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INFLUENCE OF HOUSEHOLD SOCIO-ECONOMIC, DEMOGRAPHIC, AND CULTURAL FACTORS ON WOMEN'S ACCESS TO MATERNAL HEALTHCARE IN MALINDI SUB COUNTY, KILIFI COUNTY, KENYA

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A DISSERTATION SUBMITTED TO THE SCHOOL OF EDUCATION AND SOCIAL SCIENCE IN FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF DEVELOPMENT STUDIES AT ST. PAUL'S UNIVERSITY, KENYA

OCTOBER, 2024

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DECLARATION

This research project is my original work and has not been presented for a degree in any other university.No part of this thesis may be reproduced without the prior written permission of the author and/or St. Paul's University

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DEDICATION

This work is dedicated to the resilient mothers of Malindi Sub County, who persevere in seeking effective maternal healthcare despite the formidable challenges they encounter.

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ACKNOWLEDGMENTS

I am profoundly grateful to the Almighty God for granting me the strength and resilience needed to overcome the challenges encountered throughout the completion of this project.

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ABSTRACT

Globally, maternal healthcare access remains a critical concern due to significant disparities, particularly in developing countries where access rates are notably lower. The Sustainable Development Goals underscore the importance of prioritizing maternal health, urging nations to improve access to maternal healthcare services. However, various factors hinder full access to such services.This study investigated the influence of social and economic factors on household access to maternal healthcare in Malindi Sub County, Kilifi County. Specifically, it examined the impact of income levels, literacy rates, parental age, and religious beliefs. The study, grounded in the Behavioral Model of healthcare service utilization, Maternal Morbidity Measurement (MMM), and the Three Delay Theory, employed a mixed research approach. A sample size of 382 respondents was determined using the Krejcie and Morgan's formula from a population of 73,547 households. Stratified sampling was employed to divide the sub-county into five strata based on wards, selecting households with mothers accessing maternal health services using purposive sampling. Additionally, twenty respondents were purposively chosen for key informant interviews. Because the dependent variable in the questionnaire was binary (access to maternal healthcare was either yes or no), the study used binomial logistic regression modeling to ascertain the influence of income levels, literacy levels, parental age and religious beliefs on the access to maternal healthcare. Income levels, with a coefficient of 2.236 (p-value = 0.007), literacy levels, with a coefficient of 1.981 (p-value = 0.002), and religious beliefs, with a coefficient of 1.004 (p-value = 0.037), were identified as significant factors positively influencing access to maternal healthcare. Conversely, parental age demonstrated a significant negative impact on access, with a coefficient of -1.262 (p-value = 0.004). The study concludes that socioeconomic status, education, and religious beliefs significantly influence maternal healthcare access, with a particular concern regarding diminished access as parental age increases. Consequently, this research emphasizes the critical need for targeted interventions to alleviate these disparities, recommending economic empowerment for women with lower income levels, health literacy education initiatives for vulnerable populations, and a multimodal approach to address cultural barriers and support both younger and older mothers in accessing healthcare services.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Maternal healthcare, which includes essential services during pregnancy, childbirth, and the postpartum period, is a critical component of public health that directly influences national development (World Health Organization (WHO), 2019). The health of mothers is not only a fundamental right but also a cornerstone for societal progress, as it determines the survival and quality of life of the next generation (Ikamari, 2020). The high maternal mortality rates witnessed globally, particularly in developing countries, present a significant challenge to achieving sustainable development. In 2017 alone, approximately 295,000 women lost their lives due to pregnancy-related complications, a stark reminder of the ongoing disparities in healthcare access and quality (WHO, 2020).

While global efforts have resulted in a 35% reduction in maternal deaths since 2000, disparities persist, especially in regions where socio-economic factors heavily influence healthcare access (World Health Organization, 2019). Research shows that factors such as income, education, cultural beliefs, and access to healthcare services are pivotal in determining maternal health outcomes (Kota et al., 2023). These socio-economic determinants, deeply embedded in the social fabric, often dictate whether women can access the necessary care during pregnancy and childbirth. As such, improving maternal healthcare is not only a public health imperative but also a crucial driver of economic and social development.

The link between maternal health and national development is profound. Healthier mothers contribute to stronger families, communities, and economies. When women have access to quality maternal healthcare, they are more likely to survive childbirth and raise healthier children, who in turn, have better chances of thriving and contributing to the workforce. Conversely, high maternal mortality and morbidity rates can cripple a nation's development efforts, leading to increased healthcare costs, loss of productivity, and perpetuation of poverty cycles (Koblinsky et al., 2016). Therefore, maternal healthcare is not just a health issue; it is a development issue that impacts a country's overall growth and progress.

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In developing regions, particularly in sub-Saharan Africa, the maternal mortality rate remains alarmingly high. This is largely due to a combination of inadequate healthcare infrastructure, socio-economic disparities, and cultural practices that hinder women from seeking timely and appropriate care. For instance, in Kenya, despite numerous interventions and programs aimed at improving maternal health, rural areas like Malindi Sub-County continue to experience low utilization of maternal healthcare services. Studies have shown that only 35% of pregnant women in Malindi seek maternal care at healthcare facilities, a situation exacerbated by factors such as distance to health facilities, literacy levels, income, and religious beliefs (Chorongo, 2016).

The persistent low access to maternal healthcare services in areas like Malindi not only jeopardizes the health of mothers and children but also undermines the country's broader development goals. Maternal deaths and complications during childbirth have a ripple effect on families and communities, leading to economic losses, increased healthcare costs, and long-term socio-economic challenges (World Health Organization, 2019). Addressing these barriers to maternal healthcare is therefore essential for promoting national development and achieving global health targets, such as the Sustainable Development Goals (SDGs), particularly SDG 3, which aims to ensure healthy lives and promote well-being for all at all ages.

Maternal healthcare is intrinsically linked to national development, with socio-economic factors playing a critical role in determining access and outcomes (United Nations, 2015). The need for targeted interventions that address these factors is paramount, particularly in rural areas where the challenges are most pronounced. By improving maternal healthcare access and quality, nations can not only save lives but also foster sustainable development, ensuring that all citizens, regardless of socio-economic status, have the opportunity to contribute to and benefit from the country's progress.

Despite the existing literature on the relationship between socio-economic factors and maternal healthcare access, significant research gaps remain. Many studies predominantly focus on urban settings, such as those conducted by Escamilla et al. (2018) and Oluoch-Aridi et al. (2020), leaving rural populations, like those in Malindi Sub-County, underexplored. For instance, while Ochako et

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al. (2018) examined barriers to antenatal care in urban areas, their findings do not address the unique challenges faced by rural women, including transportation difficulties and limited access to healthcare facilities. Moreover, although socio-economic factors are acknowledged, there is often insufficient analysis of how specific determinants, such as education, income levels, age, religious beliefs, and local healthcare infrastructure, interact to influence access to maternal healthcare. Research by Kilemi (2023) highlights economic barriers but does not sufficiently explore the roles of educational attainment or cultural beliefs in shaping healthcare-seeking behaviors across different age groups. This study, therefore, aimed to explore the socio-economic determinants of maternal healthcare access in Malindi Sub-County, specifically examining how these factors interact to affect utilization rates. By focusing on this under-researched area, the study sought to provide a comprehensive understanding that can inform policies and strategies aimed at enhancing healthcare delivery and promoting national development.

1.2 Statement of the Problem

Ideally, maternal healthcare should be universally accessible, ensuring that all women, regardless of their socio-economic status, geographic location, or cultural background, receive comprehensive care throughout pregnancy, childbirth, and the postpartum period. Achieving this ideal would significantly reduce maternal and infant mortality rates, aligning with national development goals such as Kenya's Vision 2030 and global targets like the Sustainable Development Goals (SDGs). Specifically, SDG 3 aims to ensure healthy lives and promote well-being for all ages, with a focus on reducing maternal mortality rates to below 70 per 100,000 live births by 2030 (United Nations, 2015).

In practice, however, many regions in Kenya, particularly rural and underserved areas such as Malindi Sub-County, face significant barriers to accessing maternal healthcare. Despite policy efforts and investments in the healthcare sector, disparities persist, driven by various socio-economic and cultural factors. For example, while Kenya's national Maternal Mortality Ratio (MMR) stands at 362 deaths per 100,000 live births (Kenya Health Information, 2014), Malindi Sub-County reports a distressingly high MMR of 428 per 100,000 live births (Waiswa et al.,

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2020). This discrepancy highlights severe challenges in accessing maternal healthcare services in the region.

This study aims to address several key issues. First, it will specify the socio-economic factors (such as poverty, income levels, and employment status) and cultural beliefs (such as traditional practices and religious views) being investigated. Understanding these factors is crucial for evaluating their influence on maternal healthcare access in Malindi Sub-County. Second, while existing literature identifies high maternal mortality ratios, it often lacks a detailed examination of how socio-economic and cultural factors contribute to these challenges. Studies by Kota et al. (2023) and Kilemi (2023) highlight general barriers but do not provide a thorough analysis specific to Malindi Sub-County. Third, the research seeks to fill gaps identified in current research by providing a detailed analysis of how particular socio-economic factors and cultural beliefs affect maternal healthcare access in the region, including the impacts of income, education levels, and specific cultural practices. Finally, the study will include a comparative analysis to contextualize Malindi Sub-County's situation with other regions and similar studies, aiming to understand the unique challenges faced in this area.

By addressing these issues, the research intends to uncover the underlying barriers that prevent women from accessing essential maternal healthcare services and to propose targeted interventions. This approach aims to contribute to reducing maternal mortality rates and improving healthcare equity, aligning with both national and global health objectives.

1.3 General Objective of the Study

The main objective of the study was to investigate the influence of social and economic factors on the access to maternal healthcare in Malindi Sub County in Kilifi County.

1.3.1 Specifically, the study sought to:

i. Establish the influence of income levels on the access to maternal healthcare in Malindi Sub County
ii. Determine the influence of literacy levels on the access to maternal healthcare in Malindi Sub County

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iii. Examine the influence of mother's age on the access to maternal healthcare in Malindi Sub County

iv. Analyze the influence of religious beliefs on the access to maternal healthcare in Malindi Sub County

1.4 Research Questions

i. What is the influence of income levels on access to maternal healthcare in Malindi Sub County?

ii. How do literacy levels influence access to maternal healthcare in Malindi Sub County?

iii. In which ways does parental age influence access to maternal healthcare in Malindi Sub County?

iv. What is the influence of religious beliefs on the access to maternal healthcare in Malindi Sub County?

1.5 Justification and Significance of the Study

Maternal healthcare is an essential pillar of healthcare systems worldwide, yet understanding its dynamics within diverse cultural, social, and economic contexts remains imperative. Past studies have largely overlooked these nuanced contexts, leaving a significant knowledge gap in understanding the determinants and barriers to maternal healthcare access and utilization. This emphasizes the critical need for research that can provide context-specific insights into the complexities surrounding maternal healthcare.

The present study sought to bridge this gap by focusing on understanding the barriers that impede the full utilization of maternal healthcare services. Unlike previous research that often emphasized the importance of maternal healthcare without delving into the specific obstacles faced by women, this study aimed to identify and comprehend these barriers within the unique social and economic landscapes of specific regions. By exploring these intricacies, the study aimed to provide a deeper understanding of the factors influencing maternal healthcare access and utilization.

Moreover, the justification of this study lay in its timely focus on addressing barriers to maternal healthcare access, particularly as global efforts intensified to achieve Sustainable Development Goal 3. With targets aimed at reducing maternal mortality and ensuring universal access to

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reproductive healthcare, comprehensive research on the root causes of disparities in maternal healthcare utilization became increasingly crucial. By uncovering these disparities and providing valuable insights, the study aimed to inform policy and practice, ultimately contributing to improved maternal health outcomes and advancing progress towards global health goals

This research will provide healthcare personnel with critical insights into the social, cultural, and economic factors affecting the utilization of post-natal services. By identifying specific barriers, such as low income, educational deficits, and cultural beliefs, the study will enable healthcare providers to develop targeted interventions and strategies to improve service delivery. For example, if the research reveals that cultural beliefs are a significant barrier, healthcare personnel can create culturally sensitive educational materials to address these beliefs and encourage service uptake.

The findings will be directly communicated to the county government's health department and the Ministry of Health through detailed reports and policy briefs. These communications will outline specific barriers and recommend evidence-based policies to enhance post-natal service uptake. For instance, if the study identifies distance to healthcare facilities as a major issue, recommendations may include the establishment of more local clinics or mobile health units to reduce travel time and costs (Kenya Health Information, 2014). The expected impact includes the formulation of policies that are better aligned with the actual needs of the community, thereby improving maternal health outcomes.

Community health volunteers will benefit from the research through targeted training programs designed based on the study's findings. These programs will equip volunteers with the knowledge and tools needed to effectively communicate the importance of post-natal care and address specific barriers identified in the study. For example, training might include strategies for overcoming cultural resistance or improving understanding of available healthcare services (Waiswa et al., 2020). The study will also contribute to existing knowledge by addressing specific gaps in current research.

By focusing on the unique socio-economic and cultural dynamics of Malindi Sub-County, the research will provide a deeper understanding of these factors and how they influence maternal

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healthcare access. This will help build on existing knowledge and support the development of more effective community health strategies (Kota et al., 2023). Involving community members in the research process was a key component. Community forums and workshops wereorganized to present the findings and gather feedback. This participatory approach ensured that the research outcomes were relevant and actionable, and it engaged community members in identifying practical solutions to improve maternal healthcare access.

1.6 Scope of the Study

The study was narrowed in scope in two main ways. The first is that it was restricted to Malindi Sub County. This is because of the fact that the sub county registers a lower maternal healthcare utilization rate in comparison to other counties nationally. Secondly, the study was also narrowed to the social and economic factors. There are, of course other factors, such as policy, hospital-based factors but the study was restricted to those factors that occur at household level. This is because being a development study; the households form the most ideal unit of analysis when it comes to maternal healthcare matters.

1.7 Limitations of the Study

As expected, the current study encountered several limitations. Firstly, there was difficulty in reaching out to respondents who may have been unwilling to volunteer the required information due to concerns about privacy or reluctance to divulge personal details. To mitigate this, assurances of confidentiality and anonymity were provided to participants. Secondly, the coverage of the sub-county posed a challenge, particularly in remote areas that were difficult for the researcher to access. To overcome this obstacle, research assistants familiar with the area were utilized. Thirdly, some respondents were illiterate and unable to comprehend written questionnaires, necessitating the administration of interviews instead. Despite these challenges, efforts were made to ensure that the limitations did not unduly impact the study's results.

1.8 Assumptions of the Study

This study was based on several key assumptions, most of which were confirmed during the research. First, it was assumed that household income significantly affects access to maternal healthcare, which was validated by the finding that higher income levels correlate with increased utilization of services. Second, the assumption that household literacy levels impact access to maternal healthcare in Malindi Sub County was confirmed, as higher literacy rates were associated

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with better knowledge of available healthcare options. The third assumption posited that parental age influences access to maternal healthcare; this was partially confirmed, indicating that while younger and older parents face distinct challenges, other factors may also play a role. Finally, the assumption that religious beliefs affect maternal healthcare access was validated, with certain beliefs influencing healthcare-seeking behaviors. Collectively, these findings highlight the importance of socio-economic factors in understanding maternal healthcare access in the region.

1.9 Operational Definition of Terms

Healthcare: According to this study, healthcare was used to denote the well-being of mothers who are either expectant or those who have given birth and are still in need of medical attention in health care facilities as well as the children.

Maternal Health care: The study treats maternal healthcare as the methods, approaches, and intentional actions that guarantee the well-being of the expectant mothers before, during and after childbirth.

Community Awareness- This was used to denote the knowledge that the members of the community in Malindi Sub County have and how they utilize it with regards to making decisions pertaining on maternal healthcare

Community-Based Response Strategies-Pertains to the strategies used by community members to guarantee that concerns pertaining to maternal healthcare are taken up in order to combat the difficulties associated with maternity healthcare.

Linda Mama Healthcare Program: A free health insurance plan exclusively for mothers and their newborns that eliminates financial barriers to accessing maternal care services. It is a government-sponsored initiative that was introduced in 2013 as a health financing strategy to provide affordable maternal care.

Voucher Facilities: Refers to those health centers that offer maternal healthcare based on payments before services are rendered.

Non-voucher facilities: These, on the contrary, refers to the healthcare facilities in which the mothers receiving maternal healthcare are free to enter and receive free medical attention based on being members of a health insurance plan specifically targeting them.

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1.10 Chapter Summary

The study's background has been presented in this chapter, and it has covered influences of socio-economic factors on Household access to maternal healthcare from views that are local, regional, and worldwide. This opened the path for the problem statement and objectives of the study to be presented. This chapter also includes an operational description of words as well as the study's importance, scope, and underlying assumptions.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter outlines the theoretical framework that guided this study. It also presents literature by scholars on the issue of maternal healthcare based on the review. The chapter intended to reveal a gap in knowledge that the study sought to fill. Furthermore, the chapter presents the conceptual framework demonstrating the relationship that exists between the variables that guided the study.

2.2 Theoretical Review

This study employed three theories which included: Behavioral Model on health care service utilization and Maternal Morbidity Measurement (MMM) and the Three Delay Theory.

2.2.1 Behavioral Model

This model was first suggested by Andersen in 1968. It holds the assumptions that factors such as income, education, sex, employment, and age affect people's use of healthcare, particularly maternity healthcare. Prosser (2007) takes a cultural approach to the problem. From this angle, the healthcare needs of mothers are greatly influenced by these predisposing variables. These academics contend that tackling these social and economic variables is the first step toward resolving the maternal healthcare crisis. Three categories, namely, need-based traits, facilitating features, and predisposing factors, are used in the theory to characterize health seeking behavior.

The inclination to use health at an individual level is characterized by predisposing factors, which are further influenced by beliefs, social structure, and demographic variables. According to Anderson (1968), those with stronger predisposition traits are certain to understand the importance of medical services and utilize them instead of other options. The empowering qualities define the easily available family unit and network resources that enable a person living in that community or family to access human services departments of their choice. The empowering traits, for instance, are characterized by family or family assets and financial strength within the family. The seeming necessity of whether or not a person looks for health care is characterized by need-based qualities.

