FACTORS INFLUENCING CONTRACEPTIVE USE AMONG WOMEN OF REPRODUCTIVE AGE IN KENYA: ANALYSIS OF 2022 KDHS DATA

By

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Declaration

This research project is my original work and has not been presented for a degree award in this or any other institution.

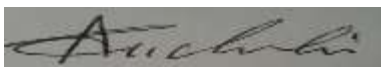**FRED WANGILA MUCHA**

SIGNED: .... DATE: 19/11/2023

This project has been submitted with our approval as University's Supervisors:

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Dedication

I would like to dedicate this work to my family: Mom Rita,Brother Augustine, Robert and Sisters Cecilia, Maureen, and Reachel.

Acknowledgment

I am profoundly grateful for the invaluable guidance and unwavering support I have received throughout the journey of my master's program. This academic endeavour has been a transformative and enriching experience, made possible by the contributions of the following persons that I would like to acknowledge.

First and foremost, I extend my heartfelt appreciation to Dr. Andrew Mutuku and Dr. Wanjiru Gichuhi, my supervisors, whose expertise, guidance, and encouragement have greatly influenced the trajectory of my research. Working under their guidance has been immensely beneficial for me, as their insightful feedback, unwavering dedication, and commitment to excellence have been a continual source of inspiration. Thank you Dr.Mariah Ngutuh for the relentless help. I would like to express my profound gratitude to the University of Nairobi for providing me with the scholarship that has enabled me to pursue this academic endeavor. To my classmates, whose camaraderie and support have been a source of strength, I express my heartfelt thanks.

Abstract

Contraceptive use is an important determinant of fertility. This study focused on factors influencing utilization of modern contraceptive methods among women of reproductive age in Kenya. Specifically, it investigated the demographic, socioeconomic, and sociocultural factors influencing contraceptive adoption. Data from the 2022 Kenya Demographic and Health Survey (KDHS) were used for this study. Descriptive statistics and logistic regression were the main methods of data analysis. The results revealed a significant association between all variables and modern contraception. Multivariate analysis showed that, women aged 20-34 were 2.5 times more inclined to use modern contraception. Additionally, those with 1-3 children exhibited a substantial 6.8-fold increase in the likelihood of using contraceptive methods. Educational level and place of residence emerged as significant socioeconomic factors. Higher education was correlated with a noteworthy increase in the adoption of modern contraceptive, and these odds varied across different regions. Religion played a pivotal role, with Muslim and 'other' faiths exhibiting lower modern contraceptive usage compared to Catholicism. Two intervening factors, wealth quintile and desired family size, were identified as significant moderators. Higher wealth quintiles were associated with increased contraceptive adoption, and a positive connection was observed between the desire for more children and contraceptive use. The primary policy implication drawn from this study is the importance of ensuring that more women complete at least secondary-level education. This not only enhances their autonomy in decision-making but also opens up economic opportunities, subsequently improving their access to modern contraceptive methods.

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Abbreviations and Acronyms

BDHS Bangladesh DHS

CPR Contraceptive Prevalence Rate

HIV/AIDS Human Immune Deficiency Virus/Acquired Immuno-Deficiency Syndrome

IUSSP International Union of the Scientific Study of Population

KDHS Kenya Demographic and Health Survey

KNBS Kenya National Bureau of Statistics

MCPR Modern Contraceptive Prevalence Rate

MICS Multiple Indicator Cluster Survey

MOH Ministry of Health

NCPD National Council for Population and Development

STDs Sexually Transmitted Diseases

TFR Total Fertility Rate

UNFPA United Nations Population Fund

CHAPTER ONE

INTRODUCTION

1.1. Background to the study

High fertility rates have long been a problem for the Sub-Saharan African (SSA) region; estimations indicate that the average woman in this region gives birth to four or more children on average (World-Fertility-Patterns, 2015). It's noteworthy that this fertility rate surpasses that of other regions, with South Asia recording a 53% fertility rate and East Asia an even lower 77% (Sharan et al., 2016). This discrepancy is a significant contributor to the region's population growth, which continues at a brisk pace of 2.3% due to the combination of declining mortality rates and persistently high fertility (Sharan et al., 2016). Despite an incremental annual increase of 0.7% in contraceptive usage across the African continent, many women still encounter barriers when attempting to access contraceptives (Ssali et al., 2013).

The use of contraceptives is crucial as it gives people the fundamental right on the timing and number of children they desire (UN, 2015). Notably, countries worldwide, including the developing world, national contraceptive programs since the mid-1960s have been implemented, reflecting the global recognition of the significance of reproductive health (Ross & Smith, 2011). Unintended pregnancies place a considerable burden on the physical and psychological well-being of women, necessitating a renewed focus on reproductive health, particularly among vulnerable populations (Center for Reproductive Rights Gaining Ground, 2015).

The importance of contraceptive use extends beyond individual rights; it is integral to women's overall reproductive health, encompassing areas such as post-rape care, whether it involves a partner or not (WHO, 2020). A new era of awareness and accessibility has been ushered in by the significant improvements made in the use of contraceptives and related reproductive health indicators by many United Nations member states in recent years (WHO, 2017). However, the global problem of unintended pregnancies stemming from unmet contraceptive needs still poses a significant threat to the conditions and welfare of women and their families, especially in developing nations (WHO, 2017).

Kenya has emerged as a leader in contraceptive within Africa, boasting of Sub-Saharan Africa's first official national contraceptive (UNFPA, 2020; Cahil et al., 2020). The establishment of the

National Council for Population and Development (NCPD) by the Kenyan government in 1982 represents a turning point in the nation's reproductive health system. This initiative has contributed significantly to the decline in Kenya's fertility rate, which plummeted from 8.1 children per woman in 1977/78 to 6.7 in 1989 and further to 4.6 in 2015 (Oktech et al., 2020; Ackerson & Zielensiki, 2017). Contraceptive initiatives supported by the NCPD are responsible for this remarkable transition. Correspondingly, contraceptive usage in Kenya exhibited a notable increase, rising from 24% in 1989 to 28.4% in 2003 and eventually reaching 42.6% in 2014 (Kamuyango et al., 2020). The significance of this relationship is visually represented in the accompanying graph.

1.1. Background of the Study
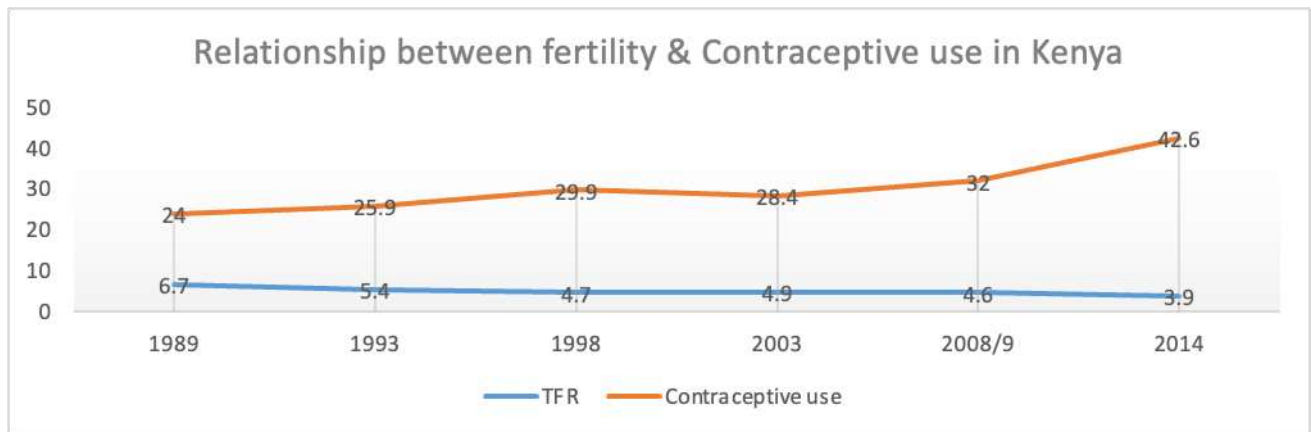
Figure 1: Relationship between contraceptive use and fertility in Kenya

Studies on contraceptive use have sometimes yielded consistencies in the factors influencing contraceptive use. For instance, some studies have found type of place of residence to be a significant predictor of contraceptive use while others have not (Kimani et al.,2013). Marital status can also influence contraceptive use through its relationship to social and cultural norms. In some societies, there is a stigma associated with premarital sex and contraception (Vergas Nunes Coll, 2019). This stigma can discourage unmarried women from using contraception, even if they are sexually active. However, a study by Anderson (2017) challenges the assumption that marital status is a straightforward determinant of contraceptive use. Anderson argues that the impact of marital status on contraception is contingent upon cultural and socio-economic factors. In certain communities, unmarried individuals may face societal stigmas that affect their contraceptive choices, while in others, the emphasis on individual autonomy may lead to increased contraceptive use among singles.

Therefore, this study sought to analyse the factors influencing contraceptive use using the just released KDHS 2022.

