

**RELATIVE SIGNIFICANCE OF SELECTED PREDICTORS OF ALIGNED
ANNUAL HEALTH SECTOR PLANNING AND BUDGETING AMONG
HEALTH MANAGERS IN BUNGOMA COUNTY, KENYA**

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**A Thesis Submitted in Partial Fulfillment of the Requirements for the Award of
the Degree of Doctor of Philosophy in Public Health of Masinde Muliro
University of Science and Technology**

November, 2023

DECLARATION

This thesis is my original work prepared with no other than the indicated sources and support and has not been presented elsewhere for a degree or any other award.

Signature

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CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance of Masinde Muliro University of Science and Technology, a thesis entitled “**Relative Significance of Selected Predictors of Aligned Annual Health Sector Planning and Budgeting among Health Managers in Bungoma County, Kenya.**”

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DEDICATION

To my parents David and Elizabeth Wamalwa for your prayers, encouragement, guidance, and support. Dad, your knowledge and experience in the Kenyan health sector greatly enriched my study.

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ABSTRACT

The process of health sector planning and budgeting involves the identification of priorities that guide budgetary allocations to improve health outcomes. Over the years, progress has been made to strengthen this process through the development of guiding frameworks. However, challenges abound in the practical applicability of these frameworks contributing to misalignment between identified priorities and budgetary allocations. In Kenya, the annual health sector planning and budgeting process is largely misaligned. Bungoma County is among the few counties that disproportionately allocates over 90% of its health budget to recurrent expenditure contrary to the recommended 70%. Therefore, informed by a framework of successful priority setting, this study sought to determine the relative significance of selected predictors of aligned annual health sector planning and budgeting among health managers across the county health system. A descriptive cross-sectional study design using quantitative and qualitative methods was employed. Quantitative data were collected from 170 health managers and qualitative data from 3 department of health executives and 8 community health committees. The county health executives, county, sub-county, and level 4 health managers were purposively recruited while level 2 and 3 health managers and community health committees were randomly selected. Quantitative data were analyzed using the statistical package for social sciences (SPSS v. 29.0). Descriptive statistics were presented in tables and graphs. Qualitative data were coded using NVIVO-12 and analyzed thematically. Hierarchical multiple regression was conducted to determine the relative significance of the predictors on the development of aligned health sector plans and budgets after controlling for level of education and length of experience. The results showed that all the predictors significantly predicted the dependent variable, transparency $\beta = .275, p < .001$, knowledge level of the health managers $\beta = .254, p < .001$, use of evidence, $\beta = .203, p < .001$, community engagement $\beta = .168, p = .004$, the attitude of the health managers $\beta = .139, p = .011$ and health partners engagement $\beta = .125, p = .027$, with a combined variance accounted for of 61.1%. Transparency of the leadership had the highest absolute value of β and therefore was the strongest predictor. These findings suggest that transparency of leadership is at the core of a successful health sector planning and budgeting process. It is therefore recommended that the county department of health should give top priority to building the leadership competencies of their leaders and establishing clear communication channels to enhance transparency in the annual health sector planning and budgeting process.

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LIST OF ABBREVIATIONS AND ACRONYMS

ADP	Annual Development Plan
ANOVA	Analysis of Variance
AOP	Annual Operational Plan
APR	Annual Performance Review
AWP	Annual Work Plan
CBEF	County Budget and Economic Forum
CBROP	County Budget Review Outlook Paper
CDH	County Director of Health
CECM	County Executive Committee Member
CFSP	County Fiscal Strategy Paper
CHC	Community Health Committee
CHMT	County Health Management Committee
CHSSF	County Health Sector Stakeholder Forum
CHSSP	County Health Sector Strategic Plan
CHU	Community Health Unit
CIDP	County Integrated Development Plan
CSO	Civil Society Organization
DOF	Department of Finance
DOH	Department of Health
FGD	Focus Group Discussion
FY	Financial Year
HFMC	Health Facility Management Committee
HMIS	Health Management Information System
HSPB	Health Sector Planning and Budgeting

HSSP	Health Sector Strategic Plan
HSWG	Health Sector Working Group
IERC	Institutional Ethics and Review Committee
KHIS	Kenya Health Information System
KHP	Kenya Health Policy
KHSPF	Kenya Health Sector Partnership Framework
KII	Key Informant Interview
KNHSSP	Kenya National Health Sector Strategic Plan
LMIC	Low- and Middle-Income Countries
MTEF	Medium Term Expenditure Framework
MTP	Medium Term Plan
NACOSTI	National Commission for Science, Technology and Innovation
NGO	Non-Governmental Organization
NHSSP	National Health Sector Strategic Plan
OECD	Organization for Economic Co-operation and Development
PBB	Program Based Budget
PFM	Public Finance Management
PFMA	Public Finance Management Act
PSRA	Priority Setting and Resource Allocation
SARA	Service Availability and Readiness Assessment
SCHMT	Sub-county Health Management Team
SDG	Sustainable Development Goal
SPSS	Statistical Package of Social Sciences
SWG	Sector Working Group
UHC	Universal Health Coverage

VIF	Variance Inflation Factor
WHO	World Health Organization

OPERATIONALIZATION OF TERMS

Aligned health sector budget - An annual budget whose resource allocations match the priorities identified in the development plans.

Evidence-informed health sector budget refers to an annual health sector budget aligned with priorities outlined in development and strategic plans and performance reviews.

Health managers- This refers to the county executives in the county department of health, the county health management team, the sub-county health management team, the health facility in-charges, and community health committees who are engaged in the annual health sector planning and budgeting process.

Health partners refer to the development partners and non-governmental organizations that are engaged in the annual health sector planning and budgeting process through the provision of technical assistance and financial support.

Health sector planning and budgeting refer to the annual process of identifying priorities guided by development plans and performance reviews and resource allocation that culminates in developing a program-based budget.

Meaningful engagement refers to the timely, active, and authentic involvement of all the relevant actors in the identification of health priorities and budgetary allocation during the annual health sector planning and budgeting process.

Predictors refer to the factors namely health managers' knowledge and attitude, community and health partners' engagement, use of evidence, and transparency of the leadership that impact the development of aligned health sector budgets.

Public Finance management refers to institutions, legislations, policies, and processes that manage the utilization of public revenues whose implementation is informed by the annual budget cycle.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Health sector planning and budgeting are concerned with identifying priorities that guide the budgetary allocation process to produce improved health outcomes in the population (World Health Organization, 2016b). The health sector budget is an accounting instrument and a comprehensive document detailing governments' commitment to investing in health policies and priorities (World Health Organization, 2018).

Many countries rely on public revenues to finance the provision of health services and Universal Health Coverage (UHC) therefore, the Public Financial Management (PFM) system which encompasses the regulations, laws, procedures, and frameworks used to manage the use of public funds, performs a significant function in sustaining progress towards effective health services delivery (Cashin *et al.*, 2017). The processes that governments employ to formulate health sector priorities and guide budgetary allocations impact the delivery of health services and, consequently, the health outcomes of the population (Piatti-Fünfkirchen & Schneider, 2018).

The implementation of public finance management processes is informed by the annual budget cycle, which is composed of three stages namely formulation, execution, and monitoring (Cashin *et al.*, 2017). Governments worldwide are increasingly realizing that budget formulation is a crucial health sector concern and that increase in revenue alone will not necessarily help improve service delivery unless budgeting processes are improved (Barroy *et al.*, 2018). Budget preparation is critical as it sets the foundation for efficient budget execution consistent with the identified priorities (World Health Organization, 2018). An analysis of health expenditure from

African countries shows that up to 30% of funds allocated to the health sector are not used due to misalignment between priorities and resource allocations attributed to deficiencies in budget preparations (World Health Organization, 2016a) which is even more pronounced in decentralized settings (Cashin *et al.*, 2017).

The health managers and relevant stakeholders within the health sector are required to interpret and follow the principles of the planning and budgeting process to better influence resource allocation. Inadequate knowledge and comprehension of the process contribute to the misalignment of health sector priorities and funds allocation, resulting in funds not being used as envisioned (World Health Organization, 2016b), significantly impeding the achievement of health sector goals (World Health Organization, 2018). Studies indicate that when health managers engage in budget preparations, the health sector budgets are more likely to be aligned with identified priorities (World Health Organization, 2016a).

Health sector budgets worldwide suffer from misalignment as they do not reflect local and international health political commitments and priorities in strategic and operational plans (Piatti-Fünfkirchen & Schneider, 2018). This misalignment between health budgetary allocations and health sector priorities as framed in development plans and health policies leads to a lack of achievement of the health service delivery goals and commitments. For instance, despite Indonesia committing to enroll its entire population to the national health insurance scheme and allocating 5% of its total budget to the delivery of health services; its allocation of 3% still falls short of the global requirements (Cashin *et al.*, 2017).

Similarly, Kenya did not achieve the policy objectives outlined in the National Health Sector Strategic Plan II of 2005-2010 (NHSSP II) to strengthen primary health care services due to skewed budget allocations to curative services (Glenngård & Maina, 2007). Unfortunately, this is still the case following findings of the health sector budget analysis for the 2018/2019 financial year that indicated despite Kenya's commitment to the achievement of UHC, its allocation to preventive and promotive health care has been consistently low and has stagnated throughout the previous three years (Republic of Kenya, 2019).

Despite the alignment of public funds with national priorities being among the critical practices of well-functioning PFM systems worldwide, there is scanty empirical research on PFM performance and processes (Fritz *et al.*, 2014). Moreover, there is scarce literature concerning the predictors of misalignment between resource allocation and health sector development plans (Munir, 2018).

The predictors of the development of evidence-informed health sector budgets that are aligned to sector priorities have been investigated leading to the formulation of several evaluation frameworks that describe the elements of an effective priority-setting exercise within the health system (Kipiriri & Martin, 2010; Sibbald *et al.*, 2009; Smith *et al.*, 2016). One of the evaluative frameworks developed through a systematic review of literature established that for a successful priority-setting exercise, the following procedural conditions should be met: stakeholder engagement, empowerment of the actors, use of evidence, transparency, procedures for revisions, and enforcement (Barasa *et al.*, 2015a). The major gap in the operationalization of these frameworks in practice is that though the predictors are interrelated, their relative significance and hierarchy have not been established (Barasa *et al.*, 2015b; Smith *et al.*, 2016). This

hierarchy would be useful in identifying and prioritizing interventions to implement to improve the process, especially in resource-limited settings.

Past studies on health sector planning and budgeting process have focused on the centralized health systems and barely on the decentralized and health facility levels (Barasa *et al.*, 2015a) thereby a dearth of literature. Additionally, the studies have been qualitative and focused on isolated planning and budgeting units in the health system. This study set out to determine the relative significance of selected predictors of aligned annual health sector planning and budgeting process among health managers across all the planning and budgeting units of the health system in Bungoma County. The findings of this research will contribute to the global literature on health sector planning and budgeting, inform PFM system reforms that are critical for effective health service delivery, including sustaining progress towards UHC, and guide the prioritization of interventions for improving the annual health sector planning and budgeting processes.

1.2 Problem statement

Strengthening the Public Financial Management System within the health sector is a fundamental component of health system strengthening if countries are to sustain progress toward the achievement of UHC (Cashin *et al.*, 2017). The annual health sector planning and budgeting process which provides an avenue for the implementation of the PFM globally, face a key challenge of misalignment between resource allocation and priorities (Piatti-Fünfkirchen & Schneider, 2018). Regionally, available data from countries that make up the WHO African bloc show that between 10% and 30% of the total health sector budget allocation is unspent which is partly contributed by misalignment between fiscal allocations and sector prioritization (World Health Organization, 2016a).

The Kenyan government has made incredible progress toward ensuring that budgeting in all sectors is aligned with the resources available. To attain this, the government institutionalized the Medium Term Expenditure Framework (MTEF) approach in the 2001/2002 fiscal year and entrenched into law the budgeting process through the enactment of the PFM Act in 2012 (Government of Kenya, 2012b). Furthermore, the Ministry of Health has formulated guidelines and tools aligned with the legislation and its functions to improve the annual health sector planning and budgeting processes (David *et al.*, 2020a).

Despite all the above progress, challenges still abound. For example, a qualitative study carried out in Kenya to analyze the Ministry of Health's planning and budgeting processes during the 2012-2013 fiscal year established a misalignment between the health sector objectives and the budgeting process. (Tsofa *et al.*, 2016). The misalignment is still the case, as evidenced by a recent study conducted to appraise county health sector planning in Kenya, which reported that the health budgets are repeatedly developed late into the planning and budgeting cycle, giving rise to misalignment between the budget and the sector priorities raising questions whether the selected priorities articulated in the plans are considered for funding (David *et al.*, 2020a). Further, the mid-term evaluation report of the Kenya National Health Sector Strategic Plan of 2018-2023 (KNHSSP) indicates that there is minimal progress made in the formulation of effective health sector budgets especially relating to the alignment of resources allocation to sector priorities (Ministry of Health, 2021b).

This misalignment contributes to a mismatch between the resource allocation and priorities both in scope and level of funding (World Health Organization, 2018) as evidenced by a study in Kenya which revealed that a mismatch of funds allocations

and health policy priorities partly contributed to the failure to achieve the first Kenya National Health Sector Strategic Plan of (1999–2004) (Glenngård & Maina, 2007).

Moreover, the county health budgets have consistently experienced a trend of increasing recurrent expenditure, rising from 78.8% in FY 2016/17 to 81.9% in FY 2017/18, and from 78.7% in FY 2018/19 to 82% in FY 2019/20. A significant portion of the allocated funds is directed toward personnel emoluments (Republic of Kenya, 2019, 2020). This trend raises legitimate concerns regarding the capacity to deliver healthcare services, promote the growth of the sector, and ultimately achieve the health sector's priority goals (Republic of Kenya, 2019, 2020).

Compared to other counties in the country, Bungoma County has one of the highest allocations to recurrent expenditure, with the allocation increasing from 91% in FY 17/18 to 94.2% in FY 18/19, and then slightly decreasing to 93.9% in FY 2019/2020 and 91% in FY 2020/2021 of its health budget (Republic of Kenya, 2019, 2020, 2022) way above the recommended 70% (Government of Kenya, 2012b). The allocations for personnel emoluments comprise 68% of the recurrent expenditure contrary to the recommended 50 to 60 percent (Republic of Kenya, 2020) while the essential health inputs take up only 10%.

Several elements have been elucidated qualitatively in the literature that contributes to effective priority-setting practices within the health sector including empowerment of the actors, stakeholder engagement, use of data, procedures for revisions, use of explicit procedures, reallocation of resources, use of values and context and leadership (Barasa *et al.*, 2015a; Sibbald *et al.*, 2009). However, the relative significance and hierarchy of these elements have not been quantified (Barasa *et al.*, 2015a; Smith *et*

al., 2016) thereby posing a challenge in determining how to apply them in improving the health sector priority setting (Sibbald *et al.*, 2009).

Further, few studies have investigated the annual health sector planning and budgeting process in Kenya among the health managers across all the planning and budgeting units collectively within the health system. Based on this background, this research was proposed to measure the relative significance and hierarchy of selected predictors of aligned annual health sector planning and budgeting process among health managers in Bungoma County using hierarchical multiple regression analysis. The measurement of the hierarchy of the predictors will be essential in informing the prioritization of evidence-informed approaches to improve the process, especially in resource-constrained settings.

1.3 Objectives of the study

1.3.1 Broad objective

To determine the relative significance of selected predictors of aligned annual health sector planning and budgeting among health managers in Bungoma County.

1.3.2 Specific objectives

- i. To assess the knowledge of health managers on the annual health sector planning and budgeting process in Bungoma County.
- ii. To assess the attitude of health managers towards the annual health sector planning and budgeting process in Bungoma County.
- iii. To determine the level of engagement of stakeholders in the annual health sector planning and budgeting process in Bungoma County.
- iv. To assess the use of evidence by health managers in informing the annual health sector planning and budgeting process in Bungoma County.

- v. To examine the transparency of the county health system leadership towards the annual health sector planning and budgeting process in Bungoma County.

1.4 Research questions

- i. What is the knowledge level of health managers on the annual health sector planning and budgeting process in Bungoma County?
- ii. What are the attitudes of health managers on the annual health sector planning and budgeting process in Bungoma County?
- iii. What is the level of stakeholders' engagement in the annual health sector planning and budgeting process in Bungoma County?
- iv. What is the status of the use of evidence among health managers in informing the annual health sector planning and budgeting process in Bungoma County?
- v. How transparent is the county health system leadership towards the annual health sector planning and budgeting process in Bungoma County?

1.5 Justification of the study

Since public funds are critical in the financing of UHC, a functional PFM system that includes sectoral planning and budgeting is essential for adequately managing public finances and health service delivery (Piatti-Fünfkirchen & Schneider, 2018; Wishnia & Goudge, 2021).

Given the global clarion call for the attainment of UHC by 2030, the strengthening of PFM systems particularly in low and middle-income countries (LMICs) has become fundamental as health systems develop and implement policies to achieve UHC (Piatti-Fünfkirchen & Schneider, 2018). Consequently, PFM has emerged as an important field of research as health systems attempt to implement reforms such as UHC to improve service delivery (Wishnia & Goudge, 2021). Besides PFM being an essential

component in the health system, there is a paucity of literature on the annual health sector planning and budgeting process (Fritz *et al.*, 2014) and limited literature on the misalignment of health sector budgets (Munir, 2018).

Health sector planning and budgeting are integral to a well-functioning healthcare system. WHO recommends a systems framework comprising six building blocks for assessing and strengthening the health system. These building blocks include service delivery, health workforce, information systems, medical products and technologies, health financing, and leadership and governance (WHO, 2007). Health sector planning and budgeting intersect with the building blocks, such as health information systems, health financing, and leadership and governance, directly influencing the identification of priorities, resource allocation, and policy development. This ensures that the healthcare system operates effectively, efficiently, and responsively to the needs of the population.

In Kenya, the annual health sector planning and budgeting process at the decentralized governments is an important phenomenon especially following the devolution of the health system (Waithaka *et al.*, 2018a). This has been demonstrated by the increasing health sector allocation which highlights the need to delve into the responsibilities and capacities of county health systems in planning and budgeting. The public health sector budget increased from Ksh 94 billion during FY2012/13, before the implementation of devolution, to Ksh 247 billion in FY 2020/21 (Republic of Kenya, 2022). Bungoma county has been purposively selected following findings of the county health budget analysis that show the county's allocation to recurrent expenditure is among the highest in the country and increased from 91 % in FY 17/18 to 94.2% in FY 18/19 and 93.9% in FY 2019/20 of its total health budget (Republic of Kenya, 2019, 2020) way above the recommended 70% (Government of Kenya,

2012b). Further, its allocations for personnel emoluments comprise 68% of the recurrent expenditure contrary to the recommended 50 to 60 percent (Republic of Kenya, 2020). The essential health inputs take up only 10% of the recurrent allocation raising legitimate concerns about service delivery, growth of the sector, and ultimately the achievement of the sector's priority objectives (Republic of Kenya, 2020).

One of Kenya's ambitious healthcare goals is to achieve UHC by 2030 and since the sustainability of UHC lies in relying on domestic sources of revenue, the county health systems must be well-equipped to allocate their resources appropriately for the attainment of this goal. Based on this premise, this study was valid as it sought to determine the relative significance of predictors of aligned health sector planning and budgeting process in Bungoma County. The findings of this research will add to the existing literature on the annual health sector budgeting process, inform PFM reforms within the health sector and contribute to the development of targeted capacity-building interventions across the budget cycle for the county departments of health all of which are critical in effective health service delivery including attaining progress towards UHC.

1.6 Significance of the study

Since devolution, the budget allocation to the health sector has steadily increased. In FY 2019/20, it reached 27.8% (Ksh 127 billion), up from 27.2% (Ksh 121 billion) in the previous fiscal year (FY 2018/19) (Republic of Kenya, 2020), thus it is expected that these funds would be allocated and used efficiently to achieve strategic sector priorities. However, Kenya is still grappling with fundamental challenges in financial resource mobilization, allocation, and utilization of public funds to achieve its health sector priorities (Health Policy Plus, 2021).

Additionally, the county health sector budgets are repeatedly developed late into the planning and budgeting cycle, giving rise to misalignment between the budget and the sector priorities (David *et al.*, 2020b; Tsofa *et al.*, 2016) raising questions about whether the selected priorities articulated in the plan are considered for funding (David *et al.*, 2020a).

This study, therefore, aimed to determine the relative significance of selected predictors of aligned annual health sector planning and budgeting process among health managers through all the planning and budgeting units of the health system in Bungoma County. The study findings will add value in several important ways. First, for academia, the study findings will make a significant contribution to the limited literature on the annual health sector planning and budgeting process in Kenya and other regions with devolved units. Secondly, the findings may also inform policy reforms of PFM within the health sector. Finally, for practice, the study findings will inform the ministry of health and the counties' departments of health on the approaches to undertake to streamline the planning and budgeting processes. This, in turn, will facilitate the development of targeted capacity-building interventions for health managers involved in the health sector planning and budgeting process.

1.7 Scope of the study

The study aimed at determining the significance of predictors of aligned annual health sector budgeting process among health managers across all the planning and budgeting units of the county health system in Bungoma County. The study was guided by the policy analysis framework and an evaluative framework for successful priority setting in the health system. The predictors that were assessed included the knowledge and attitude of the health managers, community and health partners' engagement, use of evidence, and the transparency of the leaders. The study focused only on the

formulation phase of the budget cycle and utilized a descriptive cross-sectional study design using a mixed-methods approach. The data for this study was collected from September 2022 to the end of October 2022.

1.7.1 Limitations of the study

The results of this research should be interpreted while considering three limitations. First, the data collection was conducted during a period of transition of leadership at the county government which occurred after the general elections. Therefore, finding some of the key informants who comprise the county department of health executive for qualitative data collection presented a challenge as they had vacated their offices during the leadership transition. To mitigate this limitation, interviews were conducted with officials who were serving in acting capacities in those offices.

Secondly, the research focused only on the health managers' perspectives of the annual health sector planning and budgeting process in only one county; therefore, the findings may not be generalized to the other actors involved, such as non-governmental organizations, political leaders, and the treasury as well as other regions. To overcome this limitation, health managers from all levels of the county health system were included in the study.

Finally, as this was a cross-sectional study, the data obtained represents a single point in time and could potentially differ over time. Notably, the study findings will be invaluable in improving the health sector planning and budgeting process in similar settings.

1.8 Theoretical framework

Following the findings of a systematic review of the health system priority-setting experiences and procedures in hospitals, the authors recommended that the application of a policy lens is appropriate in appraising the health sector planning and budgeting process (Barasa *et al.*, 2015b). Therefore, in this study, the health policy analysis triangle framework advanced by Walt & Gilson (1994) for the analysis of health sector policies was applied. This framework has informed health policy analysis and research across many countries and covering a diverse range of health issues (Gilson & Raphaely, 2008). Although the framework provides a comprehensive approach to health policy development and analysis, it is largely descriptive (Moloughney, 2012). The authors of this framework propose that the development of health policy results from a multifaceted interplay between various factors, including the policy content, the context in which it is developed, the involved actors, and the policy development process itself. In employing this policy framework, the definitions of the elements were adopted from the descriptions according to Barasa *et al.*, (2015b). The content refers to the PFMA provisions of the health sector budget formulation. Context denotes the devolved health sector in which the annual health sector planning and budgeting process occurs at the county level. Process refers to the annual health sector planning and budgeting process. Finally, actors are health managers across all the planning and budgeting units of the county department of health involved in the process. Figure 1.1 summarizes the adopted health policy analysis triangle that was applied in this study.

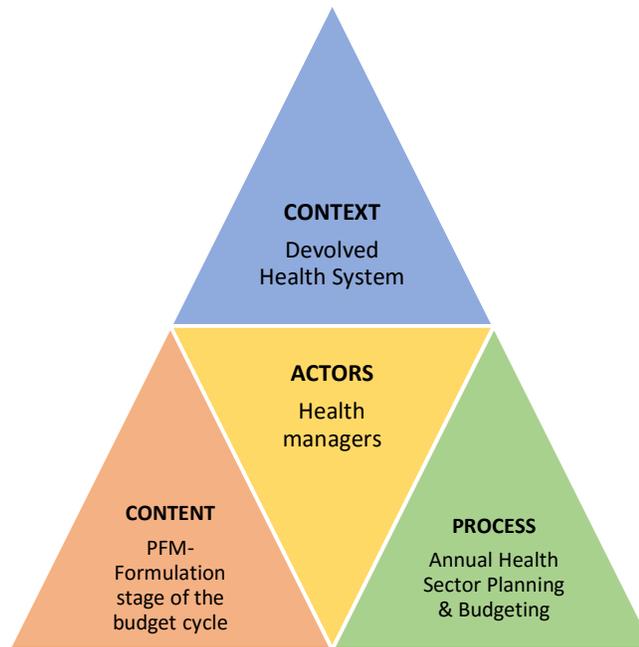


Figure 1.1: Theoretical framework for health sector priority setting practices

Source: Adapted from (Barasa *et al.*, 2015a; Gill & Gilson, 1994)

1.9 Conceptual framework

The conceptual framework for the development of an aligned health sector budget was developed following a comprehensive analysis of an evaluative framework on successful priority setting exercise within the healthcare system as advanced by Barasa *et al.*, (2015a). This framework suggests that consequentialist and procedural conditions are required for the effective identification of priorities and budgetary allocations. The procedural parameters which was the focus of this study include stakeholder engagement, empowerment of the actors, use of evidence, transparency, community values, procedures for revisions, and enforcement. Because this study focused solely on the formulation stage of the annual health sector budget, procedures for revisions and enforcement conditions were excluded as they are more relevant during the implementation stage of the budget cycle. In this study, stakeholder

engagement, empowerment of the actors, use of evidence, community values, and transparency procedural conditions constituted the independent variables.

The conceptual framework as illustrated in Figure 1.2 considers that the development of evidence-informed program-based budgets aligned with health sector priorities within the county health system is dependent upon the county health managers' knowledge and attitudes on the annual health sector planning and budgeting process, stakeholder engagement, transparency of the county health leadership and use of evidence. The control variables were the level of education and length of experience of the health managers.

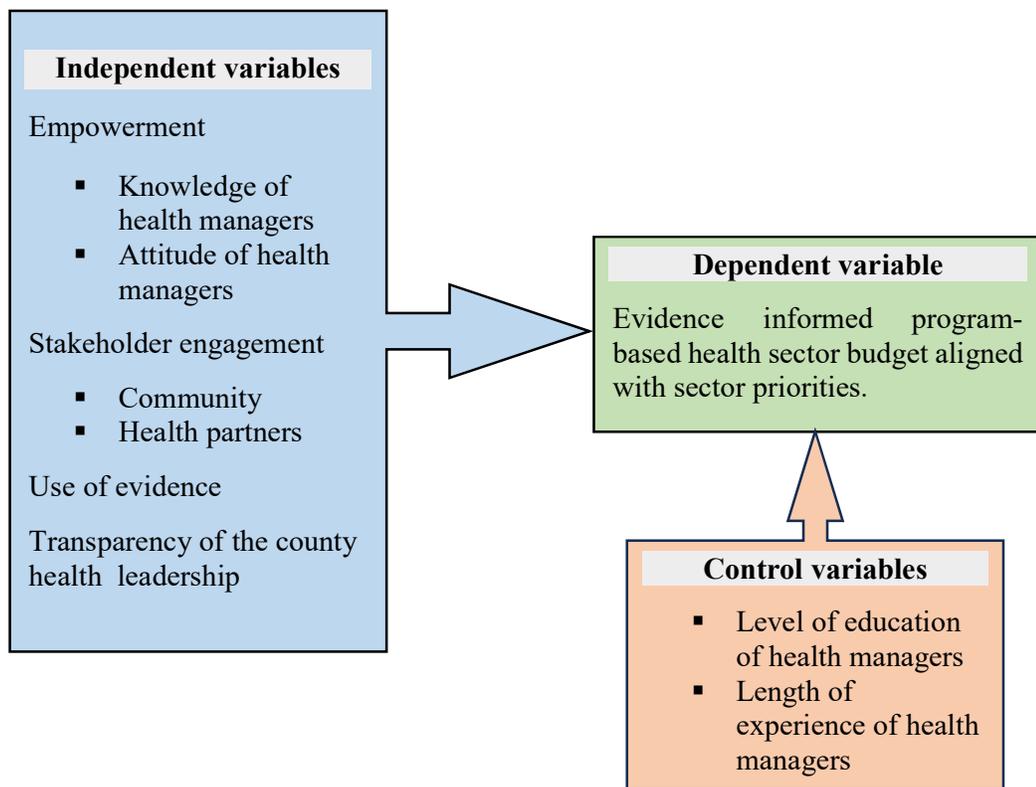


Figure 1.2: Conceptual framework

Source: Conceptualized by the researcher

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter contains reviewed literature thematically presented based on the predictors of health sector planning and budgeting and the development of aligned health sector plans and budgets by health managers. The predictors included health managers' knowledge and attitudes on the annual health sector planning and budgeting process, utilization of legal frameworks, stakeholder engagement, transparency of the county health leadership, and use of evidence to inform the process.