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Using this theory, this study advances the argument that the core of the factors which enhance the use of maternal care lies at the household level. The social and economic reasons such as income levels, literacy levels, parental age and religious beliefs have a bearing on the access to healthcare because of the fact that these factors determine the household's capacity to make use of the maternity medical care.

However, as much as the theory offers a plausible explanation, it fails to give concrete explanations, particularly in disparities between the two different socioeconomic statuses: high and poor, especially in situations where the uptake of maternal healthcare is low. This therefore poses for a need to have a theory that explains this disparity. The Behavioral Model is valuable for analyzing how various factors such as income, education, sex, employment, and age influence healthcare utilization, especially in maternity care. It categorizes health-seeking behavior into predisposing, enabling, and need-based factors, offering a broad perspective on how individual and socio-economic characteristics affect healthcare access.

The model focuses on how individual predispositions and enabling resources such as family support and financial stability impact healthcare utilization. This is particularly relevant for understanding how household dynamics influence access to maternal healthcare services. The model does not fully address disparities between different socioeconomic groups, particularly in scenarios with low healthcare uptake. It may not adequately explain why certain socioeconomic groups encounter more significant barriers to maternal care despite having similar enabling and need-based factors. The Behavioral Model may not sufficiently consider specific contextual and environmental factors that affect healthcare access, such as those prevalent in rural or underserved areas.

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2.2.2 The Maternal Morbidity Measurement Model

According to Filipi (2018), the model reflects six fundamental principles; the first principle is that of employing a woman-centered approach. Here, health problems that inhibit the mothers from doing their usual activities may have a substantial direct or indirect impact on their lives and those around them. Secondly, the model reasons that maternal morbidity is cyclical since pregnancy can occur more than once; this in itself behooves the health providers to ensure that postnatal care eliminates any form of recurring birth complication in the next birth. Thirdly, it is predicated on

the idea that the results of mother morbidity can last for a long time beyond the six weeks of the postpartum period. Therefore, according to this model, mothers ought to seek postnatal services from healthcare centers in order to counter any adverse effects. From this perspective, therefore, the model treats maternal healthcare as not only a social and economic problem, but also as a clinical and biological issue. Lastly, the model takes cognizance of the context and environment which influence maternal uptake.

However, this model is not holistic in the sense that it does treat the issue of maternal health from a medical angle. At the same time, it examines the issue from an individual's perspective basing on the social and economic status. Accordingly, this model assumes that decisions on the health of mothers need to factor in not only the context that the mother operates; but also, social and economic situation the mother finds herself in. It will therefore inform this study in postulating how social and economic factors directly affect accessibility to maternal healthcare. However, the model also does not examine the issue from a household perspective. Households form a focal point of understanding health decisions and as such, understanding the issue from this perspective is a critical pillar in comprehensively explaining maternal health decisions.

The MMM Model, as outlined by Filipi (2018), provides a holistic perspective on maternal health by focusing on both medical and social dimensions. It emphasizes the long-term impacts of maternal morbidity and the importance of postnatal care, highlighting how health issues can affect women beyond the immediate postpartum period. The model's focus on the direct and indirect impacts of health problems on women and their families aligns with a practical and empathetic approach to maternal healthcare. While the MMM Model addresses medical and individual aspects of maternal health, it may not fully consider household-level factors that play a crucial role in health decisions. This focus can limit its effectiveness in understanding how family dynamics and household support impact healthcare access. The model does not explore the role of household factors in depth, which is critical for a complete understanding of maternal health decisions.

2.2.3 The Three Delay Theory

This theory was propounded by Barnes-Josiah (1998) who used it to recognize the variables impacting women's prompt use of healthcare as an interceding component to maternal mortality.

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The Three Delay Model expresses that so as to have a viable maternal health care result, three rule factors should be thought of. These include patients' timely decision to seek care which, much of the time, is influenced by socio-economic and behavior characteristics; delay in distinguishing and reaching health care, which has the probability to build hazardous women health outcome, and deferral in receiving appropriate care which brings about a patient encountering critical outcomes that could influence any future choice in seeking health care services benefits later on. This model was important as it helped in supply-side and demand - side for health and the side for supply. Therefore, the theory was used to argue that in Malindi Sub County, access to maternal healthcare was a threefold affair that entails the influence of social and economic factors, timely decision making and individual behavioral characteristics. This theory therefore was holistic in that it factors in the entire context of households as well as health-specific circumstances which dictate mother's uptake of maternal health.

The Three Delay Theory provides a comprehensive approach to understanding factors that influence maternal healthcare outcomes. It considers delays in decision-making, accessing healthcare, and receiving appropriate care, making it useful for analyzing how various delays impact maternal health. This theory is effective in examining the interplay of socio-economic and behavioral factors that affect maternal healthcare utilization, offering a broad perspective on the barriers to accessing care. The theory does not fully capture specific contextual factors relevant to different regions or settings, such as those in Malindi Sub County. It lacks the specificity needed to address local challenges and barriers. While the theory focuses on delays in care, it does not fully address the underlying socio-economic and cultural factors that contribute to these delays.

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2.3 Empirical Review

2.3.1 Income and Access to Maternal Healthcare

The correlation between income and access to medical treatment is undeniable, with individuals and disadvantaged communities often facing barriers due to the concentration of maternal healthcare facilities in metropolitan regions (Menonnen, Dune & Perz, 2019). However, the growing issue of poverty exacerbates this situation, as more women struggle with limited incomes, particularly in Sub-Saharan Africa where a significant portion of the population resides in low-

income countries. This disparity is reflected in the higher rate of maternal deaths in developing nations compared to developed ones, with Sub-Saharan Africa experiencing a maternal mortality rate of 462 per 100,000 conceptions in 2017, significantly higher than the rate in developed nations (Amwonya, Kigosa, & Kizza, 2022).

Moreover, poverty deeply impacts the relationship between maternal mortality and limited access to healthcare, as women often bear the burden of paying for their own treatment. For instance, in Sub-Saharan Africa, the cost of a single maternal healthcare visit can equate to approximately one month's worth of income, presenting a formidable obstacle for women living on low incomes (Hamal, Dieleman, De Brouwere& de Cock Buning, 2022). This financial strain further compounds existing barriers to accessing maternal healthcare services, perpetuating a cycle of inequity and contributing to preventable maternal deaths.

However, it is crucial to acknowledge a critical perspective on this issue, which emphasizes the systemic factors at play beyond individual income levels. While income certainly influences access to healthcare, addressing the root causes of poverty and inequity requires comprehensive structural interventions. Merely increasing individual incomes may not be sufficient to overcome the systemic barriers that hinder access to maternal healthcare, particularly in resource-constrained settings.

As much as the relationship between income and maternal healthcare looks indirect, on the contrary, income levels have a huge bearing on the access to maternal health. This is because of the fact that for a household to access the services, it must incur costs (Chorongo, 2021). Both informal and formal costs for accessing services for mother health during pregnancy, delivery, and after delivery phase form a huge financial barrier for women who are deficient in accessing maternal health care services leading to non-use of Postpartum Care (PPC) services, therefore reduced utilization (Gabrysch & Campbell, 2009). This view is reinforced by Ikamari (2020) when he posits that visiting health centers for maternal services needs one to travel hence transport costs, payment for the services as well as buy the requisite medicine.

In some cases, it also requires one to pay for tests that are critical for the expectant mother. These results are consistent with research conducted by Warren et al. (2015) on the quality of care in PPC facilities in Kenya, which found that compared to women who attend non-voucher facilities, over 4/5 of voucher facility patients were seen within 48 hours and received care within the first 48

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hours. This was due to the fact that they found non-voucher facilities to be so costly that they were unable to cover the expenses.

The foregoing examples do raise the question of costs; many mothers are unable to afford the costs of maternal healthcare and as a result, they are unable to attend. This then hampers their maternal health because issues that require attention are often not diagnosed and acted upon. Indeed, a subset of the healthcare workers stated that they were able to access a variety of clinical data related to neonatal and maternal health services. This information led to their conclusion that there are many mothers who fail to reach healthcare facilities for medical attention because of cost related challenges. These challenges hamper them from accessing these facilities because either they are too far from them which imposes a financial need on them to travel or they just do not have the money to buy drugs prescribed or do the tests that are recommended.

A thorough investigation of the social determinants of maternal health was carried out by Hamal et al. (2022), adding to the current discussion over the relationship between income levels and access to maternal health care. They looked at factors impacting maternal mortality and the use of maternal health services in India using a scoping study. Their results confirmed that one of the main structural factors influencing the use of maternal health services and the rates of maternal death in India is economic status. Although the study provides significant insights from the Indian context, extrapolating these findings directly to Malindi may not fully capture the unique socio-economic dynamics and healthcare infrastructure challenges present in this specific region. Therefore, the present study sought to addressing this research gap by providing a localized insight and evidence-based recommendations to improve maternal healthcare access and outcomes in Malindi and similar settings.

Elsewhere, Kamngbal (2020), elucidated that financial constraints pose significant obstacles to women in accessing two postnatal healthcare services within the first month after giving birth. The primary cause of this barrier, as outlined by the author, is the high costs associated with transportation, medical treatment, and related expenses. This observation finds support in Chorongo's (2016) study, which focused on income-related disparities among women in accessing maternal healthcare. The study revealed that affluent women who attended all mandatory

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postpartum care appointments were more likely to utilize postnatal healthcare services compared to their impoverished counterparts.

The study concluded that the ability to afford the fees contributed to the differential utilization of maternity care between women from wealthy households and those from impoverished backgrounds. Both studies underscored the considerable influence of financial constraints on maternal healthcare utilization, particularly regarding postnatal services. However, they may not fully encapsulate the nuanced socio-economic dynamics and healthcare challenges specific to Malindi Sub County, resulting in a lack of localized insights and evidence-based recommendations tailored to address the unique barriers to maternal healthcare access and utilization in such settings. Hence, the present study in Malindi aimed to bridge this gap by offering context-specific insights into the socio-economic determinants shaping maternal healthcare access and outcomes in the region.

Evidence from the World Health Organization (2021) indicates that only half of rural mothers receive skilled healthcare assistance during delivery, compared to half of urban mothers. This disparity is attributed to rural women's inability to afford maternity healthcare treatments provided by licensed medical professionals. Similarly, a study conducted in Turkey by Celik (2020) identified a strong correlation between household economic status and the utilization of maternal healthcare services, with financially disadvantaged households facing greater difficulties in accessing these treatments. Yadav (2020) further reinforced this finding by asserting that maternity healthcare disparities among rural Indian women are primarily driven by poverty.

The studies highlighted the crucial role of healthcare funding in improving quality of life, sustaining economic growth, and enhancing healthcare accessibility and affordability. However, they may not fully capture the socio-economic dynamics and healthcare challenges specific to Malindi. This recognition prompted the present study, which aimed to understand the socio-economic determinants influencing maternal healthcare access in Malindi. By focusing on this context, the study aimed to develop targeted interventions to address the unique barriers to maternal healthcare access effectively.

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The study by Letamo and Rakgoasi (2018) in Botswana examined factors contributing to the non-use of maternal health services, finding a significant correlation between economic status and maternal healthcare utilization. Utilizing nationally representative data from the 1996 Botswana Family Health Survey, the researchers analyzed a weighted sample of 19,031 women aged 15-49 with a pregnancy history within the prior five years. The analysis employed both simple cross-tabulations and logistic regression to explore the relationship between economic status and healthcare access. The findings indicated that lower economic status was associated with reduced utilization of maternal health services, highlighting financial barriers as a critical obstacle for women seeking care. This study is particularly relevant to current research in Malindi Sub County, which aims to establish the influence of income levels on access to maternal healthcare.

However, the study's limitations include its reliance on data from a single survey year and the potential for unmeasured confounding variables, such as cultural beliefs or geographical barriers, which could influence healthcare access beyond economic status. Additionally, the focus on a historical dataset may not adequately capture current dynamics in healthcare access. The current study addresses these limitations by incorporating more recent data and a broader range of socio-economic and cultural factors, thereby providing a more comprehensive understanding of how income levels affect access to maternal healthcare in Malindi Sub County.

Ssetogo's (2019) research in Uganda examined newborn survival rates, particularly the challenges faced by infants born to lower-income mothers. Utilizing a quantitative cross-sectional design, the study analyzed data from a national health survey, focusing on factors such as maternal income, access to healthcare services, and newborn health outcomes. The findings revealed a significant disparity in survival rates, with infants of lower-income mothers at a higher risk of mortality compared to those from middle- and upper-income families. Ssetogo attributed these outcomes to inadequate access to maternal care and insufficient medical interventions during antenatal services, highlighting the critical link between economic status and healthcare access.

While Ssetogo's findings are relevant to the current research on income levels and maternal healthcare access in Malindi Sub County, the study has notable limitations. Its narrow focus on economic factors may overlook other influential elements, such as cultural beliefs, geographical

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barriers, and systemic healthcare issues. Additionally, it does not consider variations in healthcare policies or government programs that could impact access. These limitations underscore the necessity for the current study, which aims to provide a more comprehensive understanding of maternal healthcare access by integrating socio-economic, cultural, and infrastructural factors. The current study sought to address the gaps identified in Ssetogo's research, offering insights that are critical for improving maternal healthcare access in Malindi Sub County.

In the Kenyan context, the relationship between income and maternal healthcare access mirrors broader regional trends, with financial constraints playing a significant role in women's ability to utilize essential services. Ochako et al. (2018) highlighted that low-income women in Kenya encounter considerable barriers to accessing antenatal care, primarily due to the high costs associated with transportation and medical services. This finding aligns with Kakai et al. (2021), who reported that economic barriers contribute to lower utilization rates of maternal healthcare services, particularly in rural areas. However, both studies have notable limitations.

For instance, Ochako et al. focused primarily on transportation costs and did not explore other potential barriers, such as cultural beliefs, health literacy, or systemic healthcare challenges, which could also influence access to maternal care. Similarly, Kotaet al.,(2023)'s research, while insightful, may not adequately capture the diverse socio-economic and geographical contexts within Kenya, potentially overlooking how local infrastructure or community support systems impact healthcare access. These limitations highlight the need for a more comprehensive examination of the factors influencing maternal healthcare access in Kenya. This is precisely why the current study was undertaken. By integrating a broader range of socio-economic, cultural, and infrastructural factors, the research aimed to provide a clearer understanding of how income levels affect access to maternal healthcare services.

Njenga et al. (2022) highlighted that financial constraints are a significant barrier preventing many Kenyan women from accessing essential maternal health services. The high costs related to transportation, medical fees, and supplementary care intensify the difficulties faced by low-income households, resulting in reduced healthcare utilization and poorer maternal outcomes. This study emphasizes the urgent need for targeted interventions to address these financial barriers in order to

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improve maternal health access in Kenya. However, the study has some limitations. While it effectively identifies economic challenges, it does not explore other intersecting factors such as the role of healthcare infrastructure, the availability of services in rural areas, or cultural practices that may also contribute to limited healthcare access.

Additionally, Njenga et al. (2022). did not account for the impact of public health programs or subsidies that may alleviate some of these financial pressures in certain areas. Therefore, the current study aimed to build on Njenga et al.,(2022)'s findings by taking a more holistic approach, examining not only economic constraints but also the broader socio-cultural and infrastructural factors that influence access to maternal healthcare in Malindi Sub County. This more comprehensive exploration is vital to developing targeted, sustainable interventions for improving maternal health outcomes.

While global and regional studies emphasize the impact of income on healthcare access, the Kenyan literature highlights specific challenges within the local context. The studies reviewed reveal that income disparities play a significant role in determining access to maternal healthcare services. However, the unique socio-economic and healthcare infrastructure challenges in Kenya, particularly in rural areas, necessitate localized research to develop effective strategies for improving maternal healthcare access. This underscores the importance of addressing both systemic and individual financial barriers to enhance maternal health outcomes in Kenya.

While the relationship between income and access to maternal healthcare has been well-documented globally and in Sub-Saharan Africa, there is still a significant gap in localized studies that explore this dynamic within specific regions like Malindi Sub-County. Most existing studies, such as those by Amwonya, Kigosa, and Kizza (2022) and Hamal et al. (2022), have focused on broader contexts, which may not fully capture the unique socio-economic challenges faced by women in Malindi. The generalized findings from these studies, while insightful, may not be directly applicable to the specific cultural, economic, and infrastructural conditions of Malindi. Therefore, there is a need for research that provides localized insights and develops targeted interventions that address the specific barriers to maternal healthcare access in Malindi.

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Moreover, existing studies, such as those by Kamngbal (2020) and Chorongo (2016), have highlighted the impact of income on maternal healthcare utilization, particularly in postnatal services. However, these studies may not sufficiently address the nuanced socio-economic dynamics and the interplay of various factors that influence healthcare access in rural and underserved areas like Malindi. The lack of context-specific data limits the development of effective policies and interventions tailored to the needs of this region. Thus, there is a clear gap in the literature that this study aimed atfilling by offering evidence-based recommendations tailored to the unique socio-economic conditions in Malindi.

Furthermore, while studies like those by Ochako et al. (2018) and Kakai et al. (2021) have identified economic barriers to maternal healthcare access in Kenya, they often focus on national or regional levels without delving into the specific challenges faced by women in more remote areas. These studies also tend to overlook the role of cultural and structural factors that may exacerbate the impact of income on healthcare access. Consequently, there is a need for research that not only examines the direct influence of income but also considers how it interacts with other determinants, such as cultural beliefs and infrastructure, to affect maternal healthcare utilization in Malindi. This study soughtto bridge this gap by providing a comprehensive analysis of the socio-economic factors that shape maternal healthcare access in Malindi, with the goal of informing more effective and contextually relevant policy interventions.

2.3.2 Literacy Levels and Access to Maternal Healthcare

Several studies, such as those carried out by Kamngbal et al. (2020), Kaisa (2017), and Furuta (2016), have emphasized the critical role that literacy levels play as vital indicators for the full utilization of maternal healthcare services. The results of these research show a strong positive link between a mother's use of maternity health care and her educational attainment. In particular, they find that the most reliable and important factor affecting the use of healthcare services for both mothers and children is maternal education. Higher awareness of health-related concerns is exhibited by educated women, who also actively seek out information regarding the availability of healthcare facilities and make efficient use of this knowledge to preserve or enhance their general health condition.