1.2.   Problem statement

One important proximal predictor of fertility is the usage of contraceptives. Decline in fertility are frequently linked to rising contraceptive use. (Singh, et al., 2020) and therefore countries wishing to control fertility have robust contraceptive programmes (Elliason, Awanoor, Eliason, Novignon, & Aikins, 2014). Therefore, contraceptive use has an inverse relationship with fertility (Bongaarts, 2017) For instance, Kenya's Total Fertility Rate (TFR) in 1998 was 4.7 when the CPR was 39 percent and 3.9 in 2014 when the CPR was 42 percent (Bongaarts, 2017; KNBS& ICF Macro, 2015). This inverse relationship is replicated in other studies that an increase in modern contraceptive uptake is more likely to result in a decrease in the resultant fertility, measured through TFR (Alshoubaki & Harris, 2018).

Kenya's contraceptive use has been on a steady rise. Despite dropping from 29.9% in the 1998 survey to 28.4% in the 2003 survey, the KDHS 2014 registered the highest-ever jump in contraceptive use; from 32% in 2008/9 survey to 42.6% in the 2014 survey. A woman's decision to use contraception is influenced by her education level, religion, and place of living, as multiple studies have shown (Abdulahi et al., 2020; Adongo et al., 2013; Apanga & Adams, 2018). Other factors include the woman's age, number of living children, age gap with partner, fertility preference, and exposure to mass media (Adebowale, Adedini& Ibisomi, 2014; Benson, Appiah &Afari,2018; Sakaeh & Philips, 2009).

While there are several studies investigating the effects of contraceptive use, these studies have sometimes shown inconsistencies. For instance, some studies have found inconsistencies how marital status affects contraceptive use. In the same breadth, studies on the effects of type of place of residence have yielded contrasting results. This study was timely in the sense that it utilised the most comprehensive recent data set-the KDHS 2022. This provided a fresh perspective, given that such a comprehensive survey was done close to a decade ago. The study sought to answer the following questions:

i)   What were the demographic factors influencing contraceptive use among Kenyan women of reproductive age in the KDHS 2022?

ii) What were the socioeconomic factors influencing contraceptive use among women of reproductive age in Kenya in the KDHS 2002?

iii) What were the socio-cultural factors influencing contraceptive use among women of reproductive age in Kenya in the KDHS 2022?

1.3. Objectives of the study

The aim of this study was to investigate factors influencing contraceptive use in Kenya. The study had the following specific objectives:

i. To establish demographic factors influencing contraceptive use among women of reproductive age in Kenya using the KDHS 2022.

ii. To investigate socio-economic factors influencing contraceptive use among women of reproductive age in Kenya using the KDHS 2022.

iii. To determine socio-cultural factors influencing contraceptive use among women of reproductive age in Kenya using the KDHS 2022.

1.4. Justification of the Study

Understanding how people utilize contraceptives is especially crucial for developing nations like Kenya. In these nations, balancing population growth with available economic resources is a part of development strategy. Some of the guiding concepts for reproductive health in Kenya are the National Reproductive Health Policy 2022–2032 (MOH, 2022) and Vision2030 (Kenya Vision 2030, 2022). While a number of research have looked at the factors influencing the use of contraceptives in Kenya, the most of them have concentrated on the disparities in modern contraceptive use between urban and rural areas as well as subnational variations.

Under the demographic transition theory, societies change over time, where perspectives on the quality and quantity of children change as countries move towards industrialization (Dudle, 2010). Various studies in Kenya on the factors influencing contraceptive use have shown that type of place of residence, place of residence, educational level, marital status, fertility preference, wealth index, and religion are among the prominent factors influencing contraceptive use.

However, previous findings had based their analyses mainly on the KDHS 2014, which was collected almost more than ten years ago. This study sought to understand whether the factors influencing contraceptive use had changed, using the latest KDHS data. The findings showed that factors influencing contraceptive use have largely remained the same, even though exposure to mass media and type of place of residence are not significant predictors of contraceptive use.

The programs and policy implications of these findings are that there is need to put more effort in ensuring that more young women complete secondary education. The reasons for these are twofold: education improves a woman's economic opportunities and thus improve their ability and the autonomy to make decisions. secondly, education is one of the easily manipulatable variable among the variables included in this study.

Lastly, the study shows that it is no longer necessary to focus on the rural-urban divide in the use of contraceptives since women in rural areas are just as likely to use the contraceptives as those in urban areas. This means that women in rural areas may have the same access to information on contraceptive use as those in urban areas. It may also mean that unlike initially thought, rural women are just as likely to afford modern contraceptives as those in urban areas.

1.5.   Scope of the study & Limitations

This sudy focused on the Kenya Demographic and Health Survey of 2022. This was a national study focusing on all women of reproductive age who participated in the KDHS survey of 2022. This includes all the women who were sampled and consented to participate in the survey. In total, 32,156 women participated. Women who were below 15 years and those above 49 years and those outside Kenya at the time of the surveywere excluded from the survey and thus analysis.

The utilization of secondary data, although invaluable in numerous aspects, presented certain constraints when it came to the selection of variables for this study. Specifically, the variables of exposure to mass media (heard of contraceptive on radio, TV, and the Internet) had a lot of missing data. However, since the variables met the threshold for inclusion in the logistic model, the study used them as they were.

Secondly, the study would have wished to measure the impact of spousal influence on contraceptive use for those who were married but the datset did not collect information on this variable. It was therefore had to show how marriage affects on contraceptive use. Even though the study showed that 75.4 of married women were using contraceptives and 1.9 times more likely to use modern contraceptives, it would have been crucial to establish whether this has been contributed by spousal influence.

<p style="text-align:center">CHAPTER TWO</p>

<p style="text-align:center">LITERATURE REVIEW</p>

2.1. Introduction

This section presents the literature review. Section 2.2 presents the study's theoretical perspective while the empirical review section is covered in section 2.3. Section 2.4 covers the conceptual framework while section 2.5 covers the operational framework.

2.2. Theoretical perspective

This study was guided by the demographic transition theory. The theory explains how countries move from one demographic phase to another. The theory suggests four main stages of demographic transition.

During the pre-industrial era, there exists a delicate balance between elevated mortality rates and birth rates. In this context, the rate of population expansion persists at a markedly sluggish pace as a result of the constraints imposed by the existing food resources. In the absence of significant technological breakthroughs, such as the identification of novel food sources or the achievement of increased crop productivity, any variations in birth rates are promptly counterbalanced by equivalent changes in mortality rates (Dudley, 2010).

Stage two is commonly referred to as the phase observed in emerging countries, wherein there is a notable and swift decline in mortality rates. The significant decrease can be attributed to notable advancements in both the availability of food and the implementation of sanitation practices, resulting in increased life expectancy and reduced incidence of diseases. In the realm of food supply management, notable advancements include the implementation of selective breeding, crop rotation practices, and the utilization of modern agricultural techniques. In addition, significant advancements have been made in the realm of public health., particularly in relating food safety, water provision, sanitation, and individual cleanliness. Notably, during the late 19th and early 20th century, there was a particular focus on initiatives aimed at improving female literacy and implementing educational programs on public health. The decline in mortality rates in Europe began in the late 18th century in northwestern regions and progressively spread southern and eastward over the next century. However, this decrease in mortality rates was not accompanied by a proportional fall in birth rates, resulting in a significant population increase (Dudley, 2010).

As the transition into stage three occurs, birth rates begin to decline as a result of a multitude of factors that exert an influence on fertility. There are several reasons for the decrease, such as increased availability of contraception, improved wage levels, the growth of urban areas, reduced dependence on subsistence agriculture, the improved social status and educational achievements of women, a decrease in the economic importance of child labor, increased parental investment in children's education, and numerous other significant social changes. Consequently, the stabilization of population growth emerges as a noteworthy milestone in the demographic terrain, as seen by the decline in birth rates observed in industrialized nations throughout the latter part of the 19th century, particularly in northern Europe (Dudley, 2010).

During the concluding stage, namely stage four, the demographic dynamics exhibit the distinctive features of diminished birth rates and decreased mortality rates. The decline in birth rates, as shown in nations such as Germany, Italy, and Japan, poses a substantial challenge to businesses that depend on population expansion, perhaps resulting in rates falling well below the replacement threshold. As the substantial group of individuals born during the second stage of demographic transition progresses in age, it places a financial strain on the diminishing population of individuals in their working years. Concurrently, mortality rates consistently exhibit a low trajectory or, in certain cases, exhibit marginal increases as a result of the prevalence of chronic ailments linked to decreased levels of physical activity, elevated rates of obesity, and an aging population in affluent nations. During the later part of the 1900s, there was a convergence observed between birth and death rates in industrialized countries, resulting in the establishment of a stable and lower equilibrium (Dudley, 2010).

This profound theoretical framework provides a nuanced and contextualized lens through which to explore the intricate and ever-evolving interplay between population dynamics and societal progress. The demographic transition theory's ability to elucidate the past and present demographic trajectories, as well as its potential to inform future projections, underscores its enduring significance in the field of population studies.

2.3. Literature Review

The aim of a recent study by Islam et al. (2022) was to investigate how a sample of 18 Low and Middle-Income Countries (LMICs) used contraception in relation to socioeconomic and demographic factors. The findings of the study indicated that several factors played a significant role in influencing contraceptive use. These factors included the educational attainment of

women and their husbands, the type of residential area, the age of the women, their current employment status, breastfeeding practices, and their desire for additional children.