PubMed, Google scholar, ScienceDirect, Web of Science, Scopus databases, and gray literature were searched using a predetermined search technique to identify quantitative, qualitative, and mixed methods research on health sector planning and budgeting globally. The search was also supplemented with bibliographic searches of relevant articles. The keywords and phrases used in the search included health sector planning and budgeting, health managers planning and budgeting, health sector priority setting, stakeholder engagement in priority setting, evidence-informed priority setting, and community involvement in priority setting. The literature review was purposeful in the identification of the study variables, designing the conceptual framework, and informing the development of data collection tools.

2.2 Health sector budgeting

Public budgeting includes the processes used by governments to plan and allocate their financial resources, often yearly (Barroy *et al.*, 2018; World Health Organization, 2016b). Following this procedure, the general government budget is created, which includes the yearly health sector budget. The government also affirms in the health budget that the sector is a priority and that it is committed to putting its objectives into

action (World Health Organization, 2016b). Insufficient knowledge and understanding of the budgeting process among those involved in its formulation can result in a misalignment between health sector goals and the allocated funding. This can lead to resources not being utilized as intended, compromising transparency and accountability (World Health Organization, 2016b).

Guidelines for the development, implementation, and oversight of health sector budgets are provided by the public financial management (PFM) rules (World Health Organization, 2016b). An efficient PFM system is essential to implementing UHC policies given the mounting evidence that a country must rely on public money to achieve significant progress toward UHC (Barroy *et al.*, 2019; Kutzin *et al.*, 2016).

MTEF and Program-Based Budgeting (PBB) are two of the budgetary formulation reforms that nations have used to enhance their PFM systems and match the priorities and resource allocation in the health sector. MTEF is a multi-faceted approach to government spending that links sector goals to budget allocations throughout a typically three-year planning period by using budgeting and PFM (World Bank, 2013; World Health Organization, 2016b). Although MTEFs are not a brand-new method of budgeting, they have lately gained popularity around the globe. For example, Australia has been implementing its forward resource estimate and allocation system since the start of the 1980s. It was not until the latter part of the 1990s that some African nations, including Kenya, began to implement MTEF. Apart from South Africa, several African nations employed the strategy in a multi-year commitment to money allocation strategies contained in poverty reduction programs (World Bank, 2013).

The Government of Kenya (GoK) used MTEF in the 2000–2001 fiscal year to enhance coordination between public sector planning and budgeting. To comply with the MTEF implementation in the deployment of the Kenya national health sector strategic plan of 2005–2007, the MoH created Annual Operational Plans (AOPs) in 2005 (Ministry of Health, 2005).

An operational plan describes the operations carried out at each planning unit during a short period, often one year, following the overarching strategic plan for the health sector (Terwindt *et al.*, 2016; World Health Organization, 2016b). Operational planning in the health sector requires significant participation from a variety of actors at each planning unit, including other government agencies, funders, non-state agents, the private sector, and the community. It also requires alignment with the sector's strategic plan (World Health Organization, 2016b).

In addition to MTEF, PBB is an essential strategy to improve the alignment between resource allocation and health sector goals. Program-based budgeting is a type of budget classification that arranges budgets according to health services programs intended to meet policy objectives instead of line items. This is crucial because it can increase budget flexibility, monitoring, transparency, and accountability (Cashin *et al.*, 2017). Since the early 1990s, Organization for Economic Co-operation and Development (OECD) nations have adopted PBB for their respective government agencies, and their lessons learned have continued to be used to guide the implementation and institutionalization of PBB in LMICs. Particularly, country experiences suggest that the allocation of resources and alignment of sectoral plans with policy objectives contribute to the success of healthcare delivery results (Barroy *et al.*, 2022).

On the other hand, PBB adoption and implementation in LMICs is a relatively new phenomenon. Eighty percent of African nations had committed to implementing PBB by the end of 2012; however, although it had advanced in Mauritius and South Africa, it was only beginning in East Africa, which included Kenya, Uganda, and Tanzania as well as Namibia, Ethiopia, Malawi, and Mozambique (Cashin *et al.*, 2017). Only 44% of African nations utilized PBB to publish their 2017 health budgets, indicating that implementations have been delayed (Barroy *et al.*, 2019). Even though by 2019 80 percent of LMICs had implemented program-based budgeting as they had initially committed, they were at various stages of implementation. The majority (71 percent) were in the pilot stage, 20 percent were in the enactment stage (Kenya included), and only 9 percent were in the full implementation stage, with the majority of these countries being upper-middle-income nations (Barroy *et al.*, 2022).

The Public Finance Management Act (PFM Act) was adopted by the Kenyan government in 2012. The Act provided for the use of Program Based Budgeting (PBB), whose main objective is to align resource allocation with sector goals (Kenyan Government, 2012b). The national treasury delivered the nation's 2013/2014 budget in the PBB format to comply with this law, and the counties adopted it in the 2014/2015 fiscal year (Government of Kenya, 2012b). Even though the nation achieved this gradual improvement in its budgeting procedures, the 2013/2014 budget was below par and had several mistakes. These included inadequate knowledge of the ministry of health's policy objectives, ambiguous indicators with no baseline data, and seemingly reduced transparency due to insufficient technical ability to develop PBB (Lakin & Magero, 2015). The county health sector started implementing PBB in the 2016/2017 fiscal year due to technical inadequacies in forming PBB in the counties (Lakin & Magero, 2015). To further direct the PBB implementation process, the ministry of

health created health sector budgeting rules (Ministry of Health, 2019b) and criteria for the county's yearly health sector performance assessments and planning process (Ministry of Health, 2018b). This progress notwithstanding, the counties' health sector budgets continue to be characterized by an inconsistency in the distribution of resources relative to the sector's goals (David *et al.*, 2020a).

Given that PBB is still in its early phases of implementation in Kenya's health sector, there is a potential opportunity for studies to chronicle the development and experiences of health managers and stakeholders in adopting this approach (Tsofa *et al.*, 2021). Additionally, although the strategy is not novel in the field of public budgeting, PBB is still undergoing global changes, particularly in the health sector (World Bank, 2013), since effective health sector budgeting processes are a critical facilitator for nations to continue progress toward UHC (Barroy *et al.*, 2019).

Systemic problems across the budget cycle are revealed by the little literature on PFM within the health sector (Cashin *et al.*, 2017; World Health Organization, 2016b). Additionally, there is inadequate proof of the severity of the issues, their root causes, and effective stakeholder engagement techniques throughout the whole process (Barroy *et al.*, 2019).

2.3 Health sector planning and budgeting process within the county health system in Kenya

In Kenya, the national government planning is based on Vision 2030, translated into five-year Medium-Term Plans (MTPs). The health sector plan in tandem with Vision 2030 is outlined in the Kenya Health Policy (KHP) 2014-2030 and translated into medium-term plans within the Kenya Health Sector Strategic Plans (Ministry of Health, 2018b). Devolution increased the number of planning and budgeting

documents that guide the allocation of funds. These documents comprise the County Integrated Development Plan (CIDP), PBB, annual development plans (ADPs), and sector working group (SWG) reports (David *et al.*, 2020b). The five-year medium-term county government plan is elaborated in the broader CIDP. The county department of health takes the lead in priority setting and resource allocation (PSRA) based on the functions mandated to them as outlined in the fourth schedule of the constitution (David *et al.*, 2020b).

The health sector-specific agenda is further outlined in the County Health Sector Strategic Plan, which informs the development of Annual Work Plans (AWPs) or operational plans and PBB. Therefore, the county health sector Annual Performance Review (APR) and AWP processes occur within the broader government planning framework (Ministry of Health, 2018b). The illustration of the planning framework is shown in Figure 2.1.

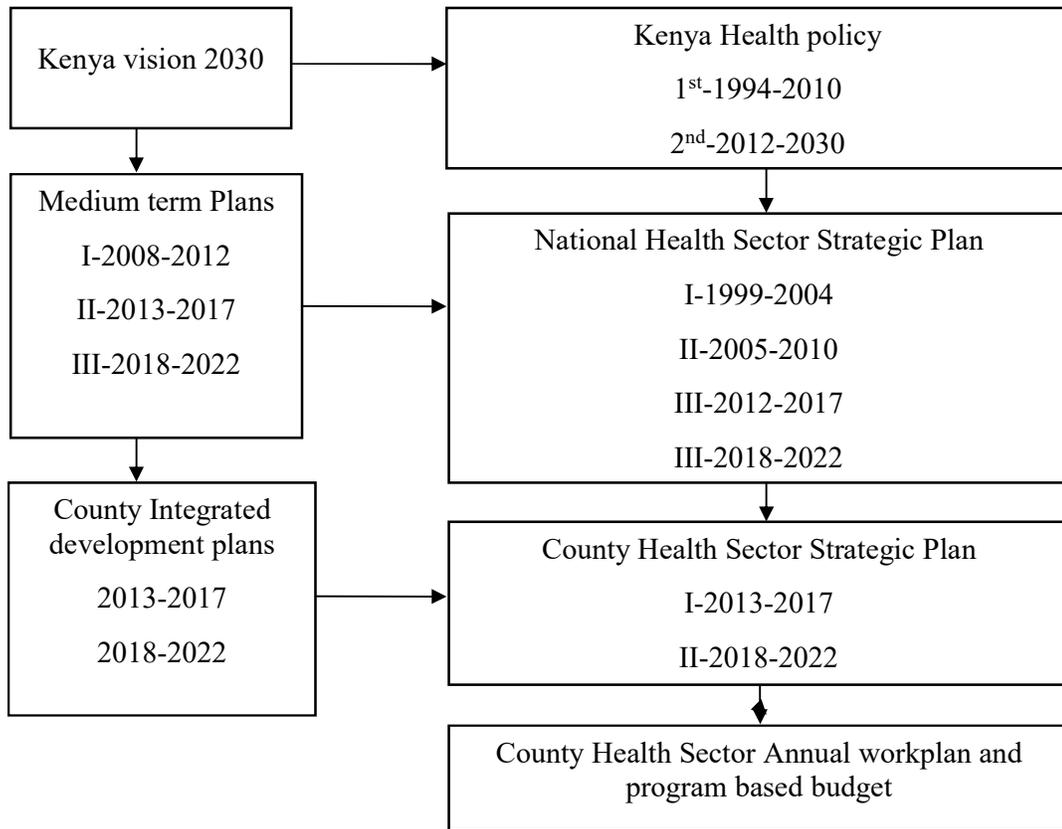


Figure 2.1: Planning framework

Adopted from the Ministry of Health, (2019)

The overall planning and budgeting process are guided by MTEF, a three-year rolling budget framework, and the country's foundation of public finance management. The goal of MTEF is to ensure coherence in planning, performance review, and budgeting. The previous financial year is denoted as FY(X-1) and the current financial year as FY(X). The first year FY(X+1) represents the subsequent financial year for which the planning and budgeting are conducted and the two financial years of FY(X+2) and FY(X+3) represent two outer financial years (Ministry of Health, 2019).

The county's annual planning and budgeting process begin in August of the current fiscal year FY(X) by releasing the MTEF budget circular by the county treasury, which details the guidelines for the planning of FY(X+1). The county treasury also submits the Annual Development Plan (ADP) extracted from the CIDP and the county health

sector strategic plan. The county planning units conduct performance reviews of the just concluded financial year FY(X-1) during the same period. The product of the performance review is a clear articulation of the health sector priorities for the subsequent fiscal year FY(X+1).

The priorities will guide the Sector Working Group (SWG) in resource bidding for the County Department of Health (CDoH). In September, the county treasury releases the County Budget Review and Outlook Paper (CBROP), which outlines the expected financial resources for the county and provides details on budget allocations for the different county departments. The county Sector Working Group (SWG) constituting of the County Executive Committee Member (CECM) for Health, Chief Officer of Health, Chief Officer of Finance, County Director of Health, CHMT members, Medical Superintendent of County Referral Hospital, Health Economist, and a representative of development partners reviews the ADP and conducts resource bidding. Once the SWG bidding process is concluded, the county treasury issues the County Fiscal Strategy Paper (CFSP) in February, alongside general county government planning guidelines and timelines. The Fiscal Strategy Paper provides a broader budget allocated ceilings for each county department. The CDoH, between February and April, undertakes its AWP exercise in all its planning units and aligns the priorities identified in the August APR process with the budget ceilings provided for within the Fiscal Strategy Paper. The CDoH then convenes an AWP planning summit to consolidate all the different planning units' AWP's and at the same time incorporate activities and resources from other stakeholders. The cycle is concluded by the end of June with the approval of the county budget by the County Executive Committee (CEC) and subsequently by the County Assembly through the legislation of the Finance Appropriation Bill. After that, the implementation of the AWP

(Year X) begins in July (Ministry of Health, 2019). The annual health sector planning and budgeting process for the county health system are shown in Figure 2.2 below.

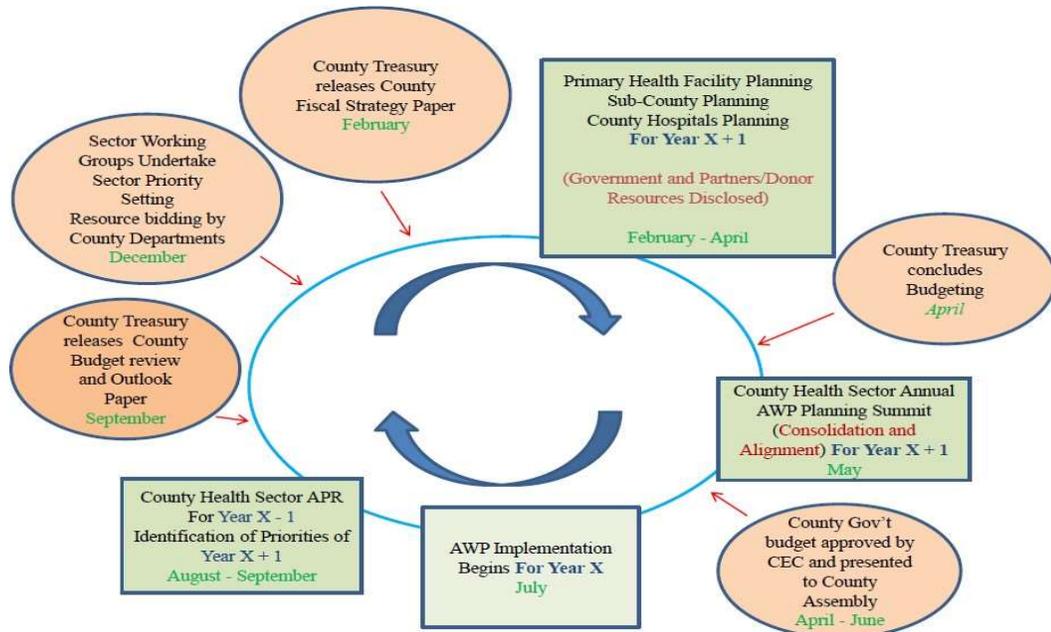


Figure 2.2: Illustration of the county's annual health sector planning and budgeting process

Source: (Ministry of Health, 2018b)

When annual planning and budgeting in the health sector occur independently, it results in mismatched health plans and funds allocation leading to resources not being used as envisioned, poor transparency, and accountability (World Health Organization, 2016b). The county health sector should abide by the planning and budgeting cycle to guarantee that the selected priorities are considered for funding (David *et al.*, 2020a).

However, Kenya's annual health sector planning and budgeting process is characterized by a mismatch between the budget and the plan. In a qualitative study conducted to analyze the planning and budgeting processes of the 2012/2013 financial

year at Kenya's Ministry of Health, it was established that the process was characterized by poor leadership and coordination, resulting in inadequate participation of the stakeholders, disconnect between operations of the treasury who are legally accountable to parliament and the ministry of health which lead to a scenario where there was a budget without a corresponding plan at the commencement of the fiscal year (Tsofa *et al.*, 2016). Similarly, an appraisal of the planning and budgeting process in level IV health facilities in Kenya revealed a misalignment between the budgeting and planning process, hence a mismatch of activities on the budget and the annual work plan (Barasa *et al.*, 2017). The same scenario is replicated in other countries; for example, in a review of the roll-out of MTEF in 9 African countries, it was demonstrated that disconnect between the priorities and budget is a common occurrence (Le Houerou & Taliercio, 2002). Further, an exploratory study in Tanzania established that health facilities generate their annual work plans without knowledge of the budget ceiling, and thus the district health managers decide the priorities that will be funded contributing to misalignment (Boex *et al.*, 2015).

To streamline the public budgeting process, the government has enacted legislation including the PFMA, the County Government Act, and the implementation of MTEF. The County Government Act 2012 obligates the county governments not to use public funds outside the approved development plans and as authorized by the county assembly (Government of Kenya, 2012a). Despite the progress made in the adoption of MTEF, enactment of the legislation, and development of guidelines on how to conduct annual planning and budgeting, the health sector in Kenya still has a long way to go in achieving alignment between sector priorities and budgetary allocations (Tsofa *et al.*, 2016).

2.4 The roles of the county executive and health managers in annual planning and budgeting at the county health system

It is essential to identify the actors engaged in the annual health sector planning and budgeting processes who could be internal or external. Beyond that, knowledge of their roles and power relations is vital in evaluating the process. Following devolution, the actors involved in the annual health sector planning and budgeting process at the county level expanded. These actors include state actors such as the governor, county executive committee, chief officers, and county assembly members. Others are health service providers, county health management teams, sub-county health management teams, hospital management teams, community health committees, and community members (David *et al.*, 2020b; Mccollum *et al.*, 2018)

Following Article 176 of the Constitution of Kenya, county governments comprise a county assembly and a county executive. Article 179 further stipulates guidelines for the establishment of the County Executive Committee. The County Executive Committee is composed of the County Governor, the Deputy County Governor, and the County Executive Committee Members who are appointed by the County Governor (Constitution of Kenya, 2010).

The responsibility of coordinating and implementing plans and policies of the county government is mandated to the county executive committee. Each county department has a County Executive Committee Member (CECM), and an accounting officer referred to as the Chief Officer (CO) (Government of Kenya, 2012a). According to the County Governments Act, the roles of the county executive committee concerning planning and budgeting include generating all development plans and budgets, facilitating public participation, coming up with all the budget documents before submitting them to the county assembly, regularly reporting to the county assembly on

performance, quarterly budget implementation, guiding the department in the development of plans and leading the implementation of county plans (Government of Kenya, 2012a).

Section 9 of the County Governments Act, 2012 stipulates the role of the Members of the County Assembly (MCAs), which include legislation, representation, and oversight. The County Assembly Health Committee is one of the sectoral committees of the county assembly mandated to scrutinize budget estimates and budget documents, make appropriate recommendations, monitor budget performance, and ensure efficiency and effectiveness by inquiring and reporting on all matters of the department (Government of Kenya, 2012a).

According to the Public Finance Management Act of 2012, the County Treasury is comprised of the County Executive Committee member for finance, the Chief Officer, and the departments of the County Treasury that bear responsibility for financial affairs. The County Executive Committee member for finance is the head of the County Treasury. The County Treasury is responsible for various roles related to planning and budgeting, which include formulating and implementing economic policies, preparing the county's annual budget, issuing circulars related to financial matters, and preparing and submitting the County Fiscal Strategy Paper and County Budget Review and Outlook Paper to the County Executive Committee for approval. (Government of Kenya, 2012b).

The Kenya Health Act of 2017 guides the formation of a county health system with a county executive department that oversees the management of county health services and is accountable to the Governor and the County Assembly. There is also a provision

for the County Director of health, who is a technical advisor on health matters in the County (Health Act No. 21 of 2017, 2017).

The County Health Management Team comprises the Director of Health, who is the Chairperson, One Deputy Director, the heads of programs, and the Administrative Officer of the Department. The County Health Management Team (CHMT) undertakes strategic management and coordination of the county health services delivery within the county while the operational management and coordination of services are undertaken by the sub-county health managers and in-charges of health facilities (Ministry of Health, 2018b).

The sub-county health management team comprises the Sub-County Medical Officer of Health, the Chairperson, the Heads of programs, and the Sub County Health Administrative Officer, who is the secretary. The Sub County Health Management Team performs delegated functions and coordinates the implementation of health policies and plans, spearheading the capacity building of healthcare workers at the Sub County level, and guiding health facilities in the sub-county to adhere to the approved regulations (Bungoma County Health Services Act, 2019).

The community health committee (CHC) is one of the governing structures of Level 1 services which is the lowest tier of the health system in Kenya. Its role in planning and budgeting is to prepare and present the community health unit's (CHU) annual work plans and budget to the link facility health committee (Ministry of Health, 2020).

2.5 Knowledge and attitude of health managers on the annual health sector planning and budgeting process

One of the critical impediments to a successful health sector budgeting process is limited knowledge of the actors about the process. The actors engaged in the annual health sector planning and budgeting process who are knowledgeable contribute to the alignment of the budget to identified sectoral priorities as outlined in development and strategic plans (Barroy *et al.*, 2019; World Health Organization, 2016b). A qualitative study of two county level hospitals in Kenya conducted in 2013 revealed that the health managers had weak technical capacity for planning and budgeting (Barasa *et al.*, 2017). Unfortunately, it appears there has been minimal progress in enhancing the technical capacity of health managers over time. Recent studies conducted on health sector budgeting in Kenya revealed that health officials have inadequate technical capacities of the budget cycle (David *et al.*, 2020a), limited technical knowledge of the PBB, and how to meaningfully engage stakeholders and the community (Tsofa *et al.*, 2021).

Additionally, a similar study in Uganda revealed that health officials have limited knowledge and skills in using available evidence to inform the budgeting process (Henriksson *et al.*, 2017). An analysis of the processes involved in making decisions at the district health system in Tanzania following decentralization showed that health managers perceived that they lacked adequate technical capacities in health budgeting, which led to historical budgeting rather than using data and priorities as outlined in strategic plans (Kigume & Maluka, 2018). Likewise, a recent study examining the distribution of resources and establishment of health priorities in high-income countries, established that insufficient knowledge of the health decision-makers

contributed to the ad-hoc selection of health priorities, and consequently, resource allocations were based on historical allocations (Seixas, Regier, *et al.*, 2021).

The other actors engaged in health sector budgeting also have weak technical capacities to develop budgets for their units effectively. Although the technical decision-makers in the executive play a critical role in successful resource allocation and priority selection, their expertise in health sector planning and budgeting is limited as revealed in a qualitative study aimed at examining priority setting in Kenya following devolution (McCollum *et al.*, 2018). Proper stewardship and leadership of the process have been found to contribute to increased transparency and alignment of priorities with budgetary allocations (Tsofa *et al.*, 2016). An evaluation study of a project conducted in India aimed at improving community evidence-based planning and budgeting revealed that continued efforts aimed at capacity-building community structures around health planning contributed to an expanded and well-functioning participation of community representatives in the process (Shukla *et al.*, 2018).

However, the health facility management committees, which are essential representatives of the communities, have weak technical capacities to effectively develop budgets for their facilities (Kigume & Maluka, 2018). Beyond the articulated technical capacity challenges, the actors also lack a basic understanding of their roles and responsibilities and hence are unable to effectively undertake the planning and budgeting process (Appleford, 2017; Shukla *et al.*, 2018; Tsofa *et al.*, 2017).

2.6 Health managers' utilization of legal frameworks to guide the annual health sector planning and budgeting process

The legal framework that influences planning and budgeting differs from country to country. It is composed of the constitution that offers essential principles of public

finance, organic budget law that outline public financial management principles, and financial regulations. It is necessary for the actors engaged in health sector planning and budgeting to be aware of these frameworks to guide their practice (World Health Organization, 2016b).

Since devolution in Kenya, several legislations have been developed and institutionalized to direct the planning and budgeting process including the Constitution, the County Governments Act of 2012, and the Public Finance Management Act of 2012 (David *et al.*, 2020a). The Public Sector Finance is articulated in Chapter 12 of the Constitution of Kenya and it guides how revenue will be raised and shared equitably across both levels of government. It requires governments to provide breakdowns of their anticipated revenues and expenditures, distinguishing them as either recurrent or development expenses, as well as suggestions for funding anticipated deficits (Constitution of Kenya, 2010). Section XI of the County Governments Act obligates county governments to formulate county integrated development plans, county spatial plans, county sectoral plans, and cities and urban areas plans which provide the foundation for all resource allocation and spending (Government of Kenya, 2012a).

The Public Financial Management (PFM) Act of 2012 is an Act of Parliament that guides better administration of public financial resources for national and county governments. It guides the operationalization of Chapter 12 of the constitution on Public Sector Finance. The PFM Act also outlines a new budget calendar with precise deadlines and elucidates the roles and responsibilities of various actors in PFM. It provides for the use of PBB to guide government revenue allocation, planning, and budgeting to synchronize funds allocation and sector priorities (Government of Kenya, 2012b). Despite the availability of these legal frameworks, there has been minimal

dissemination of these documents to guide the actors in the process thus impeding their meaningful involvement (David *et al.*, 2020a).

2.7 Stakeholder engagement in the annual health sector planning and budgeting process

Other actors besides the health managers and state agencies that can influence the health sector planning and budgeting process include stakeholders for instance the public and civil society organizations (CSOs). Their engagement in the planning and budget-making process improves transparency and accountability (World Health Organization, 2016b) as well as promotes inclusivity, legitimacy, and acceptability of the process and its products (Razavi *et al.*, 2019).

2.7.1 Community engagement in the annual health sector planning and budgeting process

The public is an essential stakeholder in budgeting because the health systems serve them, and they pay for the resources used in running the health system through insurance, taxes, and user fees (Martin, 2007). Analysis of case studies from Asia and Africa shows that public engagement in the health sector planning and budgeting process significantly strengthens the accountability of the budget cycle (World Bank, 2013). Despite the advantages of engaging the public in health sector planning and budgeting as presented in the literature, a systematic review conducted on public engagement in priority-setting exercises revealed that the public was largely and consistently excluded from the process (Razavi *et al.*, 2020). In a 2012 survey of one hundred countries on the budgeting process, it was reported that the mean score for public engagement in the process was only 19 out of 100, while South Korea, which scored 92%, extensively implemented public participation (International Budget Partnership, 2012). The success of public participation in South Korea is attributed to

heightened social and political will and the close aligning of the public engagement process with all steps of the annual budgeting cycle (Kang & Min, 2013).

In Kenya, the health sector planning and budgeting process has progressively devolved over the years to engage citizens in decision-making. In the 2007/2008 financial year, the health sector budget was developed jointly with private organizations and civil society organizations, and in the 2008/2009 annual budgeting cycle, just after the roll-out of the community health strategy (Ministry of Health, 2006), the MOH further decentralized the process to actively engage the community led by community health workers (O'Meara *et al.*, 2011a). Citizen participation in local planning, budgeting, and decision-making was given prominence following devolution as described in Article 10 of the Kenyan constitution (Constitution of Kenya, 2010). The government has anchored the principle of public participation through legislation including the County Government Act and the Public Finance Management Act, which articulates modalities of involvement by establishing County Budget and Economic Forums (CBEF) (Government of Kenya, 2012a, 2012b). However, despite the legislative and Ministry of Health provisions for public engagement in health sector planning and budgeting, citizen participation is still minimal in most counties (Wainer, 2021).

