists (agents) to treat patients. The hospital board is not as well informed about the quality, efficiency and effectiveness of the treatment as the medical specialist is.

2.2.2 Stakeholder Theory

Stakeholder theory was developed by Freeman (1994) on the premise that organizational affairs should take into account all stakeholders. According to the

idea, executives should manage a firm for the benefit of both its investors and stakeholders (Freeman, 1994). Stakeholders are organizations or individuals who are critical to a company's performance or existence, such as employees, members of the local community, shareholders, distributors, and suppliers. The evaluation of these individuals or groups is based on the assumption that their lack of support or goodwill would be detrimental to the growth of the organization or project (Freeman, 2004).

According to the stakeholders' theory, managers of public resources should consider the role of stakeholders in the management of such resources and act in the best interests of the public. This is congruent with the concept of devolution, which entails delegating political and economic resources in order to strengthen a country's participation in its development goals (McCollum *et al.*, 2018). The premise of devolution should be to stimulate the engagement of all stakeholders in resource management, the consequence of which can be more accurately recognized through empirical evaluation, as in the proposed research. The notion is that when lower-level executives are given more decision-making ability, they embrace stakeholder involvement in day-to-day operations.

The fundamental benefit of this approach is that it requires consideration of all players, which creates a firm foundation for a corporation's success. This helps to eliminate risks that could harm a company owing to disgruntled stakeholders (Freeman, 2004). It might be argued that the distinction between shareholders and stakeholders in the provision of public services is blurred, making the stakeholders' theory ideal for the proposed research. A healthcare administrator must be aware of healthcare workers, the general public, and medical providers, who all benefit from healthcare. This argument refutes Jones, Wicks, and Freeman's (2017) claim that the theory is overly difficult and impractical in practice.

Some critics argue that the theory's assumption that corporations should engage in social responsibility is flawed because organizations' primary objective is profit maximization (Ferrero, Michael, & McNulty, 2014). This viewpoint may be viable for profit-driven enterprises, but not for an organization whose primary aim is to offer public service, such as public healthcare. Healthcare leaders, on the other hand, such as healthcare administrators, should provide services that are particularly sensitive to the target audience as well as other stakeholders such as practitioners and supply chain actors.

The relevance of the stakeholder standpoints, expectations, roles and influences also appears in the emerging notion of collaborative governance. The latter can be referred to as a collective and participating decision-making process through which interdependent stakeholders seek a mutually satisfactory outcome when addressing a complex, multi-faceted problem or situation.

2.3 Empirical Review

2.3.1 Government Funding for Service Delivery

Chen et al. (2021) conducted study on decentralized healthcare funding in Ghana, Uganda, Zambia, and the Philippines. The Philippines had the most difficulty with financial concerns, according to the report, because the allocation of funding to local governments did not match to their obligations. The provinces responsible for the most expensive hospital received the least amount of funding, while the municipalities and Barangays with the least expensive treatment received the most. According to them, the problem was not the product of a local decision, but rather an error in the allocation method's general architecture. In virtually identical research conducted in Zambia, Chen et al. (2021) found that a strategy for allocating district budgets led to an extremely equitable per capita distribution among districts. As there may be

epidemiological and cost differences between districts, they concluded that it may be useful to establish a need-based approach for distributing central funds among districts.

After Ethiopia adopted sub-national decentralization of health services, Van der Beken (2019) found that decentralization was more effective in regions that strengthened their management and institutional capacity and where regional governments were able to prioritize their needs and adapt corollary strategies to local needs. As a result, child and maternal mortality rates decreased; this may have been a result of the contemporaneous implementation of other health initiatives, such as increased personnel and resource allocation to health. However, decentralization was hindered by the clientelist power link between the center and the region, which was aggravated by the absence of accountability and community voice.

According to research undertaken by Ngure (2018) in Kenya on the equitable distribution of health care resources in the Kenyan health sector, there is a considerable regional inequality. Using both weighted and unweighted population, Western, Nyanza, and Northeastern regions appeared to be under-resourced in comparison to other regions. It also demonstrated a relationship between socioeconomic characteristics and the unequal distribution of health care services among provinces. According to interviews conducted at the central and district levels, a commitment to fairness exists in the health sector in theory, but rarely reveals itself in the process of resource allocation. At the central level, for instance, one respondent stated that Kenya is still a long way from reaching equality due to the fact that equality is documented but frequently disregarded during the resource allocation process.

2.3.2 Quality of Service Delivery in the Health Sector

The three policies implemented towards the close of the 20th century have guided and directed the provision of healthcare in Kenya. These policies include the Health Policy Framework from 1994, the Kenya Health Policy Framework Implementation Action Plan from 1996, and the Health Sector Reform Secretariat (1997). These rules were designed to guide the implementation process, which was intended to address restrictions such as the reported drop in health sector expenditures, the clear poor usage of resources, and decision-making without enough information, among others (George & Bula, 2021). Using a decentralized national health care system model with a focus on preventative care at the community and household levels, the country's objective is to deliver effective, integrated, high-quality, and affordable healthcare for all inhabitants. Vision 2030 includes health as a social pillar.

Bengat, Bernard, and Joshua (2017) evaluated the determinants of service delivery in the health sector among selected Counties in Kenya and found that Public-Private Partnership positively affects Service Delivery after devolution of decision-making and funding to the Counties, as stipulated in the 2010 Constitution of Kenya and Vision 2030. The ratio for Public-Private Partnership is 1.907, which is less than 5, indicating that the model fits the data well. In addition, NFI = 0.900 and GFI = 0.911% are displayed. Robert et al. (2021) discovered significant relationships between organizational factors, interpersonal factors, environmental factors, and economic factors in their study of the factors influencing the provision of high-quality healthcare in Kasarani Sub County. The findings revealed that organizational, interpersonal, environmental, and economic variables accounted for 50,1% of the variance in the provision of high-quality healthcare in Kasarani Sub County.

Odefadehan and Adereti (2021) examined the determinants of rural women's utilization of primary health care services in Osun State, Nigeria. The patronage pattern of the primary health centres in the study region increased steadily over a five-year period (2014–18), and the majority of respondents (rural women) live an average of 1.85 kilometres away. Age of respondents, monthly income (0.018), a conducive environment, cleanliness of the environment, interpersonal relationships between staff and patients, timely diagnosis, and treatment of health problems by PHC staff, and ability of staff to prescribe effective drugs for treating diseases were all significant factors in the study.

These variables accounted for 73.6% of the variance in rural women's PHC utilization. Immunization and general medical care of disease were the two health treatments that women most frequently regarded as "always accessible." Kugonza (2016) examined public participation in service delivery in Buikwe District local government in Uganda and discovered that it is widely recognized as a means of advancing equality, building more trust, enhancing openness and answerability, and advancing equality and integrity in leadership at all levels. This research shows a contextual gap, since it focuses on general service delivery and public participation, but also includes leadership, resource allocation, and health policies and how these affect service deliveries in the public health sector.