To evaluate the effects of variables on contraceptive utilization, which was classified as either "yes" or "no," the study used binary logistic regression analysis. The study's conclusions showed that women's age and educational achievement were positively correlated, with older women showing higher levels of education. Consequently, those with higher educational attainment were more likely to use contraceptive. This is attributed to the fact that highly educated women are often employed in a variety of occupations, which makes it necessary to place limitations on the number of children they would like to have. Furthermore, it was noted that individuals residing in urban areas had more knowledge of contraceptive methods than those in rural regions. Moreover, the findings indicated that an incremental rise in the educational attainment and media exposure of the husband was positively associated with an enhanced likelihood of making informed decisions regarding contraceptive usage.

In terms of socioeconomic status, women belonging to higher wealth indices had a greater propensity to utilize contraceptive methods, whereas women with lower wealth indices displayed a higher incidence of unintended pregnancies resulting in undesired children. The study's findings indicate that in middle and low-income countries (MLICs) efforts to address the significant gaps of contraceptive utilization should prioritize interventions aimed at rural women with lower levels of education, restricted exposure to media, and lower likelihood of employment. One notable strength of this study is in its ability to integrate many data sets, hence enhancing its representativeness of developing countries. Nevertheless, the research conducted also exhibited certain constraints. While certain nations possessed modern datasets, conflict-affected nations exhibited considerably antiquated datasets that perhaps failed to accurately depict the prevailing circumstances at that time.

Kaniki (2019) examined other factors that could be influencing the reduced use of contraceptives in rural versus urban settings. His study's goal was to investigate the many factors that affect reproductive-age women living in rural Democratic Republic of the Congo (DRC) contraceptives. Through descriptive statistics, the wish for additional children, apprehension about adverse side effects, spouse (dis)approval, and religious affiliations were the main factors influencing contraceptive usage. Additionally, the limited utilization of contraceptives in rural regions can be ascribed to recurring instances of stock shortages, insufficient presence of healthcare staff in medical establishments, and considerable distances to healthcare facilities.

The findings of the research include the need to address differential access to contraceptive services between urban and rural areas. It also shows the need to involve religious and community leaders in contraceptive. This was based on the 2014 KDHS (KDHS) which analyzed a sample of women. The findings enhance our understanding of the reasons behind the often higher rates of contraceptive utilization among rural women, particularly in developing nations. A notable constraint of this study is its limited generalizability due to the utilization of convenience sampling, which therefore resulted in a lack of representativeness. Furthermore, the research relied on descriptive statistics, so precluding the ability to establish causal links between contraceptive and the response variables.

D'Souza et al. (2022) conducted a systematic literature review across multiple countries to assess various assertions about contraceptive utilization. One of the comments made was that the utilization of contraception is determined by individuals' perceptions of the possibility and desirability of pregnancy, as well as their relationship status. The study revealed that certain women refrained from use contraceptives due to factors such as infrequent sexual activity, breastfeeding which reduced the likelihood of pregnancy, or advanced age which diminished the possibility of conception. A separate study revealed that women engaged in cohabiting relationships and those who perceived their husbands to be involved in extramarital affairs had lower rates of contraceptive usage in comparison to married women. In developed countries, the utilization of contraceptives among teenagers declined in correlation with the perceived level of commitment in their relationships. Conversely, teenagers in developing countries exhibited a lower likelihood of contraceptive use, as they aimed to demonstrate their fertility to either their partners or their communities, particularly in the context of recent marriages.

The research conducted by Bajos et al. (2018) examined the social determinants of the decision-making process of women in France while selecting a contraceptive technique in the year 2010. The objective of the authors was to gain insight into the various determinants that influence the process of choosing contraceptive choices, with the ultimate goal of enhancing the provision of contraceptive services and formulating effective policies in this domain. The research utilized a cross-sectional survey methodology, drawing upon information obtained from the French National Survey on Sexual Behaviors (ENSV). 12,364 women in the 15 and 49 range comprised the study's sample, which was intended to be representative of France's population. The data collection process involved conducting face-to-face interviews and distributing self-administered questionnaires. The research examined the impact of different social variables, such as age,

education, income, immigration status, parity, and location of residency, on the selection of contraceptive methods.

The research unveiled several noteworthy discoveries pertaining to the societal factors influencing the choice of contraceptive methods in France during the year 2010. To begin with, the level of education achieved by individuals significantly influenced their decision-making process on contraception. Educational achievement for women is positively associated with their likelihood of using highly effective means of contraception, such as sterilization or hormonal contraception. This suggests that those who have received more education are more likely than their peers who have had less education to use these techniques. The aforementioned finding suggests that women can make informed decisions regarding their reproductive health when they acquire knowledge.

Additionally, it was found that the choice of contraceptive techniques and income level have a significant correlation. There exists a positive correlation between women's greater salaries and their propensity to utilize highly effective contraceptive techniques, whereas women with lower incomes tend to rely on less effective methods or forego contraception altogether. The presence of economic inequalities can potentially hinder individuals' ability to obtain and be aware of contraceptive methods that are particularly effective. This highlights the importance of implementing focused interventions that aim to enhance the accessibility and affordability of such alternatives for underprivileged communities.

Moreover, the research revealed that the geographical location of individuals had an impact on their decision on the methods of contraceptive. There was a higher likelihood of women residing in urban regions utilizing highly efficient contraceptive techniques in comparison to their counterparts residing in rural areas. The observed discrepancy might be ascribed to variations in healthcare service accessibility, such as the availability of contraceptive clinics and contraceptive counseling. This underscores the significance of resolving geographical obstacles. Additionally, the research emphasized the influence of parity on the process of making decisions on contraception. The utilization of highly efficient contraceptive techniques was found to be more prevalent among primiparous women, whereas multiparous women demonstrated a greater propensity for employing less effective contraceptive methods. This discovery implies that factors such as parity and prior pregnancy experience have an influence on individuals' choices about contraception. Despite the fact that this study is conducted in a developed nation, it examines comparable factors that are explored in the present study.

One potential weakness inherent in this study is to the presence of self-reporting bias. The ENSV is dependent on the voluntary disclosure of sexual practices and experiences by its participants. The potential for bias arises when individuals engage in the underreporting of socially undesirable activities or the overreporting of socially favorable actions. Individuals may have challenges in accurately recollecting specific facts or may exhibit reluctance in divulging sensitive information, hence resulting in data that is partial or potentially erroneous.

To better understand the socioeconomic and demographic factors influencing women's use of contraceptives in Malawi, Palamuleni (2013) carried out a study. Age, the number of children alive, and the desired family size influenced the utilization of contraceptive methods. The study employed data from DHSs 2003 and 2014. Bivariate analysis through crosstabs was conducted to ascertain the relationship between the factors. The strength of the relationships between the use of contraceptives and socioeconomic and demographic factors, including those that were found to be significant, was ascertained using the binary logistic regression model.

An advantageous aspect of the aforementioned study is in its comparative analysis of two distinct temporal periods, aimed at discerning potential alterations in the determinants of contraceptive utilization. There was a lack of alteration in the determinants impacting the utilization of contraceptives. Cross-tabulations were used in this study, to ascertain the relationship between response variables and independent factors. The findings suggest the necessity of including contraceptive (FP) education, as the various influential factors, with the exception of the woman's age, can be effectively modified by behavioral interventions.

Ramroop and Habyarimana (2018) conducted a study that employed spatial analysis to examine contraceptive utilization among women in Rwanda of reproductive age. The study found that several variables, including wealth quintile, employment status, exposure to media, educational attainment, and number of children living, were strongly correlated with contraceptive use. A logistic regression analysis was employed, utilizing data sourced from the Rwanda DHS conducted in 2014/2015. In regard to age, it was shown that women who initiated cohabitation before reaching the age of 15 had a lower likelihood of utilizing contraceptive methods compared to those who engaged in their first cohabitation experience between the ages of 22 and 49. Nevertheless, there was no discernible disparity in the rates of contraceptive utilization among women who initiated their first cohabitation at the ages of 15-17, 18-21, and 22-29. The likelihood of utilization of contraceptives was found to be 1.222 times higher among age group of 15-24, and 1.584 times higher among the age group of 25-34, compared to women in the age

group of 35-49. These findings suggest that media exposure emerged as the primary factor influencing the sustained utilization of contraceptives during the observed timeframe. The findings suggest that the need to enhance access to high-quality contraceptive services, and to involve religion in effectively educating and informing its adherents about the need to employ contraceptive methods.

Numerous studies have investigated the association between wealth quintile and contraceptive use in different global contexts. One notable study by Smith et al. (2017) conducted in sub-Saharan Africa found a clear correlation between higher wealth quintiles and increased contraceptive use. The researchers argued that individuals in higher wealth quintiles have better access to contraceptive resources, education, and healthcare services, leading to a greater likelihood of adopting contraceptive methods.

Contrary to this trend, a study by Gupta and Kumar (2018) in South Asia suggested a more complex relationship. While their findings confirmed that wealthier individuals tend to use contraceptives more frequently, they also identified regional variations within wealth quintiles. In some areas, even within the same quintile, disparities in contraceptive use were evident, indicating the influence of cultural and contextual factors on the wealth-contraception relationship.