In Kenya, community participation in health sector budgeting is conducted through engaging structures such as community health committees and hospital management committees (O'Meara *et al.*, 2011a). Nevertheless, challenges abound; for instance, besides engaging in the process, the healthcare priority needs they identify are not factored in the consolidated budget (O'Meara *et al.*, 2011a), inadequate structures to effectively mobilize and share information about the budget cycle with the public (David *et al.*, 2020a) and limited knowledge among the community members on their roles and responsibilities concerning the budgeting process (Mccollum *et al.*, 2018).

Although community participation is envisaged in law (Government of Kenya, 2012b), the health sector planning and budgeting process in the county is driven by the county health management teams using a top-down manner hence little participation of the primary care facilities (Tsofa *et al.*, 2021). Contrary to the situation in Kenya, decentralization in neighboring Tanzania has contributed to increased community participation in annual health sector planning and budgeting (Kinyenje Id *et al.*, 2022) though previously, their meaningful participation was impeded by limited knowledge and skills among the community health committees concerning the process (Kigume & Maluka, 2018).

2.7.2 Health partners' engagement in annual health sector planning and budgeting process

Development partners and non-governmental organizations (NGOs) are also crucial in the budgeting process, and health managers should welcome their engagement to enhance the effectiveness of the process. However, the inadequacies of the health managers to meaningfully engage the health partners in the budgeting process contributes to a scenario where the health partners' financial contributions and donations are off-budget (World Health Organization, 2016b). As indicated in the 2017 Oxford Business Group report on the status of Kenya's health system, though external donors fund approximately 35% of the health budget, up to 60% of those funds are off-budget and earmarked for specific vertical health interventions (Oxford Business Group, 2017). Likewise, the funding of Uganda's health care system is highly fragmented with health development partners off-budget estimated to be 76% (Abewe *et al.*, 2021).

The challenge presented by donors' off-budget contributions as noted by the World Health Organization (2016b), is the fragmentation of the health sector thereby complicating collective sector-wide planning and budgeting. Consequently, the Ministry of Health in its quest to enhance the engagement of health partners in planning and budgeting launched the health sector partnership and coordination framework in 2018. The framework aims to align health partners' support by facilitating joint consultative planning and budgeting to improve transparency and minimize duplication of funding (Ministry of Health, 2018a).

However, the progress seems to be minimal as evidenced in a study conducted in Kenya to analyze health sector planning, which established that the health partners at the county were not actively engaged in the budgeting process resulting in a lack of information regarding their resource investments in the final budget (David *et al.*, 2020b). Moreover, a review of health financing strategies in Bungoma County revealed that the county faced challenges in capturing NGO financial contributions during the budgeting process (Otieno *et al.*, 2014).

2.8 Use of evidence to inform annual health sector planning and budgeting process

Good quality and reliable data from health facilities and community structures are essential in enhancing health system strengthening. The World Health Organization (WHO) framework for health system strengthening has designated the Health Management Information System (HMIS) as one of its building blocks (WHO, 2007). The HMIS generates the bulk of its data from routine health service delivery and vital event statistics (WHO, 2008).

The data and evidence generated from the HMIS are useful in informing planning and budgetary allocations for health commodities, health financing, governance and leadership, infrastructural development, and investing in human resources for health for improved outcomes (Nabyonga-Orem, 2017; WHO, 2008). Despite there being an increasing availability of routine health information repositied in digitized platforms, it's utilization for targeted and evidence-informed decision-making is inadequate, especially in many LMICs (Lippeveld, 2017).

In a review of the literature to develop an evaluative framework to guide the priority setting and budgetary allocation exercises within the health sector, the utilization of quality data in the planning and budgeting process emerged as a significant facilitator of the process (Barasa *et al.*, 2015a). The incorporation of local data is important in the budgeting process as it reflects the realities of different contexts (World Health Organization, 2016b). In addition, health managers in a study in Uganda revealed that the use of verifiable information in planning enabled them to develop comprehensive work plans and improve dialogue among the stakeholders during the planning and budgeting process (Henriksson, 2017).

Despite the advantages of using evidence to inform health sector planning and budgeting, health departments continue to experience challenges on this front. A qualitative study conducted in Kenya at the Ministry of Health to analyze the planning and budgeting processes of the 2012/2013 financial year established that some of the impediments of the process included inadequate reliable and objective data to be used in target setting (Tsofa *et al.*, 2016).

These study findings correspond to a critical review carried out by Wickremasinghe *et al.*, (2016) whose purpose was to investigate how district health managers in developing countries use health information to guide decision-making. They experienced challenges such as unreliable data to inform the process. Additionally, a qualitative study on the bottlenecks of evidence-based district health planning that was conducted in Uganda identified inadequate and unreliable district-generated data as a key barrier to effective planning (Henriksson, 2017).

2.9 Transparency of the county health leadership towards the annual health sector planning and budgeting process

Transparency is an essential element of the annual health sector planning and budgeting process both in developed and developing nations as the openness and sharing of information, especially by the leaders, improve the process. A qualitative study examining priority-setting practices and budgetary allocations in high-income countries emphasized that transparency concerning the process and in decision-making strengthened the exercise (Seixas, Regier, *et al.*, 2021). Consequently, increased transparency from the leadership can contribute to effective resource allocation by all the stakeholders engaged in the health sector planning and budgeting process (Maluka, 2011). Likewise, a study done in Uganda reviewing the impact of an intervention to improve evidence based planning and budgeting at the district level, revealed that transparency makes the process less time-consuming and more participatory (Henriksson *et al.*, 2017).

Leadership and coordination are key in providing stewardship for the planning and budgeting process. Involvement of the leadership in the annual health sector planning and budgeting process has been demonstrated to assure the staff of inclusivity, objectivity, and fairness of the process (Barasa *et al.*, 2017). Similarly, an intervention

study in Zambia conducted to improve the health sector priority-setting practice established that transparency from the leadership and other decision-makers increased the fairness and quality of the process (Zulu *et al.*, 2014).

Qualitative research conducted in Kenya at the Ministry of Health headquarters to analyze the planning and budgeting processes of the 2012/2013 financial year found that the key drivers to the implementation of the process were objective leadership, guidance, and coordination (Tsofa *et al.*, 2016). A study examining priority-setting exercises in the county in Kenya revealed that there is minimal transparency from the leadership surrounding the rationale for decisions during the process (Waithaka *et al.*, 2018b). Unfortunately, this is still a challenge as reported in a recent appraisal of the county health system annual planning in Kenya that a lack of transparency from the county health system leadership made the health managers plan without all the necessary information (David *et al.*, 2020b). Inadequate transparency among the actors involved contributes to the misalignment of priorities and budgetary allocations and thus the non-achievement of plans (Glenngård & Maina, 2007). In other countries, the issue of inadequate transparency in the priority-setting and resource-allocation process in the health sector also poses a challenge. For instance, a study conducted in 2016 in Iran investigating the social values that guide priority settings reported that there was low transparency from the leaders of the process who did not explain the rationale of their decisions to the stakeholders (Mostafavi *et al.*, 2016). In Tanzania, despite the government developing guidelines and structures to enhance openness and accountability around the planning and budgeting process, it is yet to be realized (Maluka, 2011).

2.10 Alignment of the health sector planning and budgeting process

The alignment of public financial resources with national development priorities is an essential practice of a well-functioning PFM (Fritz *et al.*, 2014). In the health sector, the planning and budgeting process which provides an avenue for the operationalization of PFM involves the identification of sectoral priorities that inform the budgetary allocations for effective health services delivery (World Health Organization, 2016b). In the formulation of annual health sector plans and budgets, one of the key criteria for effective health sector planning and budgeting that needs to be followed by the health managers is compliance with national priorities as outlined in policies and development plans (Waithaka *et al.*, 2018b).

Ideally, the operational planning and budgeting processes should be synchronized to ensure alignment between identified health sector priorities and resource allocation (World Health Organization, 2016b). Development partners such as the World Bank have proposed systems to improve alignment including MTEF and PBB. Nevertheless, alignment between health sector planning and budgeting is yet to be achieved as the health sector budgets are still characterized by misalignment (Piatti-Fünfkirchen & Schneider, 2018). The misalignment contributes to the failure to achieve the health sector goals both in scope and level of funding (WHO 2018). Regionally, a study conducted in nine African countries to evaluate the status of implementation of MTEF which had been proposed by the World Bank as a remedy for misalignment, demonstrated that the disconnect between the priorities and budget was still a common occurrence (le Houerou & Taliercio, 2002).

Studies conducted in several African countries to investigate the status of implementation of PBB which was envisioned to be a significant solution towards misalignment have so far shown minimal improvements. There continues to be an

institutional separation in the implementation of PBB between the finance and health departments contributing to disjointed planning and resource allocation bringing about misalignment as demonstrated in Uganda (Abewe *et al.*, 2021), Gabon (Aboubacar *et al.*, 2020) and Ghana (Osei *et al.*, 2021).

Numerous studies have been conducted in Kenya to explore health sector planning and budgeting practices at the national, county, and health facilities. In a qualitative study conducted in 2012 just before devolution to examine the status of alignment between policy, planning, and budgetary allocation at the national level, Tsofa *et al.*, (2016) found that there was an institutional separation between health sector planning and budgeting process. This contributed to the development of the annual health sector budget before the annual health sector plan leading to misalignment between planning and budgeting.

In a qualitative study conducted between 2012 and 2014 to assess the initial impacts of decentralization on the health sector planning and budgeting, it was revealed that constitutional provisions such as community participation in the process did not seem to contribute to an improvement of historical misalignment of the process at least during the initial phases of devolution (Tsofa *et al.*, 2017). Several years following devolution, a qualitative study evaluating the health sector planning and budgeting practices in county public hospitals that were conducted in 2017 revealed that there still exists a misalignment between budgetary allocation and priorities identified in the annual health sector work plan (Barasa, *et al.*, 2017). In addition, a research study conducted in 2018 whose aim was to appraise the health sector planning and budgeting process at the county level in Kenya, established that the development of the annual health sector budget is not informed by the identified priorities hence a mismatch of resource allocation (Waithaka *et al.*, 2018b).

Further, in a recent study conducted in 2019 to appraise the county level planning and budgeting process, it was reported that the health managers did not comply with the stipulated planning and budgeting processes and therefore developed the annual budget before developing the AWP leading to misalignment between priorities and resource allocations (David *et al.*, 2020b). Similarly, a study evaluating the utility of PBB in Kenya found that the AWP are developed much later after the health sector budgets have been approved hence the two processes and documents are largely misaligned (Tsofa *et al.*, 2021).

2.11 Summary and Research Gap

The empirical studies reviewed herein have largely employed case study design and qualitative data collection methods. These studies have examined health sector planning and budgeting processes at isolated levels of the health system. Although health sector budget misalignment has been identified in the literature as a challenge, there is scanty literature on the causes of health budget misalignment.

Besides, though there exists in the literature frameworks that articulate the relevant conditions required for a successful priority-setting exercise, the operationalization and applicability of these frameworks have been challenging to the actors engaged in the process. The authors of the frameworks recognize that although the conditions in these frameworks are interdependent, their relative importance varies and thus recommend that they are measured to enhance their applicability (Barasa *et al.*, 2015a; Seixas, Regier, *et al.*, 2021). This study, therefore, measured the relative significance of proceduralist conditions as described in the framework developed by (Barasa *et al.*, 2015a).

Therefore, this research addressed an identified need and knowledge gap regarding the operationalization of developed frameworks for effective priority-setting processes. This was achieved by employing a mixed-methods approach to determine the relative significance of selected predictors of aligned annual health sector planning and budgeting process across all the planning and budgeting units of the health care system in Bungoma County, Kenya.

The originality of this research lies in measuring the hierarchy of the predictors using hierarchical multiple regression analysis to determine their relative significance. This measurement will be significant in guiding the prioritization of interventions aimed at improving the health sector planning and budgeting processes, particularly in resource-constrained regions.

CHAPTER THREE

MATERIALS AND METHODS

3.1 Introduction

This chapter covers the study area, the study design, the target population including the sample selection criteria, the data collection tools, and procedures as well as the data analysis and presentation.

3.2 Study area

The study was conducted in Bungoma County, which covers an area of 3032.4 KM² and is located in the Western region of Kenya (appendix 5). It is divided into ten sub-counties: namely Bumula, Cheptais, Kabuchai, Kanduyi, Kimilili, Mt Elgon, Sirisia, Tongaren, Webuye East, and Webuye West. It is the fifth most populous county in the country with a population of 1,670,535 (812,146 males and 858,389 females) (KNBS, 2019).

The county has 245 fully functional community health units (level 1), and 154 public health facilities (Ministry of Health, 2021a) as shown in Table 3.1 below.

Table 3.1: Number of community health units and public health facilities in Bungoma County

County	Level 1
Level 2-Dispensaries	125
Level 3-Health Centers	19
Level 4-Sub-county hospitals	10
Total	154

Source; (www.kmhfl.health.go.ke/ , accessed on 15th December 2021)

The county was purposively selected following findings of the county health budget analysis that showed the county's allocation to recurrent expenditure is among the highest in the country and has consistently been above 90% way above the recommended 70% (Government of Kenya, 2012b). The county's allocation to

recurrent increased from 91% in FY 2017/2018 to 94.2% in FY 2018/2019 then slightly reduced to 93.9% in FY 2019/2020 and 91% in FY 2020/2021 (Republic of Kenya, 2019, 2020, 2022) (Government of Kenya, 2012b). Further, its allocations for personnel emoluments comprise 68% of the recurrent expenditure contrary to the recommended 50 to 60 percent (Republic of Kenya, 2020). The essential health inputs use up only 10% of the recurrent allocation raising legitimate concerns about service delivery, expansion of the sector, and the overall attainment of health sector priority objectives (Republic of Kenya, 2020).

3.3 Study design

The study employed the philosophical assumptions of the pragmatic paradigm with a focus on the utilization of pluralistic methods in data collection and the practical implications of the findings of this research. The study utilized a descriptive cross-sectional study design.

The study employed a mixed-methods approach, which involved the incorporation of both quantitative and qualitative methods in data collection, analysis, and making inferences (Shorten & Smith, 2017). This approach was purposeful in drawing the robustness of both qualitative and quantitative methods and overcoming the limitations of either method if used independently.

Further, triangulation was adopted in integrating the findings of each method in the presentation and interpretation of the results to provide a comprehensive analysis of the annual health sector planning and budgeting process from the perspective of the health managers.

3.4 Study population

The study population consisted of health managers across all levels of the health system of the county health department involved in the annual health sector planning and budgeting process. They included executive members of the county health department, county health management team, sub-county health management team, health facility in-charges, and community health committee members.

3.4.1 Inclusion criteria

The inclusion criteria of the health managers included:

- Must be a county executive in the county department of health, a County Health Management Team member, a Sub-County Health Management Team member, a health facility in charge, and a member of the Community Health Committee.
- Must be working in the Bungoma County Department of Health and involved in the annual health sector planning and budgeting process for at least one fiscal year.
- The community health committee members must belong to a functional community health unit.

3.4.2 Exclusion criteria

The exclusion criteria for health managers included:

- Health managers who meet the inclusion criteria but were not on duty during the time of the study.
- Health managers who are not engaged in the annual health sector planning and budgeting process

3.5 Study variables

These are attributes of aspects of the study that the researcher measures to test for cause-effect relationships.

3.5.1 Independent variables

The independent variables included the health managers' knowledge and attitudes on the planning and budgeting process, stakeholder engagement, use of evidence, and transparency of the leadership. The control variables were the level of education and length of experience of the health managers.

3.5.2 Dependent variable

The dependent variable was evidence informed program-based health sector budget aligned with sector priorities.

3.6 Sampling design

The study employed a multistage sampling technique. Initially, stratified sampling was conducted using the 10 sub-counties as strata. In the second stage, the strata were based on the level of management and the level of the health facility.

The senior leadership of the county department of health, including the county executive committee member for health, chief officer of health, and the county director of health, county health management teams, sub-county health management teams, and in-charges of level four facilities were purposively selected. On the other hand, simple random sampling was used to recruit the in-charges of health centres, dispensaries, and community health committees that were included in the study.

This method ensured maximum variation in content and study participants hence diverse perspectives about the process, which provided a wealth of information on

planning and budgeting processes within the county health system (Polit & Beck, 2017).

3.7 Sample size determination

Because the study focused on the diverse levels of health managers with varying population sizes and thus heterogeneous, different sample size determination methods were employed. The complete enumeration method was used to recruit the executive members of the county health department, CHMTs, SCHMTs, and in-charges of sub-county hospitals (level 4) because they comprise a small segment of the entire population of health managers.

The in-charges of level 2 and 3 health facilities that were included in the study were determined using the following formula recommended by WHO for service availability and readiness assessments (SARA) for health facilities of which health sector planning and budgeting is inclusive (World Health Organization, 2015) and as indicated below

$$n = \frac{[(z^2 * p * q) + ME^2]}{[ME^2 + z^2 * p * q / N]} * d$$

where:

n = sample size

z = confidence level at 95% (1.96)

ME = margin of error (0.15)

p = the anticipated proportion of health managers with the attribute of interest (0.5)

q = 1-p

N = population size

d = design effect (1.0)

The sample size for Level 2 health facilities

$$n = \left[\frac{(1.96^2 * 0.5 * 0.5) + 0.15^2}{0.15^2 + 1.96^2 * 0.5 * 0.5 / 125} \right] * 1.0$$

$$n=32$$

The sample size for level 3 health facilities

$$n = \left[\frac{(1.96^2 * 0.5 * 0.5) + 0.15^2}{0.15^2 + 1.96^2 * 0.5 * 0.5 / 19} \right] * 1.0$$

$$n=13$$

The level 2 and 3 sample sizes were increased by 10% to 35 and 15 respectively following the recommendation of WHO (2015) in sampling for health facility assessments to account for anticipated non-responses.

Further, proportionate stratification was used to determine the sample sizes of level 2 and 3 health facilities in-charges in each sub-county using the formula below:

$$n_h = (N_h / N) * n$$

where n_h is the sample size for stratum h , N_h is the population size for stratum h , N is the total population size, and n is the total sample size.

The CHMT is made up of 10 members while the SCHMT is comprised of 10 members per sub-county (Bungoma County Health Services Act, 2019; Ministry of Health, 2018b). Therefore, the total number of health managers that were recruited for the quantitative data collection was 170, as indicated in Table 3.2 below.

Table 3.2: Health managers per sub-county for quantitative data collection

Sub-county	Level 2	Level 3	Level 4	SCHMT	CHMT	Total
Bumula	4	2	1	10	0	17
Cheptais	3	1	1	10	0	15
Kabuchai	4	2	1	10	0	17
Kanduyi	4	1	1	10	10	26
Kimilili	3	2	1	10	0	16
Mt. Elgon	4	1	1	10	0	16
Sirisia	3	2	1	10	0	16
Tongaren	4	2	1	10	0	17
Webuye East	3	1	1	10	0	15
Webuye West	3	1	1	10	0	15
Total	35	15	10	100	10	170

Sample size determination for the community health committees was guided by the attainability of data saturation. This refers to a state where sampling has been done to the point where there are no new emerging viewpoints from the study participants (Moser & Korstjens, 2018). The CHC being a homogenous study population, eight focus group discussions were sufficient to achieve data saturation (Hennink & Kaiser, 2022). Each CHC consists of 11 members and therefore 88 FGD discussants were invited to participate.

3.8 Data collection instruments

The researcher developed the instruments used to collect data and employed various data collection methods to triangulate findings and enhance rigor. The semi-structured questionnaire was used for quantitative data collection, while key informant interviews and focus group discussions were conducted for qualitative data collection.

The semi-structured interviews were used to collect data from the health facility health managers while the key informant interviews were conducted with the county executives in the department of health. Members of the community health committees from functional community health units in the county were selected to participate in

the focus group discussions. The researcher developed all the data collection tools based on the variables of the study objectives, the study conceptual framework, and themes from the literature review. Additionally, the key informant interview guide and focus group discussion guide were created using a deductive approach, in which the variables of the study informed the formulation of the questions.

The semi-structured questionnaire was administered on Android operating system devices using the KoboCollect mobile application. KoboCollect is the world's most popular free and open-source software designed to collect, manage and visualize data in challenging settings (Kobo Inc, 2022). The use of KoboCollect for data collection enables the capture, entry, and storage of data in real-time, thereby minimizing errors during the data collection and entry process. This method of data collection has several benefits over the traditional paper-based method including reduced costs, increased speed and efficiency of the survey, and assurance of collecting quality data (Lakshminarasimhappa, 2022). Skip logic patterns and controls were incorporated into the data input forms to guarantee data quality and completeness. To safeguard the security of the collected data, the password for the KoboCollect server located at <https://www.kobotoolbox.org/>, where the data was uploaded after collection, was exclusively kept by the researcher.

The following data collection tools were utilized to achieve each objective, as explained in more detail below:

Objective 1: Knowledge of health managers on the annual health sector planning and budgeting process

The semi-structured interviews were used to collect data from the CHMT, SCHMT, and in-charges of level 2, 3, and 4 health facilities. The data collected included their knowledge of the budget cycle and procedures and budget-making activities. Relating to the legal frameworks, the health managers were asked whether the documents have been disseminated, if they have access to them, and if they use them to inform annual planning and budgeting for instance the County Government Act, Public Financial Management Act, and the budget circulars.

Objective 2: Attitudes of health managers toward the annual health sector planning and budgeting process

The attitude of health managers on their perceptions of the annual health sector planning and budgeting processes was measured using a 5-point Likert scale whose responses ranged from 1 - strongly disagree to 5 - strongly agree.

Objective 3: Engagement of stakeholders in the health sector planning and budgeting process

To achieve this objective, semi-structured interviews and focus group discussions were used to collect data on the categories of stakeholders engaged in the process, the framework for engaging them, and the challenges faced in the involvement of the stakeholders. The data was collected using a 5-point Likert scale whose responses ranged from 1 - strongly disagree to 5 - strongly agree. This data was triangulated with findings from key informant interviews on county practices on stakeholder engagement.

Objective 4: Use of evidence in informing the annual health sector planning and budgeting process

The data to attain this objective was collected from focus group discussions, key informant interviews, and semi-structured interviews. The variables included the type of evidence used, its availability, challenges in accessibility, and health managers' capacity to use data to inform planning and budgeting.

Objective 5: Transparency of the county health leadership toward annual health sector planning and budgeting process

The researcher administered questionnaire and focus group discussion guides were used to collect data on the transparency of the annual health sector process. The variables included procedures for information sharing about the process and the feedback mechanisms used throughout all the planning and budgeting units of the county health system.

3.9 Pilot study

Before the main study, a pilot study was conducted to test the data collection tools and assess the feasibility of the proposed data collection procedures. A pilot study refers to a rehearsal of the main study aimed at identifying any weaknesses of the study instruments and the study techniques (Polit & Beck, 2017) to determine the possible need to reframe the questions and improve the study procedures. A pilot study conducted with a sample size ranging from 1% to 10% of the main study sample size is adequate as recommended by Mugenda & Mugenda (2009).

Following this guidance, 17 health managers from Trans-Nzoia County, representing 10% of the study sample size were recruited for pilot testing. The pilot study was conducted for 2 days on the 12th and 13th of September 2022 and all the sampled health

managers responded to the semi-structured questionnaire translating to a 100% response rate. In addition to responding to the questionnaire, the study participants were also requested to submit any comments regarding the content and design of the items in the questionnaire.

The findings of the pilot test informed the improvement of the presentation, order of items, coherency, and comprehensibility of the semi-structured questionnaire to avoid ambiguity. Additionally, the pilot test provided an opportunity for the research assistants to familiarize themselves with the data collection instrument. Finally, the results were also used in determining the reliability of the items within the various scales of measurement.

Data collection was conducted by three research assistants who underwent a 3-day training from 5th September to 7th September 2022 on aspects of data collection such as interviewing techniques, accurate recording, transcription, ethical issues, and data management. They were also trained on how to administer the semi-structured questionnaire using the KoboToolbox software. The software was designed to upload and submit only the semi-structured questionnaires that had been duly and fully completed. The researcher reviewed the uploaded data daily for accuracy, completeness, comprehensibility, and consistency. The data was collected from 22nd September to 21st October 2022. By the end of the survey, 170 fully completed semi-structured questionnaires had been submitted via the KoboToolbox application.

3.9.1 Reliability of the instruments

The pilot study results were utilized to determine the reliability of the questionnaire which comprised six scales and 41 items using Cronbach's alpha statistic. The attitude of health managers and use of evidence scales had seven items each, while the scales

of community engagement, health partners engagement, and transparency of the leadership had eight items each, and alignment of the health sector plan and budget scale had three items.

One commonly used measure of reliability is Cronbach's alpha, which ranges from 0 to 1. A higher value of Cronbach's alpha indicates a greater degree of internal consistency among the items in the scale (Taherdoost, 2016). According to Gliem & Gliem (2003), when calculating Cronbach's alpha statistic for Likert-scale data as is the case in this study, it is essential to calculate and report separately for all the various scales in the instrument. As indicated in Table 3.3, the reliability analysis revealed that the Cronbach's Alpha (α) of the scales in the semi-structured questionnaire ranged from .71 to .90 which is within the acceptable levels of internal consistency based on Taherdoost (2016). Therefore, the high internal consistency of the items within their respective scales indicated that the questionnaire was reliable.

Table 3.3: Cronbach's Alpha statistics for the scales used in the questionnaire

Scale	No. of items	Cronbach's Alpha (α)
The attitude of health managers	7	.71
Community engagement	8	.84
Health partners engagement	8	.89
Use of evidence	7	.90
Transparency of the leadership	8	.85
Alignment of health plan and budget	3	.88

3.9.2 Validity of the instruments

Validity refers to the extent to which a data collection tool precisely measures the intended variable or construct (Taherdoost, 2016). To attain content validity for the data collection instruments, a comprehensive literature review was carried out to obtain relevant items to measure the variables as depicted in the conceptual framework. Similarly, expert opinions from the supervisors on the clarity, readability,

relevance, and comprehensiveness of the instruments were sought and thus established face validity. Further, the research instruments were pre-tested as described in section 3.8 to check for the comprehensiveness and coherency of the items. To enhance the generalizability of the findings, all planning and budgeting units in the county health system were covered in the study.

3.10 Data collection procedures

The following section outlines the procedures that were utilized in collecting data with the aforementioned instruments.

3.10.1 Key informant interviews

After identifying the county executive in the county department of health, the research assistant took the respondent through the informed consent form. If they agreed to take part in the study, they were asked to sign the consent form. Next, they were prompted to respond to the questions on the key informant guide, while the research assistant took notes and audio-recorded the responses for accuracy.

3.10.2 Semi-structured questionnaire

Following the identification of the health managers, their consent was obtained by taking them through the informed consent form. If they agreed to take part in the study, they were requested to sign the consent forms. Thereafter, they were asked to respond to the questions while the research assistant recorded their responses in the KoboToolbox Mobile Application.

3.10.3 Focus group discussions

A focus group discussion guide was utilized to conduct focus group discussions. The participants of the focus group included members of the community health committees. The focus group discussions were led by a moderator and audio-recorded for accuracy and later transcribed.

3.11 Data presentation and analysis

The survey data uploaded in KoboToolbox was exported into Microsoft Office Excel where it was cleaned, coded, and examined for consistency. Following this, the data was imported into the statistical package for social sciences (SPSS v. 29.0), where both descriptive and inferential analysis was performed. Descriptive statistics for instance means, standard deviations, and percentages were presented in graphs and tables. The chi-square test for independence was conducted to test for the associations between training and demographic characteristics of the health managers and their knowledge level. The percentages of the Likert scale responses were presented using a diverging stacked bar chart. Additionally, hierarchical multiple regression analysis was employed to determine the relative significance of the independent variables in relation to the dependent variable.

Before performing the hierarchical multiple regression analysis, diagnostic tests to ascertain normality, multicollinearity, linearity, and homoscedasticity were conducted on the data set to assess the fit of the regression assumptions and to ensure data validity.