2.3.3 Institutional Framework in the Health Sector

Unexpected secondary system failures like a disruption in IT resources might potentially cause restructuring to be stalled or abandoned (McCollum *et al.*, 2018). Middle managers should demonstrate their dedication to service quality and ensure that they convey the guiding concepts, methods, and benefits of their services to the

individuals they are responsible for (Mannion & Davies, 2018). Management's initiatives are more likely to fail when they don't address the organizational culture.

Similar to the majority of developed nations, the USA places a strong emphasis on performance and raising the standard of healthcare. Public health management has all the resources and management skills required to achieve these crucial indicators (Alcaraz, Wiedt, Daniels, Yabroff, Guerra & Wender, 2020). Hospital staff members have better management abilities, making it possible for them to effectively manage resources and create a solid foundation for determining results for patients, clinicians, and organizations (Alcaraz et al., 2020). In other words, the medical staff is adequately equipped to enable them to enhance patient services and health outcomes.

The management of healthcare in the USA aims to lower the cost of health benefits while simultaneously enhancing the standard of care. In the twenty-first century, the need for better public health care has expanded steadily and quickly, creating competition in the sector (Mannion & Davies, 2018). Patient happiness, service quality, and resource management effectiveness are now providing the proof needed to measure patient, clinician, and organizational outcomes (Fawaz, Hamdan-Mansour & Tassi, 2018). It has become crucial for healthcare organizations to establish and put into practice a good plan that will provide effective care that will be appealing to patients and focused on minimizing costs, with the emphasis on quality outcome (Fawaz *et al.*, 2018). Healthcare struggles to locate and keep competent and patient personnel while also consistently providing effective and efficient care.

From the perspective of the providers, managers, policymakers, and payers alike, effective management is considered as a crucial enabler of quality. Everything inside the hospital environment is impacted by management (Mosadeghrad, 2014). If people

have good ideas for quality improvement but the management is poor, then good ideas remain meaningless. Lack of qualified management in public healthcare organizations has been identified in the majority of research. The majority of managers are hospital doctors, nurses, or other healthcare practitioners rather than qualified professional managers (Mosadeghrad, 2014). In truth, the managers in the majority of public hospitals lack managerial experience and education. In their 2013 study, Buong, Adhiambo, Kaseje, Mumbo, Odera, and Ayugi found that the majority of public health managers were attempting to solve issues with short-term fixes. In addition, there were no established standards and goals for choosing and appointing managers in healthcare facilities. National policies were viewed as being too prescriptive and lacking the necessary flexibility to be adjusted to local conditions. In order to find and hire the most qualified employees required to deliver high-quality patient care, public healthcare managers primarily demanded additional authority (Buong *et al.,* 2014). Additionally, managers do not have the same authority over physicians as they do over other workers. For instance, medical professionals expected their co-workers to be more accountable and empowered to do a good job.

2.3.4 Use of Information Technology in the Health Sector

The primary goal of information communication and health technologies is thought to be enhancing the effectiveness, accessibility, and quality of healthcare for citizens. The use of information and communication technology in health for a variety of purposes that have an impact on the healthcare industry. Every country strives to achieve two goals: controlling cost growth and enhancing citizen healthcare. Information and communication technology enabled healthcare services were expected to be worth $3.1 billion globally in 2015 alone, with developed countries accounting for 80% of this total (Powell & Glaser, 2020). The use of websites, emails,

emergency evacuations, and the advance transfer of patient photos and data from ambulances are all known to shorten the time it takes for an intervention to take place in emergency wards of most hospitals. Most professionals and community users in poor countries have not yet accessed information and communication technology at this level in health. The majority of these strategies are still in their relatively early stages of deployment due to the dearth of studies designed to determine their relevance, applicability, or cost effectiveness (Gunawan, & Wiradinata, 2020). Therefore, it is difficult for the governments of these countries to decide on their investment priorities, particularly in ICT (Kyalo, & Odhiambo-Otieno, 2019).

Information and communication technology applications in the delivery of healthcare services, for instance, are at an advanced stage in North America and Europe. In truth, there are several ways to explain how technology is used to deliver health services, including telemedicine, tele-nursing, tele-homecare, and many others. The concept behind this is to employ ICT to deliver healthcare services. The development of a strong technological foundation has been credited with the success of the use of ICT in the delivery of healthcare services (Knoeri, Steinberger & Roelich, 2016). Numerous research has been done on the ways in which technology has been used to implement e-health.

Research and application of health-enabling and ambient-assistive technologies must make a substantial contribution to technical solutions in the social context and in connection to human needs. A decrease in hospitalization and an increase in home care are already possibilities made possible by tele-health technologies like online and mobile tools. An improved benefit of using technology in the nursing care delivery system in the USA has been shown by a tele-nursing study. The advantages of tele-

nursing include better diagnosis and consultations as well as the creation of career choices and professional nurses (Srivastava & Shainesh, 2015).

Most notably, telenursing has resulted in better clinical and healthcare results for patients. The patient safety risks are connected to each of the benefit categories (Simamora, 2019). It is now necessary for nurses to learn how to use the technology used in the patient care delivery system, making tele-nursing an alluring and exceptional field of professional nursing practice. Because of the development of information and communication technology, expectations in the health sector have increased. Almost every facet of the healthcare industry is impacted by ICT. Particularly in the public health sector, information management and communication are crucial and can be improved by the system at hand. The development of electronic health, which is health services backed by ICT, has decreased healthcare costs while boosting efficiency through data management and transfer, illness management, and quality knowledge transfer (Hung, Lyons & Wu, 2020).

South Africa stands out as one of the continent's countries with the broadest adoption of e-health. The success of e-health in the country has been attributed to the country's its ICT infrastructure especially in public hospitals, well-trained staff, and faith in ICT to solve health problems (Yusif, Hafeez-Baig & Soar, 2017). In South Africa right now, technology is essential to the delivery of healthcare services. Like other developing nations, the innovative approach to eHealth is still important. The use of the Cell-life and Mindset health models is one of these technologies' triumphs. Two institutions in South Africa launched the Cell Life system in 2003 for the logistical and therapeutic management of the HIV/AIDS population.

In addition to helping with organizational planning, medicine supply, and emergency situations, the technology is mostly used by health volunteers to support their peers who are HIV (Idoga et al., 2018). In Nigeria, there is a focus on e-health solutions as rural communities work to address numerous issues with the delivery of healthcare services by utilizing ICT. In these communities, finding creative solutions that don't require as much infrastructure is crucial for lowering operating costs (Clifford, 2016).

There is minimal proof that Kenyan healthcare practitioners have greater access to adequate and trustworthy knowledge of information technology (Adeloye, Adigun, Misra & Omoregbe, 2017). The country continues to be plagued with health risks ranging from rising prevalence of HIV/AIDs, malaria, and high child mortality rate. This situation is worsened by inadequate knowledge of available remedies and poor policy implementation (World Health Organization, 2015). Despite its widespread application and use, the country's public hospitals are yet to demonstrate strong pledges or a desire to invest in information technology. Although the use of ICT in the commercial sector is growing in popularity, public institutions have not yet recognized its importance in the delivery of healthcare services.