Further nuances in the wealth-contraception relationship were explored by Johnson and Williams (2019) in a cross-national analysis. Their study encompassed diverse regions, including Latin America, Asia, and Africa. The results indicated that while a general positive correlation between wealth quintile and contraceptive use existed, the strength of this association varied significantly across countries. This emphasized the need for context-specific interventions and policies to address the diverse factors influencing contraceptive behavior.

In addition to regional variations, studies have delved into the impact of wealth quintile on specific contraceptive methods. A study by Chen et al. (2020) focused on urban settings and found that higher wealth quintiles were associated with a higher likelihood of using modern contraceptive methods, such as hormonal contraception and intrauterine devices. This nuanced analysis suggests that the wealth-contraception relationship extends beyond mere usage to the type of methods adopted, reflecting differences in access, education, and cultural preferences.

The mediating role of education in the wealth-contraception link has been a consistent theme in the literature. A study by Rahman and Ahmed (2016) highlighted that education serves as a key

factor in translating wealth advantages into contraceptive behavior. Higher educational attainment, particularly among women, was found to enhance awareness, autonomy, and decision-making power, thereby reinforcing the positive correlation between wealth quintile and contraceptive use.

OSEIIn the majority of Sub-Saharan African (SSA) nations, contraceptive (FP) is commonly included in mainstream health programming, resulting in health practitioners being the primary providers of information pertaining to contraceptive. Consequently, women who had received contraceptive information from healthcare practitioners exhibited a higher likelihood of utilizing contraceptive methods compared to those who had not received information. The research additionally revealed a strong correlation between contraceptive use and the possession of knowledge regarding any contraceptive strategy. This phenomenon may be attributed to the acquisition of knowledge, which empowers individuals to make informed decisions from a diverse range of options that are both accessible and cost-effective (Apanga et al., 2020). One notable advantage of this study is that the inclusion of data from multiple countries has enhanced its generalizability. Nevertheless, due to the utilization of secondary data in this study, the range of variables was constrained solely to those that were gathered during the corresponding national surveys. The present investigation utilizes the 2014 KDHS (KDHS) dataset. Additionally, it is critical to note that the sample used was representative of the entire nation.

In their study, Hossain, Ababneh et al. (2018) investigated the determinants of contraceptive utilization, from the 2014 Bangladesh DHS (BDHS) data. The researchers discovered that there was variation in the utilization of contraceptives based on the age involved. According to the study, women between the ages of 30-34 were the most likely to use contraceptives, followed by those between the ages of 35 and 39. On the other hand, women in the 45–49 age group had the lowest rates of contraceptive use, followed by those in the 15–19 age group. This study additionally discovered that women residing in urban areas and those who identified as non-Muslims exhibited a higher propensity to utilize contraceptive methods compared to their counterparts in rural areas and those who identified as Muslims, respectively. Furthermore, this study indicates that employed women had a higher propensity to utilize contraceptive techniques in comparison to their unemployed counterparts. In contrast to previous research endeavors, the present investigation incorporated the women's weight as a variable, which was assessed utilizing the Body Mass Index (BMI). The study revealed a positive correlation between women

with a normal body weight and their likelihood of utilizing contraceptives, in comparison to women who were either obese or underweight.

Those with husbands who completed primary or secondary education were shown to have a 0.3 times higher likelihood of utilizing contraception in comparison to those with husbands with no formal education. Nevertheless, the present study did not incorporate the educational level of the husband.

In summary, the age factor exerts a substantial influence on contraceptives use among women. Younger women may encounter impediments in terms of their ability to get and utilize contraceptives, whilst older women may exhibit distinct contraceptive requirements and inclinations. Healthcare professionals should consider these issues while delivering contraceptive services to women across various age groups.

The goal of a study by Jain et al. (2017) was to find out the behaviour of adolescents and youths in relation to their sexual and reproductive health (SRH). The findings of the research showed that one important element influencing the likelihood that a family will use contraceptive is the intended number of children. Specifically, persons who expressed a preference for a smaller family size were shown to be more inclined toward utilizing contraception methods. This qualitative study revealed that the provision of contraceptives alone did not appear to significantly influence the likelihood of teens utilizing contraceptive services. Nevertheless, it was observed that facilities equipped with Youth Friendly Services (YFS) experienced a higher utilization of contraceptive methods among young individuals. In a similar vein, a further investigation conducted by Saleem et al. (2018) revealed that women who expressed a preference for a smaller family size exhibited a higher propensity to utilize contraceptive methods. The aforementioned conclusions are substantiated by a meta-analysis undertaken by Cleland et al. (2012), wherein it was determined that a significant inclination towards having children acts as an impediment to the adoption of contraceptive practices.

Additionally, Bongaarts and Casterline (2013) conducted a study which revealed that the efficacy of programs for contraceptive might be influenced by the preferred number of children within a population. In order to achieve effectiveness, programs for contraceptive may need to prioritize the examination and intervention of cultural and social norms surrounding fertility, particularly within cultures that exhibit a strong inclination towards larger family sizes.

The study carried out by Kassaye and colleagues (2020) examined the factors associated with the use of modern contraceptive techniques in Ethiopia's Amhara Regional State. Data from the Ethiopia DHSs was analyzed in the study. A variety of factors that might affect the region's use of modern contraceptive methods showed that several factors and the use of modern contraceptive methods were statistically significantly correlated.

Initially, it was shown that age played a considerable role. The findings of the study reveal that there is a higher prevalence of modern contraception use among younger women in comparison to their older counterparts. This finding implies that a significant factor in shaping contraceptive behaviors within the studied region was age. Additionally, the aspect of future fertility preference had an impact. The utilization of modern contraceptive is more prevalent among women who express a desire for a few children, suggesting that contraceptive behavior is influenced by individual contraceptive preferences.

According to the study, educational attainment played a crucial role. The findings indicated a positive association between women's level of education and their utilization of modern contraceptive methods. Specifically, those with higher education levels show a greater propensity to employ modern contraceptive in comparison to those with lower educational achievements. This implies that education has a significant impact on enhancing awareness and understanding of contraception. Furthermore, the wealth index was determined to be a significant influencing factor. There was a higher likelihood of women from affluent homes use modern contraceptive methods in comparison to women from economically disadvantaged households. The aforementioned discovery implies that one's economic standing may have an impact on their capacity to obtain and buy contraception.

Owoko (2023) examined the many factors that influence the utilization of contraceptives among adolescent females between the ages of 14 and 19 in Homa Bay County, Kenya. The present study used a cross-sectional survey design and utilized descriptive statistics for data analysis. The findings revealed that many factors influenced the utilization of contraceptives within this particular demographic. Initially, the presence of insufficient information was recognized as a prominent contributing element. Adolescent females exhibited a restricted level of understanding and consciousness regarding contraceptives, encompassing factors such as their accessibility, varieties, and appropriate utilization. The limited availability of reliable information was a significant obstacle to their capacity to make well-informed choices on contraception.

Furthermore, the presence of negative opinions towards contraceptives revealed as an additional important factor. Adolescent females sometimes possess misconceptions and harbor unfavorable views about contraception, which are frequently shaped by cultural and religious ideologies. The presence of negative perceptions served as obstacles, impeding their willingness to contemplate or embrace contraceptive techniques.

Furthermore, it was discovered that social determinants significantly influence on the utilization of contraception among adolescent females. The research emphasized the impact of peers, family members, and community standards on individuals' decision-making processes. The influence of negative peer pressure, limited familial support, and societal stigmatization pertaining to contraceptive utilization exerted substantial influence on their views and behaviors.

In 2021, Banda et al. conducted qualitative research to investigate the factors of contraceptive decision-making and utilization among adolsecnets residing in metropolitan Lilongwe, Malawi. The research conducted successfully identified several crucial aspects that exerted influence over the decision-making process of the study participants about contraception.

It was revealed that individuals' decision-making processes were influenced by both favorable and unfavorable opinions of contraception. Positive perceptions encompassed the notion that contraceptives has the ability to avert unplanned births and provide protection against sexually transmitted illnesses. Negative impressions encompassed apprehensions over the potential adverse reactions and the efficacy of contraceptive methods.

The research findings also underscored the impact of individual desires, anxieties, and considerations on the process of selecting contraceptive choices. Certain adolescents have conveyed their inclination to prioritize the completion of their education or attainment of other life objectives before contemplating the use of contraceptives. The apprehension about potential side effects and health hazards linked with contraceptive methods also exerted an influence on the decision-making process.

One significant barrier to the use of contraceptives was inadequate information availability. The participants expressed a lack of comprehensive understanding regarding various contraceptive techniques, their accessibility, and the means by which to obtain them. The absence of pertinent information played a role in the construction of misunderstandings and exerted an impact on the process of making decisions. The study highlighted social variables, such as peer pressure and negative views from parents or guardians, as significant determinants in determining individuals'

contraceptive decisions. The decisions made by adolescents in relation to contraception were impacted by the actions and perspectives of their peers, but the presence of negative attitudes from parents or guardians posed obstacles to the utilization and availability of contraceptives.