A seven-stage hierarchical multiple regression was performed by building successive blocks of linear regression models to determine the relative significance of the independent variables: knowledge, attitude, community involvement, health partners engagement, use of evidence, and transparency against the dependent variable:

development of aligned health sector budgets after statistically controlling for the effects of education level and length of experience in a management position of the health managers.

The rationale for this is to establish whether the successive model describes the dependent variable better than the preceding model. If there is a statistically significant difference in R^2 between a preceding model and a successive model, it indicates that the added independent variables in the successive model can explain the variation in the dependent variable above and beyond what was explained by the independent variables in the preceding model. Further, the standardized regression coefficients were used to determine the relative significance of each predictor variable. The higher the absolute value of the standardized regression coefficient, the stronger the effect of the predictor variable on the dependent variable.

The equation that was used to conduct the hierarchical multiple regression analysis is shown below:

$$y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \dots + \beta_p X_{ip} + \epsilon$$

where, for $i=n$ observations:

y_i = dependent variable

X_i = Independent variables

β_0 = y-intercept (constant term) when all the independent variables have values of 0

β_1 = Regression coefficients for each independent variable

ϵ = the model's error term (also referred to as the residuals)

The following linear regression models were analyzed:

Model 1: Aligned Health Sector Budget = Constant + Experience + Education level

Model 2: Aligned Health Sector Budget = Constant + Experience + Education level
+ Knowledge

Model 3: Aligned Health Sector Budget = Constant + Experience + Education level
+ Knowledge + Attitude

Model 4: Aligned Health Sector Budget = Constant + Experience + Education level
+ Knowledge + Attitude + Community involvement

Model 5: Aligned Health Sector Budget = Constant + Experience + Education level
+ Knowledge + Attitude + Community involvement + Health partners engagement

Model 6: Aligned Health Sector Budget = Constant + Experience + Education level
+ Knowledge + Attitude + Community involvement + Health partners engagement +
Use of evidence

Model 7: Aligned Health Sector Budget = Constant + Experience + Education level
+ Knowledge + Attitude + c + Use of evidence + Transparency of the leadership

A thematic approach was used to analyze the qualitative data by developing main themes and sub-themes based on the variables in the study objectives and conceptual framework. After transcribing the digitally recorded data, all the transcripts were read to search for more emergent themes. The scripts were then imported into NVIVO-12 software for coding. Coding refers to identifying and categorizing related responses from the participants as interpreted by the researcher (Sutton & Austin, 2015). Theming involves assembling codes from the transcripts to present the information logically (Sutton & Austin, 2015).

Table 3.4 below lists the specific objectives, techniques of data presentation, and data analysis that was conducted.

Table 3.4: Techniques of data presentation and data analysis

Objective	Data Analysis	Data Presentation
1: Knowledge of health managers	Mean, standard deviation, frequencies, percentages, and Chi-square test of independence	Tables, bar graphs Text
2: Attitude of health managers	Thematic analysis	
3: Level of Stakeholder engagement	Frequencies and percentages	Tables, bar graphs Text
4: Use of evidence	Thematic analysis	
5: Transparency		
Determining relative significance of predictor variables	7- stage Hierarchical multiple regression analysis	Tables

3.12 Logistical and ethical considerations

Authorization to conduct the research was obtained from the MMUST Directorate of Postgraduate Studies (DPS) (appendix 6) and ethical approval and clearance was sought from the MMUST Ethics and Research Committee (appendix 7). The research license was granted by the National Council for Science and Technology (NACOSTI) (appendix 8), and authorization to undertake the research in Bungoma County was permitted by the county director of health (Appendix 9).

The following ethical principles were upheld in the study as follows: (appendix 1)

Autonomy: The study participants were informed of the study objectives, methodology, procedures, and benefits. They were then invited to voluntarily sign the informed consent form for participation in the study and audio recording. Participants were permitted to withdraw from the study at any point during the research process. Additionally, the respondents were given the contact information of the principal investigator for further inquiries about the study.

Beneficence and maleficence: The study did not entail any risky or invasive procedures for the respondents. The researchers explained the benefits of participating in the study and ensured that the respondents comprehended the information provided before seeking informed consent.

Confidentiality and data protection: The study participants were assigned codes instead of names to ensure confidentiality and anonymity throughout the collection and analysis of data. To protect the privacy of the respondents during data collection and analysis, neither the names of health facilities nor the key informants were mentioned in the report. The collected data was securely stored by the researcher under lock and key. Additionally, the soft copy of the data was saved on password-protected computers and encrypted to ensure its safety.

CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter presents the analysis of the data collected from the respondents in the study area. The results comprise of socio-demographic characteristics of the respondents and predictors of the development of evidence-informed annual health sector planning and budgeting process. The predictors include knowledge and attitude of health managers' utilization of legal frameworks, level of stakeholder engagement, use of evidence, and transparency of the leadership.

To examine the relative significance of each predictor variable on the development of an aligned annual health sector plan and budget, quantitative data was cleaned, and analyzed using the statistical package for social sciences (SPSS v. 29.0) and later exported to Microsoft Excel for visualization.

The qualitative data were transcribed verbatim, then the scripts were imported to NVIVO-12 for coding and later analyzed thematically. Hierarchical multiple regression analysis was performed to determine the relative significance of each predictor variable on the development of an aligned annual health sector plan and budget to develop a hierarchy of interventions that may be implemented by the health managers to improve the annual health sector planning and budgeting process.

The study targeted 170 health managers drawn from all levels of the county health system, three county health executives, and 88 FGD discussants drawn from 8 CHCs. All the health managers and county health executives responded to their respective data collection tools translating to a 100% response rate while (94%) 83 out of the expected 88 CHC members participated in the FGDs. According to Mugenda &

Mugenda (2009), a response rate exceeding 50% is sufficient for statistical analysis and reporting therefore the 100% and 94% response rates achieved in this study were excellent for data analysis and reporting.

4.2 Demographic characteristics of the respondents

The total number of health managers who were interviewed for the quantitative data was 170 of whom 51.8% were males while 48.2% were females. Nearly half of the health managers (47.6%) were aged between 35-44 years and the mean age was 42 ± 6.76 . The majority of the health managers had a diploma level of education at 48.2%. A greater proportion of the health managers interviewed were sub-county health managers at 58.8%. Most of the health managers had over five years of experience in management at 62.9%. Table 4.1 below shows the demographic profile of the respondents.

Table 4.1: Demographic profile of the respondents

Sample characteristics	Frequency (n=170)	Percent (%)
Sex		
Male	88	51.8
Female	82	48.2
Age		
	Mean age = 42 ± 6.76	
25-34	18	10.6
35-44	81	47.6
45-54	63	37.1
55-64	8	4.7
Level of education		
Diploma	82	48.2
Degree	76	44.7
Masters	11	6.5
Ph. D	1	0.6
Category of health manager		
County health managers	10	5.9
Sub-county health managers	100	58.8
Health facility managers	60	35.3
Experience in a management position		
< 5 years	63	37.1
\geq 5 years	107	62.9

Note. The County health managers make up the CHMT and are responsible for the strategic management of the county health services delivery. The sub-county health managers make up the SCHMT and they undertake the operational management and coordination of services within the sub-counties. The health facility managers are heads of levels 2,3,4 and 5 health facilities in charge of the routine running of the facilities.

The findings of the semi-structured interview were triangulated by conducting key informant interviews with three county department of health executives and eight FGDs. The FGDs were conducted with 83 CHC members (75 females, 8 males) who all had basic literacy skills. They represented eight functional community health units all of which have been operational for over 10 years having been established in 2010.

4.3 Objective 1: Knowledge of health managers on the annual health sector planning and budgeting process

The health managers were asked to report on whether they have been trained in the annual work planning process and program-based budgeting. They were also asked if the Ministry of Health planning and budgeting guidelines have been disseminated to them and provided with copies. Further, they were assessed on their knowledge of the process by responding to 11 questions on planning, budgeting, and legal frameworks that are used to inform the process. Finally, they were asked about their use of the available legal frameworks while developing the annual plan and budget.

4.3.1 Training of the health managers on the annual health sector planning and budgeting process

As illustrated in Figure 4.1 majority of the health managers representing 58% reported that they had not been trained on the annual work planning process. Similarly, 81% reported that they had not been trained in program-based budgeting.

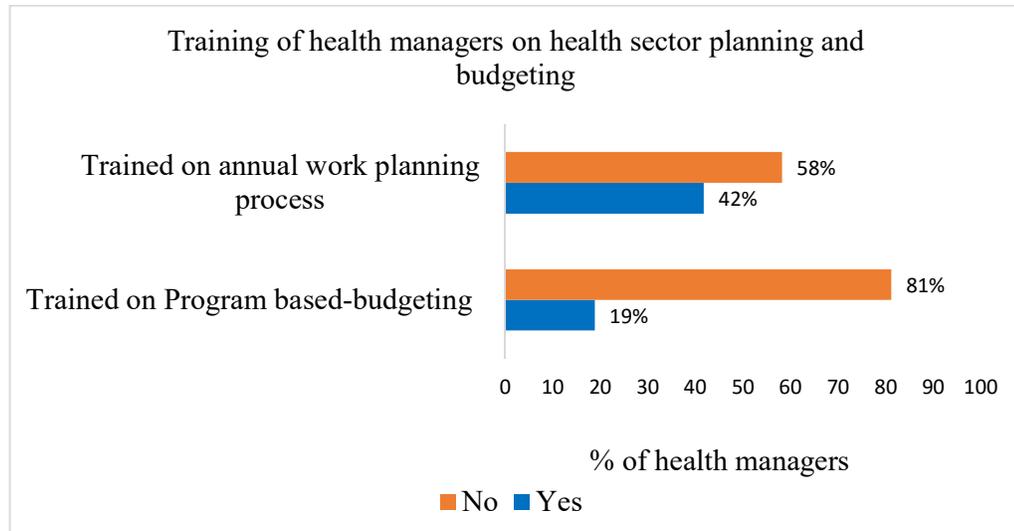


Figure 4.1: Training of health managers on health sector planning and budgeting

The respondents of the KIIs and FGDs expressed concerns over a few health managers trained in the annual health sector planning and budgeting process and the challenges faced.

“Due to limited funds, most of the health managers across the different levels of the county health system have not been trained on annual health sector planning and budgeting process.” KII-3.

“Even though the materials and information on annual health sector planning and budgeting are available on the Ministry of Health website, it is the responsibility of the county department of health leadership to design structured and sustained programs to train the health managers at the different levels on annual health sector planning and budgeting process which is yet to be achieved.” KII-1

“We are expected to participate in the development of annual plans and budgets however, we have not been trained on the annual health sector planning and budgeting process and how to complete the template.” FGD-5

4.3.2 Knowledge of the health managers on the annual health sector planning and budgeting process

Health managers who obtained a score of at least 8 out of 11 and above on questions evaluating their understanding of planning, the budgeting cycle, and actors involved, as well as the utilization of legal frameworks, were categorized as knowledgeable. From the findings, less than half of the health managers representing 42.4% were found to be knowledgeable about the annual HSPB process.

A Chi-square Test of independence was conducted to assess the relationship between health managers' training on the annual work planning process and their level of knowledge. Before that, the assumptions of Chi-square were verified including that the sample comprised independent observations and the that the expected frequencies in each cell exceeded 5. A p value less than .05 indicated statistical significance.

There was a significant relationship between the training, $\chi^2 (1, N=170) = 94.76, p <.001$, and the knowledge level of the health managers on the annual health sector planning and budgeting process as illustrated in Table 4.2.

Table 4.2: Association between training and knowledge level of health managers

Characteristic	Grouping	Knowledgeable (n=170)		Total	p value
		Yes	No		
Trained	Yes	61 (84.7)	10 (10.2)	71 (41.8)	<.001
	No	11 (15.3)	88 (89.8)	99 (58.2)	
	Total	72 (42.4)	98 (57.6)	170 (100)	

Note. $\chi^2 (1) = 94.76, p <.001$

Further analysis revealed that the knowledge level varied across the different demographic characteristics of the health managers. The majority of those who had over 5 years of management experience and those with a degree level of education were more knowledgeable at 68.1%. and 61.1% respectively. Slightly more than half of the males at 52.8% and 65.3% of those aged above 40 years were more knowledgeable.

A Chi-square Test of independence was conducted to determine the association between each demographic characteristic and the knowledge level of the health managers after validating its assumptions (the sample comprised independent observations and the count in each cell exceeded 5). A *p* value less than .05 indicated statistical significance.

There was a significant association between the level of education, $\chi^2(1, N=170) = 4.37, p = .037$, and the knowledge level of health managers on annual HSPB. However, there was no significant association between age, $\chi^2(1, N=170) = 2.55, p = .111$, sex, $\chi^2(1, N=170) = .051, p = .821$, experience $\chi^2(1, N=170) = 1.40, p = .237$ and the level of knowledge among the health managers Table 4.3

Table 4.3: Association between demographic characteristics and level of knowledge of health managers

Characteristics	Grouping	Knowledgeable (n=170)		Total	p value
		Yes	No		
Sex	Male	38 (52.8)	50 (51.0)	88 (51.8)	.821
	Female	34 (47.2)	48 (49.0)	82 (48.2)	
	Total	72 (100.0)	98 (100.0)	170 (100.0)	
Age	≤ 40 years	25 (34.7)	46 (46.9)	71 (41.8)	.111
	≥ 40 years	47 (65.3)	52 (53.1)	99 (58.2)	
	Total	72 (100.0)	98 (100.0)	170 (100.0)	
Education level	Diploma	28 (38.9)	54 (55.1)	82 (48.2)	.037*
	Degree and above	44 (61.1)	44 (44.9)	88 (51.8)	
	Total	72 (100.0)	98 (100.0)	170 (100.0)	
Experience	< 5 years	23 (31.9)	40 (40.8)	63 (37.1)	.237
	> 5 years	49 (68.1)	58 (59.2)	107 (62.9)	
	Total	72 (100.0)	98 (100.0)	170 (100.0)	

Note. * $p < .05$.

One of the key informants commented on the inadequate knowledge of health managers on health sector planning and budgeting, he said: *“Health managers, especially at the sub-counties and health facilities, struggle a lot to participate effectively in the development of annual health sector plan and budget due to inadequate knowledge and skills about the process.”* KII-2.

4.3.3 Dissemination and provision of planning and budgeting guidelines to health managers

When the respondents were asked whether the MoH planning and budgeting guidelines had been disseminated to them, the majority of them representing 59% said no. Additionally, 62% of the respondents reported that they had not been provided with the copies of these guidelines as shown in Figure 4.2 below.

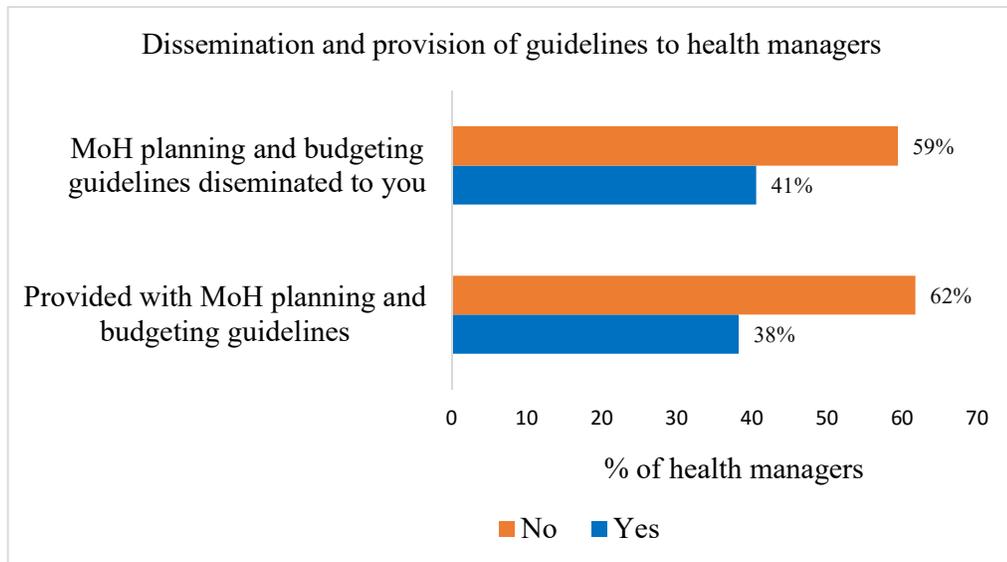


Figure 4.2: Dissemination and provision of guidelines to health managers

Note. The Ministry of Health (MoH) planning and budgeting guidelines refer to a process guide to the annual performance review, planning, and budgeting process to be used by the health managers to assist in the alignment of the processes.

The key informants as well as the FGD participants expressed similar views about the dissemination and provision of MoH planning and budgeting guidelines.

“The MoH planning and budgeting guidelines have not been disseminated to us nor have we ever seen them.” FGD-4

“Since the MoH planning and budgeting guidelines are online (MoH website) we expect the health managers through personal initiatives to download and familiarize themselves with the guidelines, however, this is largely uncommon.” KII-1

4.3.4 Health managers use of legal frameworks to inform the annual health sector planning and budgeting process

When respondents were asked whether they use the available legal documents to guide the formulation of the annual health sector plan and budget, only 46.5% reported that they used the legal frameworks, and of these, only 40.5% had been sensitized on the provisions outlined in these legal documents as indicated in Table 4.4 below.

Table 4.4: Use of legal frameworks by the health managers

Variable	Frequency		Total
	Yes	No	
Use of legal frameworks	79 (46.5)	91 (53.5)	170 (100.0)
Sensitized on legal frameworks	32 (40.5)	47 (59.5)	79 (100.0)

Note. Legal frameworks refer to the available legislations for use by health managers to guide the planning and budgeting process such as County Governments Act and Public Financial Management Act.

A Chi-square test of independence was conducted between the knowledge status of health managers and the use of legal frameworks. There was a significant association between the two variables, $\chi^2(1, N=170) = 53.67, p < .001$. The knowledgeable health managers were likely to use legal documents in developing the annual plans and budgets as illustrated in Table 4.5

Table 4.5: Association between the knowledge level of health managers and the use of legal frameworks

Characteristics	Grouping	Use of legal frameworks (n=170)		Total	p value
		Yes	No		
Knowledgeable	Yes	57 (72.2)	15 (16.5)	72 (42.4)	<.001
	No	22 (27.8)	76 (83.5)	98 (57.6)	
	Total	79 (100.0)	91 (100.0)	170 (100.0)	

Note. $\chi^2(1) = 53.67, p < .001$

The views below from the key informants further illustrate the inadequacy of the utilization of the legal frameworks in informing the planning and budgeting process among health managers.

“It seems that the health managers fear reading budget documents, they usually have no motivation to familiarize themselves with these legal documents.” KII-2

“The legal documents are mostly used by the finance department.” KII-3

4.4 Objective 2: Attitude of health managers toward the annual health sector planning and budgeting process

To assess the attitude of the health managers towards the annual HSPB process, a 5-point Likert scale consisting of seven items whose responses ranged from 1 (*strongly disagree*) to 5 (*strongly agree*) was used.

As visualized in Figure 4.3, The majority of the health managers tended to agree that annual HSPB is essential for their units (93%) and that their participation is beneficial (92%). However, less than half of them (40%) affirmed that they were motivated to actively participate in the process and 78% disagreed that they had a positive attitude toward the process.

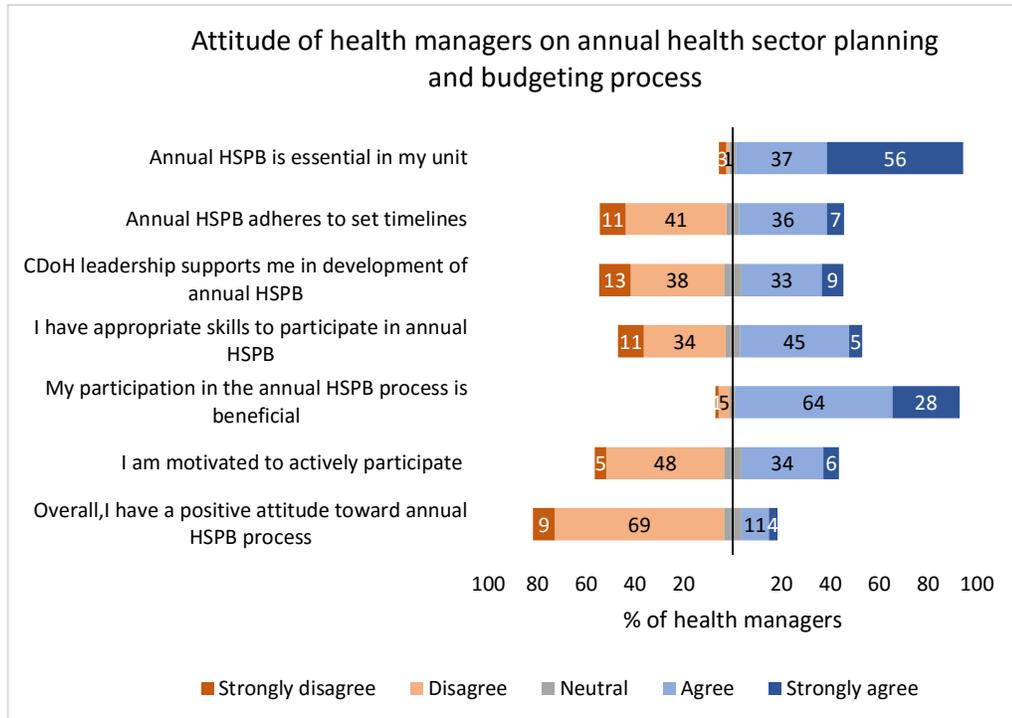


Figure 4.3: Attitude of health managers on annual health sector planning and budgeting process

The key informants and focus group discussants expressed similar views concerning their attitude toward the annual HSPB as reported below.

“It is demotivating to participate in the process, as our proposed views are later changed at the treasury without any explanations.” KII-3

“We feel demotivated and forgotten in this process, we are uninformed about the process, and it has left us with a negative attitude towards engaging in the process.”

FGD 6.

“The health managers feel disenfranchised from the process because even though they provide their views, more often than not, those views are not included in the final approved budget, as the budget is further rationalized at the treasury.” KII-2

4.5 Objective 3: Level of engagement of stakeholders in the annual health sector planning and budgeting process

This study focused on assessing two categories of stakeholders engaged in the annual health sector planning and budgeting process namely the community and health partners (NGOs). When the health managers were asked to name the categories of stakeholders they involve in the process, the majority at 79% mentioned the community followed by health partners at 68% as displayed in Figure 4.4 below.



Figure 4.4: Categories of stakeholders involved in annual health sector planning and budgeting

4.5.1 Community engagement in the annual health sector planning and budgeting process

The respondents were asked which community level structures were involved in the annual HSPB process, and as shown in Figure 4.5 below, 77% of the health managers reported that they involved the community health units (CHU) whereas only 4% were not aware of any community level structures involved in the process.

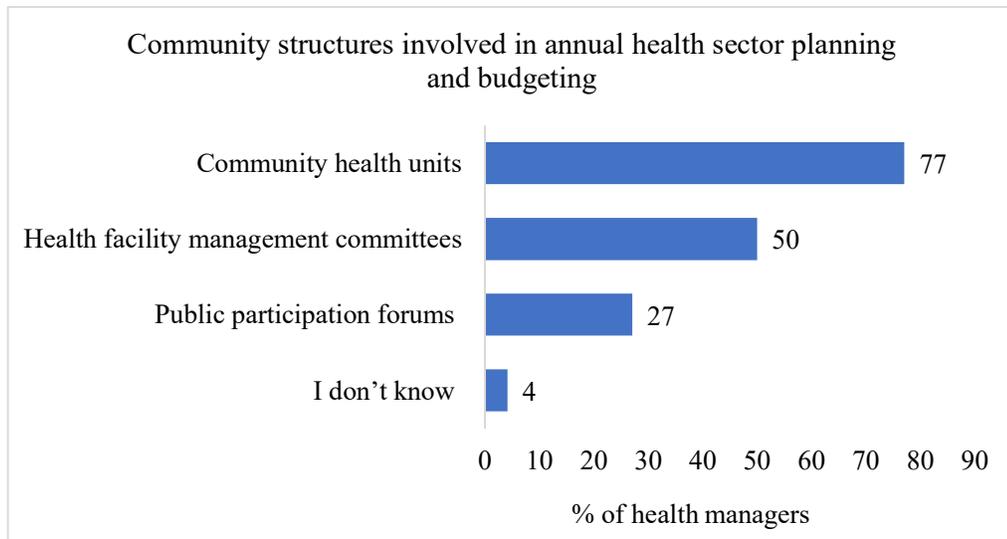


Figure 4.5: Community structures involved in annual health sector planning and budgeting

Commenting on the community structures involved in the annual HSPB, one of the key informants said, *“over 90% of the county is covered by community health units that participate in the annual planning and budgeting, their plans and budgets are submitted to the link facilities then consolidated in the sub-county plan and budget.”* KII-3.

Another said, *“the most common structure used for community engagement in the annual HSPB process is the Community Health Unit.”* KII-1

When asked about the level of community health unit engagement in the process, over half of the respondents rated the engagement as low representing 54% as shown in Figure 4.6 below.

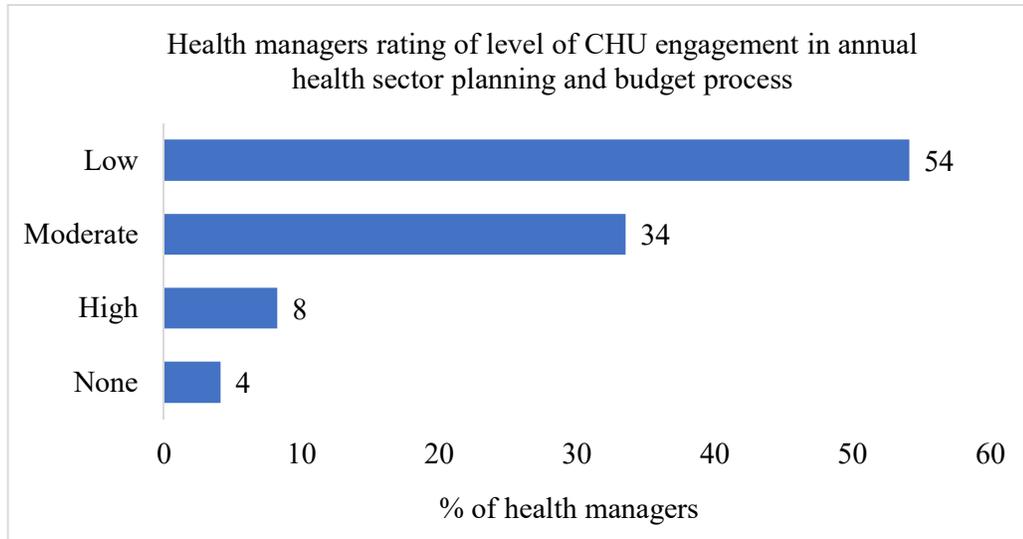


Figure 4.6: Health managers' rating of the level of CHU engagement in annual health sector planning and budget process

To further assess the CHU engagement in the annual HSPB process, a 5-point Likert scale consisting of eight items whose responses ranged from 1 (*strongly disagree*) to 5 (*strongly agree*) was used. As shown in Figure 4.7 below, although the majority of the health managers reported that CHU engagement in the annual HSPB is beneficial (87%), only 11% of them were satisfied with overall CHU engagement in the process.

Slightly more than half of the health managers (51%) disagreed that the CHUs have the necessary skills to effectively engage in the process. Similarly, 53% disagreed that an adequate budget is allocated for CHU participation, 51% disagreed that adequate time is allocated for CHU participation, and 54% disagreed that feedback is provided to the CHUs.