2.4 Conceptual Framework

A conceptual framework is made up of abstract ideas based on the author's intended goal. It is a collection of overarching concepts and guiding ideas drawn from theories and domain knowledge to guide the conduct of a research. The framework for the proposed study has both independent and dependent parameters. Government financing, service quality, institutional design, and information technology are among the independent factors. Healthcare service delivery is the dependent variable.

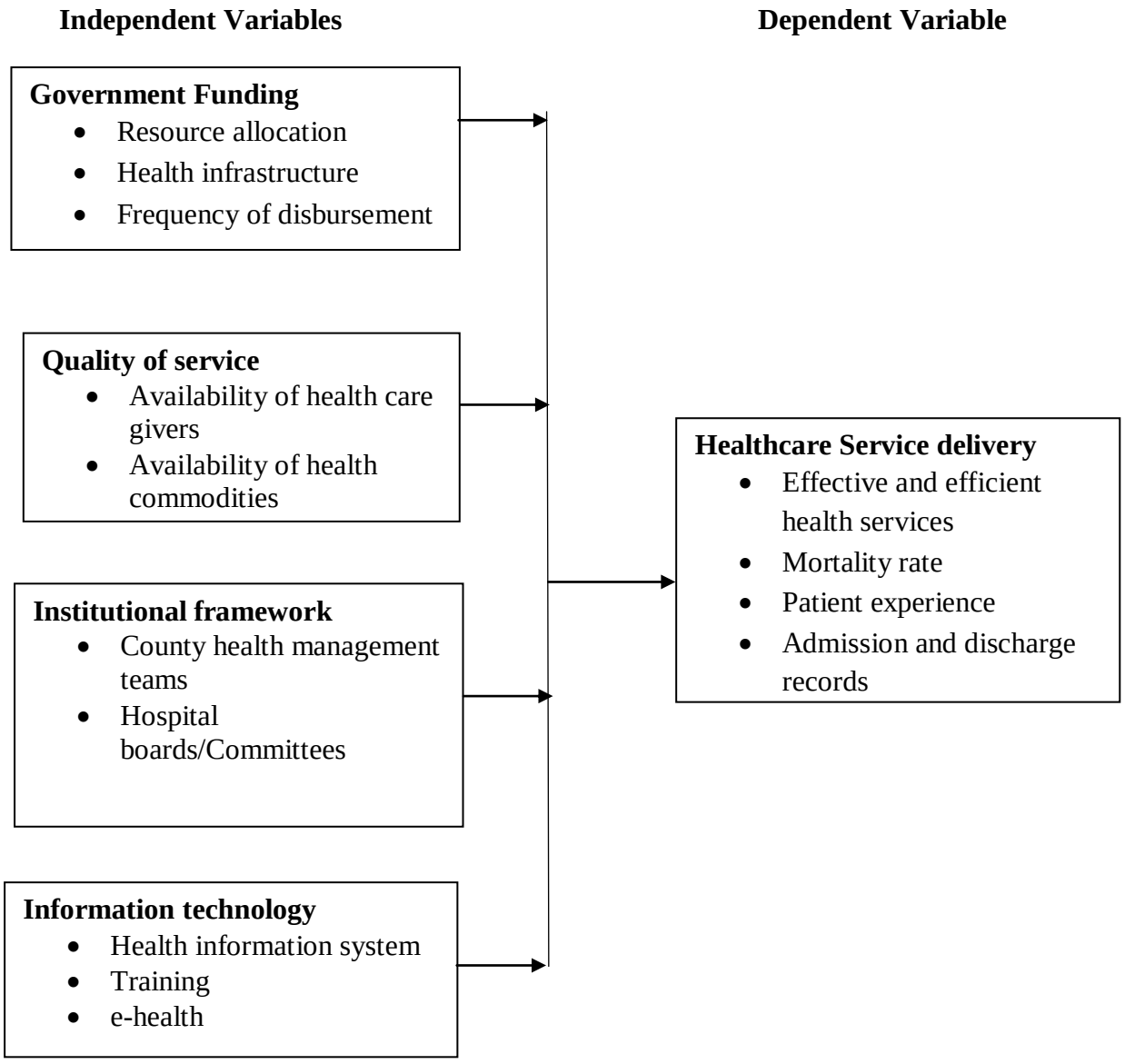

Figure 2.1: Conceptual Framework

Source: Researcher, 2022

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

The variables utilized in the study, the study's target population, the sampling methods, the sample size, the planned study's piloting, reliability, and validity are all covered in this chapter.

3.1 Research Design

In this study, a descriptive survey approach was used. According to Mayer (2017), a descriptive survey is a type of data collection that may be used to learn more about peoples' views, beliefs, habits, or any other social concerns by interviewing or giving a questionnaire to a sample of people. According to Kothari (2011), the descriptive research design entails determining what is occurring in relation to certain variables. The researcher will be able to get the right quantity of information from a big sample using the descriptive design. A researcher can characterize the traits of a population or a phenomenon using this design. It permits the use of personalized scales for data collecting. This served as the foundation for the factors that determine how medical services are delivered in Lamu County's health sector.

3.2 Analysis of Variables

Both dependent and independent variables were included in this study's variables. The delivery of healthcare services in Lamu's health sector was the dependent variable, and government financing, the standard of the provided services, the institutional setting, and information technology were the independent factors.

3.3 Location of the Study

Lamu County is among the 47 counties included in the first schedule of the 2010 Kenyan Constitution. The County, which includes the mainland and more than 7 islands in the Lamu Archipelago, has a population of 143,920 (KNBS, 2019).

The County is situated on the country's northern coast and shares boundaries with the Indian Ocean, Tana River County, Garissa County, the Republic of Somalia, and Tana River County to the southwest, north, and northeast, respectively. Lamu County has three sub-counties namely, Lamu East, West, and Central. There are 45 healthcare institutions in the County in total, including one county referral hospital.

3.4 Target Population

A research population is a clearly defined group of the items under investigation, such as individuals, services, objects, and events (Ngechu, 2008). According to Kombo and Tromp (2011), the target population is the entire group of people or things that have the same traits and from whom a sample might be taken in order to perform empirical research. A target population is a comprehensive group that includes all individuals intended to participate in research (Mugenda & Mugenda, 1999). Both the people who receive healthcare services and the people who offer them were included in the study's target group. This implies that residents were sought out for their opinions on the standard of healthcare services they get from healthcare facilities under the supervision of the Lamu County Government. Consequently, the goal for this study was 143,920. (KNBS, 2019).

3.5 Sampling

By focusing on data from a subgroup rather than all potential cases or elements, sampling techniques provide a variety of ways to help reduce the quantity of data that has to be collected. In order to achieve study goals, sample size includes the

researcher choosing a more limited sample of the studied population (Cooper & Schindler, 2013). According to Mugenda (2008), a sample size should be representative of the target population so that conclusions about it may be reached.

In studies when it is not possible to include the complete research population due to a variety of causes, sampling is advised. In light of that, the participants in this study were chosen using a straightforward random selection procedure. This strategy was applied to the county's healthcare service providers and clients. The method was advised because it gives every member of the research population an equal opportunity to take part in a specific study. The Yamane formula (Yamane, 1973) with a 95% confidence level was used to estimate the optimal sample size.