The decision-making process about contraception is influenced by the perceptions of community members as well as many environmental circumstances. The research observed that the viewpoints and social standards of community members had a notable effect on the attitudes and actions of adolescents in relation to contraception. Environmental factors, like the presence and accessibility of contraceptive services, influenced the decision-making process. Finally, the research emphasized the significance of policies pertaining to the utilization of contraceptives inside educational institutions. The participants articulated a strong demand for the implementation of comprehensive sexuality education inside educational institutions, emphasizing the importance of disseminating correct and reliable information pertaining to contraceptives and reproductive health.

In this qualitative study, a range of linked factors that impacted the decision-making process and utilization of contraceptives among young adolescents in metropolitan Lilongwe, Malawi were discovered. The results indicate the significance of addressing these issues through comprehensive and targeted treatments, which encompass enhanced information accessibility, supportive social contexts, and legislation that promote comprehensive sexuality education.

Overall, the study highlighted the importance of several factors, such as parity, age at first birth, desire for fertility, maternal education, family wealth, and geographic location, in influencing the use of contraceptives by Nigerian women who are past the prime of their reproductive years.

Mlinga et al. (2014) conducted a study in Tanzania with the objective of investigating the many factors that impact married women's use of contraceptives. The researchers also investigated any possible implications for policy that could arise from their findings. Data from the Tanzania DHS, which was carried out in 2004 and 2005, were used in the study. There were 1,244 couples, 10,329 females, and 2,635 males in the study population. The researchers used a logistic regression model to examine the relationship between the response variable, the use of contraceptives, and the other covariates. The study's results unveiled a number of aspects that exhibited a favorable correlation with contraceptive utilization. These elements encompassed the endorsement of contraceptive usage by husbands, elevated educational attainment of both women and their spouses, and open dialogues regarding contraceptive within the context of the

relationship. Conversely, religion was recognized as a detrimental factor impacting the utilization of contraceptives.

In Uganda, a research study was undertaken by Asiimwe et al. (2013) to examine the socio-demographic characteristics linked to contraceptive use among young women in comparison to older women. The researchers conducted an analysis of the data from the Uganda DHS (UDHS) 2006 and 2011. The research centered on a cohort of 2,802 women in the year 2006 and 2,814 women in the year 2011. These women were selected based on their marital status, sexual activity within the year before the survey, and absence of current pregnancy.

This study used a logistic regression model to examine the link between various independent factors and the response variable, namely the usage of modern contraceptive among different categories of women over time. According to the results, married women in the 15 and 24 range who expressed a desire for more children and lived in rural areas were less likely to use contraceptives in 2006 and 2011, both negatively and statistically significantly. On the other hand, it was demonstrated that among women 25 to 34 range, contraceptives was positively and statistically significantly correlated with variables including higher levels of household prosperity, better educational attainment, and the expression to refrain from having more children.

In a separate investigation conducted by Sileo (2019), the objective was to ascertain the many determinants in the adoption of contraceptive services and the utilization of contraceptives among postpartum women residing in rural regions of Uganda. The research utilized a cross-sectional methodology and comprised a sample of 258 female participants who had undergone prenatal treatment at a hospital located in a rural area of Uganda. The interviews were conducted at an approximate time frame of 13 weeks following childbirth. The study employed bivariate logistic regression analysis to investigate the factors of interest.

The study's findings revealed that several variables, such as education level, prior contraceptive use, discussing contraception with partners, and the belief that contraception is necessary, were found to have a huge impact on postpartum women's use and utilization of contraceptive services.

Tsui et al. (2015) carried out a thorough analysis of the use and discontinuation patterns of contraceptives among adolescents in developing countries. The data used came from health and demographic surveys carried out in over 40 nations. The research aimed to examine the

frequency of contraceptive use, cessation, and transition in girls between the ages of 15 and 19, including those who are married and single. Additionally, the study examined the relative proportions of sexual activity among women aged 15 to 19, regardless of marital status, in comparison to older women who were believed to have lower levels of sexual activity. The study unveiled a significant rise in the percentage of adolescent females utilizing contraceptive methods across the majority of nations. Furthermore, it was observed that the prevalence rate of contraception is seeing a more rapid growth among teens in comparison to older women.

Abiodun and Balogun (2019) conducted an investigation that examined the patterns of contraception use and sexual behavior among female students in Nigerian tertiary institutions. Semi-structured, self-administered questionnaires were used to collect data. The results indicated that while all participants knew about contraceptives, only 25% of them reported previous utilization of any contraceptive method. The most prevalent sources of contraceptive knowledge were found to be friends and relatives. Moreover, the apprehension regarding potential adverse consequences has arisen as a noteworthy factor contributing to the underutilization of modern contraceptive methods.

Maletela et al. (2014) used a two-stage methodology to investigate contraceptive services in Lesotho. They started by looking at how people make decisions about using contraceptives, and then they analyzed the many options available for contraceptive methods. Multivariate regression analysis was used in the first phase to determine the community and individual factors influencing the use of contraceptive procedures. Multinomial logistic regression was used to examine the data from existing users in the second part of the study. The response variable was categorized, with injectables serving as the reference category. The study revealed that various factors, including the quality of facility infrastructure, the duration of trip required to access the facility, the availability of convenient opening hours for women who are employed, government regulations regarding standardized pricing of contraceptives, and the expenses associated with travel, were found to be influential factors in determining the utilization of contraceptives.

The study conducted by Okezie et al. (2010) sought to investigate the socioeconomic factors that impact the usage of contraceptives by women residing in rural parts of Ikwuano state, Nigeria. The region was chosen due to its predominantly rural landscape and strong agricultural dependence. 200 randomly chosen women from each of the state's four clans were given questionnaires as part of the study. The research combined descriptive statistics with maximum likelihood probit regression analysis to investigate the relationship between dependent and

explanatory factors. The findings demonstrated a positive and statistically significant correlation between messages in the media, higher education levels, and women's use of contraceptives. Furthermore, the r findings indicated that the existence of an extended family structure exerted a detrimental impact on the utilization of contraception.

In Wawire et al. (2015)'s study, the factors influencing Kenyan urban slum residents' need for contraceptive services were investigated. Women were questioned in a structured manner using a questionnaire to gather primary data. Two-step regression methods and a binomial logit model analyzed the data. The conclusions showed that women living in urban slum neighborhoods seldom used contraceptive techniques. A variety of factors were associated with the use of contraceptives, including support from a partner, religious affiliation, availability of contraceptive services, friendliness of service providers, quality of services provided, and proximity to the health care facility.

A study by Kinaro (2012) investigated the many factors that impact adolescents living in Nairobi County's use of contraceptives. To collect primary data from a household survey carried out in eight administrative divisions of Nairobi County in 2010, the research utilized a systematic random sampling procedure. Several focus groups (FGDs), in-depth interviews (IDIs), and structured interviews were conducted. The results revealed that attitudes towards parental acceptance, approval from peers, self-efficacy in obtaining contraceptives, knowledge of contraceptive usage, and communication with sexual partners were influential factors in the utilization of contraceptives among adolescent individuals. The findings also indicated that parents, instructors, and service providers harbored unfavorable opinions and actively discouraged the utilization of contraceptives among teenagers, hence exerting an influence on their subsequent behaviors. Furthermore, it was determined that parents and educators exhibited insufficient understanding and competencies in properly engaging in discussions about sexuality, thereby fostering an atmosphere that indirectly impacted adolescents' attitudes about contraception unfavorably.

Contraceptive utilization in Kenya has exhibited a consistent upward trend, except a decline in 2003, where it decreased to 28.4% from the preceding survey's figure of 29.9% in 1998 (Kamuyango et al., 2020a). According to Kamuyango et al. (2020b), the usage increased from 24% in 1989 to 25.9% in the 1993 survey. The percentage increased to 32% in 2008 and further rose to 42.6% in the study conducted in 2014 (Kamuyango et al., 2020b).

Utilizing data derived from the 2008/2009 KDHS (KDHS), Lunani et al. conducted a comprehensive investigation in 2018 aimed at discerning the determinants influencing contraceptive utilization within the Kenyan context. The study systematically focused on various attributes, as identified through multivariate analysis, which exhibited statistically independent associations with contraceptive usage. These parameters encompassed educational attainment, marital status, residential locale, religious beliefs, surviving offspring count, and a history of HIV testing.

The study outcomes revealed noteworthy associations, as elucidated by adjusted prevalence ratios (APRs). Specifically, women possessing a secondary education or higher demonstrated a heightened for contraceptive use, with APRs of 1.64 and 1.77, respectively. Furthermore, women with a primary education exhibited an elevated likelihood of contraceptive utilization, as indicated by an adjusted prevalence ratio of 1.60 in comparison to their uneducated counterparts. Notably, widowed and separated women exhibited increased frequencies of contraceptive use, with adjusted prevalence ratios of 0.48 and 0.62, respectively, in contrast to single women.

Exposure to mass media, particularly through television and the internet, has been a dynamic force in shaping societal perspectives on contraceptive use. The portrayal of relationships, sexuality, and contraceptive in the media can significantly influence individuals' attitudes and behaviors regarding contraception.