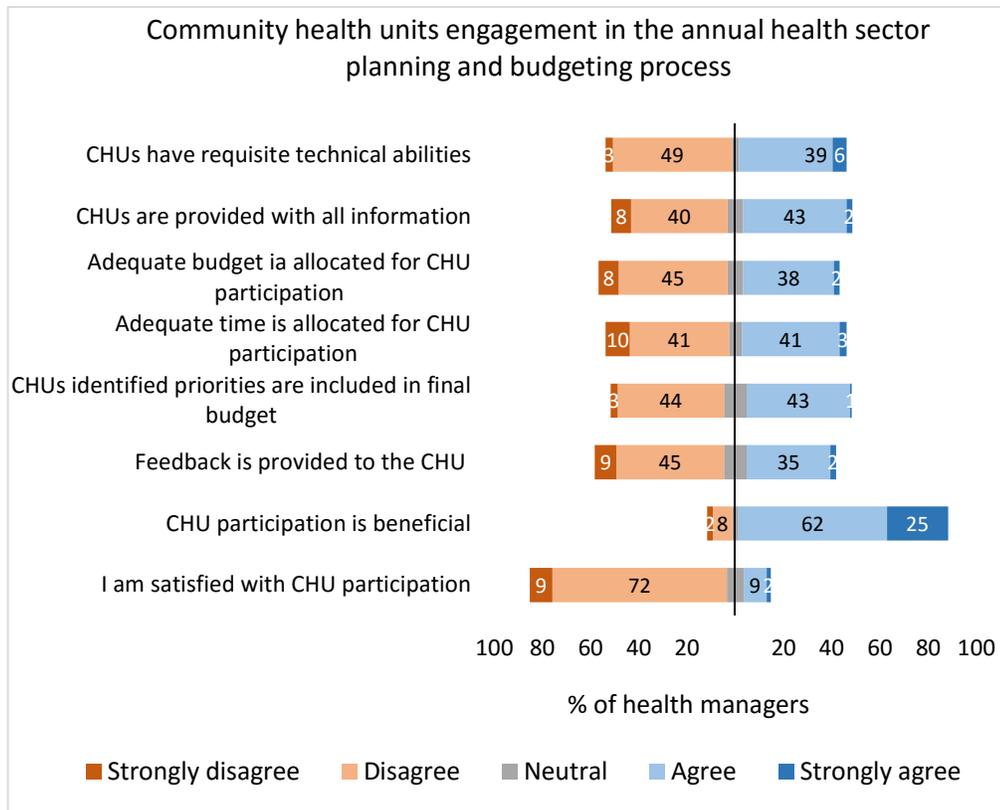


Figure 4.7: Community health units’ engagement in the annual health sector planning and budgeting process

The qualitative data yielded similar perspectives concerning the CHU engagement in the annual HSPB process as demonstrated by the responses below:

“The county does not allocate adequate financial resources for Level 1 to participate meaningfully in the annual health sector planning and budgeting process.” FGD-5

“The sub-county health management team always puts a lot of pressure on us to submit a plan and budget within a few days.” FGD-7

“We never receive any feedback whatsoever from the county department of health concerning our annual work plan and budget upon submission.” FGD-1

“Though attempts are made to involve the CHUs at all stages during planning and budgeting, limited financial resources allocated for this process hinder their full and active participation.” KII-1

“Due to inadequate financial resources, the department is hampered in organizing forums to provide feedback about the process and to share with the CHUs the approved health sector plan and budget.” KII-3

4.5.2 Health partners' engagement in the annual health sector planning and budgeting process

In response to the level of health partners' engagement in the process, 61% of the health managers rated it as moderate as presented in Figure 4.8 below.

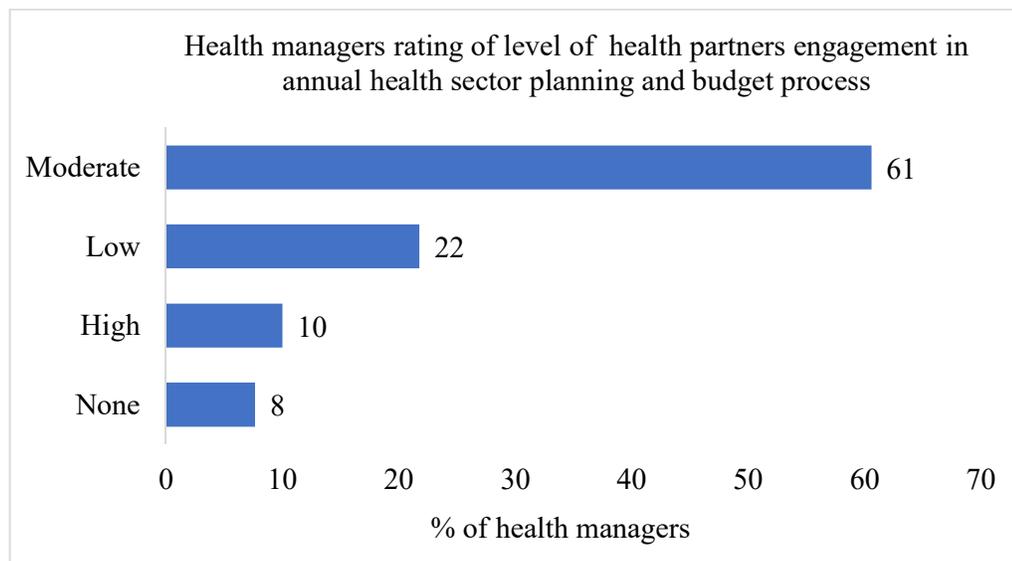


Figure 4.8: Health managers' rating of the level of health partners' engagement in annual health sector planning and budget process

To further assess the health partners' engagement in the annual HSPB process, a 5-point Likert scale consisting of eight items whose responses ranged from 1 (*strongly disagree*) to 5 (*strongly agree*) was used. As illustrated in Figure 4.9 below, the

majority of the health managers (87%) agreed that health partners' engagement in the annual HSPB process is beneficial. However, the majority of the health managers tended to disagree that health partners' engagement was optimal.

Notably, 52% disagreed that there is a well-developed structure for their engagement, 53% disagreed that there is enough budgetary allocation, 46% disagreed that enough time is allocated for their engagement and 52% disagreed that the health partners' activities and resource envelop is included in the consolidated budget. As a result, most of them (65%) disagreed that they were satisfied with the health partners' engagement in the process.

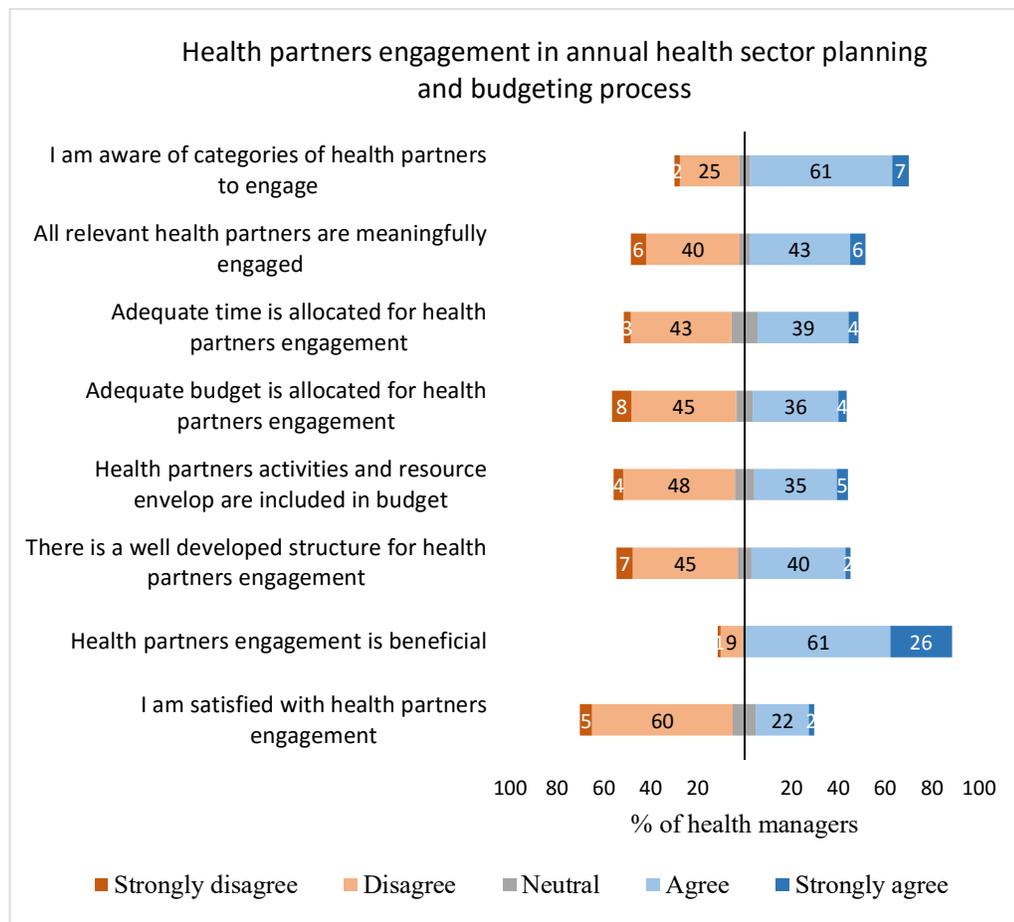


Figure 4.9: Health partners' engagement in annual health sector planning and budgeting process

The key informants reported similar views to those of the health managers as shown in the quotes below:

“A few of the health partners (NGOs) disclose their resource envelopes in the consolidated budget, this is a limitation because the department is unable to certainly determine the total annual health sector budget and contributes to duplication of funding of activities.” KII-1

“Due to the limited financial resources within the department, the MoH partnership framework is yet to be disseminated and the health sector working group and county health stakeholders’ forum are not fully operational, thus the department lacks a structured system to meaningfully engage with the health partners.” KII-2

“One of the upsides of engaging health partners is that at times, they support in funding the health sector planning and budgeting activities across all the levels of the health system to supplement the limited resources from the county department of health.” KII-1

4.6 Objective 4: Use of evidence in informing the annual health sector planning and budgeting process.

This objective sought out from the health managers whether they conducted annual performance reviews (APRs) if the APR findings are used to inform the annual HSPB process, other sources of data used to inform the process, and their perceptions of data use to inform planning and budgeting.

Most of the health managers (54.1%) reported that they do not conduct annual performance reviews. Further, only 47.4% of those who conduct APRs use its findings to inform the development of the annual HSPB.

A further analysis using the Chi-square test of independence was performed between the knowledge status of health managers, conducting APRs, and the use of the findings to inform the process. There was a significant association between the knowledge status of health managers and conducting APRs, $\chi^2(1, N=170) = 21.73, p <.001$. Likewise, there was a significant association between the knowledge status of the health managers and the use of the APR findings in developing the annual plans and budgets, $\chi^2(1, N=78) = 14.72, p <.001$ as illustrated in Table 4.6

Table 4.6: Association between knowledge level of health managers and annual performance reviews

Variable	Grouping	Knowledgeable		Total	p value
		Yes	No		
Conduct APRs	Yes	48 (66.7)	30 (30.6)	78 (45.9)	<.001
	No	24 (33.3)	68 (69.4)	92 (54.1)	
	Total	72 (100.0)	98 (100.0)	170 (100.0)	
Use of APR findings	Yes	31 (64.6)	6 (20.0)	37 (47.4)	<.001
	No	17 (35.4)	24 (80.0)	41 (52.6)	
	Total	48 (100.0)	30 (100.0)	78 (100.0)	

When asked about the sources of data that the health managers use to inform the annual HSPB process besides the APR findings, the majority of them (92%) reported that the Kenya Health Information system is largely used whereas only 25% of them use survey findings as shown in Figure 4.10 below.

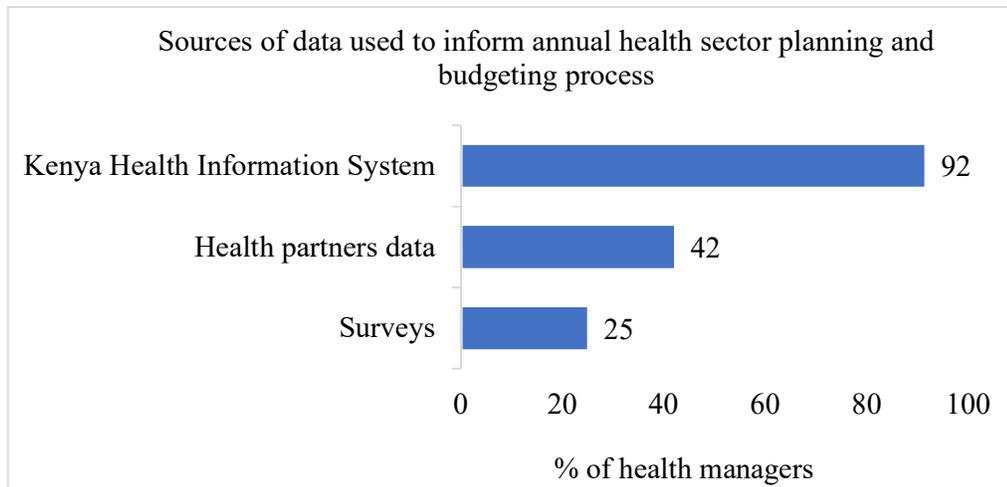


Figure 4.10: Sources of data used to inform annual health sector planning and budgeting process

To further assess the use of evidence in informing the annual HSPB process, a 5-point Likert scale consisting of seven items whose responses ranged from 1 (*strongly disagree*) to 5 (*strongly agree*) was used. As displayed in Figure 4.11 below, The findings revealed that a substantial majority of health managers (75%) agreed with the statement that the necessary data for informing the annual planning and budgeting process is readily available. However, a significant proportion of health managers tended to disagree that they have skills in data use for planning and budgeting (71%), data analysis and interpretation (57%), as well as the reliability of the data they use (54%).

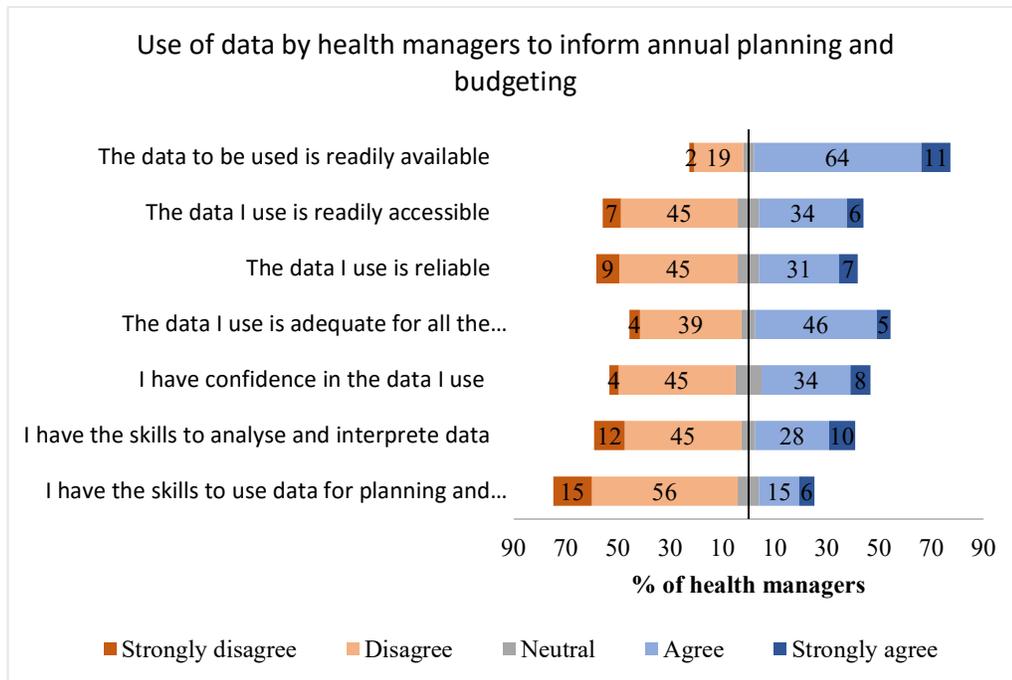


Figure 4.11: Use of data by health managers to inform annual planning and budgeting

The qualitative findings concurred with the responses of the health managers as shown by the following responses:

“We hear that some of the reporting tools we use have been revised but we have not been oriented on them and neither have they been issued. We need regular refresher training on the use of these tools and quarterly data review meetings to improve the quality of the data we collect and use.” FGD-5

“Oftentimes, available data is not reliable and therefore not used to inform the development of plans and budgets thus we opt to do historical budgeting.” KII-1

“As much as there is a lot of data generated from routine health service delivery, many of the health managers have minimal skills on data analysis, interpretation, and use of data to make decision making during planning and budgeting.” KII-3

4.7 Objective 5: Transparency of the leadership towards the annual health sector planning and budgeting process

To assess the transparency of the leadership towards the annual health sector planning and budgeting process, a 5-point Likert scale consisting of eight items whose responses ranged from 1 (*strongly disagree*) to 5 (*strongly agree*) was used.

As shown in Figure 4.12, 90% of the health managers agreed that transparency is important in enhancing the quality of the annual HSPB process. The majority of them disagreed that the process is transparent (56%), that there is a mechanism for providing feedback about the process (55%), and that overall, they are satisfied with the transparency of the leaders (77%).

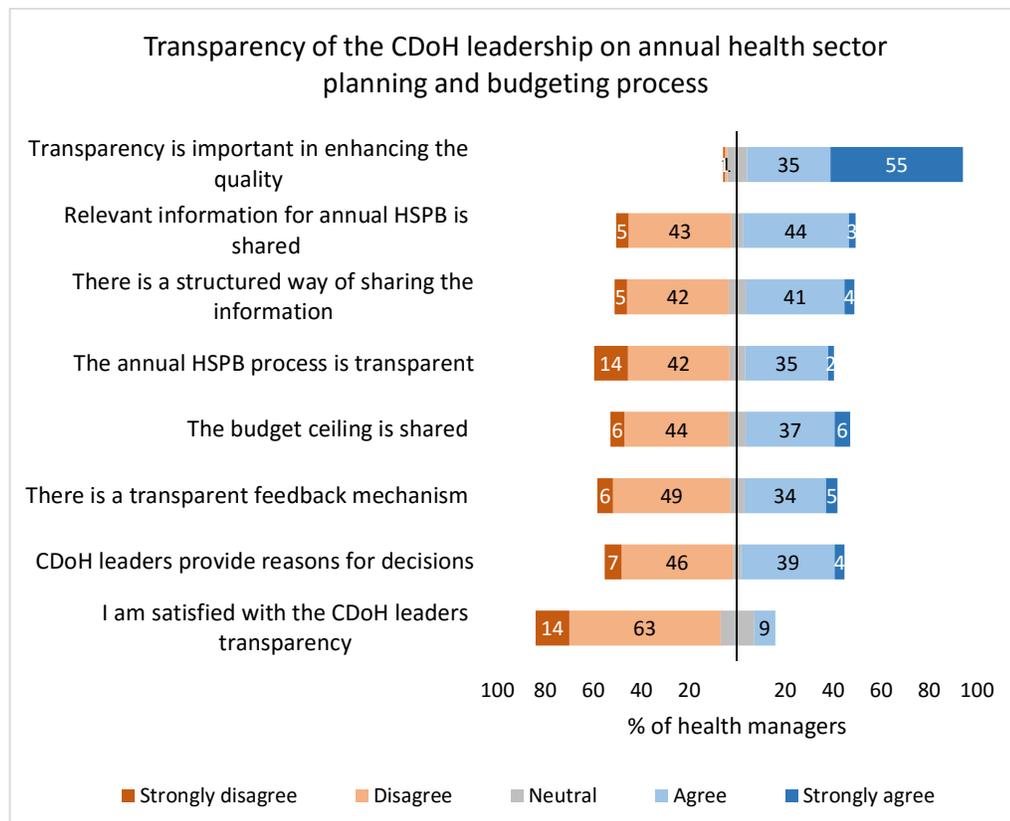


Figure 4.12: Transparency of the leadership on annual health sector planning and budgeting process

The qualitative findings from both the key informants and focus group discussions expressed similar views as shown below:

“We would like to receive feedback on the annual work plans and budgets we develop and submit to the county department of health.” FGD-4

“There is limited transparency in terms of the information shared by the county health department to facilitate our participation in the process.” FGD-6

“The annual HSPB process is far from being transparent. The department develops the plan and budget without all the required information. During the consolidation and finalization at the treasury, many changes are made to the plan and budget and reasons for these changes are not shared.” KII-3

“Due to financial constraints within the health department, forums are hardly held to provide feedback concerning the process as well as to share the details of the final consolidated and approved county health sector budget.” KII-1

4.8 Alignment of the developed annual health sector plan and budget

To determine the alignment of the developed annual health sector plan and budget, a 5-point Likert scale consisting of three items whose responses ranged from 1 (*strongly disagree*) to 5 (*strongly agree*) was used. Figure 4.13 below shows that the health managers reported that there is minimal alignment of the annual health sector plan and budget. The health managers tended to disagree that the annual health sector plan and budget are aligned. Specifically, 50% of them disagreed that the annual health sector planning process is aligned with the annual budgeting process, 52% disagreed that budgetary allocations are aligned with identified priorities and 54% disagreed that the finance team works jointly with the health managers in the formulation of annual health plans and budgets.

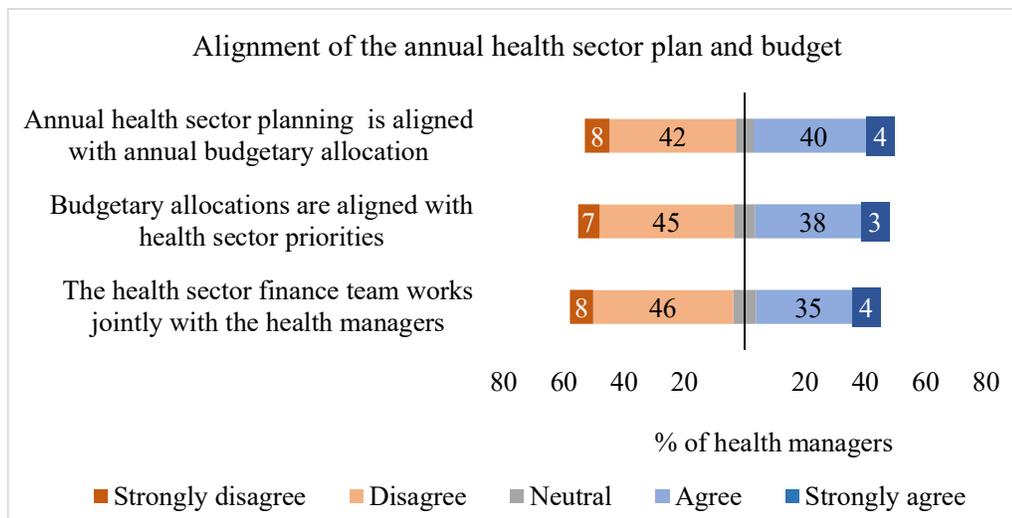


Figure 4.13: Alignment of the annual health sector plan and budget

The key informants expressed similar views to those of the health managers as indicated in their statements below:

“Mostly in the approved plan and budget the priorities do not align with funds allocated due to further rationalization done at the finance department and county assembly when budget ceilings are reduced or priority is given to politically inclined flagship projects” KII-3

“Though, the county annual health sector process should be deliberative and start with all the relevant stakeholders, engage with them meaningfully and finalize together to ensure alignment between priorities and budgetary allocation, an institutional weakness, for instance, the separation between planning and budgeting and non-functional structures like the SWG impairs this process.” KII-1

4.9 Relative significance of the predictors of an aligned health sector planning and budgeting process

Hierarchical multiple regression analysis was used to determine the relative significance of the selected predictors on the development of an aligned health sector plan and budget. Before performing the analysis, the relevant diagnostic tests were performed to confirm the suitability of the statistical test to the study and to ensure data validity.

Firstly, a sample size of 170 was considered satisfactory granted the six independent variables that were included in the analysis. There were 170 valid cases for this analysis with 6 independent variables. This gave a ratio of 28 to 1 which satisfied the minimum requirement of having at least 15 cases of data for each dependent variable (Tabachnick & Fidell, 2018). Secondly, an analysis of the standard residuals was performed, which indicated that no outliers were present in the data (Std. Residual Min = -2.73, Std. Residual Max = 2.93).

Thirdly, the assumption of multi-collinearity was also satisfied as indicated by the collinearity diagnostic tests, namely tolerance and variance inflation factor (VIF), which were found to be within acceptable limits. Multi-collinearity is deemed to be present if VIF is greater than 10 and if tolerance is lower than 0.1 which was not the case as shown in (Kim, 2019). The failure to satisfy the collinearity diagnostic tests implies that the predictor variables in a regression model exhibit a high correlation with each other, which can result in regression coefficients and predictions that are unreliable and unstable (Tabachnick & Fidell, 2018).

Table 4.7: Multicollinearity diagnostic tests

Model		B	Beta	t	Sig	Tolerance	VIF
1	(Constant)	-5.572		-8.062	<.001		
	Knowledge	.965	.284	5.051	<.001	.770	1.300
	Attitude	.296	.130	2.394	.018	.821	1.217
	Community	.467	.157	2.729	.007	.729	1.371
	Health partners	.377	.145	2.598	.010	.776	1.288
	Use of Evidence	.459	.180	3.035	.003	.691	1.447
	Transparency	1.007	.280	4.791	<.001	.712	1.404

Note. Dependent variable: Alignment of health sector plan and budget.

Fourthly, a Durbin-Watson test was conducted, and the results showed that the assumption of independent errors was met (Durbin-Watson value = 2.07) indicating that each observation in the dataset was independent implying the absence of autocorrelation.

Finally, the examination of residual scatter plots as shown in Figure 4.14 revealed that the assumptions of normality, homoscedasticity, and linearity were all met. The standardized residuals histogram indicated that the errors in the data followed an approximately normal distribution. Likewise, the normal probability plot (P-P plot) of standardized residuals demonstrated that the points closely followed the straight diagonal line, indicating linearity. The scatterplot of standardized predicted values indicated that the dataset satisfied the assumption of homoscedasticity, as the residuals' variance remained relatively constant across all the predictor variable values. (Tabachnick & Fidell, 2018).

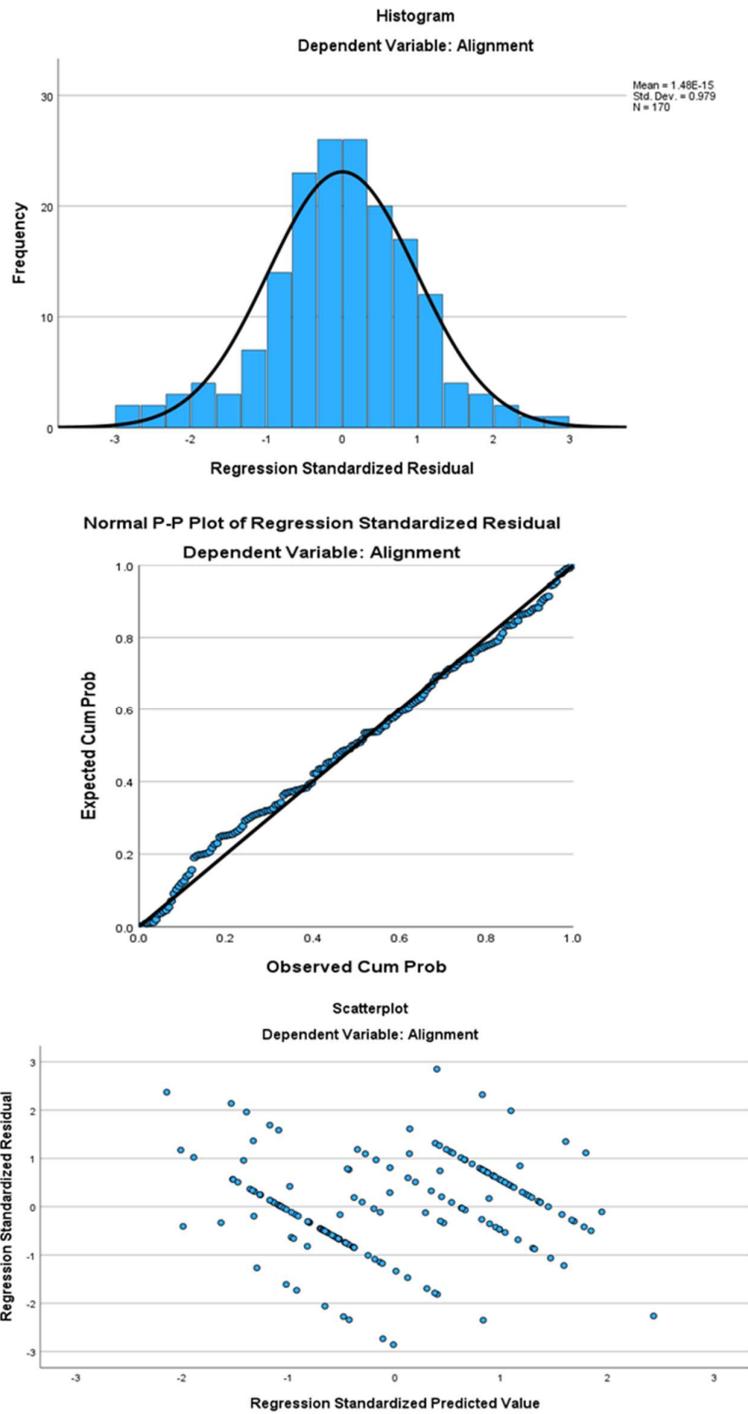


Figure 4.14: Assumptions of normality, linearity and homoscedasticity

4.10 Correlation analysis of the study variables

Before performing the hierarchical multiple regression analysis, the correlation analysis between the predictor variables and dependent variables was conducted to test for the strength and direction of the association.