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

In the above equation, n denotes the sample size, (N) denotes the population size while (e) denotes the error term.

$$n = \frac{143{,}920}{1 + 143{,}920(0.05)^2}$$

$$n = \frac{143{,}920}{1 + 143{,}920(0.05)^2} = 398.89$$

n= 399 (rounded)

Based on the above derivation, 399 respondents participated in the proposed study, helping to gather data on certain areas of the county's delivery of healthcare services.

3.6 Research Instruments

Both primary and secondary data was used in the investigation. The data was gathered from the pre-selected respondents in the Lamu County Government-managed health

sector. Data was gathered by the researcher using a semi-structured questionnaire. Because they can be completed at the respondents' convenience and are suitable for large samples, the surveys are well-liked (Mugenda & Mugenda, 2003). The researcher obtained secondary data from the cited yearly county reports.

3.7 Pilot Study

The research instrument was put through a pilot trial to see whether it was feasible. A pilot study is thought to be essential for primary research, particularly when it comes to question validity (Lewis, 2015). The pilot study assisted in identifying any potential misunderstandings in the research questions that would be given to the respondents (Orodho, 2015). A total of 40 respondents who were not included in the final survey participated in the pilot study. To confirm the validity condition, the supervisor and additional departmental lecturers were consulted for their professional judgments. To improve the instrument's validity, the researcher implemented the suggested improvements.

3.7.1 Validity of research instrument

The purpose of the validity analysis is to determine whether the research's intended goal or objective was achieved by the data that was gathered. This entails determining the relationship between the variables used and the variables observed. The need for validity analysis arises from the possibility of systematic errors in data collection, including participant selection and outcome measurement. According to Peter's advice, the split half technique was used to increase the dependability of the instruments in this study's validity.

3.7.2 Reliability of research instrument

A pilot study was conducted to assess the questionnaires' reliability. Cronbach's Alpha, which assesses internal consistency by determining if specific components of a scale measure are similarly developed, was used for reliability analysis. The stability and consistency of the procedures employed to analyze research data were examined through reliability analysis. It gauges the extent to which research techniques would provide comparable outcomes in the same circumstances (Peter, 2015). The Cronbach alpha, which gauges the data's internal consistency, was used to assess the study's dependability. According to Cronbach, if alpha coefficient is 0.70 or above then the instrument is reliable. From the pilot study findings, the alpha coefficient was 0.87 hence research instrument was deemed reliable.

3.8 Data collection

Data collecting procedures, according to Mugenda (2008), refer to the guidelines that must be followed to make sure that data collection instruments are used effectively. The researcher requested permission from the National Commission for Science, Technology, and Innovation (NACOSTI) to carry out the research using an introduction letter from Kenyatta University. Each participant in the study received a personal questionnaire from the researcher. In order to achieve this, the researcher maintained a record of the questionnaires that were delivered and those that were received back. The researcher used care and control to guarantee that all questionnaires provided to the respondents are received back. To give respondents enough time to complete the questionnaire, the survey utilized a drop-and-pick later method.

3.9 Data analysis

A combined strategy of descriptive analysis and content analysis was used to analyze the data that was gathered. The quantitative factors, such as the size of the human resource, health facilities, the working hours, and the demographics of the respondents, was examined through descriptive analysis. Tables and graphs were used as visualizations to present this. The Statistical Package for Social Sciences was used to perform the descriptive analysis of the data (SPSS). On the other side, content analysis was utilized to look at the research's theoretical conclusions.

3.10 Ethical considerations

According to Creswell and Creswell (2017), ethical issues are essential for studies based on primary data, especially if participants are involved. Ethics are stressed in research investigations because they entail interactions with individuals or sensitive information; as a result, it is crucial to keep appropriate behavior in mind during these encounters. To that purpose, the researcher produced an introductory letter from Kenyatta University to request permission to speak with respondents and access pertinent records. Additionally, the National Commission for Science, Technology, and Innovation (NACOSTI) research authorization was requested. Before including respondents in the study, informed consent was requested from them. The respondents were guaranteed that the study is solely for academic purposes, that their participation is voluntary, and that there was no direct or indirect threat as a result of the study. By securely keeping the information gathered from the respondents away from persons who are not participating in the study, confidentiality was protected during data collecting. To maintain the respondents' anonymity, respondents were asked not to provide their names on the study instruments given to them.

CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the study findings on determinants of service delivery in the health sector in Lamu County, Kenya. Frequency tables, pie charts and bar graphs are used to present data where appropriate.

4.2 Response Return Rate

The researcher dispatched 399 questionnaires to the selected respondents. However, 340 questionnaires were dully filled and returned to the researcher. This gave a response rate of 85.2% which is deemed sufficient for the study. Mugenda and Mugenda (2003) contend that a response rate of 50% is acceptable for analysis; response rate of over half is good while over 70% is very good. The response rate was therefore adequate for the study to make relevant conclusions basing on the responses. The findings are as shown in Figure 4.1.

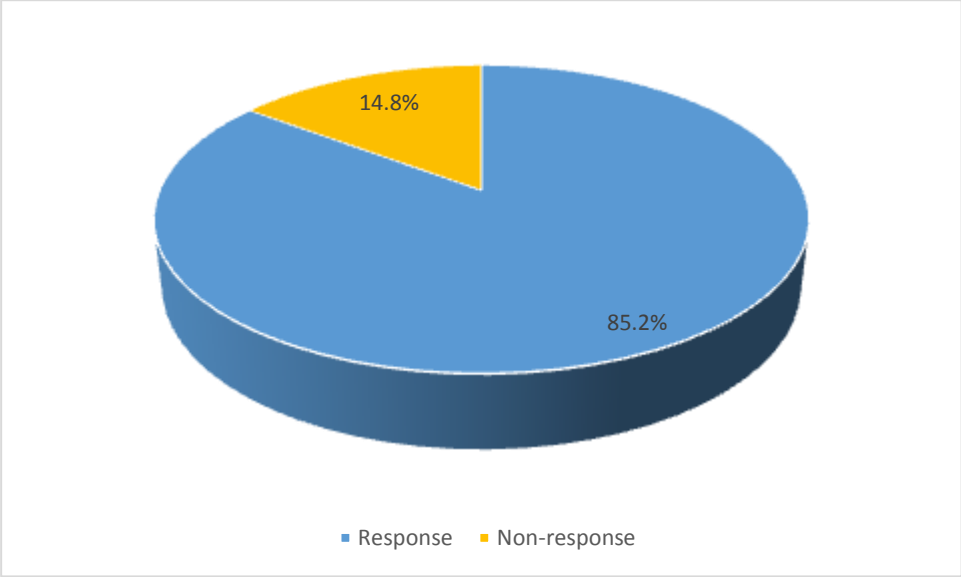

Figure 4.1 Response Rate Analysis

Source: Field Data (2022)

4.3 Demographic information

In order to analyze the nature of respondents, the researcher asked the respondents to provide general information. This section has provided the results regarding gender, age bracket, level of education, the job designation and working. The results are provided as indicated below;

4.3.1 Gender of Respondents

The study sought to identify the gender of the respondents that took part in the research. The findings were presented in Table 4.1.