Television, as a pervasive medium, has the power to both reflect and mold societal norms. Dramas, sitcoms, and reality shows often depict various aspects of romantic relationships, including intimate moments and discussions about contraception. These portrayals contribute to the normalization of contraceptive practices, showcasing characters making informed choices about contraceptive. On the flip side, sensationalized or stigmatized depictions may perpetuate misconceptions or discourage open conversations about contraception.

The internet, with its vast and easily accessible content, plays a crucial role in disseminating information about contraception. Social media platforms, in particular, serve as spaces for discussions and the sharing of personal experiences. Online forums and educational websites offer a wealth of information, empowering individuals to make informed decisions about contraceptive methods. However, the internet can also be a source of misinformation, potentially influencing perceptions and choices in a less accurate manner.

In conclusion, mass media's influence on contraceptive use is complex. While it can contribute to destigmatizing and normalizing conversations around contraception, it also holds the potential to perpetuate myths and stereotypes. As we navigate this digital age, it becomes essential to critically engage with media portrayals, promoting a balanced and informed approach to contraceptive decision-making.

In a separate investigation, Westoff and Kofiman (2014) explored the impact of television exposure on modern contraceptive use. Utilizing DHSs (DHS) data spanning a decade from 48 developing countries, they determined that women who occasionally watched television were 1.4 times more inclined to use contraceptives than their non-viewing counterparts.

2.3.4. Summary of Literature Review

The empirical findings emanating from the investigative inquiry unmistakably elucidate the multifaceted impact of an array of social, economic, and demographic determinants on the frequency of contraceptive utilization among individuals. The antecedent scholarly investigation has unequivocally substantiated that various factors, including but not limited to a woman's chronological age, the educational attainment of both spouses, the typology and geographical locale of her habitation, religious adherence, familiarity with contraceptive methodologies, exposure to mass media, and the number of extant offspring, exert discernible influences upon the utilization patterns of contraceptives.

Within the realm of research examining the nexus between a woman's age and her likelihood towards contraceptive utilization, the body of literature manifests a nuanced landscape characterized by conflicting outcomes. Notably, while certain scholarly endeavors posit a statistically significant predilection for contraceptive use among younger cohorts, contrarian evidence suggests likelihood toward an inverse correlation. Consequently, a nuanced comprehension of the intricate interplay among these aforementioned variables assumes paramount importance in elucidating the determinants that underpin the utilization of contraceptives among the populace of Kenya.

It is imperative to underscore that the research design incorporates data gleaned from the KDHS (KDHS), conducted in the year 2022, as the primary dataset underpinning the analytical framework of this scholarly undertaking. The meticulous examination of this dataset is instrumental in fostering a comprehensive understanding of the nuanced dynamics that characterize the landscape of contraceptive utilization among Kenyan individuals.

2.4. Conceptual framework

The Bongaarts proximate determinants of fertility (1978) were utilized in the conceptualization of this research project. It posits that fertility is impacted by a range of factors- proximal determinants. The aforementioned components, commonly known as background factors, exert an influence on social, economic, cultural, psychological, health, and environmental aspects. The inclusion of the independent factors evaluated in this study renders the framework more appropriate in comparison to alternative frameworks. Although the methodology does not explicitly assess contraceptive utilization, fertility was included as an indirect indicator of contraceptive use. The diagram presented herein depicts a visual representation of the framework, illustrating the interplay between many elements and their impact on fertility.

While the original framework was designed to study fertility, it has since been modified to study proximate determinants of fertility such as contraceptive use by Kimani et al. (2013). Unlike the original framework, the modified framework introduces intervening factors. It means that background factors work through intervening factors to influence contraceptive use.
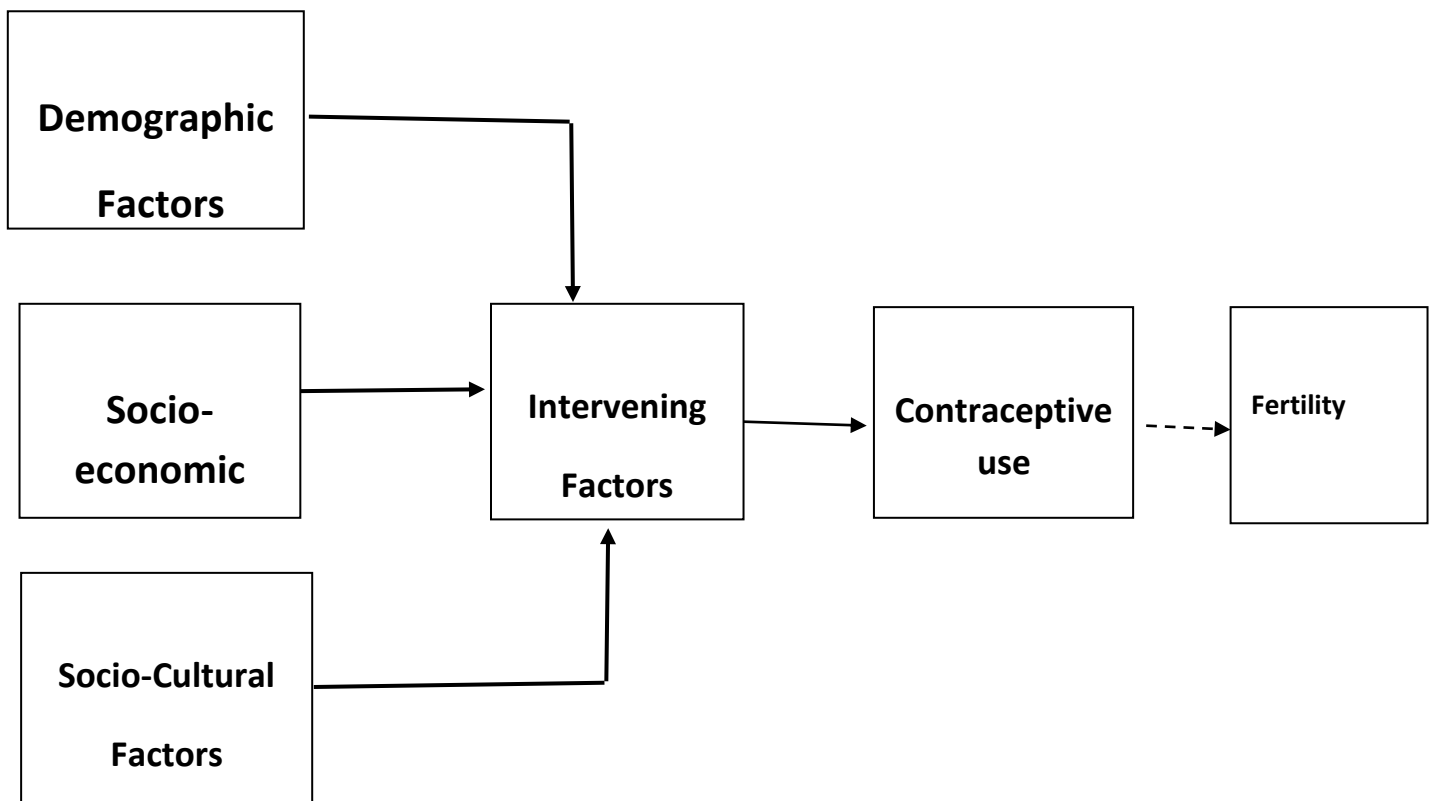
Figure 2: Conceptual Framework on contraceptive use. Source: Kimani et al. (2013).

2.4.1. Operational framework

The study was operationalized using the modified Bongaarts framework of Kimani et al. (2013). According to this framework, contraceptive use is a function of socioeconomic, sociocultural, and demographic factors. This study operationalized the following factors, as measured in the two surveys: for socioeconomic factors, the study will operationalize education level, residency, and wealth index. On the other hand, the study operationalized religion and for sociocultural factors while for demographic factors, the study operationalized the age of the woman, number of children, and marital status. One of the primary factors of fertility is the usage of contraceptives. This implies that a higher uptake of contraceptive products is likely to result in fertility decline and vice-versa. Therefore, for this study, contraceptive use is used as a proxy for fertility measurement.