Pearson correlation coefficients were computed to assess the linear association between the predictor variables and the dependent variable. The results revealed that there was a positive and significant correlation between knowledge level, $r(168) = .56, p < .001$, the attitude of health managers, $r(168) = .40, p < .001$, community engagement, $r(168) = .50, p < .001$, health partners' engagement, $r(168) = .44, p < .001$, use of evidence, $r(168) = .53, p < .001$, transparency, $r(168) = .57, p < .001$ and development of aligned plans and budgets. There was however no significant relationship between the education level of the health managers, $r(168) = .16, p = .33$, experience in a management position, $r(168) = .12, p = .13$, and development of aligned plans and budgets. Hence, based on the coefficients of the Pearson correlation, it was inferred that multiple regression analysis was suitable for gaining insights into how the predictor variables impact the dependent variable.

4.11 Hierarchical Multiple Regression Analysis

A seven-stage hierarchical multiple regression analysis was carried out with the alignment of the health sector budget as the dependent variable. In the regression analysis, a couple of variables were controlled. In the first step, multiple regression analysis was conducted with the controlled variables namely the education level of the health managers and length of experience.

A subsequent multiple regression analysis was conducted by adding a new set of independent variables to those utilized in the initial step. This approach facilitated the calculation of estimations for the impacts of independent variables on the dependent

variable. This process was repeated until all independent variables were incorporated into the multiple regression model. The statistical significance of the predictors was evaluated using the ΔF test, which indicates whether the addition of a predictor significantly improves the fit of the model.

Table 4.8: Model Summary of Hierarchical Multiple Regression

Model	Model Summary ^h							
	R	R ²	Adjusted R ²	ΔR^2	ΔF	df ₁	df ₂	Sig. ΔF
1	.191 ^a	.036	.025	.036	3.155	2	167	.045
2	.559 ^b	.312	.300	.276	66.479	1	166	<.001
3	.599 ^c	.359	.343	.047	12.028	1	165	<.001
4	.684 ^d	.468	.452	.109	33.596	1	164	<.001
5	.716 ^e	.513	.495	.045	15.173	1	163	<.001
6	.750 ^f	.562	.543	.049	18.048	1	162	<.001
7	.785 ^g	.616	.596	.054	22.498	1	161	<.001

Note.

- a. Predictors: (Constant), Experience, Education level
- b. Predictors: (Constant), Experience, Education level, Knowledge
- c. Predictors: (Constant), Experience, Education level, Knowledge, Attitude
- d. Predictors: (Constant), Experience, Education level, Knowledge, Attitude, Community
- e. Predictors: (Constant), Experience, Education level, Knowledge, Attitude, Community, Health partners
- f. Predictors: (Constant), Experience, Education level, Knowledge, Attitude, Community, Health partners, Use of evidence
- g. Predictors: (Constant), Experience, Education level, Knowledge, Attitude, Community, Health partners, Use of evidence, Transparency of leadership
- h. Dependent Variable: Alignment of health sector budget

As presented in Table 4.8, the hierarchical multiple regression revealed that Model 1 had a low R² of .036 and an adjusted R² of .025, indicating that only a small amount (2.5%) of the variation in the dependent variable is accounted for by the two predictors included in the model (constant, experience, and education level). The model is marginally significant $F(2, 167) = 3.155, p = .045$, suggesting that experience and education level are weakly associated with the alignment of the health sector budget.

Model 2 includes an additional predictor, knowledge of the health managers, which was a huge improvement over the previous model with an increase in R² to .312 and

the adjusted R^2 to .300 indicating that the inclusion of knowledge of the health managers in the model helps to explain a larger proportion (30%) of the variation in the dependent variable. The model is highly significant $F(1, 166) = 66.479, p < .001$, indicating that knowledge of the health managers had a positive association with the alignment of the health sector budget predicting the variance in the dependent model above and beyond the previous predictors (experience and education level).

Model 3 adds another predictor, the attitude of the health managers, which increased the R^2 to .359 and the adjusted R^2 to .343 indicating that the inclusion of attitude in the model further improves the fit of the model, accounting for 34.3% of the variance in the dependent variable. The model was highly significant $F(1, 165) = 12.028, p < .001$, indicating that attitude also had a positive association with the alignment of the health sector budget.

Model 4 adds yet another predictor, community engagement, which increased the R^2 to .468 and the adjusted R^2 to .452 indicating that the inclusion of community engagement in the model helps to explain a larger proportion (45.2%) of the variance in the dependent variable. The model remains highly significant $F(1, 164) = 33.596, p < .001$, suggesting that community engagement also had a positive association with the alignment of the health sector budget.

Model 5 includes a fifth predictor, health partners' engagement, which increased the R^2 to .513 and the adjusted R^2 to .495 indicating that the inclusion of health partners' engagement in the model further improves the fit of the model, accounting for 49.5% of the variance in the dependent variable. The model remains highly significant $F(1, 163) = 15.173, p < .001$ indicating that health partners' engagement also had a positive association with the alignment of the health sector budget.

Model 6 introduces the use of evidence as a sixth predictor which increased the R^2 to .562 and the adjusted R^2 to .543 indicating that the inclusion of the use of evidence in the model helped to explain a larger proportion (54.3%) of the variance in the dependent variable. The model remains highly significant $F(1, 162) = 18.048, p < .001$, suggesting that using evidence to inform planning and budgeting also had a positive association with the alignment of the health sector budget.

The seventh and final model comprised eight predictors namely experience, education level, knowledge, attitude, community engagement, health partners' engagement, use of evidence, and transparency of the leadership. This model yielded a significantly improved R^2 of .616 and an adjusted R^2 of .596, suggesting that the inclusion of transparency of leadership enhanced the model's fit and explained 59.6% of the variance in the dependent variable. Moreover, the highly significant F value ($F(1, 161) = 22.498, p < .001$) indicated that transparent leadership was positively associated with the alignment of health sector budgets.

The independent variable that accounted for the largest variance in the development of an aligned health sector plan and budget was the knowledge level of the health managers which singularly accounted for 27.6% of the variation in the outcome variable. All together the eight predictor variables accounted for 59.6% of the variance in the development of an aligned health sector plan and budget.

Table 4.9: ANOVA results of the hierarchical multiple regression

		ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.360	2	3.180	3.155	.045 ^b
	Residual	168.310	167	1.008		
	Total	174.669	169			
2	Regression	54.489	3	18.163	25.088	<.001 ^c
	Residual	120.180	166	.724		
	Total	174.669	169			
3	Regression	62.654	4	15.664	23.073	<.001 ^d
	Residual	112.015	165	.679		
	Total	174.669	169			
4	Regression	81.699	5	16.340	28.824	<.001 ^e
	Residual	92.970	164	.567		
	Total	174.669	169			
5	Regression	89.617	6	14.936	28.625	<.001 ^f
	Residual	85.052	163	.522		
	Total	174.669	169			
6	Regression	98.142	7	14.020	29.680	<.001 ^g
	Residual	76.527	162	.472		
	Total	174.669	169			
7	Regression	107.525	8	13.441	32.228	<.001 ^h
	Residual	67.144	161	.417		
	Total	174.669	169			

Note.

df means degrees of freedom; F is the calculated value of the Analysis of Variance (ANOVA)

a. Dependent Variable: Alignment

b. Predictors: (Constant), Experience, Education level

c. Predictors: (Constant), Experience, Education level, Knowledge

d. Predictors: (Constant), Experience, Education level, Knowledge, Attitude

e. Predictors: (Constant), Experience, Education level, Knowledge, Attitude, Community

f. Predictors: (Constant), Experience, Education level, Knowledge, Attitude, Community, Health partners

g. Predictors: (Constant), Experience, Education level, Knowledge, Attitude, Community, Health partners, Use of evidence

h. Predictors: (Constant), Experience, Education level, Knowledge, Attitude, Community, Health partners, Use of evidence, Transparency of leadership

The output of the ANOVA results as displayed in

Table 4.9 presents the level of significance of each of the seven models. All seven models were statistically significant at $p = <.001$ whereas the first model had a p value of .045. It was apparent that the F value was greatest for the seventh model comprising eight predictor variables. The F values represented the overall predictive effects of each of the independent variables which changed upon adding subsequent predictor variables.

Table 4.10: Regression coefficients of the predictor variables

Model ^a	Unstandardized Coefficients		Standardized	t-statistic	Sig
	B	Std. Error	Beta (β)		
(Constant)	-5.961	.717		-8.312	<.001
Education level	.224	.106	.110	2.124	.035
Experience	-.011	.105	-.005	-.104	.918
Knowledge	.865	.196	.254	4.421	<.001
Attitude	.316	.123	.139	2.571	.011
Community	.499	.171	.168	2.923	.004
Partners	.326	.146	.125	2.230	.027
Evidence	.517	.153	.203	3.380	<.001
Transparency	.990	.209	.275	4.743	<.001

Note.

^aDependent Variable: Alignment of health sector budget

The t-statistic indicates that all the predictor variables had a statistically significant association ($p < .05$) with the dependent variable apart from the length of experience of the health managers.

From Table 4.10, the linear equation extracted for predicting the development of an aligned health sector plan and budget is as follows:

$$\text{Aligned health sector budget} = -5.961 + 0.224(\text{Education level}) - 0.011(\text{Experience}) + 0.865(\text{Knowledge}) + 0.316(\text{Attitude}) + 0.499(\text{Community}) + 0.326(\text{Partners}) + 0.517(\text{Evidence}) + 0.990(\text{Transparency})$$

This equation suggests that the aligned health sector budget is influenced by education level, knowledge, attitude, community engagement, health partners' engagement, use of evidence, and transparency of the leaders, while experience had a negligible effect. The coefficients indicate how much the health sector budget would change with a one-unit increase in each respective independent variable, keeping all other variables constant.

The equation provided allows for the estimation of the influence of each predictor variable on the aligned health sector plan, keeping all other variables constant. An increase in education level by one unit is linked to a corresponding increase of 0.224 units in the aligned health sector plan, while an increase in experience by one unit has a negligible effect (-0.011). Similarly, an increase in knowledge by one unit corresponds to a 0.865-unit increase in the aligned health sector plan, while an increase in attitude by one unit is linked with a 0.316-unit increase. Additionally, an increase in community engagement by one unit is associated with a 0.499-unit increase, an increase in health partners' engagement by one unit correlates with a 0.326-unit increase, and an increase in the use of evidence by one unit corresponds with a 0.517-unit increase. Finally, the transparency of the leadership emerged as the most influential predictor variable, with a one-unit increase resulting in a corresponding 0.990-unit increase in the aligned health sector plan.

To compare the relative magnitude of each predictor variable to the outcome variable, standardized regression coefficients were used. The standardized regression coefficients (betas) indicate the relative significance of each independent variable in accounting for the variance in the health sector budget. The higher the absolute value of the standardized regression coefficients, the stronger the impact of the predictor variable on the dependent variable. At the 5% significance level, all standardized beta

coefficients for the predictor variables exhibited a significant t-statistic with $p < .05$, except for the length of experience variable, whose t-statistic was not significant ($p = .918$).

Transparency of the leadership had the highest absolute value of the standardized beta coefficients of $.275$ and thus had the most significant amount of effect on the dependent variable followed by knowledge status of the health managers at $\beta = .254$, use of evidence, $\beta = .203$, community engagement $\beta = .168$, the attitude of the health managers $\beta = .139$, and finally health partners' engagement $\beta = .125$, and finally education level $\beta = .110$ in that order. The length of experience of the health managers had the lowest absolute value at $\beta = .005$ thereby having the smallest effect on the dependent variable that was not statistically significant.

Overall, these results indicate that the knowledge and attitude of health managers on the annual HSPB, community and health partners' engagement, use of evidence to inform the process, and transparency of the leadership are associated with the development of an aligned health sector budget and plan. Thus, the key finding from this analysis is that transparency of the leadership regarding the annual health sector planning and budgeting process is the most important predictor of the development of aligned annual health sector plans and budgets over and beyond the other predictors.

CHAPTER FIVE

DISCUSSION

5.1 Introduction

This chapter presents a discussion of the results obtained from this study, as presented in the preceding chapter. It compares these findings with the existing literature and interprets them. The study aimed to determine the relative significance of selected predictors of developing an aligned annual health sector plan and budget.

Overall, the study findings indicate that the predictor variable that had the strongest effect on the dependent variable (aligned annual health sector plan and budget) was the transparency of the leadership followed by the knowledge level of the health managers, use of evidence to inform planning and budgeting, community engagement, the attitude of the health managers and finally health partners engagement.

The discussion is comprised of the predictors of the development of an aligned annual health sector plan and budget. The predictors included knowledge and attitude of health managers, stakeholder engagement including community and health partners, use of evidence, and transparency from the leadership.

5.2 Knowledge of the health managers on annual health sector planning and budgeting

The results of the study show that few of the health managers (42%) and (19%) had been trained in planning and budgeting and PBB respectively. This finding corroborates a status report on the implementation of PBB across Africa which indicated that inadequate knowledge is one of the main stumbling blocks to achieving full implementation of PBB (Worthington, 2013). Similarly, other recent reviews of the utility of PBB within the health sector at the county in Kenya also acknowledge

the limited capacity of the actors involved as an impediment to the implementation of PBB (David *et al.*, 2020a; Tsofa *et al.*, 2021). Since the implementation of PBB has been proposed as one of the public financial management reforms that can lead to alignment between the health sector plans and budgets (Cashin *et al.*, 2017), it is crucial for health systems to invest in continued capacity building for the managers on the same. WHO is committed and has invested in supporting Low and Middle-Income countries (LMICs) in building the knowledge base of health managers by creating free self-paced eLearning courses. Among these courses is the Public Financial Management course which extensively covers the budget cycle (WHO, 2021). Therefore, health managers across the region have the opportunity to enhance their knowledge and mastery of the budgeting process in the health sector by utilizing this excellent resource.

The finding that a health manager's level of education is significantly associated with their knowledge level is in line with previous research conducted in Iran, which also established a relationship between the educational level of health managers and their knowledge in planning and budgeting (Mosadeghrad *et al.*, 2018). These findings suggest that providing education and training opportunities for health managers can improve their knowledge and subsequently enhance their performance in planning and budgeting. Furthermore, they underscore the significance of attracting and retaining individuals with high levels of education and qualifications to fill management positions in the healthcare sector.

The study results further revealed that less than half of the health managers representing 42.4% were found to be knowledgeable about the annual HSPB process. This result corroborates with findings of several other previous studies which indicate that most of the health managers across the health system have limited knowledge of

annual health sector planning and budgeting in Africa (Barasa *et al.*, 2017; David *et al.*, 2020a, 2020b; McCollum *et al.*, 2018; Tsofa *et al.*, 2017, 2021; Worthington, 2013) and high-income countries alike (Seixas, Regier, *et al.*, 2021). The limited knowledge among the health managers seems to be due to insufficient capacity-building initiatives on the HSPB process as revealed in this current study.

However, the current finding contradicts the results of a study conducted in Uganda, which suggested that district health managers had adequate knowledge and skills in evidence-based health sector planning and budgeting processes (Henriksson *et al.*, 2017). A possible explanation for this could be the interventions funded by development partners that had been put in place to improve the technical capacity of the health managers in planning and budgeting as well as strengthening the health system functions. Similarly, a study conducted by Kigume & Maluka (2018) in Tanzania also showed that decentralized health managers had sufficient knowledge to develop health sector plans and budgets due to continued capacity building.

The results of this study also indicated that there was low dissemination of planning and budgeting guidelines as well as legal frameworks, at 41% and 40.5% respectively. The MoH guidelines include the step-by-step process for county health sector annual work planning processes (Ministry of Health, 2018b) and the MoH simple MTEF guide (Ministry of Health, 2019). The legal frameworks include the CGA (Government of Kenya, 2012a) and the PFM Act (Government of Kenya, 2012b). All these documents are indispensable in steering the health managers and other actors involved in the process to meaningfully engage in the process. This finding is in accord with a previous study which indicates there has been minimal dissemination of the legal frameworks and annual health sector work planning and budget making guidelines (David *et al.*, 2020a).

Inadequate dissemination of these documents by the concerned authorities seems to contribute to the limited understanding of the process as exhibited by the few knowledgeable health managers and also restricts their meaningful participation. Though all the guidelines and legal frameworks about the health sector planning and budgeting process are online on the respective ministries' websites, the health managers were not motivated to download them and educate themselves as was expressed by one of the key informants. Therefore, it is imperative that the authorities go a step further and roll out elaborate dissemination of these documents to empower the health managers to proactively engage in the process.

While all health managers at various tiers of the county health system participate in the annual health sector planning and budgeting process, less than half of them have sufficient knowledge of the process. This calls for concern because this lack of technical capacities may contribute to the obstacles health managers face during the implementation of the process such as demotivation, inadequate use of routine health information, poor stakeholder engagements, and misalignment between planning and budgeting.

Thus, to bridge this gap of limited knowledge on health sector planning and budgeting among health managers, it is necessary to set up sustained interventions to train the health managers. This was also expressed by the views of the key informants who emphasized the importance of continued capacity building of the health managers across all levels on planning and budgeting.

Lastly, concerning knowledge, the study indicated there was no significant relationship between the length of management experience and the knowledge level of the health managers. This result is consistent with a study that evaluated county

hospitals' planning and budgeting process in Kenya. The authors of the study found that hospital managers with mid-level experience in management who were meaningfully included in the process exhibited a better understanding of the process compared to those who were left out of the process (Barasa *et al.*, 2017). This suggests that experience in management alone is insufficient to contribute to the formulation of aligned health sector plans and budgets. It needs to be complemented by other interventions, such as the capacity building of health managers on the process, inclusivity in the process, and better governance by the leadership of the county health department

5.3 The attitude of the health managers toward annual health sector planning and budgeting

The majority of the health managers (93%) tended to agree that annual HSPB is essential and beneficial for their units. In line with other studies, health managers agree that HSPB is beneficial in several ways such as contributing to evidence-informed budgetary allocations and achievement of policy objectives (World Health Organization, 2016b) that contribute to improved health outcomes (Piatti-Fünfkirchen & Schneider, 2018). It is also essential in aligning local health sector priorities to periodic and emerging global health goals as ratified by countries (Barroy, Dale, *et al.*, 2018)

Despite the advantages of health managers' participation in the planning and budgeting process, a significant proportion of them (78%) reported a lack of positive attitude and felt demotivated to proactively engage in the process. These findings are in accord with those of a Zambian case study about planning and budgeting for primary health care which revealed that the district and health facility managers perceived the process to be meaningless and done as a matter of procedural requirement because of

demotivation occasioned by failure to implement previous plans and budgets (Ngulube *et al.*, 2005). Similarly, another study in Kenya reported that county hospital managers were largely unmotivated and hardly cared to participate in the process (Barasa *et al.*, 2017). An analysis of the health sector budgeting process in Ghana revealed that the health officials view the process as a formal routine and feel disinterested in actively getting involved (Atuilik *et al.*, 2019).

In contrast, Henriksson *et al* (2017) through an interventional study in Uganda found that the district health management team members were highly motivated and committed to engaging the in HSPB process. This may partly be attributed to the intervention targeted towards institutional strengthening and recognition of the best performing districts by the Ministry of Health on planning and budgeting.

The negative attitude of the health managers towards the process could be attributed to the challenges they face. As expressed in their perceptions, potential contributing factors include limited support from county health leadership and inadequate skills related to the process. Addressing these barriers through the development of interventions aimed at enhancing health managers' skills and motivation could cultivate a more positive attitude among them, ultimately leading to the successful development of health sector plans and budgets.

5.4 Stakeholders' engagement in the annual health sector planning and budgeting

The discussion focuses on the two categories of stakeholders assessed in this study that are engaged in the annual health sector planning and budgeting process namely the community and health partners.

5.4.1 Community engagement in annual health sector planning and budgeting

The results of this study indicate that though the community health committees (CHC), one of the workforce of the community health unit was the most common community structure used to foster community engagement in the annual HSPB process, their level of participation was low as rated by 54% of the health managers. Although 87% of the health managers reported that community participation is essential, only 11% were satisfied with the process, seemingly contributed to by minimal knowledge and skills, inadequate time and budgetary allocation for their engagement, limited transparency and feedback from the health managers as revealed by the study.

From the study, it was reported by 87% of the health managers that community participation in the annual HSPB process is essential for the overall success of the process. This finding aligns with the results of other studies in this area that have shown that community participation in health planning and budgeting is essential because the health system serves the community (Martin, 2007). Community participation is also beneficial in voicing community health needs (Frumence *et al.*, 2014), improving transparency and accountability (World Bank, 2013; World Health Organization, 2016b) as well as promoting inclusivity, legitimacy, and acceptability of the process (Razavi *et al.*, 2019).

The engagement of established community structures, for instance, community health committees to foster community participation in the annual health sector planning and budgeting process is consistent with the findings from other studies (Kesale *et al.*, 2022; Kilewo & Frumence, 2015; O'Meara *et al.*, 2011a). In the wake of the devolution of the health systems, community participation in priority setting, particularly the formulation of health sector plans and budgets has been given prominence leading to the creation of community structures such as community health

committees to mainstream community participation. In the literature, the names of the community structures are referred to differently from country to country as a village, ward health committees, or community health committees (Mccoy *et al.*, 2012). Interestingly, despite there being established community engagement structures reinforced through legislations, policy guidelines and frameworks, community participation in planning and budgeting is still low (Kilewo & Frumence, 2015; Razavi *et al.*, 2019, 2020) in alignment with the findings of this study.

The 2012 open budget survey of 100 countries including Kenya, indicated that the mean score of the indicators on community engagement in the budgeting process was only 19 out of 100 (International Budget Partnership, 2012). In comparison, the 2021 open budget survey shows a significant decline in global community participation in the budgeting process, with an average score of 14 out of 100. Kenya scored 31 out of 100 and was identified as having limited community participation based on the survey's findings (International Budget Partnership, 2021). This evidence demonstrates that community participation is scarce and that minimal progress has been made to meaningfully engage the communities. Moreover, a qualitative synthesis of participation of community health committees in primary health care in Sub-Saharan Africa showed that these structures are poorly engaged and often not included in the formulation of health facilities plans and budgets (Karuga *et al.*, 2021).

Contrary to the present finding, a study conducted in Tanzania, to evaluate the findings of an accountability project aimed at enhancing the delivery of health services in primary care health facilities revealed that the majority of the health facilities, 65.5% involved the community in annual health sector planning and budgeting (Kinyenje Id *et al.*, 2022). This could be due to the impact of a government project focused on upgrading the ratings of public health facilities dubbed Big results now. Similarly, the

findings of the open budget survey conducted in 2012 indicated that out of 100 countries surveyed, South Korea had the highest score of 92% in public engagement in health sector planning and budgeting (International Budget Partnership, 2012). The success was largely attributed to heightened social and political will and the close aligning of the public engagement process with all steps of the annual budgeting cycle (Kang & Min, 2013). This may serve as a benchmark for countries struggling to make notable progress in meaningful community engagement in planning and budgeting including Kenya to learn about extensive and innovative opportunities available to effectively engage the community.

This study reported that the CHC members had not been trained in the annual health sector planning and budgeting process and therefore have inadequate requisite technical capacities to meaningfully engage in the annual health sector planning and budgeting process. Similar to this finding, previous studies have also shown that few of the committee members have been trained in their management roles including planning and budgeting (Kilewo & Frumence, 2015; S. O. Maluka & Bukagile, 2016; McCollum *et al.*, 2018; Shukla *et al.*, 2018).

The minimal technical capacities of the CHCs and their low engagement in the annual HSPB process seem to reinforce each other. It has been demonstrated in the literature that due to the limited capacity of the community health committee members, health managers perceive that engaging them would not be meaningful to the process, thus their low participation (Morrison & Dearden, 2013; Shayo *et al.*, 2012). This further aggravates the CHC members' acquisition of the relevant health sector planning and budgeting skills and experience. Bearing this in mind, it is critical to devise sustained measures of building the technical capacities of the CHCs to enable them to participate meaningfully in the process and promote better health outcomes.

Further, even the low engagement of the CHCs in planning and budgeting is not without challenges. Consistent with the findings of this study, past studies have also reported that CHCs face several obstacles as they participate in the process. Firstly, they are allocated a limited budget and time to engage in planning and budgeting (Kilewo & Frumence, 2015). Secondly, due to limited transparency from the management, minimal information about the process is disseminated to them thus curtailing their proactive engagement in the process (David *et al.*, 2020b). Finally, even after the development of their plans and budgets, the CHCs receive little to sometimes no feedback concerning the entire process, and their inputs are seldom factored in the consolidated health sector plan and budget as reported elsewhere in Kenya (O'Meara *et al.*, 2011a) and Ghana (Atuilik *et al.*, 2019). This contributes to a limited commitment from the community to engaging meaningfully in the process, as they find it more of a routine and not beneficial to their voiced health service delivery needs.

The low engagement of the community structures undermines the core principle of primary health care and negates the very essence of decentralization in the health sector. Thus, these findings suggest that health managers need to move away from the rhetoric on community engagement in health planning and budgeting as envisaged in legislation, policy guidelines, and frameworks and operationalize their engagement. In the case of Kenya, this may include disseminating and operationalizing guidelines of community participation, sustained capacity building of community health units, increased budgetary allocation for their engagement, and improving transparency and feedback from the health managers at all levels. The practical implication of these study findings corroborates the call of a recent study to the ministries of health to

strengthen the CHCs through regular capacity building for them to efficiently discharge their roles and responsibilities (Karuga *et al.*, 2019).

5.4.2 Health partners engagement in annual health sector planning and budgeting process

The study findings showed that 61% of the health managers reported that the level of health partners' engagement in the annual HSPB process was moderate. Though 87% of them agreed that their engagement is beneficial, there are inadequate structures to involve them consequently their activities and resource envelope are not incorporated in the consolidated health sector budget.

The engagement of health partners such as NGOs and international aid donors contributes significantly to the funding of the health system. This may partly explain the moderate involvement of the health partners in the annual HSPB process as reported by the majority of the health managers. It was also noted that health partners play a major role in financing the health sector planning and budgeting activities across all the levels of the health system due to limited resources from the county government. This finding supports others in this area that have demonstrated the substantial contribution health partners make in filling resource gaps in financing the health sector (Appleford, 2017; Razavi *et al.*, 2019; Tsofa *et al.*, 2023). In the case of Kenya as noted by the Oxford Business Group (2017) 35% of health care is funded by donors.