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A study conducted in Germany by Nawabi et al. (2021) highlighted the significant role of literacy levels, particularly during pregnancy, as maternal health behavior impacted both the mother's well-being and that of her child. While this study provided valuable insight into the importance of literacy in maternal healthcare, it also exhibited research gaps. For instance, it did not fully explore the specific socio-economic and cultural contexts influencing maternal healthcare utilization, which could vary significantly from those in other regions such as Malindi Sub-County. Additionally, the study's focus on Germany may have limited its generalizability to settings with different healthcare systems, socio-economic dynamics, and cultural norms, such as Malindi. Therefore, while this study contributed to understanding the relationship between literacy and maternal health behavior, further research was needed to explore these factors in diverse contexts like Malindi. This has provided comprehensive insights and recommendations for improving maternal healthcare access and outcomes in such settings.

In the Philippines, Wonh (2019) conducted a study to examine the relationship between the quality and access to maternal healthcare and parental care use, where it was established that education significantly contributed to maternal healthcare access. While this study shed light on the impact of education, particularly literacy levels, on maternal healthcare access, it also revealed research gaps concerning geographical context. Given the unique socio-economic and healthcare infrastructure dynamics in different regions, particularly in Malindi Sub-County, the present study sought to explore how literacy levels influenced maternal healthcare access. This research aimed to provide more nuanced insights into the role of education in maternal healthcare utilization and to inform targeted interventions aimed at improving access and outcomes in specific geographical contexts.

Regionally, several studies have highlighted the negative impact of illiteracy on access to maternal healthcare. Mukonnen's (2019) study in Ethiopia, as well as similar research conducted in Burundi and Uganda by Desire (2021) and Ssetongo (2019) respectively, found that illiterate women in rural areas were less likely to access maternal healthcare services. These women often relied on traditional approaches to maternal healthcare and were unaware of modern practices such as vaccinations and close monitoring of pregnancy progress. Conversely, Letamo (2018) conducted a study in Botswana, emphasizing the importance of education in understanding the need for

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maternal services. Educated women were found to have better comprehension of maternal healthcare requirements compared to their uneducated counterparts.

The common finding across these studies underscores the critical role of education in maternal healthcare utilization. Educated women are more likely to understand the importance of maternal services and consequently access them. This implies that efforts to improve maternal healthcare access should include initiatives aimed at enhancing literacy and education among women, particularly in rural areas where illiteracy rates tend to be higher. However, it is essential to acknowledge the potential limitations of these studies, particularly regarding their generalizability to other contexts such as Malindi Sub-County. The socio-economic and cultural dynamics in Malindi may differ significantly from those in the regions studied, which could influence the relationship between literacy and maternal healthcare access differently. Therefore, the present study in Malindi aimed to fill this gap by providing context-specific insights into the influence of literacy levels on maternal healthcare access and outcomes in the region.

According to Ali (2020), women' educational attainment in Mali has a significant impact on their use of maternity health services. Areas where the level of education is high, social networks gave women access to information and contact about safer motherhood and the importance of good maternal health care. Paudel (2013) asserts that educated and learned mothers in Nepal, attend anti-natal services, and deliver at health centers as opposed to uneducated mothers who rarely attend healthcare services. In conclusion, the authors state that mothers who have secondary education certificates are more likely to utilize postnatal health care as compared with those who do not have. Therefore, for programs that seek to enhance access to maternal healthcare to succeed, the issue of enhancing health literacy needs to be factored in. This could be as a result of sensitization or information dissemination. Therefore, while these studies provide valuable insights into the relationship between education and maternal healthcare utilization, their applicability to different contexts should be interpreted with caution. Consequently, the present study sought to fill the existing limitations by providing context-specific insights into the influence of education on maternal healthcare access and outcomes in Malindi Sub- County.

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The influence of education on the use of maternal health services is also examined from a new angle by Obasohan, Gana, Mustapha, Umar, Makada, and Obasohan (2019) in their study on decision-making autonomy and maternal healthcare usage among Nigerian women. They contend that, in contrast to popular belief, education increases women's autonomy, which in turn increases the probability that they will seek maternity treatment. The authors use factor analysis/score to create a women's autonomy index based on cross-sectional analysis of nationally representative data from the Nigerian Demographic and Health Survey (NDHS) in 2013. They identify correlations between response and exposure variables using logistic regression and chi-square analysis.

According to their research, there is a strong correlation between Nigerian women's autonomy in making decisions and their use of antenatal care (ANC) services. In particular, women who possess greater autonomy in making decisions have notably greater chances of using ANC services in contrast to people who have less autonomy. The authors draw the conclusion that increased educational attainment increases maternal health service consumption and access, which is mediated by Nigerian women's increased autonomy in making decisions. While the study provides valuable insights into the complex relationship between education, autonomy, and maternal healthcare utilization among women, its reliance on data from the 2013 Nigerian Demographic and Health Survey (NDHS) may not fully capture the current landscape of education and maternal healthcare utilization among Nigerian women. Moreover, the findings may not be entirely applicable to Kenya due to contextual differences between the two countries. These limitations underscored the need for the present study, which aimed to investigate similar dynamics within the specific socio-cultural context of Kenya, particularly in Malindi Sub-County.

Amwonya, Kigosa, and Kizza (2022) conducted a study in Uganda to examine the relationship between maternal healthcare consumption and female education. Their findings revealed that female education had a positive and significant impact on the use of maternal health care services. However, the study relied on Ordinary Least Squares (OLS) and Regression Discontinuity Design (RDD) methods, which may introduce biases due to unobserved variables and assumptions of comparability, respectively. To address these limitations, the present study employed a mixed-methods research design integrating qualitative and quantitative data collection techniques. This approach aimed to control for and mitigate potential biases inherent in single-method studies like

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OLS and RDD. Rigorous sensitivity analyses were conducted, and relevant confounding variables were controlled for, enhancing the robustness and reliability of the findings. By adopting these methodological strategies, the present study aimed to provide more nuanced insights into the relationship between female education and maternal healthcare utilization, contributing to a more comprehensive understanding of this critical issue.

In Kenya, research has highlighted the critical role of literacy in accessing maternal healthcare. For instance, Ochola and Wambui (2021) found that low literacy levels among women in rural areas were associated with limited access to and utilization of maternal health services. Their study emphasized that enhancing literacy could lead to improved health outcomes, suggesting that educational initiatives are essential for bridging the gap between women and necessary healthcare services. Similarly, Ochieng (2022) underscored the significance of educational interventions in improving maternal healthcare access in rural Kenyan communities. This finding reinforces the idea that literacy is not just an individual trait but a vital determinant of health, enabling women to navigate healthcare systems effectively. Additionally, Njeri and Mutua (2023) conducted a focused study in Malindi Sub-County, revealing that women with higher literacy levels were significantly more likely to attend antenatal care and utilize other maternal health services compared to their less educated counterparts. Their results indicate a direct correlation between literacy improvements and enhanced access to maternal healthcare, highlighting the potential of educational programs to address existing gaps in service utilization.

Despite these insights, certain limitations within these studies warrant consideration. For example, Ochola and Wambui (2021) and Ochieng (2022) did not explore the specific contextual factors affecting literacy and healthcare access across distinct regions, which vary widely in Kenya. Furthermore, while Njeri and Mutua (2023) focused on Malindi, their study did not fully account for the diverse socio-economic and cultural dynamics influencing maternal health access among different population strata. The current study examined the influence of literacy levels on access to maternal healthcare in Malindi Sub County. It provides an understanding of how literacy interacts with local socio-economic and cultural factors, ultimately offering targeted recommendations for improving maternal healthcare access in this specific context.

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The research by Chorongo (2016) and Nyaboke (2016) provides valuable perspectives on how literacy levels affect access to maternal healthcare in Kenya, particularly in regions such as Malindi and Kilifi County. Chorongo's work highlights the crucial role of disseminating information on maternal health to meet Sustainable Development Goal (SDG) 3, revealing that low literacy levels in rural areas significantly hinder access to essential health information. Similarly, Nyaboke (2016) 's study points out the need for adult education initiatives, like community gatherings (barazas), to better inform illiterate mothers about maternal and child healthcare services. However, since these studies were conducted eight years ago, they do not accurately reflect the current literacy rates or healthcare conditions in Malindi Sub-County. Changes over time in literacy levels, healthcare infrastructure, government policies, and societal norms affect the relevance of their findings. Thus, the current study aimed at addressing these gaps by providing updated insights into how literacy levels influence access to maternal healthcare in Malindi Sub-County.

The existing research often reflects findings from contexts vastly different from that of Malindi Sub-County. For instance, the study by Nawabi et al. (2021) conducted in Germany shows how literacy impacts maternal health behaviors, but the socio-economic and cultural environment in Malindi differs significantly from Germany's. Therefore, the insights from such studies do not fully apply to Malindi's unique healthcare system, cultural norms, and socio-economic challenges. This study sought to fill this gap by focusing on how literacy levels specifically influence maternal healthcare access within Malindi's context.

While Wonh's (2019) study in the Philippines revealed that literacy significantly impacts maternal healthcare access, it did not address how these findings might differ in regions like Malindi, which have distinct socio-economic conditions and healthcare challenges. The current study aimed to investigate how literacy levels influence maternal healthcare access specifically in Malindi Sub-County, providing insights that are directly applicable to this region and can inform targeted interventions.

Research such as that by Chorongo (2016) and Nyaboke (2016) provides valuable perspectives on the role of literacy in maternal healthcare. However, given that these studies were conducted several years ago, their findings may no longer be fully applicable due to changes in literacy rates,

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healthcare infrastructure, and policies. The present study sought to update and build upon these earlier findings, offering a contemporary analysis of the relationship between literacy and maternal healthcare access in Malindi Sub-County.

Studies like Amwonya et al. (2022) in Uganda have used methodologies that might not fully capture the complexities of the relationship between literacy and maternal healthcare access. The use of methods such as Ordinary Least Squares (OLS) may introduce biases due to unobserved variables. To address this, the present study employed a mixed-methods approach that combines qualitative and quantitative data collection techniques, ensuring a more comprehensive understanding of the influence of literacy on maternal healthcare access in Malindi. By addressing these research gaps, this study aimed at providing a deeper and more contextually relevant understanding of how literacy levels affect access to maternal healthcare in Malindi Sub-County. The findings will contribute to more effective policy-making and health education strategies tailored to the specific needs of the region.

Age and Access to Maternal Healthcare

According to Furuta (2016), the link between age of mother and maternal health is subject to continuums debate. For example, Fall (2015) avers that infant mortality, undernutrition, preterm birth, and intrauterine growth restriction are all linked to young mother ages at childbearing. Biological, social, and behavioral variables all contribute to these connections. Younger moms may be less able to attention to their infant's requirements since they are behaviorally immature and may nurse for a shorter period of time than older mothers. Compared to older moms, they typically have fewer secure connections, less education, and a worse financial standing. Their dietary requirements conflict with the fetus's if they are still developing. Conversely, older mothers (over 35) have a higher risk of stillbirths, preterm deliveries, restricted intrauterine growth, and chromosomal defects.

In the Philippines, Wong (2019) revealed that older women have lower accessibility to maternal healthcare compared to younger women. He attributed this disparity to the higher literacy levels among younger women, who are more inclined towards modern healthcare practices, unlike older women who often adhere to traditional maternal healthcare procedures. Consequently, older

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women may suffer negative health consequences due to certain age-related conditions that may go undiagnosed and untreated.

Similarly, Charkaborty's study (2018) in Bangladesh found that women over 40 tend to undervalue maternal health services compared to younger counterparts. This perception is rooted in the belief that older women, having experienced childbirth, possess greater knowledge and experience in managing maternal health issues. While these studies offer valuable insights into the factors affecting maternal healthcare accessibility across different age groups, their findings may not fully capture the socio-cultural contexts and healthcare systems specific to Malindi sub-county. Consequently, the generalizability of their conclusions to the Malindi context are limited.

In Burundi, Desire (2021) avers that older women tended to place more trust in traditional midwifes as opposed to seeking healthcare in health facilities. This is because they are seen to be experienced and they understand the complexities of child birth more than the young professionals. Therefore, the older women prefer seeking their services from these traditional care givers. Similar findings were established by Kaisa (2017) in Tanzania whereby older women tend to shun healthcare services for mothers compared to younger women. Once again, a number of factors contribute to these outcomes. In certain contexts, older moms are less educated, have a lower socioeconomic standing, and have a greater parity than in others, when they are educated women who have put off having children in order to pursue their careers. Obesity, diabetes, hypertension, and related pregnancy problems are more common in older moms. The two studies provide good background information about the possible nexus between religion and maternal health adoption. However, their respective conclusions are not relevant to Kenya due to the differences of sociocultural setup. The study sought to fill this gap.

The developmental foundations of adult illness, particularly cardiovascular disease and its risk factors, diabetes and hypertension, have drawn increasing attention in recent years. Research conducted in affluent nations indicates that children of younger moms perform less well in school. Studies have also revealed that children of older moms had higher blood pressure as children. There are no published research that looks at the relationship between adult cardiovascular disease risk factors and maternal age. The majority of research that correlates maternal age with child outcomes comes from High-Income Nations (HICs). Nonetheless, compared to High-Income Countries (HICs), Low- and Middle-Income Countries (LMICs) have a higher prevalence of young

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motherhood (fecundity rate for women under 19 is around 103 per 1000 women annually). It's possible that more young moms in LMICs are physically immature due to the delayed growth completion of females who are malnourished. In LMICs, the confounding impacts of social and economic status may be different. For instance, in certain contexts, being young while getting married is normal and not always a sign of deprivation.

In Kenya, a study by Wambua and Mwanzia (2020) revealed that older women in rural areas often face challenges accessing modern maternal healthcare services due to entrenched traditional practices and lower levels of health literacy. These barriers are compounded by limited availability of healthcare facilities in rural settings. Similarly, Ndegwa et al. (2021) reported that in Kiambu County, older mothers tend to prefer traditional birth attendants over formal healthcare services, reflecting a reliance on customary practices rather than modern medical interventions. Mwaura et al. (2019) found that younger mothers in Nairobi were more likely to access antenatal care compared to their older counterparts, who often delayed seeking healthcare due to perceptions of being experienced and self-sufficient. This delay can result in adverse health outcomes for both mothers and infants.

Additionally, Otieno (2018) in Kisumu highlighted that older women, particularly those with limited education, face significant barriers to accessing maternal healthcare services. The study pointed out that older women often lack awareness about the benefits of modern maternal healthcare, which contributes to lower utilization rates. These findings indicate that while age significantly influences maternal healthcare access, the specific socio-cultural and healthcare contexts in Kenya, such as those in Malindi Sub-County, present unique challenges. Thus, the current study aimed at addressing these regional variations and provide context-specific insights into how maternal age impacts healthcare access in Kenya.

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Studies conducted in other countries, such as Wong (2019) in the Philippines and Charkaborty (2018) in Bangladesh, provide insights into age-related disparities in maternal healthcare access. However, these findings may not fully apply to the socio-cultural and healthcare context of Malindi Sub-County, where local customs and healthcare infrastructure may differ significantly. This study aims to address this gap by examining the influence of maternal age on healthcare access within the unique setting of Malindi. Research by Wambua and Mwanzia (2020) and

Mwaura et al. (2019) has highlighted the differences in healthcare access between older mothers in rural and urban areas. However, there is a lack of research focusing on semi-rural areas like Malindi Sub-County, where urban and rural dynamics converge. This study sought to explore how maternal age influences healthcare access in this mixed setting, where traditional practices and modern healthcare services coexist.

Studies by Desire (2021) and Kaisa (2017) have shown that older women in some African contexts prefer traditional birth attendants over modern healthcare services. However, there is a need for more localized research in Malindi Sub-County to understand how these preferences affect access to maternal healthcare among older women. This study aimed at filling this gap by investigating the extent to which traditional practices influence healthcare decisions based on maternal age in Malindi. Otieno's (2018) findings from Kisumu indicate that older women, particularly those with lower levels of education, face significant barriers to accessing maternal healthcare. However, there is limited research on how these factors interact with age to impact healthcare access in Malindi Sub-County. This study explored the combined influence of maternal age, educational attainment, and socio-economic status on access to maternal healthcare services in this region.

2.3.3 Religious Beliefs and Access to Maternal Healthcare

When it comes to religious beliefs, it is apparent that as Koeing (2013) avers, they dictate how individuals express themselves with regards to the Supreme Being. This is related to health because of the fact that people attribute health to a supreme and transcendent being. People express their belief in religion through behaviors that are manifest that is outward. On the other hand, when it comes to spirituality, it is personal and privately related to the individual person. Both spirituality and religion are ways in which individuals living in a particular social and cultural context have their conception about issues that affect them, including health. For example, Schlehofer, Omoto and Adelman, (2008) state that regarding the everyday life, religion is a determining factor of how individuals act and think. It dictates how people dress, how they eat, how they relate, marriage, family as well as how they manage their health.

Therefore, religion can be understood from a conceptual perspective as the precursor to the culture and lifestyles of people. All the available religions starting with Christianity to Islam as well as

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Hinduism and Buddhism do offer insights on how their adherents manage their lives and in turn what they ought to eat as well as how they are supposed to treat the elderly when they are sick. From this dimension, therefore, suffice is to make that religion does manage both private and public lives of people.According to Heubuisch (2010), there is abundance of research linking religion to health.

Koening (2013) claims that recent trends have led to place less emphasis on the nexus between healthcare access of the elderly and religious factors yet when it comes to the treatment of ill health, religion is a determinant, and it makes people to decipher how to address it. People make decisions based on their religious persuasions and these decisions do determine their healthcare. An example of this is on occupational therapy, the Buddhists have for a long time employed acupuncture, which is a religious activity to treat a myriad of diseases in individuals; at the same time, they have also used meditation to solve psychological and psychiatric challenges in individuals. Thereforereligious therapy is a very important instrument in applying to treatment of ill health.

In the United Kingdom, for example, religious and spiritual needs have been incorporated in the National Health Insurance (Koening, 2013). At the same time, when it comes to Scotland, the relationship between health and religion is live and direct. The National Health Service has for a long-time compelled citizen to have due respect for the dignity and humanity of patients. At the same time, it has also compelled them to their diversity including their cultures and faiths and accord them faith and hope as they heal.