Table 4.1 Respondents' gender

Gender	**f**	**%**
Male	183	53.8%
Female	157	46.2%
Total	**340**	**100%**

Source: Field Data (2022)

Findings in Table 4.1 established that 53.8% of the respondents were male while 46.2% were female. This suggests respondents were drawn from all gender group to demystify any gender biasness that may have been related with the survey discoveries. This finding is supported by a study conducted by Kyalo, Gichira, Waititu and Ragui (2013), who noted that gender disparities in employment opportunities and economic investment patterns in Kenya are prevalent in many sectors of the economy.

4.3.2 Respondents Age

The respondents were requested to indicate their age. Age of the respondents is an indispensable factor in the study because it determines one's experience and way of responding to situations. The findings were tabulated in Table 4.2.

Table 4.2 Age of the respondents

Age	**f**	**%**
20 - 30 years	60	17.6%
31 – 40 years	92	27.1%
41 – 50 years	114	33.5%
Above 50 years	74	21.8%
Total	**340**	**100%**

Source: Field Data (2022)

The results in Table 4.2 indicates that 33.5% of the respondents were aged between 41 and 50 years, 27.1% were between 31 and 40 years, 21.8% were above 50 years while 17.6% were aged between 20 and 30 years. The implication of this is that majority of the respondents were over 40 years hence have the necessary experience therefore, eligible to take part. This finding is confirmed by statistics provided by KNBS further support this finding through their report that indicates that the highest level of employability is between the age groups of 25 to 49 years at 87.8% (KNBS 2019).

4.3.3 Level of Education

The participants were requested to indicate their education level. The findings tabulated in Table 4.3.

Table 4.3 Distribution of respondent education level

Qualifications	**f**	**%**
Diploma level	119	35.0%
Degree level	156	45.9%
Master level	65	19.1%
Total	**340**	**100%**

Source: Field Data (2022)

The findings displayed in Table 4.3 show that, 45.9% of the respondents had bachelor's degree, 35.0% had diploma while 19.1% had master's degree. The significance of this is that the respondents included in the study were knowledgeable enough to understand the questions being posed to them in the questionnaires. This finding is supported by a study conducted by Amutabi (2016), who noted that education is very crucial in any organization.

4.3.4 Working Experience

The respondents were requested to indicate their number of years they have been working at road infrastructure sector. The findings were as shown in Figure 4.2.

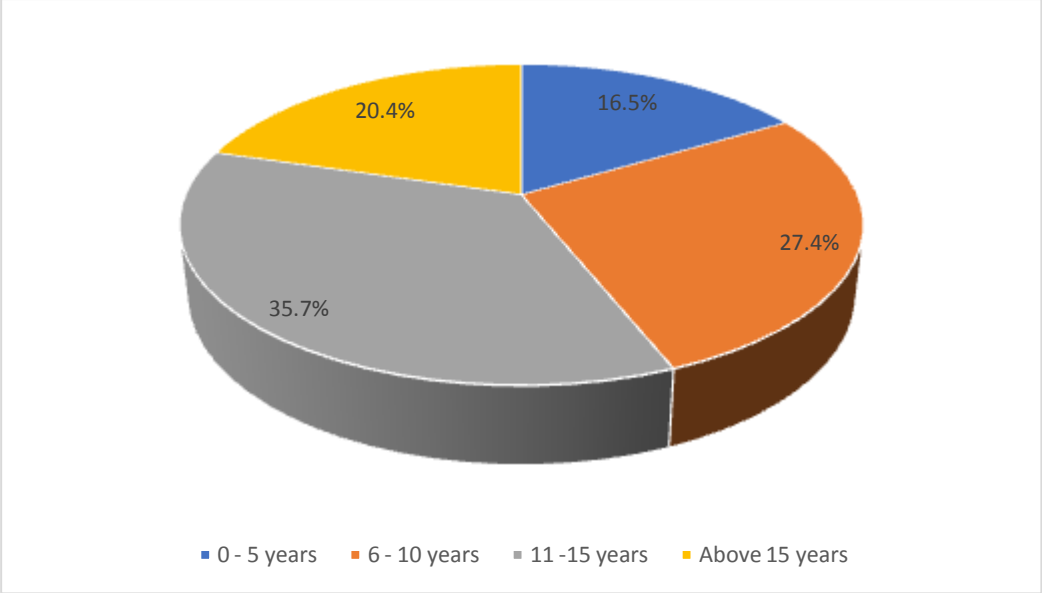

Figure 4.2 Analysis of Work Experience of Respondents

Source: Field Data (2022)

The findings in Figure 4.2 revealed that 35.7% of the participants have worked between 11 and 15 years, 27.4% have worked between 6 and 10 years, 20.4% have worked for more than 15 years and 16.5% have worked for less than 5 years. These outcomes indicate that the participants had different lengths of working experience at health sector which allowed them to provide information for the study presenting different points of views influenced by their lengths of experience.

4.4 Descriptive Statistics

This study utilized used mean and standard deviation to present the summary measures of the sample that was observed. Analysis of descriptive statistics was conducted on the basis of the data collected on the variables that were at the core of this study. The basic feature of the observed sample formed the basis for quantitative data analysis for this study.

4.4.1 Resource Allocation

The first objective of the study was to assess the resource allocation for service delivery in the health sector. The respondents were requested to indicate their agreement level with each statement regarding to resource allocation on a scale of 1 to 5 where 1 (strongly disagree), 2 (disagree), 3 (moderate), 4 (agree), 5 (strongly agree). The results were presented in Table 4.4.

Table 4.4 Descriptive statistics on resource allocation

Statement	Mean	SDEV
Devolved resource distribution allows for adequate allocation of resources in the hospital	3.68	0.656
Devolution has allowed for timely provision of medical supplies for better service delivery	3.56	0.534
Devolved resource distribution has allowed for accountability in the utilization of resources	3.74	0.781
Devolved resource distribution has prevented long stock-outs of essential drugs in health facilities	3.62	0.653
Devolved resource distribution has enabled strong, responsive, efficient, and equitable distribution of health facilities in the hospital	3.67	0.578

Source: Field Data (2022)

The findings presented in Table 4.4 show that majority of the respondents agreed that devolved resource distribution allows for adequate allocation of resources in the hospital as indicated by mean of 3.68 and standard deviation of 0.656. The participants also agreed that devolution has allowed for timely provision of medical supplies for better service delivery as supported by a mean of 3.56 and standard deviation of 0.534. Furthermore, majority of the respondents agreed that devolved resource distribution has allowed for accountability in the utilization of resources as

presented by a mean of 3.74 and standard deviation of 0.781. Health sector planning, budgeting and efficient financial management are key to ensuring rational prioritization and use of limited resources, and in responding to community priorities, broader political interests, and the fiduciary requirements of national bodies and external funders. The findings are in line with the findings of a study by Tsofa, Goodman, Gilson and Molyneux (2017) who established that decentralization has been an important element of the health system governance reform agenda for many years owing to its perceived importance in creating opportunities for strengthening local level management efficiency over ever-scarce health sector resources.