Additionally, this assistance has contributed remarkably to the betterment of health outcomes notably an improvement in life expectancy and reduced mortality among children under the age of 5 as reported in a data analysis of 140 aid-recipient countries (Bendavid & Bhattacharya, 2014). It is of the essence therefore that governments and

health partners need to collaborate under a structured framework in developing the health sector plans and budgets to harness these and other benefits.

Unfortunately, several studies have similarly reported inadequate structures for health partners' engagement and if they do exist, are not fully operational. In Kenya, such a structure is the health sector working group (SWG) which was found to be non-functional in this study, similar to the results of a previous study (David *et al.*, 2020b). The purpose of the SWG is to set sectoral priorities according to approved plans, estimate the resource requirements and bid for the resources from the county executive and county assembly. The county Sector Working Group (SWG) is comprised of the County Executive Committee Member (CECM) for Health, the Chief Officer of Health, the Chief Officer of Finance, the County Director of Health, CHMT members, the Medical Superintendent of County Referral Hospital, Health Economist, and representatives of development partners (Ministry of Health, 2019). It is critical that the county health leadership fully constitute the health SWG and allocate sufficient funds for their optimum functionality. This will facilitate improved government coordination around budget formulation including priority setting, resource allocation, and resource bidding from the legislative assemblies according to the approved development plans and provisions of the PFM Act of 2012.

Further, to enhance coordination among health partners, the Ministry of Health launched the Kenya Health Sector Partnership Framework (KHSPF) 2018–2030. It is aimed at aligning the health partners' support by facilitating joint consultative planning and budgeting in line with government frameworks. The county governments were advised to establish partnership structures namely the County Health Sector Stakeholders Forum (CHSSF) consistent with the provisions of this framework (Ministry of Health, 2018a). This forum is essential to establishing and convening joint

annual planning and budgeting processes to align identified priorities with budgetary allocation.

The findings of this study show that the county health leadership is yet to domesticate and disseminate this partnership framework and that the CHSSF is non-functional, consequently, the department lacks a structured system to meaningfully engage the health partners. This finding resonates with others conducted in Kenya by Tsofa *et al* (2023) that found that the CHSSFs are non-functional and by David *et al* (2020b) that revealed several counties neither have a partnership coordination framework nor a Memorandum of Understanding (MoU) with the health partners to coordinate their engagement.

The availability and functionality of these structures play an essential function in the health sector planning and budgeting process as it facilitates the joint identification of priorities and allocation of resources which contributes to the attainment of health policies. Inadequate structures to meaningfully engage health partners in planning and budgeting tend to diminish its intended benefits. Disadvantages brought about by the inadequacy of these structures contribute to poor planning and budgeting processes such as limited inclusivity, inadequate response to government policies as outlined in strategic plans, duplication of funding of programs, and uncertainty in determining the total annual health sector budget and expenditure.

One of the main challenges of not effectively engaging health partners is that their activities and resource envelopes are not included in the health sector plan and budget as revealed in this study and reported in others as well. Otieno *et al* (2014) in their study on healthcare financing strategies in Bungoma County found out that the county faced challenges in capturing NGO financial contributions during the budgeting

process. Likewise, research on 15 counties in Kenya revealed that due to minimal and uncoordinated engagement of the health partners, the county department of health leadership is unable to determine the health partners' financial contribution to the overall annual health sector budget (David *et al.*, 2020a). The Oxford Business Group (2017) estimated that up to 60% of the health partners' contribution to Kenya's health sector budget is off-budget and is focused on vertical programs. Similarly, in neighboring Uganda, it is approximated that 76% of health development partners' funds are off the government system and focus on specific interventions (Abewe *et al.*, 2021). The consequence of vertical programming is that it contravenes the essence of coordinated and alignment of sector-wide planning and budgeting guided by a joint framework namely MTEF.

Additionally, health partners also yield a lot of power when it comes to planning and budgeting due to the resources they have. Through this power, they influence the priority-setting process and resource allocations to fit their interests which sometimes do not align with the government's policies (Nagemi & Mwesigwa, 2020; Razavi *et al.*, 2019). The formation and optimum functioning of these partnership structures cannot be underestimated as they would reinforce coordination, increase integration and engagement between health partners and the government to ensure that identified health priorities and resource allocation align with that of the government.

5.5 Use of evidence to inform annual health sector planning and budgeting process

The results of the study showed that most of the health managers do not conduct APRs and if they do, only a few of them use the findings for planning and budgeting. The most commonly used source of data to inform the process is the KHIS. Though routine health information is largely available many of the health managers reported that the

data they use is unreliable and that they have limited skills for data analysis, interpretation, and use in decision making.

The most commonly used source of data to inform the process is the KHIS and 75% of the health managers affirmed that this data is readily available. The availability of a lot of routine health information is in tandem with the findings of Akaco *et al.*, (2015) and Lippeveld (2017) who reported that over the years health systems have strengthened efforts to generate the information giving rise to a lot of routine health service delivery data. This information is collected from all tiers of the health system through the filling of registers then aggregated and submitted for uploading to a health management information system. Data generation is an initial stage within the data management continuum whose end goal is to translate it into meaningful information for use in strategic planning, resource allocation, and decision making to enhance health service provision and outcomes. The essence of conducting APRs is to facilitate the health managers in taking an additional step to interrogate and analyze the KHIS data. This analysis forms the foundation of evidence-based planning and budgeting for the upcoming financial year Unfortunately, most health systems especially in LMICs get stuck in data collection and find it challenging to go further to the last and critical stage of utilizing the data for strategic health sector planning and resource allocation (Lippeveld, 2017).

This current study showed that although 54.1% of health managers conduct quarterly performance reviews based on routine health information, only 47.4% of them use the findings to inform the subsequent planning and budgeting cycle. Likewise, low utilization of health information to inform planning has also been reported in other Sub-Saharan countries for instance, 35% in Zanzibar (Ally, 2019), and 45.8% in Ethiopia (Shiferaw *et al.*, 2017). Additionally, studies carried out in Peru (Dale *et al.*,

2020) and Gabon (Aboubacar *et al.*, 2020) show that despite the performance reviews being carried out routinely and the findings published, the information obtained is hardly used in the identification of health priorities and to guide resource allocation. This suggests that the majority of health managers have focused on data collection and submission to the next level foregoing its use in decision making as is widespread, especially in LMICs (Mboera *et al.*, 2021). Generally, findings from other studies in this area similarly strengthen the evidence of minimal use of information by health managers to inform prioritization of needs and budgetary allocations to improve health outcomes (Bendavid & Bhattacharya, 2014; Bhattacharyya *et al.*, 2020; Henriksson *et al.*, 2017; Waithaka *et al.*, 2018b).

However, this finding is contrary to a study that was carried out in Ethiopia which indicated that 89% of healthcare professionals utilized data for planning (Dagneu *et al.*, 2018). A possible explanation for this stark difference might be due to the high percentage of health professionals with data analysis skills reported to be 88.8% compared to 38% in this study.

The limited utilization of data to inform health sector planning and budgeting has consequential implications, as health managers are compelled to resort to historical budgeting practices. This refers to resource allocation that primarily relies on the previous year's budget with the costs slightly increased to cater for inflation (World Health Organization, 2016b). In keeping with the literature, (Seixas, Dionne, *et al.*, 2021; Waithaka *et al.*, 2018b), this study similarly found that due to inadequate reliable data, the health managers opt to use historical budgeting to develop annual plans and budgets. Although historical budgeting is also an approach to resource allocation, it has some drawbacks for instance, it is less robust and does not allow for a shift towards recently identified priorities as well as emergencies that necessitate revisions of the

budget. Consequently, it has been advised that the use of historical budgeting in the health sector should be “carefully considered” and instead focus on using more nuanced approaches such as explicit bottom-up costing methodologies (World Health Organization, 2016b).

The minimal utilization of health information in planning and resource allocation could be attributed to a multitude of challenges faced by health managers, as highlighted in their perspectives of data use. Among the challenges they encountered were inadequate skills for data analysis and unreliable data. Notably, 57% of them disagreed with possessing the skills to analyze data, while 71% disagreed with having the skills to utilize data for evidence-based planning and budgeting. In line with this finding, previous studies have demonstrated that health managers have minimal technical capacity in data analysis impeding the generation of reliable information and its use in informing health sector planning and budgeting (Akaco *et al.*, 2015; Henriksson, 2017; Waithaka *et al.*, 2018b) One of the ways of mitigating these challenges is through capacity building of the health managers on data management which is an enabler in enhancing the use of health information (Barasa *et al.*, 2015a; Henriksson *et al.*, 2017).

As shown in this study, health managers who were trained and therefore knowledgeable on health sector planning and budgeting were more likely to use data from annual performance reviews and reports to inform the process. This finding resonates with the findings from a previous study (Dagneu *et al.*, 2018). A possible explanation for this result could be that health managers equipped with knowledge of health sector priority setting including data analysis and utilization are empowered to interrogate and make meaning out of the routine health information as opposed to just filling it and submitting it to the next level. Consequently, this form of data processing

enables health managers to go a critical step further and utilize the information for targeted and evidence based planning and budgeting.

Studies have shown that motivated health managers are more likely to utilize health information to guide the strategic planning and budgeting process (Aqil *et al.*, 2009). This study reported that only 40% of the health managers felt motivated to meaningfully participate in the process. This possibly explains the finding that few health managers used health information from reports and annual reviews to inform planning and resource allocation. This, therefore, calls for a design of combined interventions to improve health managers' use of routine health information for instance technical capacity building and behavioral skills like motivation and attitude change to enhance data use culture among health managers. The use of combined interventions was demonstrated to be an effective approach in facilitating data use to inform decisions in a scoping study about the use of routine health information in LMICs (Lemma *et al.*, 2020).

5.6 Transparency of the leadership toward the annual health sector planning and budgeting process

Though 90% of the health managers agreed that transparency is important in enhancing the quality of the annual HSPB process, 77% of them affirmed that they were dissatisfied with the transparency of the CDoH leadership in the process. Some of the reasons that could be contributing to the dissatisfaction brought to the fore by the findings of the study include inadequate sharing of relevant information about the process such as budget ceilings, not providing reasons for budgetary decisions and limited mechanisms for providing feedback about the process.

Transparency of the leadership is an essential element of the annual HSPB process and is also beneficial in enhancing the quality of the procedures involved, as affirmed in this study and others conducted in both low and high-income countries. A qualitative study examining priority-setting practices and budgetary allocations in high-income countries emphasized that transparency concerning the process and in decision making strengthened the exercise (Seixas, Regier, *et al.*, 2021). In Kenya, it has been found to contribute to the alignment of priorities with budgetary allocations (Tsofa *et al.*, 2016) and in Uganda, an evaluation of the impact of an intervention to improve evidence-informed planning and budgeting at the regional level revealed that transparency made the process less time consuming and more participatory (Henriksson *et al.*, 2017). Maluka (2011) found that transparency in healthcare priority settings contributes to effective resource allocation in a study conducted in Tanzania. Lastly, in Zambia, transparency was found to be essential as it increased the fairness and quality of the planning and budgeting process (Zulu *et al.*, 2014). Therefore, the role of transparency of the county health department leadership in planning and budgeting cannot be overemphasized.

Despite these benefits of transparency, several studies have reported that there is limited transparency concerning the process in concurrence with the current study finding. The 2021 open budget survey showed that the global mean score for transparency in the budgeting process was 45 out of 100. Kenya's score of 50 out of 100 indicated that limited information is provided to the actors to enable meaningful engagement in the process (International Budget Partnership, 2021). Studies conducted in Kenya to evaluate and describe the health sector priority-setting processes have revealed that one of the obstacles encountered by health managers is the inadequacy of transparency from the authorities (David *et al.*, 2020b; Waithaka *et*

al., 2018b). Similarly, research in other countries has reported minimal transparency among the leadership in priority-setting exercises such as in Iran (Mostafavi *et al.*, 2016) and Tanzania despite the government developing guidelines and structures to enhance openness and accountability around the planning and budgeting process (Boex *et al.*, 2015; Maluka, 2011). Contrary to these findings, transparency has been enhanced in the health sector planning and budgeting process in South Africa through the public display of the budgeting information to the stakeholders and the public alike through the use of non-technical terms (Barroy *et al.*, 2022). Sharing of the information increases accountability, confidence and further facilitates meaningful engagement of all the actors in the process.

Limited transparency of the county health department leadership and other decision makers is exhibited through inadequate sharing of relevant information with the health managers and other stakeholders. This information for instance departmental and programmatic budget ceilings and reasons for the decisions taken to inform budgetary allocations is valuable in facilitating the meaningful engagement of the actors in the process.

The findings of other studies in High-Income Countries (HICs) and LMICs are in tandem with those reported in this study. Seixas *et al.*, (2021) in their description of priority-setting exercises in government-financed healthcare systems in high-income countries showed that sometimes health managers plan and allocate resources with minimal information from the leadership. In Kenya, descriptions and evaluations of the county health system priority setting practices have revealed that at times, the health managers are forced to plan and budget for the health sector with very minimal information at their disposal for instance lack of knowledge of their programmatic budgetary allocations (Bukachi *et al.*, 2014; David *et al.*, 2020b; O'Meara *et al.*,

2011b; Waithaka *et al.*, 2018b). Similar findings have also been observed in Uganda (Henriksson *et al.*, 2017) and Tanzania (Maluka *et al.*, 2010).

Inadequate sharing of information may be demotivating to the health managers as this may make them perceive that their contribution to the process is not valued and therefore could curtail their meaningful engagement in the planning and budgeting process. Therefore, it is essential that health managers are provided with adequate information and are given opportunities to contribute to the planning and budgeting process.

5.7 Alignment of the annual health sector plan and budget

According to the findings of this study, it is evident that the annual health sector planning and budgeting process is not aligned. Specifically, half of the health managers disagreed that the annual health sector planning process is aligned with the annual budgeting process, 52% disagreed that budgetary allocations are aligned with identified priorities and 54% disagreed that the finance team works jointly with the health managers in the development of plans and budgets.

Misalignment between health sector planning and budgeting process has consistently been documented in the literature. An implementation review of MTEF that had been proposed by the World Bank as a remedy for misalignment, demonstrated that the disconnect between the priorities and budget development was still a common occurrence (le Houerou & Taliercio, 2002). Likewise, a review of public financial management systems in Tanzania and Zambia revealed that one of the major barriers to health service delivery was the misalignment between planning and budgeting (Piatti-Fünfkirchen & Schneider, 2018).

Several studies have highlighted the disjointed development of the health sector plan and budget between the finance and health teams. A review of the implementation of PBB in LMICs demonstrated that there exists minimal collaboration between the finance and health departments which has impeded the full implementation of PBB in LMICs (Barroy *et al.*, 2022). For instance, in Ghana, minimal institutional collaboration in PBB development led to misalignment with the Ministry of Health using four programs while the Ministry of Finance used five (Osei *et al.*, 2021). Similarly, limited cooperation between the finance and health departments has contributed to poorly conceived health sector programs in Uganda (Abewe *et al.*, 2021), Gabon (Aboubacar *et al.*, 2020), and Ghana (Atuilik *et al.*, 2019).

In Kenya, this institutional separation has contributed to weak engagements and, consequently, misalignment in planning and budgeting processes as well (David *et al.*, 2020b; Tsofa *et al.*, 2016). As was expressed by the key informants in this study, misalignment has resulted in situations where various actors within the healthcare sector lead different processes. For example, while the County Director of Health oversees the annual health sector planning process, the County Executive Committee member for Health, who is liable to the treasury and county assembly, heads the PBB development (Tsofa *et al.*, 2021; Waithaka *et al.*, 2018b). The weak collaboration between the finance and health departments is likely because PBB which is led by the treasury is entrenched in legislation and follows a strict timeline (Government of Kenya, 2012b) while planning which is driven by the health department is not.

It has also contributed to the annual work plans being developed much later after the health sector budgets have been approved hence the two processes and documents are largely misaligned (David *et al.*, 2020b; Tsofa *et al.*, 2021; Waithaka *et al.*, 2018b).

This implies that the health sector priorities identified in the plans are not included in the approved budget in time for the resources to be allocated accordingly, similarly, the resource allocations in the final budget do not correspond to the health needs identified in the plans.

Study findings have demonstrated that when the Departments of Health and Treasury work jointly, the development of the plans and budgets are more aligned contributing significantly to the achievement of strategic objectives (Barroy *et al.*, 2022). For instance, in Burkina Faso which is quite progressive in PBB reforms, the finance and health teams have worked together closely over several years in defining the programs to include in the PBB and successfully aligned them with the health sector strategic plan (Barroy, André, *et al.*, 2018). To this effect, several recommendations have been put forward to strengthen the engagement between the two departments. Deployment of budget officers and economists to the county health department has been proposed to set up an integrated and well-coordinated team that can meaningfully collaborate in PBB development efficiently in line with the legal frameworks (David *et al.*, 2020b; Tsofa *et al.*, 2016; Waithaka *et al.*, 2018b).

There has been mixed evidence in the literature as to whether this recommendation can suffice in improving the alignment between the planning and budgeting processes. A project on transforming health service delivery in selected states within Nigeria found that integrated finance and health teams contributed to the development of more aligned plans and budgets (Allison, 2008). In contrast to this finding, a recent study describing the implementation of public financial management in South Africa demonstrated that integrating the finance and health departments is not enough in itself to result in the alignment of the processes (Wishnia & Goudge, 2021). The authors argue that for this integration to be successful, there is a need for continued cross

learning, better governance, and cultivation of trust between the two departments which can lead to improved working relationships. The findings of this present study support this argument. Despite the deployment of finance officers from the county treasury to work closely with health managers in the county department of health, proactive collaboration and alignment in planning and budgeting between the two entities are yet to be achieved.

This suggests that there is a need to go further than just the deployment and focus on institutional strengthening founded on existing legal and policy frameworks. This will facilitate the creation of enabling environments for collaborative and meaningful engagements that contribute to alignment between planning and budgeting.

A noteworthy observation made in this discussion is that studies that reported improved variables of health sector planning and budgeting process among health managers were due to interventions aimed at strengthening several components of the health care system that were largely donor-funded. The interventions covered areas such as strengthening the health sector planning and budgeting process (Henriksson, 2017), quality improvement of health services (Kinyenje Id *et al.*, 2022), and strengthening health policy and financing (Allison, 2008). It would be essential that such interventions and best practices are consolidated in a policy framework to enable governments to contextualize, adapt, replicate, and scale up to ensure sustained improvement of the process.

These interventions may contribute to public financial management reforms in the health sector of which planning and budgeting is one of its key objectives. These reforms are essential in assisting countries, especially LMICs to improve alignment between health priorities and allocation of resources (Barroy *et al.*, 2022) and also as

noted by International Health Partnership for UHC 2030 (2021) these reforms are critical for the health systems around the world in sustaining progress towards the achievement of UHC which is SDG 3.8

5.8 Relative significance of the predictors on the alignment of the health sector plans and budgets

The hierarchical multiple regression analysis revealed that the addition of each subsequent set of predictors significantly enhanced the model's capacity to account for the variance observed in the dependent variable. This is concurrent with both the premises of the health policy analysis triangle (Gill & Gilson, 1994), which served as the theoretical framework for this study and the perspectives of authors of priority-setting frameworks (Barasa *et al.*, 2015a; Sibbald *et al.*, 2009; Smith *et al.*, 2016) who assert that the components of an effective health sector planning and budgeting process are interconnected and exist within a complex relationship.

Initially, Model 1, which only included experience and education level as control variables, had a weak association with the dependent variable and only accounted for 2.5% of the variance in the dependent variable. However, subsequent models with the addition of knowledge, attitude, community engagement, health partner engagement, use of evidence, and transparency of leadership as predictors significantly improved the capacity of the model to explain the variance in the dependent variable, with the final model accounting for 59.6% of the variance.

The study revealed that the strongest predictor of developing aligned health sector plans and budgets is the transparency of leadership. This infers that even though the predictors are interrelated, transparency of the leadership is at the heart of a successful health sector planning and budgeting process. Additionally, this finding sheds new

light on the importance of transparency as a key enabler in enhancing effective health sector planning and budgeting process. This is consistent with the results of an earlier study that evaluated the allocation of budgets and setting of priorities in public health facilities of high-income nations, which demonstrated that transparency was an important factor that should be emphasized throughout the process for it to be effective (Seixas, Regier, *et al.*, 2021). In addition, according to the International Budget Partnership, the world's leading authority on conducting and publishing global budget surveys, transparency is one of the three key aspects that is measured and tracked to enhance governance and accountability around the budgeting process (International Budget Partnership, 2021). This further highlights the significance of transparency in promoting inclusive and effective planning and budgeting processes.

Several health sector governance frameworks envisage transparency as a significant element of effective leadership and governance within the healthcare system (Baez-Camargo & Jacobs, 2011; Greer *et al.*, 2016; Kirigia & Kirigia, 2011). Moreover, a recently developed health system framework for strengthening health policy implementation and analysis identified leadership and governance as the most important enabler, in enhancing the quality of other functions within the healthcare system (Papanicolas *et al.*, 2022).

Therefore, building stronger leadership in the health system is critical for aligning the planning and budgeting process, and ultimately, for the success of the health system as a whole. Additionally, investing in the development of leadership competencies and providing training for leaders in the health system should be a top priority for county governments to improve the alignment of the health sector planning and budgeting process.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter concludes the research by summarizing the main study findings related to the research objectives and articulating the value and contribution thereof. It states the recommendations for different actors across the health system on strategies to be implemented to strengthen the future practice of the annual health sector planning and budgeting process. Finally, it proposes additional areas for future research.

6.2 Conclusion

After the decentralization of the health sector in Kenya, the county health system has become pivotal in providing health services to the population. Consequently, it receives a substantial budget allocation to fulfill its mandate efficiently and effectively, as stipulated in Schedule Four of the constitution. Therefore, it is crucial to strengthen the county health system annual planning and budgeting process. Based on this premise, the study aimed to determine the relative significance of selected predictors of aligned annual health sector planning and budgeting process among health managers.

6.2.1 Knowledge of health managers on annual health sector planning and budgeting process

The study findings indicate that a majority of health managers lack the necessary training in planning and budgeting, including program-based budgeting. Additionally, a vast majority of them have not been adequately informed about the Ministry of Health's planning and budgeting guidelines nor provided with copies of these guidelines. However, the findings also highlight the transformative impact of training

health managers in planning and budgeting. Trained health managers demonstrated higher levels of knowledge and were more inclined to utilize legal frameworks. Moreover, their increased knowledge was associated with a higher likelihood of conducting annual performance reviews and using the findings to inform the development of subsequent plans and budgets. These findings emphasize the need for comprehensive training programs that address knowledge gaps and equip health managers with the necessary skills for effective planning and budgeting within the healthcare sector.

6.2.2 The attitude of health managers towards the annual health sector planning and budgeting process

While a majority of the health managers recognized the importance of annual HSPB for their units and acknowledged that their participation is beneficial to the process, their overall attitude towards the process was predominantly negative. The study reveals that less than half of the health managers expressed motivation for active participation. This lack of motivation for active engagement may hinder the effectiveness of the process, potentially impeding its success. Moreover, the majority of health managers perceived that the (CDoH) leadership do not adequately support them during the HSPB process, which could further contribute to their negative attitudes and limited engagement.

6.2.3 Community and health partners engagement in the annual health sector planning and budgeting process

The most common categories of stakeholders involved in the annual HSPB process are the community and health partners. The community health committees, operating under the CHU framework, are the most widely used structures for engaging the community. However, community engagement in the process is not effective, as it was

rated low by the majority of the health managers. Over half of the health managers disagreed that the CHCs have the requisite skills to engage meaningfully in the process. Similarly, most of the health managers tended to disagree that adequate budget and time are allocated for CHCs' participation and that feedback is provided to them at the end of the process.

On the other hand, health partners' engagement in the annual HSPB process is seen as beneficial by almost 90% of health managers. Despite this, a majority of health managers expressed dissatisfaction with the engagement of health partners. Key issues highlighted include the absence of a well-developed structure for their involvement, inadequate allocation of budget and time for engagement, and the failure to incorporate their activities and resource envelopes in the consolidated budget. These results emphasize the need for improvements in both community and health partner engagement within the annual HSPB process.

6.2.4 Use of evidence to inform annual health sector planning and budgeting process

The KHIS serves as the primary source of data for informing the annual health sector planning and budgeting process. While the KHIS demonstrates its potential by providing readily available data collected from routine health service delivery, it is evident that most health managers lack the necessary skills in data management. This deficiency encompasses areas such as data analysis, interpretation, and the effective utilization of data to inform planning and budgeting decisions. Additionally, the data used to inform the process was reported to be unreliable, posing further challenges to the decision-making process. By addressing these gaps, the health sector can make substantial strides toward evidence-based planning and budgeting, leading to more informed and effective resource allocation for better health outcomes.

6.2.5 Transparency of the leadership towards annual health sector planning and budgeting process

Transparency of the leadership emerged as the most important predictor of aligned health sector plans and budgets and therefore is at the heart of successful alignment of health sector plans and budgets. Although 90% of the health managers affirmed that the transparency of the county health department leadership is essential in enhancing the quality of the process, they were dissatisfied with the transparency of the leaders. The county health system leadership falls short in sharing relevant information related to the process, such as budget ceilings and reasons behind decision-making. Additionally, the absence of a structured feedback mechanism further restricts the open flow of information about the process. By fostering a culture of transparency, the county health sector leaders can promote a more inclusive and participatory approach to health sector planning and budgeting.

6.2.6 Alignment of the annual health sector planning and budgeting process

Over half of the respondents expressed their concerns regarding minimal collaboration between the health department and the county treasury revealing a gap in the coordination and communication between these two key actors. Consequently, health managers acknowledged the existence of misalignment between the annual health sector plan and the corresponding budgetary allocation, as well as a lack of synchronization between budgetary allocations and the identified priorities. These findings call for enhanced collaboration and synergy between the health department and the county treasury to ensure alignment between planning and budgetary allocation.

6.2.7 Relative significance of the predictors of aligned health sector planning and budgeting

Altogether, the results indicate that the predictor variable with the strongest effect on the dependent variable (aligned health sector plan and budget) was the transparency of the leadership which had the highest absolute value of the standardized beta coefficient of $\beta = .275$ followed by knowledge level of the health managers at $\beta = .254$, use of evidence, $\beta = .203$, community engagement $\beta = .168$, the attitude of the health managers $\beta = .139$, and finally health partners engagement $\beta = .125$ in that order.

Positive strides across the health system have been made toward improving the health sector planning and budgeting processes by developing frameworks to guide the process. It is an opportune time to go a step further and operationalize the developed frameworks which in turn can translate to the effective formulation of health sector plans and budgets as also proposed by Barasa *et al* (2015a) and Sibbald *et al* (2009).

In keeping with this proposition, this thesis provides an attempt to operationalize the Barasa *et al* (2015a) framework of evaluation of the process of setting healthcare priorities at regional and health facility levels which was developed as a result of a synthesis of the literature. This has been done by measuring the relative significance of the predictors in the framework using hierarchical multiple regression analysis. This may be helpful to the health managers at various levels in designing interventions to improve the annual health sector planning and budgeting process, especially in resource-constrained settings.

These findings imply that for health systems to improve the annual health sector planning and budgeting process, the interventions that need to be contextualized, designed, and implemented should focus first and foremost on improving the

transparency of the leadership, building the capacity of the health managers, using of evidence to inform planning and budgeting, strengthening community engagement, and finally enhancing health partners engagement.

Furthermore, when taken together, the results of this study emphasize the need for greater granularity in the components of the developed frameworks for priority setting in healthcare systems. This, in turn, presents opportunities to individually address the predictors, which collectively can enhance the improvement of the process. Overall, the current study findings have provided a credible starting point for health managers and the leadership of the county health department in their efforts to strengthen the annual health sector planning and budgeting process.

6.3 Recommendations

Informed by the conclusion of this study, the following recommendations are made to enhance the alignment of the annual health sector planning and budgeting process.

6.3.1 Knowledge of health managers on annual health sector planning and budgeting process

Policymakers: The county department of health leaders should design structured and sustained programs of strengthening the technical capacities of the health managers in health sector planning and budgeting through training and mentorship. This will be needed for the effective and purposeful engagement of the health managers throughout the process.