When applied to maternal healthcare in India, Yadav (2020) conducted a study on the changing patterns in inequalities in maternal healthcare. The results of the study indicate that religious principles and convictions still have a big impact on whether it's easier or harder to get healthcare. For example, in some rural parts of the country, it is considered a taboo for expectant mothers to be attended by male health officials because the traditions do not allow. In Turkey, Celik (2020) avers that Muslim expectant women prefer to be attended by Muslim medical officers and the vice versa. Similarly, in countries that are still deeply religious such as India, Yadav (2020) posits that one cannot delineate religious beliefs from maternal healthcare because the two are intertwined. In fact, he reports that those maternal programs that have succeeded in these countries always ensure

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that religious beliefs are embedded in the healthcare management systems to promote and enhance acceptability by the users. To this end, religious organizations have established health facilities in a bid to not only enhance access to healthcare, but also act as forums of empowering women with meaningful ideas that make them arrive at the right decisions. These beliefs are not just limited to Muslim and Hindu religions.

Among Christians, Luke (2020) avers that the Catholic faithful is very particular when it comes to maternal issues; driven by the pro-life approach, they abhor any maternal activity that has the end of ending life and as such, the women are prohibited from performing any action that can jeopardize the lives of the children and mother. From this end, it is apparent that religion and maternal access is inescapable. All these studies depict possible association between religion and maternal healthcare adoption. However, a keen examination reveals important gaps. For instance, all the studies are not exhaustive enough to differential religion from other variables that may affect use of maternal healthcare. Besides, it will be impossible to directly apply the same conclusions to the specific local context of Malindi Sub-County. This resulted in a research gap that the current study attempted to close.

In a 2020 World Health Organization research, religion's role in promoting universal access to maternity healthcare was examined. The findings established that religion plays several roles in enhancing access to healthcare. First, it is a tool of mobilization; to be able to get as many people as possible to consume healthcare information, if it is done through religious forums, the level of enhancing the message will be tremendously increased. This view is complimented by Perry (2021) in arguing that religious forums are usually the best in delivering health messages to the public with ease. However, religious beliefs can also be detrimental to access to maternal healthcare if their aim is to discourage people from accessing these services. In Uganda, Ssetongo (2019) reports that some religious organizations tended to discourage members from seeking health services from secular facilities. It is worth to note that religion may not be solely responsible to any significant effect on access to maternal health. The research by Odebode, James, and Ijaodola (2020), which looked at how married individuals in the Ilorin Metropolis, Kwara State, used family planning strategies in relation to their religious views, is a powerful example of this

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understanding in action. Their study's conclusions showed that adoption of family planning techniques was unaffected by religious convictions.

Wanjiru and Njeru (2021) found that in certain Christian communities in Kenya, traditional practices often override modern medical recommendations, affecting women's access to maternal healthcare services. Similarly, Karanja (2022) noted that Islamic practices in some Kenyan communities influence maternal healthcare decisions, with a preference for traditional care providers over formal medical institutions. In a study focusing on rural Kenya, Onyango and Omondi (2020) observed that religious beliefs profoundly affect antenatal care practices among women. The researchers found that adherence to religious doctrines often leads women to seek traditional remedies or faith-based interventions rather than conventional healthcare services. This preference can limit access to modern maternal health resources.

Further, Ochieng and Mwangi (2021) investigated the impact of Catholic teachings on maternal healthcare decisions in Nairobi. Their study highlighted those Catholic doctrines, particularly those emphasizing the sanctity of life, significantly influence women's choices regarding maternal health practices, including the use of contraception and abortion services. In addition, a study by Kibet and Kiprop (2022) in Bomet County revealed that religious beliefs play a significant role in shaping maternal healthcare access. The study found that women adhering to specific religious beliefs may experience barriers to accessing healthcare services due to the prioritization of faith-based practices over medical interventions.

Furthermore, the work of Mutiso and Muli (2023) in Machakos County demonstrated that religious affiliations and practices often dictate maternal health behaviors and service utilization. Their research illustrated that religious beliefs can both positively and negatively influences women's access to and use of maternal healthcare services, depending on the nature of the beliefs and the healthcare system's adaptability. This indicates that while religious beliefs influence maternal healthcare practices, the specific religious and cultural contexts in Kenya, such as those in Malindi Sub-County, present unique challenges. The current study aimed at addressing these contextual variations by examining the role of religious beliefs in maternal healthcare access, utilizing both quantitative and qualitative data to fill existing research gaps.

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Most research has considered religion in isolation when examining its impact on healthcare access. However, the interaction between religious beliefs and other socio-cultural factors, such as gender roles, economic status, and education, has not been thoroughly explored. Understanding how these factors intersect with religious beliefs is crucial for a comprehensive analysis of healthcare access. This study investigated how religious beliefs, combined with other socio-cultural elements, shape maternal healthcare access in Malindi Sub-County. The influence of religious leaders and institutions on healthcare decisions has been acknowledged in some studies, such as those by Perry (2021) and Ssetongo (2019). However, there is limited research on how these figures specifically impact maternal healthcare access in Malindi Sub-County.

Given the significant role that religious leaders play in shaping community beliefs and practices, it is essential to examine their influence in this context. This study aimed at filling this gap by exploring the impact of religious leaders and institutions on maternal healthcare access in Malindi. While it has been noted that religious beliefs can lead to a preference for traditional or faith-based remedies over modern medical interventions, as discussed by Wanjiru and Njeru (2021) and Karanja (2022), there is a lack of research focused on how these beliefs affect the actual utilization of maternal healthcare services in Malindi Sub-County. This study delved into how religious beliefs that either promote or hinder the use of maternal healthcare services available in the region, aiming to provide a clearer understanding of these dynamics.

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2.4 Summary of Literature Review

This review has presented many studies from local, regional and international contexts on the issue of maternal healthcare and its access in terms of social and economic determinants. It is apparent that age, income levels, literacy levels and religious beliefs have a bearing on the access to maternal healthcare across the globe. It thus becomes necessary to examine the access to healthcare from local perspectives.

2.5 Conceptual Framework

Figure 2.1 summarizes the link between the various variables that guided the study. The independent variables included the social and economic factors which entailed income levels, literacy levels, parental age and religious beliefs. On the other hand, the dependent variable was

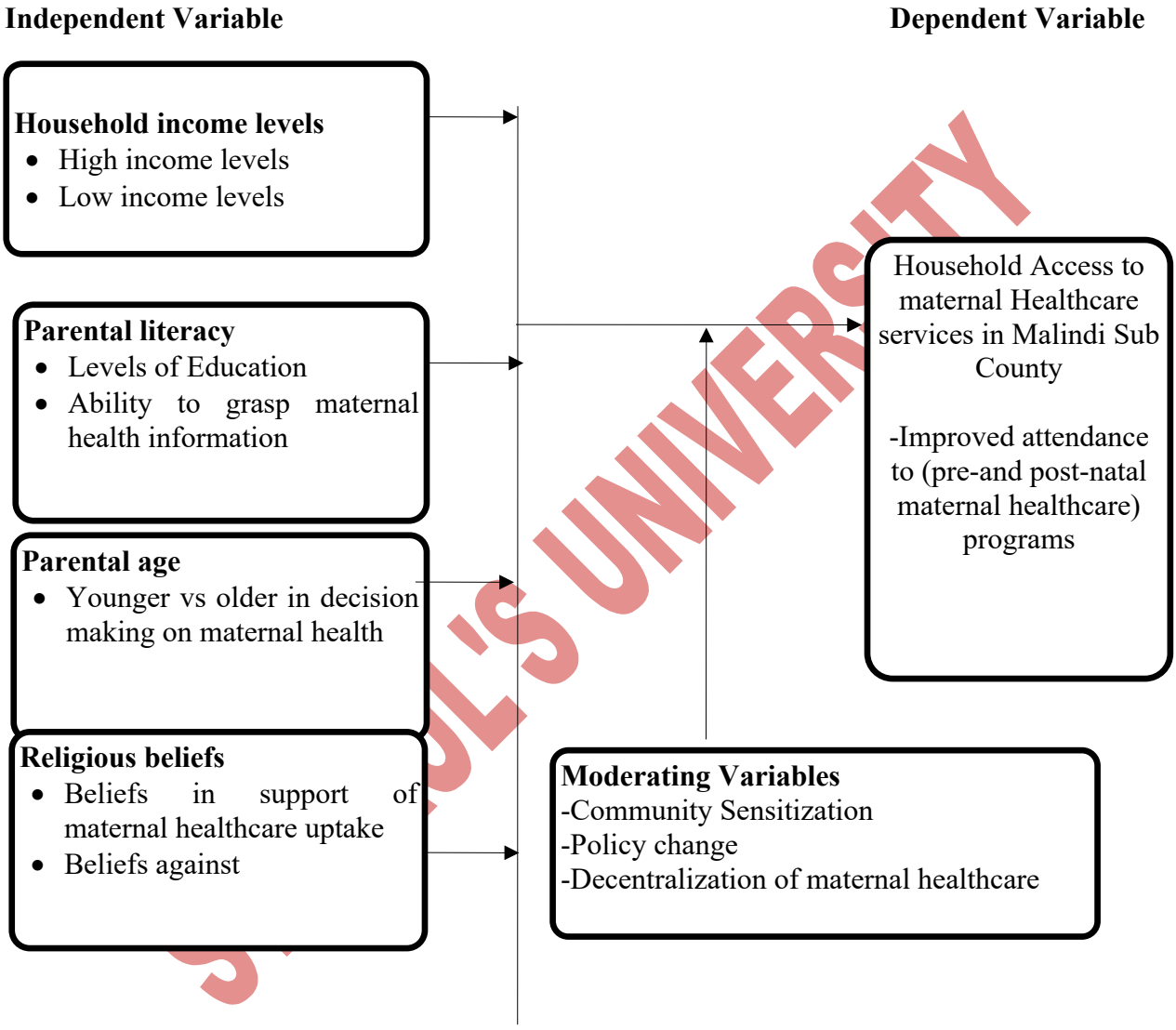
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household access to maternal healthcare services. The intervening variables entailed policy measures that are geared towards accelerating the access to maternal healthcare. These included: policy change, community sensitization as well as decentralization of maternal healthcare.

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Figure 2.1
Conceptual Framework



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The above conceptual framework illustrates how various independent variables influence household access to maternal healthcare services in Malindi Sub County, mediated by moderating variables. Household income levels play a significant role, where higher income levels often facilitate access to maternal healthcare services due to greater financial resources, while lower

income levels may pose barriers due to financial constraints. Similarly, parental literacy levels, encompassing both education and the ability to comprehend maternal health information, directly impact access to these services. Higher levels of parental literacy are associated with better understanding and utilization of maternal healthcare services, while lower literacy levels may impede access. Additionally, parental age dynamics are crucial, with older parents typically possessing more experience and knowledge regarding maternal healthcare decision-making, potentially facilitating access, whereas younger parents may encounter challenges in accessing and utilizing these services. Religious beliefs also exert influence, where supportive beliefs can encourage uptake of maternal healthcare services, while beliefs opposing such services may act as barriers.

However, the impact of these independent variables on access to maternal healthcare is not direct but is moderated by community sensitization, policy changes, and decentralization efforts. Effective community sensitization programs raise awareness about the importance of maternal healthcare and address cultural and social barriers, while policy changes can enhance the availability, accessibility, and affordability of maternal healthcare services, thereby removing systemic barriers. Furthermore, decentralization of maternal healthcare services brings them closer to communities, reducing logistical barriers such as distance and transportation costs, thus facilitating access.

Overall, the interaction between independent variables such as household income, parental literacy, parental age, and religious beliefs, and moderating variables like community sensitization, policy changes, and decentralization efforts, shapes the extent to which households in Malindi Sub County are able to access maternal healthcare services effectively, as indicated by improved attendance to pre- and postnatal maternal healthcare services.

2.6 Chapter Summary

The literature on related studies on the issue of the factors that affect access to maternal healthcare has been discussed in this section. The first part was aimed at outlining the theories that were used in anchoring the study. The theories included Behavioral Model on health care service utilization and Maternal Morbidity Measurement (MMM) and the Three Delay Theory. Thereafter, the chapter has proceeded to examine the issue of maternal access from four variables namely: income levels, literacy levels, age differentials and lastly religious views. In so doing, it presented not only

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the global picture, but also the regional and local perspectives. The objective was to identify a deficiency that the present study sought to address. Finally, the chapter introduced the conceptual framework, illustrating the connections between the variables that directed the study in the form of a diagram.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter provides a detailed description of the appropriate research design depending on the study's aims and field. It also describes the study area, population, target population, sample size, sampling technique, data collecting, data analysis techniques, and ethical issues.

3.2 Research Design

The research adopted a mixed-method approach, integrating both questionnaires and interview schedules, to collect data comprehensively on the influence of social and economic factors on access to maternal healthcare (Dawadi et al., 2021). This methodological choice facilitated data collection in scenarios involving large populations, where alternative study designs might have been unsuitable. By combining qualitative and quantitative methodologies, the research design ensured a nuanced understanding of the subject matter, capturing not only statistical trends but also the underlying attitudes, values, and attributes of the population under study.

The use of questionnaires allowed for the collection of structured data, enabling statistical analysis to identify patterns and associations between variables. On the other hand, interview schedules provided an avenue for in-depth exploration of participants' perspectives, experiences, and insights, enriching the understanding of complex socio-economic dynamics influencing maternal healthcare access. This comprehensive approach was deemed necessary to document the current state of affairs accurately and characterize various behavioral aspects of the target group. Ultimately, the mixed-method design was considered adequate for the study due to its ability to yield detailed qualitative and quantitative data, providing a holistic view of the factors affecting maternal healthcare access and allowing for more nuanced analysis and interpretation.

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3.6 Study Site

The investigation was carried out in Malindi Sub County in Kilifi County in the larger coast region. The sub county borders Kilifi North Sub County to the south and Magarini Sub County to the North. At the same time, the sub county has five wards namely: Ganda, Jilore, Kakuyuni, Malindi Town and Shella. The Sub County is located within Kilifi County which has its

headquarters in Kilifi town. According to the recent census, Malindi Sub County has a population of 163,351 and 73,547 households with an average household size of 4.4 (KNBS, 2019).

Because of its notably low usage of maternal health services, Malindi, located within Kilifi County, was most preferred and chosen as the focal region for the investigation of the impact of socioeconomic determinants on household access to healthcare for mothers. For example, according to statistics from Chorongo, just 35% of mothers in Malindi receive healthcare services, which is much less than the 80% that the World Health Organization (WHO) recommends. It is alarming that so few women are using maternal health care, especially in light of the 44% global maternal death rate.

Malindi was selected as the study area for several compelling reasons. Firstly, the notably low utilization of maternal health services in Malindi presents a critical public health concern that warrants further investigation. With maternal healthcare consumption significantly below the WHO-recommended threshold, there is an urgent need to understand the underlying socioeconomic determinants contributing to this disparity. Additionally, Malindi's unique socio-economic and demographic characteristics make it an appealing case study area. Its geographical location, bordering Kilifi North Sub County to the south and Magarini Sub County to the North, provides insights into variations in healthcare access within the same administrative region. Moreover, conducting the study in Malindi allows for the investigation of maternal healthcare access within the context of Kilifi County, facilitating a comprehensive examination of healthcare disparities and the effectiveness of healthcare policies and interventions within the region. Therefore, the choice of Malindi Sub County as the study area offers a rich and nuanced understanding of the socioeconomic determinants influencing household access to maternal healthcare in coastal Kenya.

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3.7 Target Population

The study targeted mainly households in Malindi Sub County which has a total of 73,547 households with an average household size of 4.4(KNBS, 2019). Households with mothers who sought maternity services in the selected health facilities were targeted because of being directly related to the research topic. In doing so, the households were the point of concern because to be

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able to understand social and economic factors, it is best done from the household perspective. Refer to Table 3.1

Table 3.1

Distribution of Wards and Number of Households

Wards	Number of Households
Jilore	1996
Ganda	4240
Malindi Town	46054
Shella	14,439
Kakuyuni	6,818
Total	**73,547**

Source: KNBS, 2019

3.8 Sample Size

The number of participants was determined by applying Krejcie and Morgan's table from the formulae for Calculating Sample Size developed by Krejcie and Morgan (1970). Since the target population was the households in Malindi sub county which is 73,547, the formulae recommend a sample size of 382 (See Appendix). This formed the sample size for the study. The sub-county has a total of 5 wards, namely: Kakuyuni, Ganda, Jilore, Malindi Town, and Shella; therefore, in each of the wards, the respondents were selected depending on total of households thus making a total of 382 as displayed in table 3.2.

Table 3.2

Sample Size Distribution

Wards	Number of Households	Sample	Percent
Jilore	1996	10	2.7
Ganda	4240	22	5.8
Malindi Town	46054	239	62.6
Shella	14,439	75	19.6
Kakuyuni	6,818	35	9.3

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Total	**73,547**	**382**	**100.0**

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Table 3.3

Key Informants

Wards	Sample	Percentage
Kakuyuni	4	20%
Ganda	4	20%
Malindi town	4	20%
Shella	4	20%
Jilore	4	20%
Total	**20**	**100%**

3.9 Sampling Techniques

Stratified Sampling was used by first grouping the heterogeneous group into homogenous groups (wards) within the constituency. According to Creswell and Creswell (2017), stratified random sampling is most commonly used method in enabling researchers select a sample population that most closely resembles the whole population under investigation. By doing this, it creates strata in the population according to traits they have in common.

The researcher then used simple random sampling to choose the right number of respondents (households with mothers) after dividing the wards. The researcher targeted those households that have mothers who are seeking maternal healthcare from the sub-county's health facilities. Mugenda and Mugenda (2014) explains that simple random sampling is ideal when the researcher is dealing with a population that has the characteristics that are needed for the study. In this case, the mothers seeking maternal health services in the health centers across Malindi Sub-County were targeted because they had the knowledge and experience that the researcher was looking for. This was done by administering questionnaires using a drop and pick system.

The study employed purposive sampling to select 20 key informants, specifically 4 Community Health Workers (CHWs) from each of the five wards, as outlined in Table 3.3. The aim was to reach the saturation threshold, as suggested by Mason (2017), which typically occurs when no new

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ideas or information emerge from additional data collection. By involving 20 key informants, the study sought to achieve this saturation point in qualitative research. Mason's recommendation of involving between 20 to 60 key informants guided the decision-making process. By selecting a manageable number of key informants, the study focused on gathering rich and detailed insights from individuals who were well-positioned to provide valuable perspectives on the factors influencing maternal healthcare access in Malindi Sub-County.