Figure 3: Operational Framework
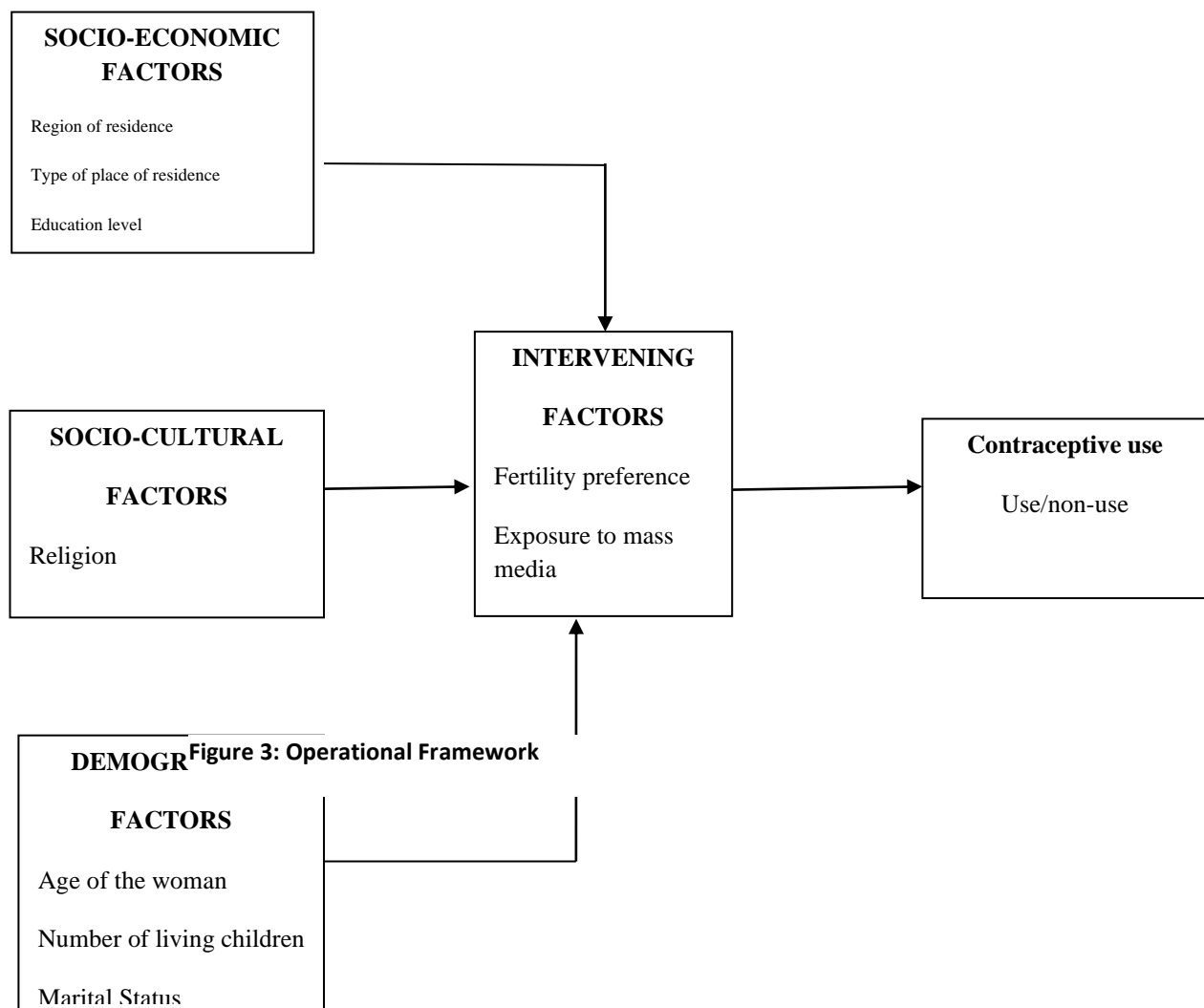
Figure 3: Operational framework. Source: Kimani et al.(2013)

2.4.3 Operationalization of variables

This sub-section describes how the variables were measured.

Contraceptive use/non-use- this was the response variable for the study. It will be measured by classifying women as either using modern contraceptive use or not during the survey period. Those using modern contraceptive were coded as 1 while those not using were coded as 0 (Reference category). In the survey data, there were 21 categories, the first one (0) being 'not using'. However, using in this dataset meant either traditional or modern. Therefore, for the purpose of this study, those categories representing traditional methods were also recoded into 0 (no using) because even though they were using a method, it was not a modern method. The categories recoded into 0 were periodic abstinence, withdrawal, periodic abstinence, and Lactational Amenorrhoea. The rest were recoded as 1 (using) to refer to the category using a modern method.

**Region of residence** – This was the region where the participant lived at the time of the survey. Here, regions were conceived as the former eight provinces. They were: Nairobi, Coast, Rift Valley, Easter, North Eastern, Central, Western, and Nyanza. It attempted to measure whether women staying in each of the regions was more or less likely to use contraceptives. In the initial data set, Coast was coded as 1, North Eastern (2), Eastern 3, Central (4), Rift Valley (5), Western (7), Nyanza (8), and Nairobi (9). To make North Eastern the reference category, it was recoded into a different variable (1). The rest retained their categories

Level of education –defined as the level of educational attainment. Participants self-reported their educational levels. It is classified into no education, primary education, and post-primary education. It measured whether a woman having education was more or less likely to use contraceptives. In addition, did the increase or reduction in a woman's education result to increased or reduced use of contraceptives? In the initial survey, this variable was categorised into 'no education' (0), 'primary' (1), 'secondary' (2), and 'higher' (3). For this study, the first two categories remained as they were while the last two (secondary and higher) were combined and recorded into a different variable (secondary+) and assigned value 2.

Religion – This referred to the various religious affiliations that the various women belonged to at the time of the interviews such as the Roman Catholic, Protestant/ Other Christian, Muslim, and Other Religion/ No Religion. This variable attempted to measure whether religious affiliations with the above religions increased or reduced contraceptive use. Studies have shown

that due to their approach to natural fertility, Roman Catholics and Muslim women are the least likely to use contraceptives. In this case, Roman Catholic was used as the reference category. It attempted answer the question: what are the odds of a woman belonging to any of the groups using modern contraceptive compared to being a Roman Catholic? In the survey, the categories were coded Roman Catholic (1), Protestant/other Christian (2), Muslim (3), No religion (4), and Other (96). For this study, the variables were recoded into different variables. Roman Catholic was recoded into 0 and made the reference category while 2, 3, 4, and 96 were recoded into 1, 2, 3, and 4 respectively.

Age of the woman -this referred to the number of years lived by the participant upto the last birthday: 19 and below, 20-34, and 35+ years. Did belonging to either of these age groups increase or reduce the odds of using contraceptives compared to being 15-19, the reference category. Using the five-year age groups of the respondent, the initial seven categories (15-19, 20-24, 25-29, 30-34, 35-39, 40-44, and 45-49) were recoded into 15-19, 20-34, and 35+ years. This means that the first category remained unchanged and was assigned value 0 (reference category) while the second up to the fourth category (30-34) were classified as being 20-34 and assigned value 1 while the remaining last three categories (35-39,40-44, and 45-49) were recorded as being 35+ years and assigned value 2.

Fertility preference – This variable referred to whether the fecund woman wanted more children or not. Initially, this variable had been put in eight categories: Wants more within 2 years, wants more in 2+ years, Wants (unsure), undecided, wants no more, sterilized (respondent or partner), declared infecund, and never had sex. For this study, the variables were put in two categories: wants more and does not want more. Therefore, Wants more within 2 years, wants more in 2+ years, Wants (unsure) were categorized as 1 (Want more) while the rest were categorized as 0 (Do not want more). The 'do not want more' (0) was made the reference category. Therefore, the variable attempted to measure the odds of using contraceptives increased or reduced for wanting more children, compared to 'not wanting more children'.

Exposure to mass media - This exposure to radio, internet, and television among other sources of media used to impart information to society.   The question in the survey was, "heard contraceptive on radio [internet and tv] in the last few months" and the response categories were No (0) and Yes (1). These categories were left unchanged in the current study. 'No' was made the reference category. The question, therefore, was whether the odds of using contraceptives

increased or reduced with exposure to mass media because mass media not only bring knowledge to potential consumers but is also an avenue for allaying fears about given methods.

Number of Living of Children: Studies have shown that number of living children may affect a woman's decision on contraceptive use. Many children may mean that a woman uses contraceptives to avoid getting pregnant or simply space the parities. In the KDHS data, this variable was recorded as a continuous variable. However, for this study, four main categories were created for ease of analysis.

The variables are summarised in the table 2.4 below

Table 2.4: Variable Operationalization

Variable	Variable Definition	Measurement
Contraceptive use	Defined as married women in rural areas who were using or not using contraceptives during the survey.	0- non use 1- use
Region of residence	Place of residence during the surveys.	1- North Eastern* 2- Coast 3- Nairobi 4- Eastern 4- Central 5- Rift Valley 6- Western 7- Nyanza
Education Level	Defined as the level of education of the respondent during the surveys.	0- no education* 1- Primary 2- Secondary+

Age	Age of the respondent at the time of the survey, measured from the last birthday.	0-<20* 1-20~34 2-35+
Number of living children	Number of Children born to the respondent during the survey.	0- none* 1- 1-2 2- 3-4 3- 5+
Fertility preference	Whether the respondent wanted another child at the time of the surveys.	0-wants more children 1-Does not want more children.
Mass media exposure	exposure to radio, internet, and TV.	0- had not heard of contraceptive on radio/TV/Internet in the last months* 1- participant had heard of contraceptive on radio/TV/Internet in the last months

Table 1: Variable Measurement

Legend: * reference category.

CHAPTER THREE

METHODOLOGY

3.1.   Introduction

This section presents the study's data sources and methodology. Section 3.2 presents that data sources while section 3.3 presents methods of data analysis. Lastly, section 3.4 presents the ethical considerations for the study.

3.2.   Data source

This study relied on data from the KDHS 2022, which was a representative sample of women between the ages of 15 and 49 participated in the survey. The study collected information from 32,156 female participants in total. Both health and demographic data were gathered for the survey.