The findings further established that devolved resource distribution has prevented long stock-outs of essential drugs in health facilities as indicated by a mean of 3.62 and standard deviation of 0.653. Additionally, the respondents also agreed that devolved resource distribution has enabled strong, responsive, efficient, and equitable distribution of health facilities in the hospital as supported by a mean of 3.67 and standard deviation of 0.578. The findings were supported by Gimoi (2017) who established that the state of the medical equipment had improved and new equipment being bought. There was access to piped water and proper waste disposal as well as protected placenta disposal pits. Health infrastructure is key in restoring public perception of good quality care and achieving devolution goals on improvement of primary health care facilities. The study revealed that devolution had an improvement on health infrastructure. Medical equipment was in good condition in most facilities and new equipment had been acquired under the medical equipment scheme.

Although it was noticed that the public finance act of 2012 was followed in the budgetary planning process for the health sector, equity in resource allocation was not seen. However, the interviewees generally agreed that the health department's funding

allocation procedure has no criteria and is mostly driven by political factors. A number of stakeholders, including the community and the providers of health services, were also recognized as rarely participating actively in the budget-making process.

4.4.2 Quality of service delivery in the health sector

The second objective of the study was to determine the quality of service delivery in the health sector. The respondents were requested to indicate the extent of their agreement with each statement regarding to quality of service delivery on a scale of 1 to 5 where 1 (strongly disagree), 2 (disagree), 3 (moderate), 4 (agree), 5 (strongly agree). The results were presented in Table 4.5.

Table 4.5 Descriptive statistics on quality of service delivery

Statement	Mean	SDEV
The service delivery are affordable	3.64	0.644
The service delivery are accessible to all people	3.59	0.651
The service delivery are acceptable	3.57	0.675
The services given are relevance	3.67	0.601

Source: Field Data (2022)

The findings in Table 4.5 established that majority of the respondents agreed that service delivery are affordable as supported by a mean of 3.64 with standard deviation of 0.644. Respondents agreed that service delivery are accessible to all people as shown by a mean of 3.59 with standard deviation of 0.651. Respondents agreed that service delivery are acceptable as supported by a mean of 3.57 with standard deviation of 0.675. Additionally, respondents agreed services given are relevance as shown by a mean of 3.67 with standard deviation of 0.601. Improvement in health

care delivery requires a deliberate focus on quality of health services, which involves providing effective, safe, people-centred care that is timely, equitable, integrated and efficient. The results are supported by Mosadeghrad (2014) who established that cooperation between the patient and the healthcare professional in a friendly setting results in quality healthcare. Healthcare service quality is influenced by personal aspects of the patient and provider as well as by organizational, systemic, and environmental factors. The availability of resources, effective management of those resources, staff, and processes, as well as collaboration and cooperation among providers, all contribute to higher healthcare quality. Additionally, consistent treatment should be provided across several sickness episodes in public hospitals, and care for the individual should be coordinated amongst various teams and levels of care. Additionally, primary care should provide an all-encompassing array of services from conception to death as well as across the spectrum of disease burden.

4.4.3 Governance Structure

The third objective of the study was to determine the governance structure in the health sector. First, the study sought to determine whether management style influence daily service delivery within the hospital. The findings were displayed in Figure 4.3.

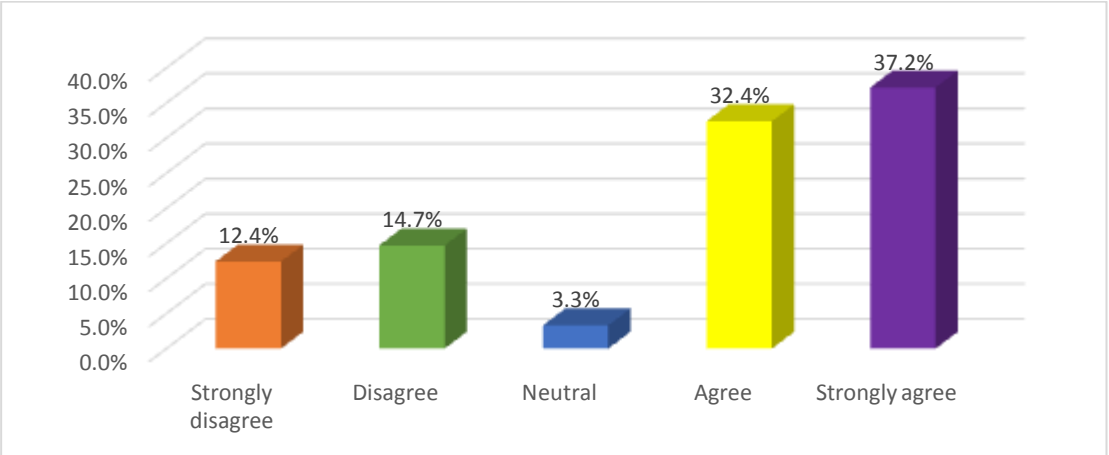

Figure 4.3 Influence of management style on service delivery at hospital

Source: Field Data (2022)

The findings displayed in Figure 4.3 show that 37.2% of the respondents strongly agreed that management style affect the service delivery with the hospital. The medical superintendent was the only decision-maker at the hospital, making decisions regarding what components of adjustments, improvements, and services were to be implemented, according to those who strongly thought that management had a stronger impact on service delivery. According to Brian (2016) senior management must demonstrate commitment to service quality and middle managers should also show their commitment, and ensure that they communicate principles, strategies and benefits of their services to the people for whom they have responsibility. In order to boost the effectiveness of health services, elevate performance, and eventually improve the health condition of the population, it is important to improve governance and, by extension, deter corruption in health systems.

Also, the study sought to determine how governance structure has influence the quality services in health sector and findings presented in Table 4.6

Table 4.6 Governance structure in hospitals

Governance structure	Frequency	Percentage
Management style	115	33.8%
Organization structure	72	21.2%
Finance	63	18.5%
Power and authority	90	26.5%
Total	**340**	**100**

Source: Field Data (2022)

It was further noted that 33.8% of the respondents believed that management style had the biggest influence in service delivery in Hospitals in Lamu County while at the

same time only 18.5% respondents felt that finances played a role in the outcome of service delivery. Subsequently, 26.5% respondents believed that power and authority had an influence on the services delivered in Hospitals in Lamu County while 21.2% believed that it is an organization structure. Table 4.6 shows how functions of management influence service delivery in Public Hospitals in Lamu County. On both sides of governance, the board and the executives must juggle a lot of things. Both parties set goals and objectives to work toward, and they both need to manage risks. Healthcare businesses are strongly encouraged by the breadth and complexity of healthcare governance to invest in board management software to make sure they are adhering to all governance requirements and maintaining the confidentiality of all information (Kinyeki, 2017.

Furthermore, the study sought to explore how change in management style of service delivery are given in Table 4.7.