3.10 Data Collection Tools

3.10.1 Questionnaire

Questionnaire was the main tool for collecting primary data from mothers seeking maternity care at medical institutions. The advantages of employing questionnaires in the study included the fact that responses were gathered in a standardized manner. The questionnaire was created based on the particular objectives of the study. In order for the respondents to provide objective answers, the researcher and her assistants had to convey the material to them in a way that ensured everyone understood the questions.

The questionnaire for this study was divided into six sections to comprehensively assess the social and economic factors influencing household access to maternal healthcare in Malindi Sub County. Section A collected demographic data such as age, marital status, education, household size, and occupation. Section B examined the impact of income levels on healthcare access through Likert scale statements and open-ended questions. Section C focused on the role of education, assessing how parental education influences healthcare decisions.

Section D explored the effects of parental age on healthcare access, with both quantitative and qualitative queries. Section E investigated the influence of religious beliefs on maternal healthcare choices, combining Likert scale statements and open-ended responses. Finally, Section F sought an overall view on access to maternal healthcare, summarizing the study's key factors. Therefore, since the mothers may not have a lot of time to respond to the study, this method was deemed ideal because they were given the questionnaires in order to fill them at their own appropriate time and collected at a later time. Besides, using questionnaires was relatively quick method of gathering information.

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3.10.2 Key Informant Interview

Interview schedules were also used in this study for the primary respondents. Using an interview schedule provided the detailed information required for qualitative data. Health professionals that deal with maternal health were interviewed. This tool has the benefit of assisting the researcher in better understanding the interviewee's points of view and emphasizing the spirit of debate in a relaxed and casual setting. Key Informant Interviews (KIIs), which largely included community health workers, were the emphasis of this study's use of interviews as a major strategy to get important insights. Their wealth of expertise in supporting moms in need of maternity services prompted their decision. Selected health professionals stationed at health centers were given the interview dates. The study specifically targeted maternity services officers, with the aim of speaking with 10 medical professionals.

3.11 Pretesting of the Research Tools

For the pretesting of the research tools, a portion of respondents (38 individuals, constituting 10% of the pretest sample) was drawn from Magarini Sub County. This location was selected to ensure that the pretest sample provided a diverse range of perspectives and experiences related to the study's focus. Magarini Sub County was chosen because it shares similar socio-economic characteristics with Malindi Sub County, where the main study was be conducted, yet it remains distinct enough to offer valuable insights into the questionnaire's effectiveness. By including a different but comparable area, the researcher aimed to identify any potential biases or issues in the questionnaire that might not be evident in the primary study location. This approach ensured that the research tools were rigorously tested and refined, enhancing their validity and reliability for the main study.

3.11.1Instruments Reliability

To assess the reliability of the research instruments, this study utilized the test-retest method, a standard approach for measuring consistency. The process involved administering the questionnaire to 10% of the sample size, specifically individuals who sought services at public health facilities, before the main study was conducted. The same questionnaire was then administered again to these respondents at a later date. The reliability of the instrument was evaluated by calculating the correlation coefficient between the responses from the initial

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administration and those from the subsequent one. This coefficient, known as the Pearson correlation coefficient, provides a measure of the consistency of the instrument over time. A high correlation coefficient (typically above 0.7) indicates strong reliability, demonstrating that the instrument consistently measures the intended variables. This approach ensured that the research instruments were dependable and accurately assessed the factors under investigation.

3.11.2 Instruments' Validity

Validity of an instrument relates to the extent to which research tools assess what is anticipated of them is referred to as validity (Creswell & Creswell, 2017). Furthermore, according to Patton (2006), the degree to which research tools are in a position to establish knowledge or truth is another way to define validity. The content validity of the judgments of experts, including university supervisors who assisted in questionnaire design, was the basis for the researcher's reliance in the current study.

3.12 Data Collection Procedures

The data collection process was carefully structured to ensure accuracy and reliability. Initially, the survey instruments, including the questionnaire, were designed to be straightforward and comprehensible, with clear questions aimed at meeting the research objectives. To facilitate the administration of these instruments, trained research assistants were employed. These assistants were tasked with distributing the questionnaires and guiding respondents through the process. Prior to receiving the questionnaires, respondents were briefed on the purpose of the survey, the significance of their responses, and how to complete the forms correctly.

The questionnaires were then administered in person, with research assistants available to clarify any questions or provide additional explanations as needed. To ensure confidentiality, the interviews were conducted in a secure and private environment, which encouraged respondents to answer honestly. Ample time was provided for respondents to complete the questionnaires, and any incomplete or unclear responses were followed up to gather the necessary information. Finally, the collected data was reviewed for consistency and completeness, with any discrepancies addressed through further clarification. This systematic approach ensured that the data collected was both accurate and reliable.

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3.13 Data Analysis and Presentation

While the interview guide delved deeper into qualitative components of perceptions, the questionnaire gathered both quantitative and qualitative data on demographics and perceptions. The comprehension of the study questions was enhanced through the analysis's use of both quantitative and qualitative data.

Data analysis of quantitative (questionnaire) data involved both descriptive and inferential analysis through the use of Statistical Package for the Social Sciences (SPSS version 25.0) software.

The data was first cleaned and coded in order to guarantee accuracy and dependability in the results. The computation of frequencies, percentages, and their tabulation are all part of descriptive statistical analysis. Correlation analysis was used in inferential statistical analysis as the diagnostic tests for the correlation between the predictor variables. Utilizing binomial logistic regression modeling helped ascertain the influence of income levels, literacy levels, parental age and religious beliefs on the access to maternal healthcare. Because the dependent variable in the questionnaire is binary (access to maternal healthcare was either yes or no), the binomial regression model is exactly suited.

The interview guide qualitative data underwent a narrative analysis, with a focus on the use of excerpts from written or spoken tales to highlight themes, storylines, and individual experiences. Direct quotes give the study's conclusions weight and legitimacy while presenting the respondents' voices and opinions in an honest and genuine manner. By using story analysis, participants' views and experiences might be thoroughly explored, leading to a greater understanding of their opinions and actual experiences.

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3.14 Ethical Consideration

In order to deal with the research's ethical concerns, the researcher was first provided with a letter from the university authorizing the study, after which a research permit was requested from the National Council for Science, Technology, and Innovation (NACOSTI). The County Commissioner and County Department of Health also gave their approval.

Since it is a health-related study, the permission from the county department was critical importance. In addition, the researcher went to the Sub County headquarters and asked for authorization to conduct the study. As a result, the researcher made sure that permission from those

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surveyed was obtained prior to doing any research. To achieve this, the researcher had to explain to the participants the purpose of the study and the tasks they would be asked to complete. More specifically, they had to agree to the research before it could start. Additionally, the researcher maintained the respondents' confidentiality, privacy, and anonymity throughout the study. In order to protect their anonymity, this meant coding the surveys and not asking them to write their names. Therefore, by indicating that the information provided would only be used for study, the researcher gave those who participated the assurance of secrecy.

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CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

The analysis of the field data is covered in this chapter. Furthermore, the information is conveyed, evaluated, and spoken about. Below are further presentation of the response rate, data on demographics, conclusions in accordance with the aims, and an explanation of the findings.

4.2 Questionnaire Response Rate

This study distributed 382 questionnaires of which 325 were completed and returned, giving in 85.5 percent response rate. The response rate was therefore adequate for drawing broad conclusions in the study. Kothari and Gang (2014) state that a response rate of 50% is sufficient for reporting and analysis, 60% is acceptable, and 70% or more is exceptional. Based on these guidelines, the study's major findings may be drawn with this response rate. Table 4.1 below tabulates this information.

Table 4.1

Response Rate

Responses	Number	Percentages
Administered Questionnaires	382	100
Not returned	57	14.9
Filled and Returned	325	85.1

Source: Field Data, 2023

4.3 Demographic Information

The age, marriage status, level of education, size of family, and employment of the respondents were among the details the researcher sought to learn. The results are compiled in this section.

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4.3.1 Respondent's Age

The study enquired on the age of respondents and findings as shown in Table 4.2.

Table 4.2

Distribution of Respondents according to their age brackets

Age Brackets	Number	Percentages
Below 20	26	8.0
20-30	81	24.9
Above 30	218	67.1
Total	325	100.0

Source: Field Data, 2023

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The findings reveal that 67.1% of respondents were over 30 years old, 24.9% were between 20 and 30 years, and 8.0% were below 20 years. This data shows a significant proportion of older individuals seeking maternal healthcare. It is important to note that while the data indicates a predominance of older respondents, this does not necessarily imply that women over 30 are more engaged in reproduction. Research suggests that reproductive behaviors are influenced by a range of factors beyond age alone. For instance, studies have shown that socioeconomic status, access to education, and healthcare resources significantly affect reproductive decisions (Gichuru et al., 2020; Mwangi & Ndungu, 2019).

When comparing the age distribution of respondents with national statistics, Kenyan data shows that the majority of women of childbearing age are concentrated in the 20-34 age bracket (Kenya National Bureau of Statistics [KNBS], 2022). For instance, the KNBS (2022) reports that 52% of

women aged 20-34 years are actively engaged in reproductive health services, indicating a similar trend to what was observed in Malindi Sub County. However, national data does not specifically segregate healthcare utilization by age beyond general trends, making direct comparisons challenging. Evidence regarding the direct impact of age on seeking maternal healthcare is mixed. Some studies suggest that older women, particularly those above 35 years, may have more frequent healthcare interactions due to increased health risks associated with advanced maternal age (Nguyen et al., 2021). Conversely, other research indicates that older women may face barriers to accessing care due to systemic issues such as affordability and availability of services (Chirchir, 2020).

Additionally, while age is a significant factor, other variables also impact maternal healthcare-seeking behavior. Factors such as income level, educational attainment, and geographical accessibility to healthcare services play crucial roles in influencing maternal health behaviors (Mwenda & Waweru, 2021). For example, lower-income families may experience more challenges in accessing healthcare, irrespective of the age of the mother. Thus, while the data shows a higher proportion of older respondents, it is essential to consider a broader range of factors influencing maternal healthcare access. A nuanced analysis incorporating socioeconomic and geographical variables would provide a more comprehensive understanding of the determinants affecting healthcare-seeking behaviors across different age groups.

4.3.2 Marital status

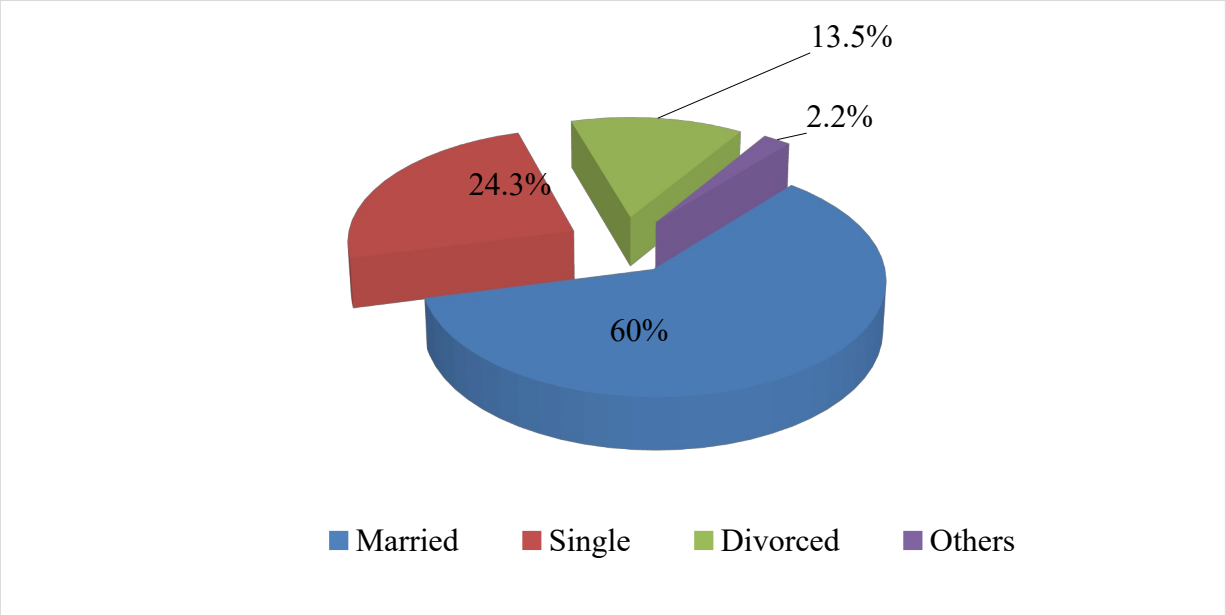
The study enquired on marital status of the respondent because it may impact the ability to obtain maternal health care. According to Wulandari, Laksono and Nantabah (2020) married women are likely to make complete visits to maternal health centers compared to the single women. The current study reveals that slightly more than half (60%) of the responders had married lives. Roughly one-third (24.3%) of the respondents was single, 13.5% divorced and the remaining 2.2% others as summarized in figure 4.1.

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Figure 4.1

Distribution of Respondents according to their Marital Status



Source: Field Data, 2022

The findings indicate that 60% of respondents were married, 24.3% were single, 13.5% were divorced, and 2.2% identified as other. These results are consistent with the notion that married women may have better access to maternal healthcare. Evidence supports that marital status can significantly impact healthcare access, as married women often benefit from spousal support, which can facilitate access to health services (Saha et al., 2019). For instance, married women are more likely to have financial and emotional support from their partners, which can improve their healthcare-seeking behavior (Sauer & Solomon, 2020).

Further, married women generally experience higher engagement with maternal health services. This increased engagement is partly due to the support they receive from their spouses, who may be more involved in their healthcare decisions and management (Okunade&Elnahal, 2021). In contrast, single or divorced women may face more challenges in accessing healthcare, such as

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limited financial resources or lack of support, which can affect their ability to seek regular maternal care (Ghosh et al., 2021).

The Kenya National Bureau of Statistics (2022) indicates that marital status is indeed a factor in maternal healthcare utilization. National data suggests that married women are more likely to attend antenatal care and give birth in healthcare facilities compared to single women, reflecting broader trends observed in the study. The high proportion of married respondents in this study may impact the generalizability of the findings. While the results provide valuable insights into the experiences of married women, they may not fully represent the experiences of single or divorced women who might face different barriers and challenges in accessing maternal healthcare. To ensure a more comprehensive understanding, future research should aim to include a more balanced representation of marital statuses.

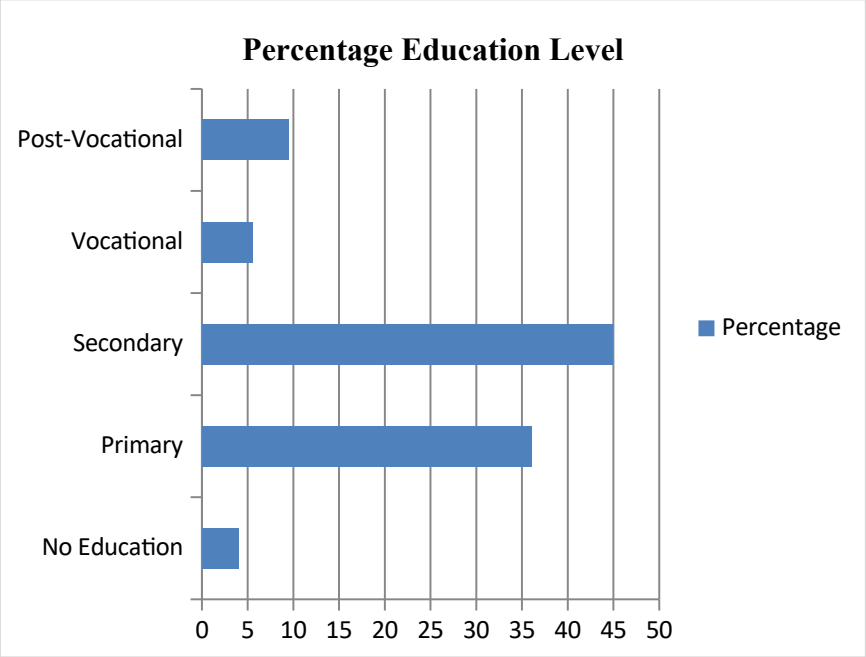
4.3.3 Highest Level of Education

The distribution of respondents according to their educational attainment was also sought by the study. The findings are as depicted in Figure 4.2.

Figure 4.2
Distribution of Respondents according to their Levels of Education

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Source: Field Data, 2022

The findings indicate that 44.9% of respondents had attained secondary education, 36.0% had completed primary education, 9.5% had vocational training, and 5.5% had post-vocational education. Notably, 4.0% of respondents had no formal education. Education is a critical determinant of health literacy, influencing individuals' awareness of and engagement with healthcare services. Studies have shown that individuals with higher educational levels generally possess better health knowledge and are more likely to utilize healthcare services effectively (Grosse, Nelson, &Allweiss, 2021). This relationship is evident in the current study, where respondents with secondary or vocational education demonstrated a more substantial understanding of the importance of maternal healthcare compared to those with lower levels of education.

Moreover, participants with higher educational attainment were more adept at providing relevant information about maternal health services. This ability is supported by research indicating that education enhances information processing and communication skills, which are essential for articulating knowledge about health services (Smith, Patel, & Wang, 2019). For instance, those

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with secondary and vocational education were better able to discuss and detail their experiences with maternal healthcare services, reflecting their improved capacity to convey relevant information (Khan, Ali, & Akhtar, 2022). However, it is important to recognize that education alone does not fully account for variations in maternal healthcare awareness and utilization.

Other factors, such as access to information, cultural beliefs, and systemic challenges within the healthcare system, also play significant roles. For example, even individuals with higher education may face barriers like inadequate healthcare infrastructure or cultural misconceptions that can impact their engagement with maternal health services (Johnson & Allen, 2021). The findings align with broader trends observed in Kenya. The Kenya National Bureau of Statistics (2022) reports that educational attainment is positively correlated with health literacy and service utilization. Individuals with higher education levels are generally more likely to access and use healthcare services effectively, validating the study's results.