The county department of health leaders should facilitate the dissemination and sensitization of the planning and budgeting legislations, guidelines, and frameworks among all health managers to empower them to constructively participate in the process.

Practice: The health managers trained in planning and PBB should offer on-the-job mentorship to those not trained to upskill them to be knowledgeable about the process as well.

6.3.2 The attitude of health managers towards the annual health sector planning and budgeting process

Policymakers: The county department of health leaders should create and implement innovative programs to motivate the health managers to meaningfully engage in the process. Motivation is a key enabler for health managers to develop a positive attitude and remain committed to the process.

Practice: The county leadership should involve the health managers in planning and budgeting in all phases of the process. This could help to increase their ownership and engagement in the process, which could in turn lead to a more positive attitude towards it.

6.3.3 Community engagement in the annual health sector planning and budgeting process

Policymakers: The county health department should train the CHCs on the planning and budgeting processes.

The leadership of the county health department should allocate sufficient funds and time to enable CHCs to participate throughout all stages of the annual planning and budgeting process to ensure plans and budgets reflect community needs

The county health department should allocate funds to conduct feedback forums with CHCs to improve collaboration, inclusivity, transparency, and accountability in the planning and budgeting process.

Practice: The health managers at their respective levels of the health facilities should use already available forums in the community health units for instance dialogue days to provide feedback concerning the planning and budgeting process to the community.

6.3.4 Health partners engagement in the annual health sector planning and budgeting process

Policymakers: The county department of health leadership should allocate resources and constitute the CHSSF and health SWG to facilitate their functionality. This has the potential to significantly enhance the development of aligned health sector plans and budgets through better coordination and engagement of health partners.

Practice: The county health department needs to disseminate the Kenya Health Sector Partnership Framework (KHSPF) to all health managers. Effective dissemination of the partnership framework is essential to the success of health partners' engagement in the process.

6.3.5 Use of evidence to inform annual health sector planning and budgeting process

Policymakers: The county health department should invest in capacity building all the health managers at the different tiers of the county health system on the whole continuum of data management through training. The training should cover quality data collection, analysis, interpretation, and data use in planning and budgeting.

There is a need for the county health department to allocate funds for conducting APRs across all the tiers of the health system to enhance evidence generation and its utilization for effective planning and budgeting

Practice: The health records and information managers should offer mentorship to the health managers on retrieving health service delivery performance information from KHIS and how to use it for strategic planning and budgeting.

The health managers can utilize the data review meetings to interrogate the health service delivery data to enhance data quality and therefore the reliability of the data used to inform planning and budgeting.

6.3.6 Transparency of the leadership towards annual health sector planning and budgeting process

Policymakers: The county department of health leadership needs to communicate in a timely and transparent manner all the required information concerning planning and budgeting to the health managers to promote their effective participation.

The county health department needs to train the leaders involved in the process on aspects of leadership and governance. This will improve their leadership competencies and provide them with the essential skills to promote transparency in their communication and decision-making.

The county health department should establish functional and effective feedback mechanisms to facilitate a consistent and transparent flow of information during and after the planning and budgeting process.

Practice: The county health department can use existing forums such as health managers' monthly and quarterly meetings to provide feedback on the annual health sector planning and budgeting process.

6.3.7 Alignment of the annual health sector planning and budgeting process

Policymakers: The county department of health and the county treasury should co-develop a policy framework detailing clear guidelines that will foster meaningful

collaborative and effective engagement between the treasury and health department in the formulation of the health sector plan and budget.

Practice: The county department of health and the seconded officers from the county treasury should work collaboratively to ensure that all the required planning and budgeting procedures articulated in the budgeting cycle are comprehensively implemented in line with the existing legislation and guidelines.

6.4 Further research

The findings from this study has highlighted additional areas in which further research would be beneficial to the health sector planning and budgeting process.

The measurement of the predictors was developed using data from only one county, it could be useful to measure the relative significance of the predictors in other counties. This will allow for a comparison of the relative significance of the predictors in the different contexts which through further investigations can pave the way for the development of a universal model.

Considering that one of the limitations of the study was that data was only collected from health managers across all tiers of the healthcare system, it would be beneficial to collect data from other actors involved in the health sector planning and budgeting process, such as local political leaders, non-governmental organizations, and the treasury, to further strengthen the measurement of the predictors

The determined relative significance of the predictors of the development of aligned health sector annual plans and program-based budgets could be tested through an intervention study. This would yield insights into the suitability and effectiveness of the model in the formulation of aligned health sector plans and budgets.

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APPENDICES

Appendix 1: Informed Consent Form

Title: **Relative significance of selected predictors of aligned annual health sector planning and budgeting among health managers in Bungoma County, Kenya**

My name is Mildred Nanjala, a Doctor of Philosophy in Public Health student at Masinde Muliro University of Science and Technology. I am carrying out an investigation to find out the relative significance of selected predictors of aligned health sector planning and budgeting among health managers in Bungoma County. I would like to provide you with information regarding the selection process of study participants, as well as the procedures, risks, and benefits associated with taking part in this study.

The study aims to investigate the annual planning and budgeting process in all the units of the county health system. The researcher would like to learn about your experiences in the annual health sector planning and budgeting process in the development of evidence-informed health budgets.

I would like to invite you to participate in this study since your experience as a health manager in the county department of health can contribute to understanding the annual health sector planning and budgeting process. If you agree to participate in this study indicated by appending your signature at the end of this form, you will be asked questions regarding your knowledge and experiences of the annual health sector planning and budgeting in your unit which will take approximately thirty (30) minutes.

Participating in this study does not imply any risks to you. Your participation will not have immediate benefit to you; however, it will assist us to find out about the predictors of the county's evidence-informed health sector planning and budgeting process. Confidentiality will be maintained by using codes throughout data collection, storage,

and report writing. The physical copies of the data will be securely stored under lock and key, while the digital copies will be password protected.

Your participation in this study is strictly voluntary, and you have the option to withdraw from it at any stage if you choose to do so. You are allowed to ask any questions to clarify any concerns at any point during the study.

For further inquiry into the research, you may contact the principal researcher: Mildred Nanjala at mildrednanjala@gmail.com. This study has been reviewed and approval granted by the Masinde Muliro University of Science and Technology Ethics and Review Board; a committee mandated to ensure that the ethical principles of the study participants are upheld in the study. In the event of any further clarifications concerning the study and you would wish to express to another person besides the principal investigator, you are advised to contact MMUST ERC at 0702 597 360/1 or rel@mmust.ac.ke.

Consent

(Completion of this section is mandatory)

Having confirmed my understanding of this information and sought further clarifications, I am satisfied with the provided information and give my voluntary consent to participate in this study.

Signature of Respondent: _____

Name of Respondent: _____

Date: _____

Day/month/year

Declaration by the principal investigator

I have explained to the would-be study participant the process of participant selection, procedures, potential risks and benefits associated with participating in the study and ensured that they have understood.

I confirm that the study participant has freely and voluntarily given consent to participate in the study.

The study respondent has been provided with a copy of this Informed Consent Form (ICF)

Signature of Researcher: _____

Name of Researcher: _____

Date: _____

Day/month/year

Appendix 2: Semi-structured questionnaire for health managers

Title of study: Relative significance of selected predictors of aligned annual health sector planning and budgeting among health managers in Bungoma County, Kenya

Study respondents - County Health Management Team, Sub-County Health Management Team, and health facility in-charges.

Name of county		
Name of sub-county		
Category of Health Manager		
Name of Health Facility		
Level of Health Facility		
Name of interviewer		
Date of interview		
Time taken	Time started:	Time ended:

Section 1: Introduction

101: Age in completed years		
102: Sex	<input type="checkbox"/> Male	<input type="checkbox"/> Female
103: Highest level of education	<input type="checkbox"/> Certificate	
	<input type="checkbox"/> Diploma	
	<input type="checkbox"/> Degree	
	<input type="checkbox"/> Masters	
	<input type="checkbox"/> Ph. D	
104: Duration in service in your current management position	<input type="checkbox"/> 1-2 years	
	<input type="checkbox"/> 3-4 years	
	<input type="checkbox"/> \geq 5 years	
105: What position do you hold in your unit?	<input type="checkbox"/> Head of a program	
	<input type="checkbox"/> Head of a sub-program	
	<input type="checkbox"/> Head of Health Facility	
	<input type="checkbox"/> Other, specify	

Section 2: Knowledge of health managers in the annual health sector planning and budgeting process

I. Training in annual health sector planning and budgeting process

201	Have you attended any training on health sector planning (Annual work planning-AWP) in the last 12 months?	<input type="checkbox"/> Yes
		<input type="checkbox"/> No
202	What was the duration of the training if attended in completed days	
203	Have you attended any training/orientation on Program Based-Budgeting (PBB) in the last 12 months?	<input type="checkbox"/> Yes
		<input type="checkbox"/> No
204	What was the duration of the training if attended in completed days	
205	Have the MoH planning and budgeting guidelines been disseminated to you?	<input type="checkbox"/> Yes
		<input type="checkbox"/> No
206	Have you been provided with the MoH planning and budgeting guidelines?	<input type="checkbox"/> Yes (Ask to see copies)
		<input type="checkbox"/> No

**II. Knowledge of the annual health sector planning and budgeting process
(Tick one or all that apply)**

207	What is the first stage of the budget cycle process	<input type="checkbox"/> Formulation
		<input type="checkbox"/> Approval
		<input type="checkbox"/> Execution
		<input type="checkbox"/> Audit
		<input type="checkbox"/> I don't know
208	Who is the lead actor in the first stage of the budget cycle	<input type="checkbox"/> County executive committee member, Finance
		<input type="checkbox"/> County executive committee member, Health
		<input type="checkbox"/> County assembly
		<input type="checkbox"/> Auditor General
		<input type="checkbox"/> I don't know
209	What are the key budget documents required for implementing the first stage of the budget cycle	<input type="checkbox"/> The budget circular
		<input type="checkbox"/> County Budget Review and Outlook Paper (CBROP)

		<input type="checkbox"/> County Fiscal Strategy Paper
		<input type="checkbox"/> County Budget Proposal
		<input type="checkbox"/> I don't know
		<input type="checkbox"/> Others, specify
210	When undertaking the planning and budgeting process, which plans and reports do you refer to in the identification of priorities	<input type="checkbox"/> County Integrated Development Plan (CIDP)
		<input type="checkbox"/> Annual Performance Review (APR) reports
		<input type="checkbox"/> County Health Sector Strategic Plan
		<input type="checkbox"/> Sector Working Group Reports (SWG)
		<input type="checkbox"/> I don't know
		<input type="checkbox"/> Others, specify

Section 3: Attitude of health managers towards evidence-informed health sector planning and budgeting

Below are some statements regarding perceptions toward the annual health sector planning and budgeting process. Please read each of the statements and indicate by ticking to what level you disagree or agree using the rubric provided.

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	2	3	4	5
301	The annual health sector planning and budgeting process is an essential undertaking in my unit					
302	The development of the annual county health sector budget adheres to the budget cycle timelines					
303	The CDoH leadership supports me to develop an evidence-informed health sector annual plan and budget					
304	I have the appropriate skills to develop an evidence-informed health sector annual plan and budget					

305	My participation in the annual health sector planning and budgeting process is beneficial					
306	I am motivated to actively participate in the annual health sector planning and budgeting process					
307	Overall, I have a positive attitude toward the annual HSPB process					

Section 4: Utility of legal frameworks in the annual health sector planning and budgeting process (Tick one or all that apply)

401	What are the legal documents that guide the annual health sector planning and budgeting process at the county level	<input type="checkbox"/> County Government Act, 2012
		<input type="checkbox"/> Public Financial Management Act, 2012
		<input type="checkbox"/> I don't know
		<input type="checkbox"/> Others, specify
402	Do you use these legal documents to guide the annual health sector planning and budgeting process?	<input type="checkbox"/> Yes
		<input type="checkbox"/> No
403	Are the legal documents available to you	<input type="checkbox"/> Yes (Ask to see them)
		<input type="checkbox"/> No
404	Have you been sensitized on the provisions of the legal documents?	<input type="checkbox"/> Yes
		<input type="checkbox"/> No

Section 5: Stakeholder engagement in the annual health sector planning and budgeting process (Tick one or all that apply)

<p>501: What are the categories of stakeholders that are engaged in the annual health sector planning and budgeting process</p>	<input type="checkbox"/> Local political leaders <input type="checkbox"/> Academics <input type="checkbox"/> Non-governmental organizations (NGOs) <input type="checkbox"/> Private sector <input type="checkbox"/> Public/community <input type="checkbox"/> Others (Specify) <input type="checkbox"/> I don't know
---	--

(a): Community engagement (Community Health Units) in the annual health sector planning and budgeting process

502: How would you rate the level of community engagement in the annual health sector planning and budgeting process

1 <input type="checkbox"/> None	2 <input type="checkbox"/> Low	3 <input type="checkbox"/> Moderate	4 <input type="checkbox"/> High
---------------------------------	--------------------------------	-------------------------------------	---------------------------------

503	<p>Which structures do you use to involve the community in annual health sector planning and budgeting?</p>	<input type="checkbox"/> Health Facility Management Committees <input type="checkbox"/> Community Health Committees (Community Health Units) <input type="checkbox"/> Public participation forums <input type="checkbox"/> I don't know <input type="checkbox"/> Others (Specify)
-----	---	---

Below are some statements regarding community engagement (CHUs) in the annual health sector planning and budgeting process. Please read each of the statements and indicate by ticking to what level you disagree or agree using the rubric provided.

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	2	3	4	5
504	The CHUs have the requisite technical capacity to participate meaningfully in annual HSPB					
505	The CHU are provided with all the necessary information they require for meaningful participation					
506	An adequate budget is allocated to allow for comprehensive CHU engagement throughout the HSPB process					

507	Adequate time is allocated to allow for comprehensive CHU engagement throughout the HSPB process					
508	Health priorities proposed by the CHU are included in the county consolidated plan and budget					
509	Feedback to the community on the final consolidated health sector plan and budget is provided at the end of the process					
510	CHU participation is beneficial to the annual HSPB process					
511	Overall, I am satisfied with community engagement in the annual HSPB process					

(b): Health partners engagement in the annual health sector planning and budgeting process

512: How would you rate the level of health partners engagement in the annual health sector planning and budgeting process?

1 <input type="checkbox"/> None	1 <input type="checkbox"/> Low	3 <input type="checkbox"/> Moderate	4 <input type="checkbox"/> High
---------------------------------	--------------------------------	-------------------------------------	---------------------------------

Below are some statements regarding health partners' engagement in the annual health sector planning and budgeting process. Please read each of the statements and indicate by ticking to what level you disagree or agree using the rubric provided.

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	2	3	4	5
513	I am aware of all the relevant categories of health partners to engage in the HSPB process					
514	All the relevant health partners are meaningfully engaged in the annual HSPB process					
515	Adequate time is allocated to allow comprehensive health partners engagement throughout the HSPB process					

516	An adequate budget is allocated to allow for comprehensive health partners' engagement throughout the HSPB process					
517	Activities supported by all health partners and their budgets are included in the health sector budget					
518	There is a well-developed structure for engaging the health partners in the annual HSPB process					
519	Health partners' engagement is beneficial to the annual HSPB process for my unit					
520	Overall, I am satisfied with the health partners' engagement in the annual HSPB process					

Section 6: Use of evidence/data to inform annual health sector planning and budgeting process

601: Have you participated in Annual Performance reviews (APRs)?	<input type="checkbox"/> Yes (Ask to see reports)
	<input type="checkbox"/> No
602: Performance evidence generated from APRs is used in the identification of priorities and resource allocation	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
	<input type="checkbox"/> I don't know
603: What other sources of evidence/data do you use to inform the annual HSPB process?	<input type="checkbox"/> Kenya Health Information System (KHIS)
	<input type="checkbox"/> Surveys
	<input type="checkbox"/> Health partners' data
	<input type="checkbox"/> Others, specify

Below are some statements regarding the use of evidence/data in annual health sector planning and budgeting. Please read each of the statements and indicate by ticking to what level you disagree or agree using the rubric provided.

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	2	3	4	5
604	The data to be used for the annual HSPB is readily available					
605	The data that I use for annual HSPB is readily accessible from relevant managers					
606	The data I use for the annual HSPB is reliable					
607	The data I use for the annual HSPB is adequate for all the indicators of the priorities identified					
608	I have confidence in the data that I use to inform the annual HSPB process					

609	I have the technical skills to analyze and interpret KHIS data					
610	I have the necessary skills to use data to inform planning and budgeting					

Section 7: Transparency from the county department of health (CDoH)

leadership on the annual health sector planning and budgeting process

Below are some statements regarding transparency toward health sector planning and budgeting. Please read each of the statements and indicate by ticking to what level you disagree or agree using the rubric provided.

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	2	3	4	5
701	Transparency is important in enhancing the quality of the planning and budgeting process					
702	All the relevant information needed to inform planning and budgeting is shared on time to facilitate the process					
703	There is a structured way the CDoH leadership uses to share the relevant information for annual HSPB					

704	The annual health sector planning and budgeting process is transparent					
705	The budget ceiling for my unit is shared to allow for effective planning and budgeting					
706	There is a transparent feedback mechanism in place for the annual planning and budgeting process					
707	CDoH leaders provide reasons for decisions they make during the annual planning and budgeting process					
708	Overall, I am satisfied with the CDoH leaders' transparency during the annual planning and budgeting					

Section 8: Alignment of health sector plans and budgets

Below are some statements regarding the alignment of the health sector plan and budget. Please read each of the statements and indicate by ticking to what level you disagree or agree using the rubric provided.

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	2	3	4	5
801	The annual health sector planning process (AWP-Annual Work Planning) is aligned with the annual budgetary allocation process (PBB-Program Based Budgeting)					
802	Budgetary allocations are aligned with health sector priorities identified in development plans (CIDP-County Integrated Development Plan, CHSSP-County Health Sector Strategic Plan, and APRs-Annual Performance reviews)					

803	The health sector finance team works jointly with the health managers to develop an aligned annual health sector plan and budget					
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Appendix 3: Key informant guide for county health executives

Title of study: Relative significance of selected predictors of aligned annual health sector planning and budgeting among health managers in Bungoma County, Kenya

Study respondents - CECM health, Chief Officer of Health, County Director of Health

County:	
Date:	
Time started:	Time ended:
Interviewer:	
Respondent code:	

1. How do you participate in the annual health sector planning and budgeting process? Please explain.
2. Does the budgeting process in your department follow the budgeting cycle and the timelines in the budget circular? If not, why?
3. Does your department have a health sector working group (SWG)? What is its composition and roles? Is it functional? Ask to see minutes and SWG reports.
4. How do you rate the technical capacity of the health managers involved in the annual health sector planning and budgeting process?
 - Probe if they have been trained on the process and have the relevant documents and information.

5. In your opinion, to what extent do the approved budgets correspond with the identified priorities as outlined in the plans?
 - Probe for use of evidence in informing the annual health sector planning and budgeting.
 - Probe for the use of APR and development plans (CIDP, ADP, strategic plan, SWG)
 - How do you ensure that the units' budgetary allocations align with the department's priorities?
6. In your opinion, what needs to be done to strengthen the alignment between annual planning and budgeting?
7. Which legal documents do you receive from the County Treasury and county planning department to guide you in the planning and budgeting process? Ask to see copies. How do you use them?
8. How are the health partners in the county involved in the annual health sector planning and budgeting process?
 - Probe if the partners are represented in the HSWG and if their budgets and activities are included in the department's annual budgets.
 - Are you aware of the MoH Partnership framework? If so, has it been domesticated and disseminated?
 - Any challenges faced in involving health partners in the process.

9. How is the community engaged in the annual health sector planning and budgeting process?
- What structures if any do you use to involve them
 - At what stage of the HSPB are they involved
 - Is there a feedback mechanism to communicate with the community?
 - What are the challenges of involving the community in the process?
10. How is the information regarding the annual health sector planning and budgeting process shared with the health managers?
- What information is shared?
 - Is there a structured system in place for sharing?
 - Is there a feedback mechanism for information sharing?
11. How is the transparency of the annual health sector planning and budgeting process? Explain How you ensure that the process is transparent?

Appendix 4: Focus group discussion guide for community health committees

Title of study: Relative significance of selected predictors of aligned annual health sector planning and budgeting among health managers in Bungoma County, Kenya

Study respondents – Community Health Committees.

Sub-County:	
Date:	
Time started:	Time ended:
Moderator:	
Name of CHU:	Name of link facility:
FGD group code:	

1. What do you understand by the term annual health sector planning and budgeting?
2. Do you participate in the annual health sector planning and budgeting process in the county? Please explain.
 - What roles, if any, do you perform?
 - Have you received formal training for your role as a CHC? If Yes, When & how long was the duration of the training?
3. Please explain the technical capacity (knowledge and skills) within your unit to participate in the annual health sector planning and budgeting process.
 - Knowledge of Level 1 planning and budgeting process
 - Knowledge of the Ministry of Health planning and budgeting guidelines for Level 1

- Have you received training on Level 1 planning and budgeting in the last 12 months? If Yes, When & how long was the duration of the training?
 - Have you been provided with the (i) Ministry of Health planning and budgeting guidelines? (ii) Level 1 planning and budgeting template?
4. To what extent are you supported to engage in annual health sector planning and budgeting? By link facility and SCHMT?
 5. What is your opinion on the time allocated to you to develop the Level 1 annual plan and budget?
 6. What documents guide you during the annual health sector planning and budgeting process?
 - Are they familiar with the CIDP, CHSSP, APRs reports, ADPs, and sector working group reports?
 - Ask to see their copies.
 7. In your opinion, to what extent do the budgets you develop correspond with the identified priorities as outlined in the plans?
 - Probe for use of evidence in informing the annual health sector planning and budgeting.
 - Probe for the use of APR and development plans (CIDP, ADP, strategic plan, SWG)
 - How do you ensure that the units' budgetary allocations align with the department's priorities?

8. How can you describe the involvement of stakeholders (NGOs, CBOs) in the Level 1 annual health sector planning and budgeting process?
- Is it important to involve them?
 - Is there a structured framework for their involvement?
 - What are some of the challenges in involving them?
 - How can this involvement be strengthened?
9. How do you use evidence to inform planning and budgeting?
- What is the source of the evidence?
 - Is it accessible?
 - What is your technical capacity (knowledge and skills) in using data to inform planning and budgeting?
 - What challenges do you face in using the data?
 - What are some of the ways the use of data can be improved?
10. How is the information regarding annual health sector planning and budgeting shared with your unit from the SCHMT?
- What information is shared?
 - Is there a structured system in place for information sharing?
 - What planning and budgeting feedback would you like to receive in your unit?
 - Is there a feedback mechanism for information sharing?
 - Do you receive the approved annual health sector plan and budget after the process is completed?
 - Are you satisfied with the transparency from the leadership in information sharing?

Appendix 5: Map of Bungoma County



Source; (<https://opencounty.org/>, accessed 19th February 2022)

Appendix 6: Approval from the Directorate of Postgraduate Studies



MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

Tel: 056-30870
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Website: www.mmust.ac.ke

P.O Box 190
Kakamega – 50100
Kenya

Directorate of Postgraduate Studies

Ref: MMU/COR: 509099

26th July 2022

Mildred Nanjala Wamalwa
HPH/H/01-57339/2016,
P.O. Box 190-50100,
KAKAMEGA.

Dear Ms. Wamalwa

RE: APPROVAL OF PROPOSAL

I am pleased to inform you that the Directorate of Postgraduate Studies has considered and approved your PhD Proposal entitled: "*Significance of The Predictors of Evidence-Informed Annual Health Sector Planning and Budgeting among Health Managers in Bungoma County, Kenya*" and appointed the following as supervisors:

1. Dr. Maximilla Wanzala - MMUST
2. Prof. Ondiek B. Alala - MMUST

You are required to submit through your supervisor(s) progress reports every three months to the Director Postgraduate Studies. Such reports should be copied to the following: Chairman, School of Public Health, Biomedical Sciences and Technology Graduate Studies Committee and Chairman, Medical Laboratory Sciences Department. Kindly adhere to research ethics consideration in conducting research

It is the policy and regulations of the University that you observe a deadline of three years from the date of registration to complete your PhD thesis. Do not hesitate to consult this office in case of any problem encountered in the course of your work.

We wish you the best in your research and hope the study will make original contribution to knowledge.

Yours Sincerely,

Prof. Stephen O. Odebero, PhD, FIEEP
DIRECTOR, DIRECTORATE OF POSTGRADUATE STUDIES

Appendix 7: Approval from Institutional Ethics Review Committee (IERC)



MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY
Tel: 056-31375 P. O. Box 190,
Fax: 056-30153 50100,
E-mail: ierc@mmust.ac.ke Kakamega,
Website: www.mmust.ac.ke KENYA

Institutional Scientific and Ethics Review Committee (ISERC)

REF: MMU/COR: 403012 Vol 6 (01)

Date: August 5th, 2022

To: Mildred Nanjala

Dear Madam,

RE: SIGNIFICANCE OF THE PREDICTORS OF EVIDENCE INFORMED ANNUAL HEALTH SECTOR PLANNING AND BUDGETING AMONG HEALTH MANAGERS IN BUNGOMA COUNTY, KENYA.

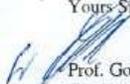
This is to inform you that the *Masinde Muliro University of Science and Technology Institutional Scientific and Ethics Review Committee (MMUST-ISERC)* has reviewed and approved your above research proposal. Your application approval number is **MMUST/IERC/095/2022**. The approval covers for the period **August 5th, 2022 to August 5th, 2023**.

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 **MMUST-ISERC**.
- 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 **MMUST-ISERC** 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 **MMUST-ISERC** 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 an executive summary report within 90 days upon completion of the study to **MMUST-ISERC**.

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

Yours Sincerely,


Prof. Gordon Nguka (PhD)
Chairperson, Institutional Scientific and Ethics Review Committee

Copy to:

- The Secretary, National Bio-Ethics Committee
- Vice Chancellor
- DVC (PR&I)

Appendix 8: Approval from the National Commission for Science, Technology and Innovation (NACOSTI)


REPUBLIC OF KENYA


NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION

Ref No: **913448** Date of Issue: **25/August/2022**

RESEARCH LICENSE



This is to Certify that Ms.. Mildred Nanjala Wamalwa of Masinde Muliro University of Science and Technology, has been licensed to conduct research in Bungoma on the topic: Significance of the Predictors of Evidence-Informed Annual Health Sector Planning and Budgeting among Health Managers in Bungoma County, Kenya for the period ending : 25/August/2023.

License No: **NACOSTI/P/22/19784**

913448
Applicant Identification Number

W. Kitembo
Director General
NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY &
INNOVATION

Verification QR Code



NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

Appendix 9: Approval from the County Director of Health, Bungoma County



REPUBLIC OF KENYA
COUNTY GOVERNMENT OF BUNGOMA
MINISTRY OF HEALTH
OFFICE OF THE COUNTY DIRECTOR
HEALTH



Telephone: 0725393939
E-mail: health@bungoma.go.ke
When replaying please quote

COUNTY DIRECTOR OF HEALTH
BUNGOMA COUNTY
P. O. BOX 18-50200
BUNGOMA

OUR REF: CG/BGM/CDH/RESRC/VOL.1

DATE: 29th August, 2022.

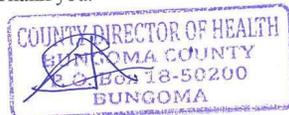
Ms. Mildred Nanjala Wamalwa
P.O Box 1965-50100
Kakamega.

RE: RESEARCH AUTHORIZATION.

Following your request for authority to carry out research on “**Significance of the Predictors of Evidence-Informed Annual Health Sector Planning and Budgeting among Health Managers in Bungoma County**”, I am pleased to inform you that you have been authorized to undertake the research for the period ending 25th August, 2023.

Kindly note that you shall deposit a **copy** of the final research report to the County Director of Health. The soft copy of the same should be submitted through the online Research Information System.

Thank you.



Dr. Johnston Akatu
County Director of Health
BUNGOMA.