Table 4.7 Rating of influence of management style

Rating	Frequency	Percentage
Highly	156	48.9%
Moderately	97	28.5%
Maybe	52	15.3%
Somehow	10	2.9%
No impact	25	7.4%
Total	**340**	**100**

Source: Field Data (2022)

Out of the 340 respondents, 156 (48.9%) felt that changing the current management would have a high impact on the services being offered in these facilities for the better as shown in Table 4.7. This they opined that needed a progressive leader who is diplomatic and open to discussion with the rest of the team to determine how best the

services could be improved to suite the standards of the system and patients. The hospitals personnel are more equipped with the management skills that enable them to efficiently manage resources and provide evidentiary basis for determining patient, clinician, and organizational outcomes (Nembhard, 2019). Effective management is cited as a vital enabler of quality from the providers' perspective, managers, policy-makers and equally the payers. Management affects everything within the hospital environment (Mosadeghrad, 2014). Good ideas remain useless if people have them for quality improvement, where the management is not good.

4.4.4 Use of information technology

The fourth objective of the study was to assess the use of Information Technology in the health sector in Lamu County. The results of use of information technology at the hospitals are given in Table 4.8.

Table 4.8 Use of information technology

Response	Frequency	Percentage
Yes	278	81.8%
No	34	10.0%
I am not sure	28	8.2%
I don't know	0	0%
Total	**340**	**100**

Source: Field Data (2022)

When assessing the use of ICT services in the facilities, a whole 818% of the respondents noted to have used these systems to offer services at one point in time, though not at the hospitals where they were currently working, 10.0% had never used them in any hospital while only 8.2% were not sure of using ICT services to offer services as shown in Table 4.8. The hospitals use information mainly for billing and payment services, which were used by the finance team and at the administration

areas only. Most of the participants had not used the systems in the hospitals but had at least used them elsewhere, in other hospitals where they either trained or worked before joining the current work places. The findings are supported by Hung, Lyons and Wu, (2020) ICT impacts in almost every aspect of the healthcare sector. Information management and communication especially in Public Health Sector is important and can be improved by the available system. The emergence of electronic health, which is ICT supported health provision, has reduced the cost of healthcare thereby increasing efficiency by data management and transfer, disease management and quality transfer of knowledge.

The results of response on the current use of application systems against their best use in the hospitals is shown in Table 4.9

Table 4.9 Current ICT application system against the best use

Response	Frequency	Percentage
Yes	118	34.7%
No	156	45.9%
I am not sure	37	10.9%
I don't know	29	8.5%
Total	**340**	**100**

Source: Field Data (2022)

Those health workers who had used ICT were asked whether the current use and implementation of ICT services in these facilities were the best way to offer services to patients, 45.9% believed that it was not used in the best way while only 34.7% of the respondents felt that it served the purpose. The remaining respondents were either not sure or didn't know. This information is represented in Table 4.11. Participants who responded that the ICT services were not being used to their best level noted that there needs to be a paperless system from admission to discharge of patients and

outpatient areas to improve on the efficiency of service delivery. Tele-health systems such as online and mobile tools have already opened up the possibilities for reducing hospitalization and an increase in home care (Venter et al., 2012). The benefits of using the tele-nursing technologies range from improved diagnosis and consultations to the development of career options and professional nurses (Hebda and Czar, 2013). The ICT services provide a significant contribution to the use of technology in the healthcare sector. Users aren't bogged down by clunky interfaces or pointless bottlenecks when health information technology is effectively incorporated into a facility.

The study also sought to determine areas in the hospitals where ICT is most applied. The findings were tabulated in Table 4.10.

Table 4.10 Areas in the hospital highly using ICT services

Response	Frequency	Percentage
Treatment	38	11.2%
Management	48	14.1%
Pharmacy	59	17.4%
Procurement and supply	81	23.8%
Billing and payment services	114	33.5%
Total	**340**	**100**

Source: Field Data (2022)

The study further enquired on the Departments in the hospitals which are highly using ICT applications and tools where 114 respondents, representing 33.5% believed that billing and payment services were most utilizers of ICT as shown in the Table 4.10. This was followed by procurement and supply at 23.8% each while treatment accounted for the least users of ICT services in these facilities. This shows that the

uptake of ICT services in these hospitals is still very low, reducing efficiency and productivity of the hospitals. Departments like Outpatient, senior Management, Pharmacy and stores still relied on paper work which further reduced the efficiency of performance.

4.5 Regression Analysis

The multiple regression analysis was performed to show the relationship between the determinants and quality of service delivery by hospitals The results are presented in the following sections;

Table 4.11 Modal Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.851	0.724	0.713	0.118

Source: Field Data (2022)

Table 4.11 indicates the model summary. From the findings, R was 0.851, adjusted R square was 0.713 and R squared was 0.724. The adjusted R square of 0.713 implies that 71.3% of quality of services delivery in hospitals in Lamu county are explained by the independent variables of the study. However, there are other factors that affect quality of services delivery that are not included in the model which account for 28.7%. An R of 0.851 on the other hand signifies strong positive correlation between the variables of the study.

Table 4.12 ANOVA

Model	SS	df	MS	F	Significance

Regression	52.41	4	526.3	2.53	0.03
Residual	4.22	336	0.152		
Total	**56.63**	**340**			

Source: Field Data (2022)

From the ANOVA Table 4.12, the study was done at 5% significance level which is 0.05. The study provided a P-Value of 0.03 which is lower than the significance level of 0.05, therefore statistically significant. This implies that resources, governance structure and use of ICT affect the quality of services delivery in hospitals in Lamu County. Also, $F_{Calculated}$ was 2.53 and $F_{Critical}$ was 2.11, thus $F_{Calculated} > F_{Critical}$ an indication that the overall regression model was significant for the study. The findings are support by Atupamoi, (2017) who postulated that there existed a significant relationship between resources and service delivery. This may be as result of inadequate resources, lack of political good will and faltering commitments. Notably, county governments should also increase their efforts and commit more resources to improve the health care service delivery (Kyalo, Kimeli, & Evans, 2017). Report on devolution progress over the last five years, revealed that the health sector has undergone various transformations, developments, and challenges though there is no data on the consistency across counties

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter outlines a summary of the major findings of the study; it then draws conclusions and finally, it makes some recommendations and suggestions on areas of further study.

5.2 Summary of Study Findings

The first objective of the study was to assess the resource allocation for service delivery in the health sector. From the findings, it was established that devolved resource distribution allows for adequate allocation of resources in the hospital. Also, the devolution allowed for timely provision of medical supplies for better service delivery. The results further show that there is increase in accountability and equitable distribution of hospital facilities. More so, the decentralization of hospital resulted to strong, responsive, efficient, and justifiable distribution of health facilities in the hospital.

The second objective of the study was to determine the quality of service delivery in the health sector. From the findings, it was discovered that services delivery was affordable, accessible, acceptable and relevance. The improvement in health care delivery requires a deliberate focus on quality of health services, which involves providing effective, safe, people-centred care that is timely, equitable, integrated and

efficient. Healthcare service quality is influenced by personal aspects of the patient and provider as well as by organizational, systemic, and environmental factors.