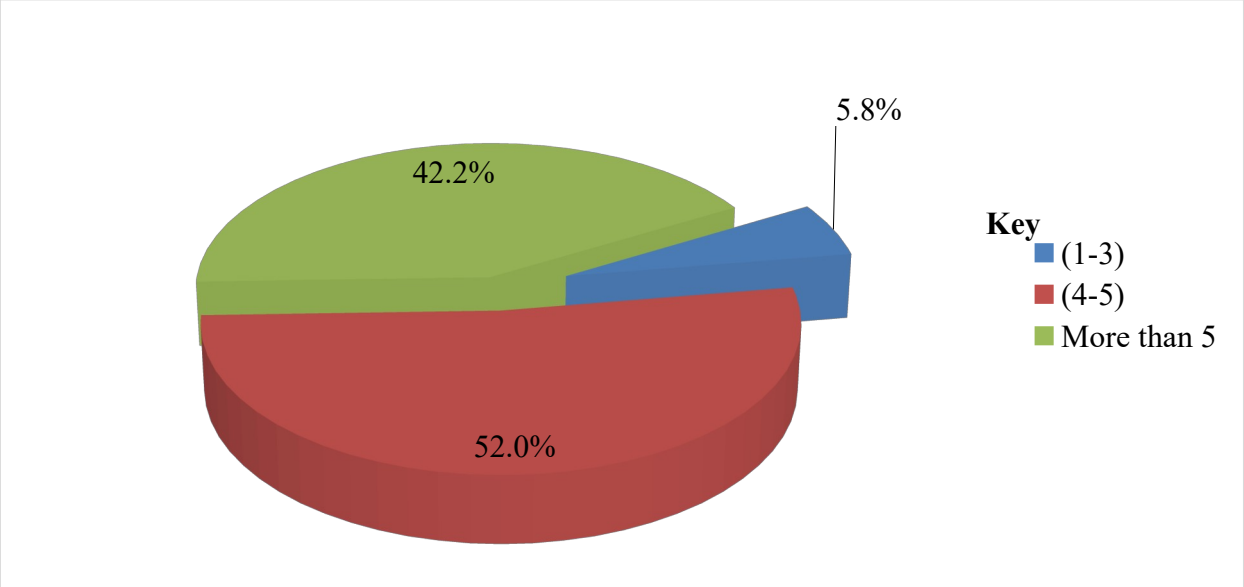
4.3.4 Size of Household

The study also enquired on the household size because of the possible effect on access and use of maternal healthcare. Othman and Motlak (2023) argue that the family the most important economic and social units in any human community. The two further scholars argue that the household can be used as a mean to overcome social reality. All household members may be compelled to use the similar proportion of supplies of goods as if they were staying alone (Othman &Motlak, 2023).

The findings on size of household are illustrated in Figure 4.3 below.

Figure 4.3
Size of Households

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Source: Field Data, 2022

Findings shown in Figure 4.3 indicate that slightly over half (52%) of the participants were from households with members between 4 and 5. About 42.2% of the respondents were from households with more than five members and the remaining 5.8% with 1 to 3 members. The findings imply that most households in Malindi sub-county have between 4 and 5 members. This is not unexpected, given that the sub-county's average household size was 4.4 in the 2019 Kenya Population and Housing Census (KNBS, 2019).

4.3.5 Occupation

Occupation is an important factor in terms of household's income and by extension access to maternal health. Table 4.3 summarizes the findings.

Table 4.3

Distribution of Respondents according to their Occupations

Occupation	Number	Percentages
None	69	21.2
Formal employment	77	23.7
Informal	147	45.2

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Others	32	9.8
Total	325	100.0

Source: Field Data, 2022

The survey reveals that 45.2% of respondents were engaged in informal employment, 23.7% were in formal employment, 21.2% were not employed, and 9.8% were involved in other unspecified forms of employment. The high proportion of respondents in informal occupations is consistent with International Labor Organization (ILO, 2021), indicating that rural areas, such as those in Malindi sub-county, often have a higher prevalence of informal employment compared to urban settings. According to ILO, (2021), informal employment is notably more common in rural areas due to limited access to formal job opportunities and the reliance on subsistence activities, such as agriculture. Agriculture, which is a predominant sector in rural informal employment, is particularly prevalent in Malindi sub-county. The Kenya National Bureau of Statistics (KNBS, 2022) reports that informal employment in agriculture significantly contributes to rural livelihoods. In Malindi, a substantial portion of the population is engaged in agricultural activities, further reinforcing the dominance of informal sector jobs in the area.

Comparing these findings with employment statistics from urban areas, such as Nairobi, which has a significantly higher rate of formal employment KNBS (2022), highlights the disparity between urban and rural job markets. Urban areas typically offer more formal job opportunities in sectors such as manufacturing and services, contrasting with the informal employment landscape prevalent in rural regions. The "other forms of employment" category, representing 9.8% of respondents, included occupations not specified in the questionnaire. This group could encompass various informal and non-traditional job types such as house helps, casual labor, self-employment in small businesses, or part-time roles not captured by the primary categories.

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4.4 Influence of Income Levels on household's Access to Maternal Healthcare

In order to establish the effects of income levels on household's access to maternal healthcare, descriptive statistics were performed by the researcher using means, standard deviations, frequencies, and percentages as guidance. The results are reported in table 4.4

Table 4.4

Influence of Income Levels on Households' Access to Maternal Healthcare

Statements	SA (%)	A (%)	UD (%)	D (%	SD%
Generally, those who are poor are more likely not to visit health centers in comparison with those who come from higher income households	20	60.9	0.3	17.5	1.2
Parents income levels determines access to maternal health	38.8	60.3	0	0.6	0.3
Rich people tend to be more informed about the importance of maternal health services compared to the poor.	58.8	12	0	29.2	0
Maternal health access has nothing to do with income levels instead. It is related to other factors which are not economic in nature.	1.2	16	0	9.2	73.5

Source: Field Data, 2023

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Table 4.4 above illustrates that the data reveals that 80.9% of respondents agreed that poorer individuals are less likely to visit health centers compared to those from higher income households. Additionally, 99.1% of respondents believed that parental income levels determine access to maternal health. Furthermore, 70.8% agreed that wealthy individuals tend to be more informed about the significance of maternal healthcare, while 82.7% disagreed with the notion that maternal health access is unrelated to income, suggesting it is influenced by non-economic factors. Many

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women struggle with the costs of maternal healthcare for instance, Gulema and Berhane (2017) found that financial constraints often lead to delays in seeking maternal care, as women anticipate high costs associated with healthcare services. This concern about costs is a significant barrier that affects both the timeliness and quality of care received. It is essential to recognize that while income levels significantly impact access to healthcare, they do not act in isolation. The relationship between income and health outcomes is mediated by other factors such as healthcare access and cultural barriers. Studies have shown that higher income improves access to healthcare services, but other determinants, such as the availability of services and cultural attitudes towards healthcare, also play crucial roles. For example, Smith et al. (2019) highlights that education and awareness, alongside income, is critical in determining health outcomes.

The findings underscore the need for policy interventions aimed at improving access to maternal healthcare for low-income households. The significant correlation between income and healthcare access highlights the importance of economic empowerment in enhancing maternal health. Policy measures such as subsidized healthcare programs and improved healthcare infrastructure in rural areas could help bridge the gap between high and low-income households. Cultural and social barriers also play a crucial role in maternal healthcare access. For instance, cultural beliefs and practices may influence healthcare utilization, and these barriers need to be addressed alongside economic constraints. Research by Hamal et al. (2022) and Celik (2020) supports the view that economic status affects healthcare utilization, but they also point to the importance of addressing structural and intermediary factors. The disparity between rural and urban healthcare access is evident, with rural areas often facing greater challenges. The World Health Organization (2021) reports that rural mothers are less likely to receive care from qualified health personnel compared to their urban counterparts. This inequality underscores the need for targeted interventions to improve healthcare access in underserved areas. Thus, while income levels are a significant determinant of maternal healthcare access, a comprehensive approach that includes economic support, improved healthcare services, and cultural sensitivity is essential for addressing the broader issues affecting maternal health outcomes. Implementing these measures can help achieve more equitable access to maternal healthcare and improve health outcomes across different socioeconomic groups.

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4.5 Influence of Education Levels on Household Access to Maternal Healthcare

As part of the current study's objectives, effects of education levels on household access to maternal healthcare was determined. The findings are summarized in Table 4.5.

Table 4.5

Descriptive Statistics on Education Levels

Statements	SA (%)	A (%)	UD (%)	D (%)	SD (%)
Parental education levels directly affects their choice to visit health center for maternal services	34.2	60.6	0.6	2.5	2.2
Parents with high level of education are more likely to uptake maternal services from hospitals compared to illiterate parents	14.8	75.4	2.5	5.2	2.2
The level of household engagement with maternal healthcare programs increases with increasing level of education	32	52	2.8	7.1	6.2
Maternal healthcare uptake is more likely to be higher in areas where most parents generally have knowledge about the benefits	65.2	5.5	0.6	6.5	22
Mothers with high level of education are more likely to uptake maternal services compared to those who parents/caregivers have no formal education	63.4	16	1.5	9.2	9.8

Source: Field Data, 2022

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Table 4.5 reveals that 94.6% of the respondents agreed that parental education levels directly affect their choice to visit health centers for maternal services, while 90.2% agreed that parents with higher levels of education are more likely to use hospital-based maternal services compared to illiterate parents. Moreover, 84% of respondents agreed that household engagement with maternal healthcare programs increases with higher education levels. Around 70.7% supported the statement that maternal healthcare uptake is likely to be higher in areas where parents are generally knowledgeable about the benefits of such services. In addition, 63.4% strongly agreed that mothers with higher levels of education are more likely to use maternal services compared to those whose parents or caregivers have no formal education. These findings suggest that education levels significantly influence access to maternal healthcare. Respondents' narratives further illustrated the role of household education in maternal healthcare, as seen in the following quotes:

- *"Educated parents take matters of maternal health seriously."*
- *"More educated parents understand why they should seek care because they know the risks of maternal health issues."*
- *"Most people with low education levels are struggling financially. Therefore, they hardly have expenditure for medical services. They rely on subsidies from the government."*
- *"Parents with low education don't see the importance of accessing maternal health services. They prefer using herbal medicine instead of going to hospitals."*

While these quotes support the general consensus that education influences healthcare decisions, they reflect a mix of views. The quotes should not be taken as fully representative but rather as insights into how education impacts decision-making for some individuals. The findings suggest that education plays a vital role in promoting maternal health, as educated individuals are better informed about healthcare services and more likely to seek out such services. Previous studies align with this perspective. For instance, Furuta (2016), Kaisa (2017), and Mukonnen (2019) found that higher education levels increase autonomy in decision-making, which in turn enhances access to maternal healthcare. According to Kangbal et al. (2020), educated women tend to prioritize maternal healthcare more due to their understanding of health risks, similar to the findings in this study.

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In most cases the higher education correlates with increased employment opportunities and consequently better access to healthcare but sometimes education does improve employment prospects (Paul & Chouhan, 2020). Other factors, such as regional disparities, availability of healthcare services, and cultural practices, also play crucial roles in healthcare access. In fact, Wonh (2019) found that in the Philippines, the relationship between education and maternal healthcare access was mediated by factors like healthcare quality and geographic location. Therefore, a more nuanced interpretation of education's role in maternal health is necessary.

Furthermore, the findings in this study provide valuable policy insights. For example, enhancing educational opportunities for women, particularly in rural areas, could improve maternal health outcomes by increasing health literacy and promoting the use of maternal healthcare services. This aligns with studies like those of Yadav (2020), which emphasized the importance of education in addressing maternal health inequalities in rural India. Policies aimed at integrating maternal health education into broader educational curricula may also be instrumental in reducing maternal mortality and improving health outcomes across different socio-economic strata. Thus, while education is undeniably an important determinant of maternal healthcare access, its impact should be considered alongside other socio-economic, cultural, and structural factors. The findings suggest that improving maternal healthcare access requires a holistic approach, combining education with targeted healthcare policies that address both financial barriers and regional inequalities.

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4.6 The influence of Parental Age on households' access to Maternal Services

Table 4.6

Parental Age and Households Access to Maternal Services

Statements	SA (%)	A (%)	UD (%)	D (%)	SD (%)
The older a mother is, the less she prefers going to hospital for maternal healthcare	56.9	26.5	2.5	3.1	11.1
Young mothers prefer giving birth in hospitals than at home	64.6	18.8	1.5	5.2	9.8
There is a general trust in traditional birth	6.2	16.0	9.2	0.0	68.6

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attenders

Source: Field Data, 2023

The findings in Table 4.6 illustrate a notable association between parental age and household access to maternal healthcare services. A significant proportion (83.4%) of respondents agreed that older mothers tend to avoid hospital-based maternal healthcare. However, this trend may not solely be due to age, as socio-economic status, education, and cultural beliefs are likely to play a role as well. For instance, older women may feel more experienced and less reliant on formal healthcare, or they may face other constraints like lower income or lack of access to healthcare facilities. While 83.4% of respondents indicated that older mothers are less likely to seek hospital-based care, other respondents noted that some older women might delay pregnancy due to career reasons, thus accessing maternal healthcare services later in life. This points out to a more nuanced relationship between age, socio-economic status, and maternal healthcare access. The interplay of these factors suggests that while older mothers might avoid hospitals for childbirth, this is not a universal trend, and the reasons for such decisions are varied.

Qualitative data from respondents further corroborates the descriptive findings. When asked whether parental age influences decisions to attend maternal healthcare services, many respondents emphasized the role of experience, suggesting that younger women often lack knowledge and experience in handling maternal health, whereas older women might rely more on their accumulated childbirth experience. One respondent remarked:

> *"A young mother needs an elderly mother for guidance or instructions. She may not be able to follow medical instructions as compared to older women."*

This sentiment reflects the belief that young mothers may struggle with medical guidance, further complicating their access to maternal healthcare services. However, another perspective suggested that fear of societal reprimand might deter young mothers from seeking formal healthcare services, especially for teenage mothers:

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> *"Maybe for teenage mothers who fear as they are still in school and do not wish to be known or found to be pregnant. Also, aged women who fear going for maternal healthcare as their age is advanced hence, they shy away."*

These insights reveal that both young and older women face unique barriers to accessing maternal healthcare, which may stem from fear, social stigma, or overconfidence in traditional methods. The nuanced nature of these findings underlines the importance of age-specific maternal healthcare interventions. The data also revealed that 68.6% of respondents strongly disapproved of Traditional Birth Attendants (TBAs), indicating a general lack of trust in traditional practices. This might be due to increased awareness of the risks associated with non-professional maternal care, as well as the proliferation of government-sponsored healthcare programs. These programs have helped educate communities on the benefits of modern maternal healthcare services, thus eroding trust in TBAs. Despite this, traditional practices may still persist in areas where formal healthcare is inaccessible, or cultural norms hold sway. Further research is needed to explore the continued influence of traditional practices on maternal health, particularly in rural areas.

The current findings are consistent with studies conducted in various regions, which also show that parental age influences maternal healthcare decisions. For example, in the Philippines, Wong (2019) found that younger women were more likely to access healthcare services than older women, who tended to rely on traditional methods. This was partly attributed to younger women having higher literacy levels and more exposure to formal healthcare systems. Similarly, a study by Charkaborty (2018) in Bangladesh revealed that older women, particularly those over 40, were less likely to use maternal health services compared to younger women, often citing previous childbirth experience as a reason.

In contrast, the study by Desire (2021) in Burundi found that older women placed more trust in traditional remedies and midwives rather than in hospitals, further confirming that age can play a critical role in shaping maternal healthcare preferences. These regional differences underscore the importance of considering local cultural and economic factors when designing maternal healthcare policies.

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The findings of this study have several policy implications. Maternal healthcare interventions should be tailored to address the unique needs of both younger and older mothers. For younger mothers, targeted interventions could focus on education and awareness, helping them understand the importance of maternal healthcare and alleviating fears of stigma. For older mothers, interventions should aim at overcoming over-reliance on traditional methods, ensuring that they have access to modern maternal healthcare services. Additionally, policies that focus on socio-economic and educational empowerment are essential. As noted, education plays a critical role in maternal healthcare access, and older women from lower socio-economic backgrounds may require additional support to overcome barriers related to income or literacy.By addressing these broader socio-economic factors, maternal healthcare services can become more inclusive and accessible across all age groups. While the findings suggest that parental age affects access to maternal healthcare, it is essential to clarify that this relationship may not be strictly causal. Other factors, such as education, income, and cultural beliefs, may also mediate this relationship. Thus, the study suggests a correlation rather than a direct causal link between age and maternal healthcare access. Future research should aim to disentangle these complex interactions to better understand how different factors contribute to maternal healthcare utilization.

4.7 The Influence of Religious Beliefs on Household's Access to Maternal Health Services

Table 4.7 shows that 73.5% of the respondents strongly disagreed to the statement that religion does not play any role in influencing parents' decision to uptake maternal health services. This implies that religion does play an important role in access to maternal health. In the study, 72.3% of the study participants strongly disapproved the statement that parents follow religious beliefs when it comes to maternal health. On the other hand, there was a strong agreement that some religious beliefs negatively affect mother's parents' decision not to seekmaternal services.

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Table 4.7

Descriptive Statistics on Religious Beliefs

Statements	SA (%)	A (%)	UD (%)	D (%)	SD (%)
Some religious beliefs negatively affect mother's parents' decision not to attend maternal services	37.5	33.8	3.1	1.2	24.3
Parents follow religious beliefs when it comes to maternal health	2.2	18.5	2.5	4.6	72.3
Religion does not play any role in influencing parents' decision to uptake maternal health services	1.2	16.0	0.0	9.2	73.5

Source: Field Data, 2022

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In terms of the qualitative data, the study revealed that some of the respondents cited some of the religions that discouraged their members from accessing and using modern healthcare. One of the respondents had this to say:

> *Most religions rebuked modern family planning. Parents are made to believe that is sin to seek for and use family planning.*

The above findings clearly reveal that religion has some influence on access and use of maternal healthcare. This is because religion is central to life especially in the context of Africa. For instance, religious beliefs may encourage some women to ignore crucial maternal health care services. In the current study, one of the respondents revealed that most religions rebuked modern family planning. The respondent added that parents were convinced that it was sin to seek for and use family planning. The current study is congruent with some of the previous studies on the issue of religion and maternal health. For instance, Yadav (2020) on the study about changing patterns in inequalities in maternal healthcare in India concluded that religious values and beliefs still play an important role in enhancing or limiting access to healthcare. Mochache et al. (2020) in

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their study entitled "religious, socio-cultural norms and gender stereotypes influence uptake and utilization of maternal health services among the Digo community in Kwale" found that religious norms were important influences on access and utilization of maternal health services. Similar support can also be found in Turkey where Celik (2020) observed that Muslim expectant women preferred to be attended by Muslim medical officers and the vice versa. In one of the recent studies by World Health Organization (2020) on the place of religion in enhancing the Universal Access to maternal Healthcare, it was also established that religion plays several roles in enhancing access to healthcare. In the current study, the detrimental aspect of religion is well illustrated when one of the respondents disclosed that it discouraged family planning.