The third objective of the study was to determine the governance structure in the health sector. From the findings, it was established that management style affects the service delivery with the hospital. The medical superintendent was the only decision-maker at the hospital, making decisions regarding what components of adjustments, improvements, and services were to be implemented. The findings also established that changing the current management would have a high impact on the services being offered in these facilities for the better. Effective management is cited as a vital enabler of quality from the providers' perspective, managers, policy-makers and equally the payers.

The fourth objective of the study was to assess the use of Information Technology in the health sector in Lamu County. From the findings, it was established that ICT services is currently used by hospital in various way such as billing and payment services, which were used by the finance team and at the administration areas only. The use of ICT has reduced the cost of healthcare thereby increasing efficiency by data management and transfer, disease management and quality transfer of knowledge.

5.3 Conclusion

From the study results, it was concluded that resources allocation affect the quality of services offered by the devolved healthcare services in Lamu County. The introduction of the devolved systems was expected to increase the funding in the operations of health facilities, but this has not been appropriately met. Disbursement of funds has been delayed since the inception of devolution, and this has affected

the delivery of services in terms of delay of medical equipment, drugs, and other operations within the facility.

The governance structures have been a significant issue in most of the health facilities in Lamu County. The research indicates that the management before devolution was better. Many health workers were promoted in the form of grades when they were under the national government, and this was a key motivation. The current governance in the health facilities have been affected by politics. Therefore, the study concludes that leadership and governance influence the provision of devolved healthcare services in Kenya.

5.4 Recommendation

Based on the findings of the study, the following recommendations are made:

Service charters in the county governments should reflect the health needs of the people and community participation be enhanced in health decision making. Strengthen community health strategy is critical.

The national government should ensure there is timely financing to the county governments. The county governments should also look for more sources of income other than depending only on the national government. By doing this, more financial resources will be available.

The study recommends that county governments should employ more health workers and offer training to improve their skills. Promotions should be enhanced and be based on merits to encourage them to work smart.

Though the county governments are in charge of health facilities, various leaders and stakeholders need to be involved in decision making. Leaders should be elected by

staff in the health centers based on merits since most of the appointments today come with political influence.

5.5 Recommendation for further Study

Similar study can be conducted in the other counties in Kenya to ascertain if consistent results can be achieved. Moreover, further research should be carried out to explore the effect of health policies in the provision of devolved health services.

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APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

Name: John Mburu Kimani

Cell. No :

Email:

Dear Sir/Madam,

RE: REQUEST FOR FILLING OF QUESTIONNAIRE

I am a postgraduate student at Kenyatta University, School of Humanities and Social Sciences working on a research project entitled "Determinants of service delivery in the health sector in Lamu County, Kenya". It's on this basis I humbly entreat for your help in data collecting by filling the attached research questionnaire. Information provided will be solely for academic objectives and handled in utmost credence.

Your support is highly appreciated.

Thank you.

Yours Faithfully,

APPENDIX II: QUESTIONNAIRE FOR THE RESPONDENTS

Instructions

Fill in the questionnaire as truthful as possible by ticking in the relevant boxes and filling the blank spaces. The information gathered in this study will be treated with utmost privacy and confidentiality.

Section A: Demographic information

1. Indicate your gender

   Male [ ] Female [ ]

2. Age in complete years

   20-25 [ ] 26-30 [ ] 31-35 [ ] 36-40 [ ] 41-45 [ ]

   46-50 [ ] 51- 55 [ ] above 56 [ ]

3. Which department did you operate?

   Administration [ ] Medical [ ] Surgical [ ]

   Procurement and Supplies [ ] Pharmacy [ ] Finance [ ]

   ICT [ ]

4. Hospital service duration in years

   0-5 [ ] 6-10 [ ] 11-15 [ ] 16-20 [ ] 21-25 [ ]

   26-30 [ ] above 30 [ ]

5. Indicate your level of education

   Primary Secondary [ ] College Certificate [ ] College Diploma [ ]

Bachelor Degree [ ] Masters Degree [ ] PhD [ ]

Section B: Resources Allocation for Service Delivery

6. Is resources supply sufficient in your hospital?

   Yes [ ] No [ ] I am not sure [ ] I don't Know [ ]

7. Please tick the answer that reflects your opinion in the following statements using the scale of 1-5 from Strongly Agree -5, Agree -4, Neutral-3, Disagree-2 and Strongly Disagree-1

Statement					
Devolved resource distribution allows for adequate allocation of resources in the hospital					
Devolution has allowed for timely provision of medical supplies for better service delivery					
Devolved resource distribution has allowed for accountability in the utilization of resources					
Devolved resource distribution has prevented long stock-outs of essential drugs in health facilities					
Devolved resource distribution has enabled strong, responsive, efficient, and equitable distribution of health facilities in the hospital					

8. On a scale of 1-5 to what extent do you feel that the adequately allocation of resources enhances service delivery at the health sector?

Very extent	Moderately extent	Low extent
3	2	1

Section C: Quality Service Delivery

9. Do services delivered in this facility meet your expectation of quality of care?

   Yes [ ] No [ ]

10. Please give a reason for your answer above.

……

……

……

11. Please agree or disagree with the following

Instructions: does service delivery meet your expectations on the following?	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
Affordability					
Accessibility					
Acceptability					
Relevance					

Section D: Governance Structure

12. Do you agree that the current management style influence the daily service delivery within the hospital?

    Strongly Disagree [ ] Disagree [ ] Neutral [ ]

    Agree [ ] Strongly Agree [ ]

13. What aspects of governance structure do you think has the most influence on the services?

    Management style [ ] Organization structure [ ]

    Finance [ ] Power and authority [ ]

14. On a scale of 1-5 how much do you think changing the management style will influence on the general service delivery?

Highly	Moderately	Maybe	Somehow	Not impact
5	4	3	2	1

15. What aspects of the management do you feel should improve to ensure quality service delivery to the patient?

    Motivation [ ] Communication [ ] Leadership [ ]
    Delegation [ ]

16. Others,

    specify…….....

17. What is your view on the current governance structure within this hospital in relation to quality of service delivery?

    _____

    _____

    _____

Section E: Use of ICT in health sector

18. Have you ever used any information technology in any of your services within this hospital?

    Yes [ ] No [ ] I am not sure [ ] I don't Know [ ]

19. If yes, do you think the manner in which ICT is applied currently is the best for the healthcare services delivery?

    Yes [ ] No [ ] I am not sure [ ] I don't Know [ ]

20. In which areas in the hospital is ICT most applied?

    Treatment [ ] Management [ ] Pharmacy [ ]
    Procurement and supply [ ] Billing and payment services [ ]

21. In which area do you believe ICT should be most applied?

    Treatment [ ] Management [ ] Pharmacy [ ]
    Procurement and supply [ ] Billing and payment services [ ]

22. Do you agree that the current ICT application increases efficiency of healthcare delivery? Strongly Disagree [ ] Disagree [ ]
    Neutral [ ]

Agree [ ] Strongly Agree [ ]

23. On a scale of 1-5 to what extent do you value the current use of ICT on your daily patient interaction?

Highly valued	Moderately valued	Maybe valued	Somehow valued	Not valued
5	4	3	2	1