The current study generally reveals that religion is an important aspect toindividuals and the community at large. The issue of religious beliefs and religiosity are deeply entrenched in individuals' choices of maternal healthcare services and by extension determine their choices on maternal healthcare programs.

4.8 Inferential Statistics

This segment entailed Pearson Correlation and Binomial logistic Regression analysis. Pearson Correlation was anticipated to establish the magnitude and direction of the association between independent variables (income levels, literacy levels, parental age and religious beliefs) and dependent variable (access to maternal healthcare). Binomial logistic regression analysis was applied to determine the relative influence of income levels, literacy levels, parental age and religious beliefs on access to maternal healthcare.

4.8.1 Correlation Analysis

To scrutinize the kind of the association between predictor variables and response variable, Pearson Correlation was applied so as a diagnostic test to check if the predictor variables were highly correlated among themselves and also to ascertain the direction, strength and the statistical significance of the correlation with the response variable. Table 4.8 below summarizes the relationship.

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Table 4.8

Pearson Correlation Analysis

		Access to maternal healthcare	Income levels	Literacy levels	Parental age	Religious beliefs
Access to maternal healthcare	Pearson Correlation	1.00	.761	.791	-.713	.313
	Sig. (2-tailed)		.011	.013	.003	.023
	N	325	325	325	325	325
Income levels	Pearson Correlation	.761	1.00	.0141	.189	.047
	Sig. (2-tailed)	.011		.0534	.055	.078
	N	325	325		325	325
Literacy levels	Pearson Correlation	. 791	.0141	1.00	.345	.091
	Sig. (2-tailed)	.013			.057	
	N	325	.0534	325	325	.084
Parental age	Pearson Correlation	-.713	.189	.345	1.00	.121
	Sig. (2-tailed)	.003				
	N	325	.055	.057		.067
Religious beliefs	Pearson Correlation	.313	.047	.091	.121	1.00
	Sig. (2-tailed)	.023	.078	.084	.067	
	N	325	325	325	325	325

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The findings in table 4.8 indicate that all the four independent variables of income levels, literacy levels, parental age and religious beliefs had a positive correlation with access to maternal healthcare. Literacy levels had the strongest correlation with r=0.791, followed by income levels

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with r=0.761, parental age with r=-.713 and lastly religious beliefs had a correlation of r=0.313.

4.9 Model Parameter Estimates

4.9.1 Parameter Estimates on the Influence of Iocial and IconomicFactors on the Access to Maternal Healthcare

In this study the dependent variable was access to maternal healthcare. The multiple regression analysis was used to fit the model as presented below in Table 4.9

Table 4.9

Model Parameter Estimates on the link between Socioeconomic Factors and Access to Maternal Healthcare

	B	df	Sig.
Income levels	1.981	1	.002
Literacy levels	2.236	1	.007
Parental age	-1.262	1	.004
Religious beliefs	1.004	1	.037
Constant	1.056	1	.001

Table 4.9 shows that for each unit increase in income levels, there is an associated increase in access to maternal healthcare by 1.981. Specifically, the coefficient for income levels is 1.981, with a significance level of 0.002, suggesting a robust positive relationship between higher income and improved access to maternal healthcare services. A similar positive relationship is observed with literacy levels. Each unit increase in literacy levels is associated to an increase in access to maternal healthcare by 2.236. The coefficient is 2.236, and the significance level is 0.007. This implies that higher literacy levels are associated with better access to maternal healthcare, reflecting the role of education in enhancing awareness and access to healthcare services. In contrast, the study finds a negative impact of parental age on access to maternal healthcare. The coefficient for parental age is -1.262, with a significance level of 0.004. This result suggests that as

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parental age increases, the access to maternal healthcare tends to decrease by 1.262, which may be due to various factors such as financial constraints or health-related issues experienced by older parents. The influence of religious beliefs is positive, with a coefficient of 1.004 and a significance level of 0.037. This indicates that stronger religious beliefs are linked to greater access to maternal healthcare, possibly due to the supportive role that religious communities play in encouraging healthcare-seeking behaviors. The constant term in the model is 1.056, with a significance level of 0.001. This value indicates that beyond the factors of income levels, literacy levels, parental age, and religious beliefs, other variables also contribute positively to access to maternal healthcare services.

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CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the study with sections on summary of the findings, the conclusions, recommendation and suggestion for further studies. The sections are presented as per the study objectives. The objective of the study was to investigate the influence of social and economic factors on the access to maternal healthcare in Malindi Sub County in Kilifi County. The specific objectives focused on establishing the effects of income levels on the access to maternal healthcare in Malindi Sub County, determination of the effects of literacy levels on the access to maternal healthcare in Malindi Sub County, examination of the effects of parental age on the access to maternal healthcare in Malindi Sub County, and to analyze the effects of religious beliefs on the access to maternal healthcare in Malindi Sub County. The research was based on descriptive research design. Both quantitative and qualitative data was collected using semi- structured questionnaire.

5.2 Summary of the Findings

5.2.1 Income Levels and Household's Access to Maternal Healthcare

Most respondents agreed that access to health facilities is difficult for people from lower-income households, and that parental money has a significant role in a person's ability to receive maternal health services. Furthermore, most respondents think that those in higher economic status know more about the value of maternal health services than do those in lower economic status. Most people disagree with the notion that maternal health access is independent of income, highlighting the critical role that economic variables play in this situation.

The findings point to a crucial connection between maternal healthcare availability and socioeconomic levels. One important element to improve maternal health outcomes is the economic empowerment of households. Feedback from respondents emphasizes the need for free or subsidized services; the Linda Mama program is one example of this plan. One major obstacle that has been discovered is the difficulty of women to pay for the costs of maternity healthcare.

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This can result in non-attendance, which can have a negative impact on maternal health. The text also refers to a pertinent Indian study, which supports the idea that maternal health service utilization is highly influenced by economic position.

5.2.2 Education Levels and Household Access to Maternal Healthcare

Most respondents concur that parents' educational backgrounds have a direct influence on their decision to visit health facilities for prenatal services. It is widely accepted that parents who have completed more formal education are more likely than those who have not to choose hospital maternity care. The results show a favorable relationship between rising educational attainment and household participation in maternal healthcare initiatives. Results also show that locations where parents are aware of the benefits of receiving healthcare for themselves have greater rates of maternal healthcare uptake.

Furthermore, there is compelling evidence to suggest that women who have completed more education are more likely to use maternal services than those who have never attended school. Respondent narratives offer qualitative insights that support the notion that maternal health access is strongly influenced by education. Overall, the study indicates that since educated people are better able to obtain healthcare services, education is crucial in promoting maternal health. This is corroborated by inferential, which shows that literacy levels have a positive and statistically significant impact on maternal healthcare access. This emphasizes the likelihood that literacy levels will have a favorable impact on maternal healthcare access.

5.2.3 Parental Age and Households Access to Maternal Services

The study disclosed that parental age had some influence on household's access to maternal health care services. It emerged that older women attended hospital for maternal heath care less often compared to the young. The study disclosed that young mothers prefer giving birth in hospitals than at home significantly, majority of respondents concurred those older moms is generally less likely to favor hospital visits for maternity care. Notwithstanding this pattern, the research indicates that variables other than age may influence this propensity. Furthermore, many of respondents strongly embrace the claim that young mothers prefer giving birth in hospitals rather than at home, while majority strongly disagree with the assumption that traditional birth attendants are widely trusted.

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The descriptive findings about the effects of parental age are further reinforced by respondents' qualitative perspectives. Numerous participants conveyed the opinion that young women struggle, have little experience, and don't grasp the significance of maternal health. According to the respondents, young moms may require mentoring from more experienced women because of their inexperience and potential for shame, which can prevent them from seeking out maternity care. Statistical analysis further verifies a negative and statistically significant influence of parental age on access to maternal healthcare, meaning that an increase in parental age by one year leads to a decrease in the urge to receive maternal healthcare by 0.2831. This means that the older the lady gets the lesser they are likely to go for maternal health services.

5.2.4 Religious Beliefs and Household's Access to Maternal Health Services

The study established that religion had some bearing on decision making choices related to maternal healthcare services. Most of the respondents indicated that parents follow religious beliefs when it comes to maternal health, and that some religious beliefs affected parental decision on maternal services visits. The assertion that religion has no influence on parents' decisions was strongly disagreed with by a significant majority of respondents, highlighting the significance of religious views in relation to receiving maternal health treatments. Additionally, many of respondents strongly disagreed with the idea that parents should follow their religious convictions when it comes to maternal health. Rather, there was broad consensus that parents' decisions to attend maternal services can be adversely affected by their religious convictions.

Qualitative findings from the research indicate that many faiths discourage its adherents from obtaining contemporary medical treatment, especially when it comes to family planning. This implies that decisions about maternal healthcare services can be greatly influenced by one's religious convictions. Additionally, statistical analysis verifies a positive and statistically significant influence of religious beliefs on access to maternity healthcare. The results suggest that access to maternal healthcare is positively influenced by religious beliefs 2.729 times more frequently.

5.3 Conclusion

It is well acknowledged that a person's ability to acquire maternal health treatments is greatly impacted by their parents' financial resources, underscoring the relationship between healthcare accessibility and economic standing. The prevalent notion that those with higher socioeconomic

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class possess greater knowledge on the importance of maternal health services compared to those from lower socioeconomic backgrounds highlights the gap in healthcare awareness based on socioeconomic status. Significantly, the study shows that there is broad disagreement about the idea that access to maternal health care is unaffected by income, confirming the crucial role that economic factors play in determining access to these treatments.

The connection found between the availability of maternity healthcare and socioeconomic levels suggest that enhancing maternal health outcomes requires economic empowerment. In their reply, respondents emphasized the value of interventions like the Linda Mama program, which provides free or subsidized services. Financial difficulties become a major barrier that makes it difficult for women to pay for the healthcare they need during pregnancy and may result in absenteeism, which would be harmful to the health of the mother. Overall, the results highlight the intricate relationship between maternal healthcare and economic determinants and call for focused measures to improve accessibility and encourage favorable outcomes for maternal health.

The relevance of education in healthcare decision-making is highlighted by the general consensus among respondents that parents' preferences for hospital maternity care are directly correlated with greater levels of formal education among parents. Furthermore, the findings show a favorable correlation between rising educational attainment and household participation in maternal healthcare programs, underscoring the important role that education plays in encouraging family healthcare participation. The study also emphasizes the significance of health literacy in healthcare use by highlighting the effect of parental understanding of healthcare advantages on maternal healthcare uptake. Strong data indicates that women who have completed more education are more likely to use maternity services, highlighting the education's crucial significance in the practice of seeking medical attention. The idea that education has a significant impact on maternal health access is further supported by qualitative insights gleaned from respondent's narratives.

The significance of educational activities in enhancing maternal healthcare access and outcomes is underscored by the fact that educated individuals possess superior ability to obtain healthcare services. These results are further supported by statistical research, which shows that literacy levels have a favorable and statistically significant impact on mothers' access to healthcare. These results

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highlight the role that reading, and education play in improving maternal health and making healthcare more accessible to women.

The study concludes that family access to maternal healthcare services is highly influenced by the age of the parents. It shows a pattern where older women, as compared to their younger counterparts, tend to visit hospitals less frequently for maternal healthcare. Despite this pattern, the study shows that this behavior may be influenced by factors other than age. Furthermore, the majority of respondents concur that traditional birth attendants are not generally trusted, and young moms prefer hospital deliveries over home births. Qualitative observations underscore the obstacles that young mothers encounter, including insufficient experience and social disapproval, which could potentially impede their ability to obtain maternal healthcare.

Majority of respondents say their parents have religious convictions in this sense, with certain religious convictions having a detrimental influence on parental choices about visits to maternal services. The majority of respondents vehemently disagree with the idea that religion has no bearing on these choices, highlighting the significance of religious perspectives in healthcare decision-making. Qualitative research indicates that certain religions restrict their followers from utilizing modern medical care, especially family planning. This suggests that religious beliefs have a big impact on choices about maternal healthcare services. These results are corroborated by statistical analysis, which establishes that parental age and religious beliefs have a favorable and statistically significant impact on a mother's ability to get healthcare. Overall, the study emphasizes the intricate interactions between cultural and demographic variables that influence maternal healthcare service accessibility, underscoring the necessity of healthcare policies and interventions.

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5.4 Recommendations

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

Economic Empowerment Programs: To address the income barriers affecting access to maternal healthcare, it is essential to implement targeted economic empowerment programs. These programs should be integrated into existing government initiatives, such as the Linda Mama program, to ensure long-term sustainability. It is crucial to involve relevant stakeholders, including

local government, healthcare providers, and non-governmental organizations, in the design and management of these programs. Continuous evaluation should be conducted to measure the effectiveness of these interventions, with feedback collected from beneficiaries to refine and improve the programs. The goal is to reduce financial obstacles and ensure that all women, regardless of income level, can access maternal healthcare services. Monitoring systems should be established to track the impact of these economic empowerment initiatives on maternal health outcomes.

Educational Initiatives and Health Literacy: Enhancing education and health literacy is vital to improving maternal healthcare access. Specific educational programs should target underserved populations, particularly rural and low-income communities. These initiatives should focus on increasing awareness of the importance of maternal healthcare and ensuring that women, especially young mothers, are informed about the services available to them. Collaborating with schools, community centers, and local organizations can help ensure these programs reach vulnerable groups. Additionally, these educational efforts should be integrated into broader national health education strategies to ensure they are sustainable and far-reaching. Regular assessments should be conducted to determine the effectiveness of these programs, with adjustments made based on participant feedback and healthcare utilization trends.

Support for Mothers of Different Age Groups: The study highlights the need for a multi-faceted approach to address the impact of parental age on maternal healthcare access. For older mothers, healthcare systems should provide tailored support, including education on the benefits of maternal healthcare and addressing any barriers related to age or traditional practices. For younger mothers, efforts should focus on reducing societal stigmas and providing mentorship programs that connect them with experienced mothers or healthcare workers. To ensure the integration of these strategies into existing healthcare systems, it is essential to collaborate with local health workers, traditional birth attendants, and community leaders. These programs should also be evaluated regularly to assess their impact, with feedback mechanisms in place to continuously improve support for both older and younger mothers.

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Integration of Traditional and Modern Healthcare Practices: Efforts to improve maternal healthcare access must take into account the influence of traditional beliefs and practices. There should be initiatives to integrate traditional and modern healthcare practices by engaging traditional birth attendants and community health workers in promoting hospital-based maternal care. This can help bridge the gap between traditional practices and modern healthcare, ensuring that women receive the best possible care. Training programs for traditional birth attendants should be introduced to equip them with knowledge of modern maternal healthcare practices, allowing them to work alongside healthcare providers. These programs should be regularly assessed for effectiveness, with feedback obtained from both healthcare workers and traditional practitioners to ensure successful integration.

Culturally Sensitive Healthcare and Engagement of Religious Leaders: The influence of religious beliefs on maternal healthcare decision-making necessitates the development of culturally sensitive healthcare services. Healthcare providers should receive specialized training on understanding and respecting diverse religious perspectives, enabling them to offer care that aligns with patients' beliefs while promoting the importance of maternal health. Engaging religious leaders and communities in raising awareness about maternal healthcare is crucial for ensuring widespread acceptance. Initiatives should focus on working with these leaders to advocate for the use of healthcare services, particularly in communities where religious beliefs might otherwise discourage modern medical care. These programs should be integrated into existing healthcare systems, and their effectiveness should be evaluated through community feedback and healthcare access data. Stakeholders, including religious and community leaders, should be involved in the ongoing evaluation and improvement of these initiatives to ensure their sustainability and impact.

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5.5 Suggestion for Further Studies

The intersectionality of socioeconomic characteristics, including parental education and income levels, with other demographic characteristics, like ethnicity, and geography, could be the subject of future research in this field. A more thorough knowledge of the obstacles marginalized populations experience may be obtained by looking into the interactions between these many factors and how they affect maternal healthcare outcomes and access.

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Further investigation of the influence of cultural and religious beliefs on maternal healthcare decision-making is also a potential area for future research, particularly in varied communities. The creation of culturally responsive healthcare interventions and policies may benefit from an investigation into the ways in which various religious and cultural practices influence attitudes regarding the use of healthcare by mothers.

Additionally, longitudinal studies monitoring the outcomes and use of healthcare by mothers over time may be able to spot patterns and trends in the availability of care and results for maternal health. Researchers can evaluate the efficacy of programs and policies targeted at enhancing maternal healthcare access and outcomes by looking at changes in healthcare utilization and outcomes across time.

Finally, qualitative research focusing on the viewpoints and experiences of marginalized groups such as women from rural regions, immigrants, and adolescent mothers may offer insightful information about the particular challenges they encounter when trying to receive maternal healthcare services. Gaining insight from these communities' lived experiences could help develop focused interventions that meet their unique requirements and enhance maternal healthcare outcomes and access for all mothers.

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APPENDICES

Appendix I: Questionnaire

My name is Emmanuel Kalu, a student at St. Paul's University Pursuing a Masters Degree in Community Development. I am writing a research on *'**The social and economic factors affecting household's access to maternal healthcare in Malindi Sub County***. Your responses will be treated with outmost confidentiality and anonymity. The responses will be used for research purposes only.

SECTION A: Demographic Information

1. Age Bracket
   - Below 20 ☐
   - 20-30 ☐
   - Above 30 ☐

2. What is your marital status?
   - Married ☐
   - Single ☐
   - Divorced ☐
   - Others (Specify) ……

3. What is the highest level of school you attended?
   - Tertiary/Post- tertiary) ☐
   - Vocational ☐
   - (Post – secondary) ☐
   - Secondary ☐
   - Primary ☐
   - No education ☐

4. How many people live in your household?
   - 1 – 3 ☐
   - 4 – 5 ☐
   - More than 5 ☐

5. What is your main occupation?
   - None ☐
   - Formal Employment ☐
   - Informal ☐
   - Others (specify) ……

SECTION B: Effects of income levels on household's Access to Maternal Healthcare

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6. What is your level of agreement/disagreement on the following statement? Kindly respond using the liker scale where SAQ (Strongly Agree); A (Agree); UD (Undecided); D (Disagree); SD (Strongly Disagree)

Statements	**SA**	**A**	**UD**	**D**	**SD**
Generally, those who are poor are more likely not to visit health centers in comparison with those who come from higher income households					
Parents income levels determines access to maternal health					
Rich people tend to be more informed about the importance of maternal health services compared to the poor.					
Maternal health access has nothing to do with income levels instead. It is related to other factors which are not economic in nature.					

7. In your view, how do you think access to maternal healthcare can be enhanced among mothers who come from low income households?

……
……
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……
……
….

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SECTION C: Effects of Education Levels on household access to maternal healthcare

8. What is your level of /disagreement on the following statement? Kindly respond using the liker scale where SA (Strongly Agree); A (Agree); UD (Undecided); D (disagree); SD (Strongly Disagree)

Statements	**SA**	**A**	**UD**	**D**	**SD**
Parental education levels directly affects their choice to visit health center for maternal services					
Parents with high level of education are more likely to uptake maternal services from hospitals compared to illiterate parents					
The level of household engagement with maternal healthcare programs increases with increasing level of education					
Maternal healthcare uptake is more likely to be higher in areas where most parents generally have knowledge about the benefits					
Mothers with high level of education are more likely to uptake maternal services compared to those who parents/caregivers have no formal education					

9. In your opinion, explain how the level of education of parents affects the rate of accessing maternal healthcare in health centers

……

……

……

……

……....

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SECTION D: The effects of Parental Age on households access to maternal services

10a) Do you think a parent's age affects their decision to attend maternal services in health facilities? Yes ☐ No ☐

b) Kindly Explain your answer in 'a' above

……

……

……

……

……

11). Kindly respond using the liker scale where SA (Strongly Agree); A (Agree); UD (Undecided); D (Disagree); SD (Strongly Disagree)

Statements	**SA**	**A**	**UD**	**D**	**SD**
The older a mother is, the less she prefers going to hospital for maternal healthcare					
Young mothers prefer giving birth in hospitals than at home					
There is a general trust in traditional birth at tenders					

b) What can be done to ensure that age does not affect a person's decision to uptake maternal services?

SECTION E: The effects of religious beliefs on household's access to maternal health services

12a) Does a person's religious views affect their decision to uptake maternal healthcare services?

Yes ☐ No ☐

b) Kindly explain your answer in 'a' above

……

……

……

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c) Kindly respond using the liker scale where SA (Strongly Agree); A (Agree); UD (Undecided); D (Disagree); SD (Strongly Disagree)

Statements	SA	A	UD	D	SD
Some religious beliefs negatively affect mother's parents decision not to attend maternal services					
Parents follow religious beliefs when it comes to maternal health					
Religion does not play any role in influencing parents decision to uptake maternal health services					

b) Explain how religion influences your choice to attend to maternal health services?

……

……

……

SECTION F: Access to maternal health services

13) Do you agree that social and economic factors of income levels, literacy levels, parental age and religious beliefs influence the access to maternal healthcare in your community?

Yes ☐ No ☐

THANK YOU

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Appendix II: Interview Schedule

1. Do you think income levels play a role in women's access to maternal healthcare?
2. Kindly explain your answer in '1'
3.Have you ever witnessed a mother who would have attended maternal healthcare but constrained by income levels? If yes, how was she assisted?
4. Do literate mothers exhibit different characteristics from those who are not?
5. If yes, how different are they from their illiterate counterparts?
6. What do you think ought to be done in order to ensure that the illiterate mothers are able to uptake fully maternal healthcare?
7. Does age of the parent determine their uptake of maternal services?

Kindly explain your answer in '7' above

8. Have you ever experienced a challenge with the women seeking maternal health related to their religious beliefs?
9. If yes, what was the challenge?
10. How was the challenge solved?

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Appendix III: Interview Consent Form

Research project title:Influence of Socio-Economic Factors on Household Access to Maternal Healthcare in Malindi Sub County, Kilifi County, Kenya

Research Participants name: **KALU KAHINDI EMMANUEL**

There will be a 15 to 20 minute interview. Although there shouldn't be any hazards involved regarding your involvement, you are free to end the interview or remove yourself from the study at any point.

We appreciate your willingness to participate in an interview for the aforementioned study. Interviewees often explicitly consent to being interviewed and to the use of the information they provide during the interview process before any ethical procedures are carried out. We need this permission form to make sure you agree to the terms of your participation and that you understand why you are involved. Thus, after reading the information sheet that goes with it, would you kindly sign this form to attest to your approval of the following:

- A recording of the interview will be made, and a transcription must be generated.
- The transcript will be delivered to you, and you'll have a chance to fix any factual errors.
- As the research investigator, Kalu Emmanuel will examine the interview transcript.
- Only the researcher, their academic colleagues, and any other researchers they may work with in the course of their research will have access to the transcript of the interview.
- Care will be taken to ensure that any additional data from the interview that might belong to you is not disclosed, and any summary of the interview or direct quotes from the interview that are made available through academic publications or other academic outlets will be anonymized so that you cannot be identified.
- The actual recording will either be preserved or destroyed
- Any changes to the aforementioned terms will only be made with your express consent, or the interview agreement may include a quote agreement.

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Citation

I am also aware that someone may directly cite me. If you agree with any of the following assertions, please initial next to it for possible citation:

- I would like to see the notes, transcripts, any other information gathered on my involvement in the study.
- I consent to being directly quoted.
- I consent to the researchers publishing papers including quotes from me, and I agree to be cited directly in the event that my name is not published, and a fictitious name (pseudonym) is used.
- Your interview may be used in whole or in part in scholarly publications.

Quotation

I am also aware that someone may directly cite me. If you agree with any of the following assertions, please initial next to it for possible citation:

- I would like to see the notes, transcripts, any other information gathered on my involvement in the study.
- I consent to being directly quoted.
- I consent to the researchers publishing papers including quotes from me, and I agree to be cited directly in the event that my name is not published, and a fictitious name (pseudonym) is used.
- Your interview may be utilized in whole or in part in scholarly publications, policy papers, or news pieces; on our website and in other media that we may create, including spoken presentations, feedback events, and other an archive of the previously mentioned project

By signing this agreement , I acknowledge that:

1. I am participating in this project willingly.
2. I am aware that I am under no obligation to participate and that I may end the interview at any moment.
3. The interview transcript or selected passages from it may be utilized as previously said;
4. I've gone over the information sheet.
5. I don't anticipate getting anything in exchange for my involvement.

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6. I have the option to obtain a copy of the transcript of my interview and make any required modifications to guarantee the efficacy of any confidentiality agreements;
7. I am free to ask any questions I may have
8. If I have any further questions later on, I will get in touch with the researcher.

_____ _____

Participants Signature Date

The Research Ethics Board at St. Paul's University has evaluated and approved this study. Kindly get in touch with the undersigned if you have any more queries or worries concerning this research.

Researchers Name

KALU KAHINDI EMMANUEL

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Appendix IV: KREJCIE and MORGAN'S Formulae for Calculating Sample Size

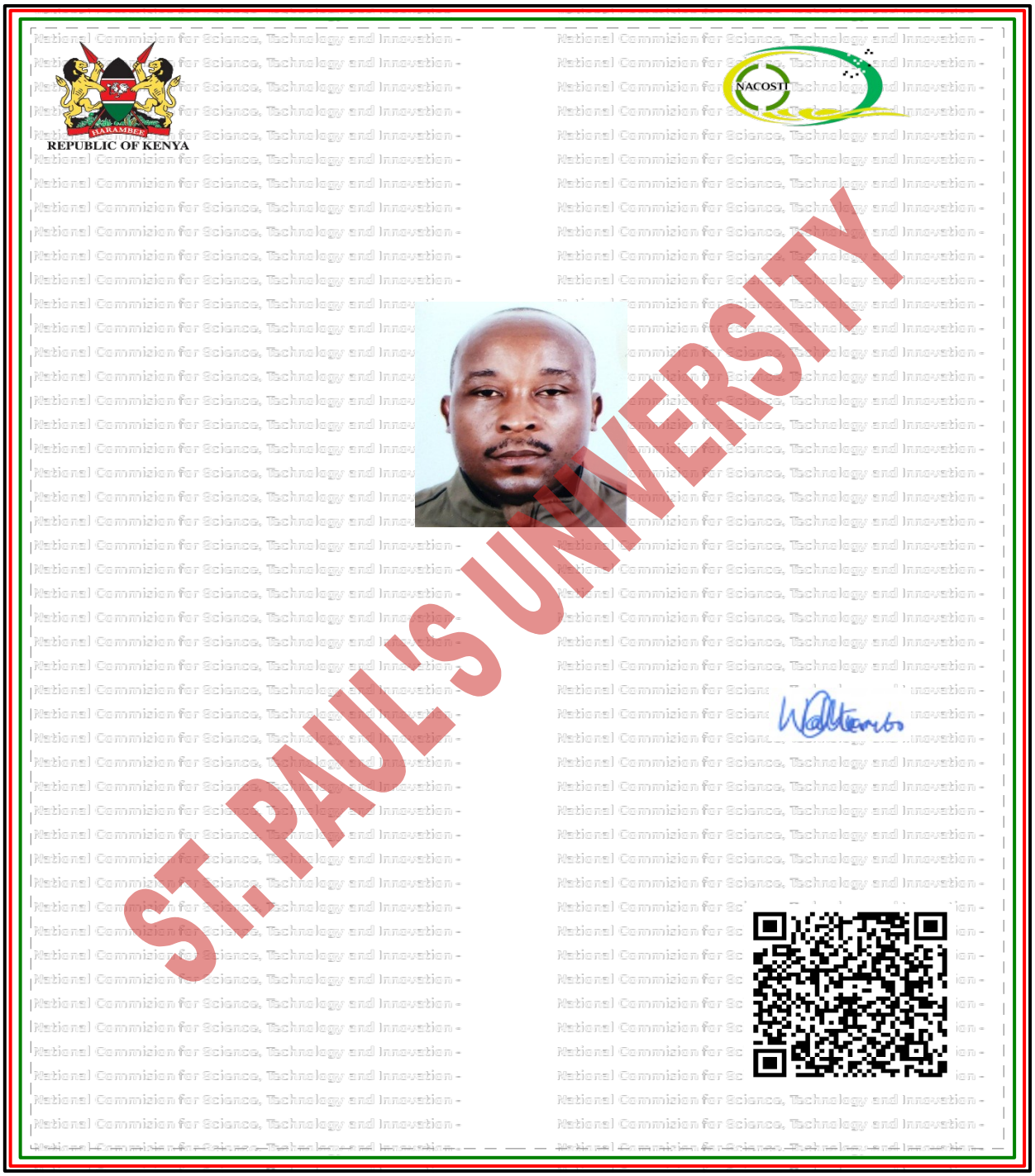
N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

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Appendix V: Research Permit



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Appendix VI: Research Authorization ISERC

ST. PAUL'S UNIVERSITY

Private Bag 00217 Limuru,
Kenya
Email: office@spu.ac.ke
Website: www.spu.ac.ke

Tel Office: +254 (0) 20-2020505/10
Mobile: +254 (0) 728-669000
(0) 736-424440

REF: SPU/90/2023 **Date: 25th September 2023**

TO: Emmanuel K. Kalu
St. Paul's University

Dear Emmanuel,

REF: Influence of Socio-Economic Factors on Household Access to Maternal Healthcare in Malindi Sub County, Kilifi County, Kenya

Greetings,

This is to inform you that SPU- Institutional Scientific Ethics Review Committee has reviewed the above-named research proposal. **Your ERB approval number is 99, for the period between 25th September 2023 – 25th September 2024.**

This approval is subject to compliance with the following requirements;

i. Only approved documents including (informed consents, study instruments) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SPU- Institutional Scientific Ethics Review Committee.
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 SPU- Institutional Scientific Ethics Review Committee 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

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the integrity of the research must be reported to *SPU- Institutional Scientific Ethics Review Committee* 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 SPU- Institutional Scientific Ethics Review Committee.

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,



Dr. Daniel Nzengya, PhD
Chairperson
SPU- Institutional Scientific & Ethics Review Committee



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Appendix VII: Kilifi County Research Authorization

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COUNTY GOVERNMENT OF KILIFI

DEPARTMENT OF HEALTH SERVICES

When Replying quote
Email: chmtkilifi@gmail.com
REF: KLF/DOH/RESEARCH /VOL.1/120

P.O Box 9-80108
Kilifi
Date: 23 January 2024

OFFICE OF THE COUNTY DIRECTOR HEALTH & SANITATION SERVICES

Emmanuel Kalu,
MDSNRB2119/11,
St. Paul's University,
Limuru.

Dear Sir,

RE: DEPARTMENTAL AUTHORIZATION TO CARRY OUT RESEARCH ON INFLUENCE OF SOCIOECONOMIC FACTORS ON HOUSEHOLD ACCESS TO MATERNAL HEALTHCARE IN MALINDI SUB COUNTY, KILIFI COUNTY, KENYA.

The Kilifi County Department of Health Services is in receipt of your email requesting to conduct a study on "Influence of Socioeconomic Factors on Household Access to Maternal Healthcare in Malindi Sub County, Kilifi County, Kenya" together with the protocol, institutional ethical and scientific approval from St. Paul's University SPU/ERB/99, NACOSTI permit Ref: NACOSTI/P/23/30147.

The Department is pleased to grant you authorization to conduct your study within Kilifi County in line with ethical consideration and approved study protocol, and within the **expiry date** of your ERB approval **25th September, 2024**. Kindly adhere to the guidelines for conduct of research during the time of study.

It is required that you engage the **Sub County Manager of Health - Malindi** prior to commencing data collection.

Upon completion of the study, you will be required to share your study findings, conclusion and recommendations with the Department of Health Services, Kilifi County.

Sincerely,

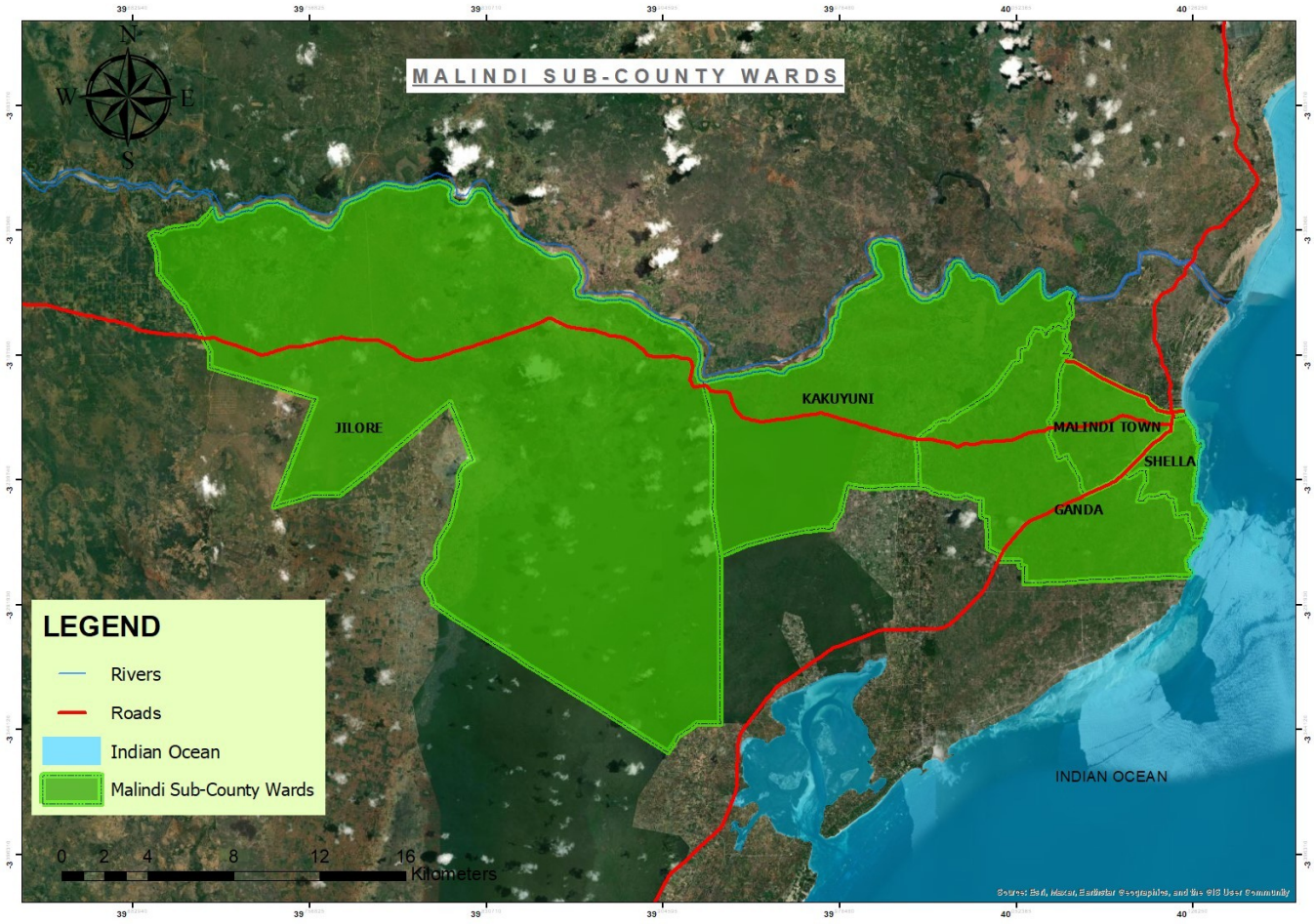
KILIFI COUNTY
23 JAN 2024

Dr. Hassan Lel
Ag. Director - Health & Sanitation Services
KILIFI COUNTY.

Cc.
- CECM- Health & Sanitation Services
- Chief Officer - Health & Sanitation Services
- Heads of Divisions

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Appendix VIII: Map of the Study area



ST. PAU