This study's main focus was on women of reproductive age living in Kenya and the utilization of modern contraceptive methods. Three main categories were used to group the independent variables: socio-economic, socio-cultural, and demographic. The socio-economic variables that were analyzed in this research included the women's educational attainment, wealth index, and place of residence. On the other hand, the socio-cultural elements included faith and a spouse's support. The age of the female participant, the number of children she had, and her preference for her partner's age were the demographic characteristics that were the subject of the inquiry.

Numerous research and surveys have demonstrated that the use of modern contraceptive methods reflects the overall use of contraceptives (Bradley, 2009; KNBS and ICF Macro, 2015). These results consistently show that the percentage of women who have used modern methods of contraception closely corresponds with the percentage of women who have used any type of contraception in most countries. These studies also show that the effectiveness of traditional methods of contraception in avoiding conception is lower. Data gathered from a population of married women living in Kenya between the ages of 15 and 49 was used in this study. Women who live with their partners were classified as married people for the purposes of this study since they encounter comparable levels of sexual exposure.

3.3.   Methods of data analysis

The primary techniques for data analysis in this study were logistic regression and descriptive statistics. The following describes these techniques.

3.3.1. Descriptive statistics and cross tabulations

The Statistical Package for Social Sciences (SPSS) Version 20 was employed for this analysis. Respondents were characterized by a range of background characteristics using frequencies. To demonstrate variations in the use of contraceptives, cross tabulation was employed at the bivariate level. The significance of the relationships between each in response variable and the response variable was examined using the chi square test. Tested hypotheses included:H0: There is no significant association between X_1 and X_2 (Bornel & Ferguson, 1994)

H_1 There is significant association between X_1 and X_2

Chi square statistic was computed as:

$X2 = £ (O-E) 2 E$

Where E - Expected frequency for a cell

O - Observed frequency for a cell

£ - means sum

Bivariate methods of analysis are used to show presence of association and the significance of this association only. They fail to show the direct impact of any relationships between the different test variables. Because of this, the best fitting model to explain the relationship between the dependent variable (using contraceptives) and a set of in independent variables was found using logistic regression.

3.3.2. Logistic regression

Logistic regression is a quantitative statistical analysis method that is used when then response variable is dichotomous, taking the value of either 0 or 1(Shober & Veter, 2021;Peng, Lee, & Ingersoll, 2018). Due to this, the concentration of observations is either one, which represents the likelihood of seeing the event, or zero, which represents the probability of not seeing it. This methodology was applied in this study to examine the impact of each explanatory factor on the use of contraceptives. In this investigation, the usage of contraceptives was coded as 1, while its non-use was coded as 0.

Comparing the resulting odds ratio to the reference category, one may observe the relative significance of each in response variable in predicting the likelihood of engaging in contraceptive behavior (Peng, Lee, & Ingersoll, 2018). Additionally, the chi square test does not

permit statistical controls, which is another reason why logistic regression is favored. The general logistic regression equation is in the form of:

$$Y = e^{B0+B1X}/1+e^{B0+B1X}$$

Where: Y = Response variable

Bo = Intercept of the logistic regression model

Bi = Logistics regression coefficient

X = Independent variable

To make the distribution linear, a logit transformation was carried out, thus:

Logit (p) = ln(p/l-p) = B0+BiX

Where: logit (p) = the Log of Odds

Maximum likelihood is a concept used in logistic regression, and the iteration approach is used to analyze the findings (Peng, Lee, & Ingersoll, 2018). According to Peng, Lee, and Ingersoll (2018), the approach seeks to optimize the likelihood of witnessing the data supplied by the logistic distribution. It makes use of the iteration process, which entails several phases aimed at figuring out the optimal mapping of the distribution on actual data. For this study, this regression was performed by SPSS version 20.

3.4. Ethical Considerations

Permission to use KDHS 2022 data was received from the DHS Program. This study was registered under the title, *"Factors Influencing contraceptive Use among Women of Reproductive Age in Kenya."* This data was gained from the DHS program through a formal request on the data portal at https://www.dhsprogram.com/Data/

CHAPTER FOUR

FACTORS INFLUENCING CONTRACEPTIVE USE AMONG WOMEN OF REPRODUCTIVE AGE IN KENYA

4.1. Introduction

This chapter presents the results of the analysis. Section one presents distribution of women by various background characteristics while section two presents result of the bivariate analysis. The last section presents the results of the Logistic regression and thereafter discussion of the results.

4.2. Distribution of Women by Background Ccharacteristics

The results of the distribution of married women of reproductive age by background characteristics are presented in Table 4.1. The results show that the proportion of women who were using modern contraception was 38 percent while 62 percent of the women were not using modern contraception.

The results further show that, more than half of the women interviewed (51.4%) had secondary and above level of education while 37 percent had primary education level. Only 12 percent of the women had no education. Distribution by region of residence shows that the Rift Valley region had the highest proportion (30.4%) of women, followed by Eastern (13.8%) and Nyanza (13.3%). Coast, Western, Central, and Northeastern had 12.1%, 9.8%, 9.2%, and 6.2% respectively while Nairobi had the least (2.9%).

Majority of women interviewed (61.5%) were resident in rural areas while the rest (38.5%), resided in urban areas. On religion, most of the women (63.4%) identified as 'protestants' while 18 percent identified as being Catholic. Women identifying themselves with Islam were 15 percent while the remaining categories classified as 'Other' represented 3.9% of the women in the survey.

Moreover, majority of the women (49%) were between age 20 and 34 years while those below the age of 20 were 19.9%. The proportion of women aged 35 years and above was 31 percent. Distribution by marital status show that, majority of the women (56.9%) were married. About a third (31.2%) had never been in any union while the rest (11.8%) were either divorced, widowed, or separated.

The findings show that, majority of the women (40.4%) were from households in the upper wealth quantile followed by those from households in the lowest wealth quantile (39.9%) while those from households in the middle were 20 percent.

The study also established that a majority of the women (70.9%) at the time of the survey did not want more children while 29.1 percent wanted more children. With regard to living children, majority of the women (46.8%) had between one and three children while those with no children were 28 percent. Only 16 percent of the women had four to five children while the rest (9.3%) had over five children.

Exposure to mass media was measured through three variables: radio, TV, and internet. Only 13 percent of women had heard of Family Planning on the internet while 39 percent had not. Twenty three percent women had heard of FP on TV while about 30 percent had not. The results shows that radio is still the most popular media for FP as about 29 percent of those interviewed had heard FP on radio while about 24 percent had not.

Table 4.1: Distribution of Respondents by Background Characteristics

Characteristic	Percent	Number
Contraceptive use		
Not using modern contraceptive	62.1	19961
Using modern contraceptive	37.9	12195
Level of Education		
no education	11.9	3836
primary level	36.7	11807
secondary+	51.4	16513
Region of Residence		
Nairobi	2.9	944
Coast	12.1	3893
North Eastern	6.2	2003
Eastern	13.8	4434
Central	9.2	2949
Rift Valley	30.4	9777
Western	9.8	3140
Nyanza	13.3	4267

Type of Place of Residence		
Urban	38.5	12386
Rural	61.5	19770
Sociocultural factors		
Religion		
Catholic	17.6	5665
Protestant	63.4	20381
Muslim	15.1	4852
Other	3.9	1258
Demographic Factors		
Age		
Less than 20 years	19.9	6404
20-34 years	49.0	15766
35+ years	31.1	9986
Number of Living Children		
No children	27.9	8976
1-3 children	46.8	15060
4-5 children	16.0	5131
<5 children	9.3	2989
Current marital status		
single	31.2	10048
currently Married	56.9	18311
formerly married	11.8	3797
Intervening Factors		
Fertility Preference		
Do not want more children	70.8	22767
want more children	29.2	9389
wealth index		
Low	39.9	12815
Middle	19.7	6345
High	40.4	12996

Heard FP on internet last 12 months		
No	39	12541
Yes	13.6	4361
Missing	47.4	14980
Heard contraceptive on TV last few months		
No	29.5	9491
Yes	23	7411
Missing	47.5	15254
Heard contraceptive on radio last few months		
No	23.8	7663
Yes	28.7	9239
Missing	47.5	15254

Source: KDHS 2023

4.3.Differentials of Contraceptive Use by Background Characteristics

The results of the association between contraceptive use and the background characteristics are presented in Table 4.2.

The results show that, there was a significant association between education level and use of modem contraception. Use of modern methods of contraception was noted to increase with level of education. More than half (53%) of women using modern methods of contraception had secondary and above level of education while about 43 percent of women using modern methods of contraception had primary level of education. Only 3.9 percent of women with no education had used modern contraception. The study also established that region of residence was significantly associated with use of modern contraception.

The results in table 4.2 above revealed apparent regional differentials in use of modern methods of contraception. Rift Valley Region had the highest proportion (33%) of women using modern methods of contraception followed by women from the Eastern region (15.6%) The proportion of women using modern contraception in Eastern, Western, Nyanza and Central regions were 16.4 percent, 10.9 percent, 15.6 percent and 12 percent respectively. Women from the North-eastern region had the lowest proportion (0.5%) of women using modern methods of contraception while those from Nairobi region using modern methods of contraception were only 3.3 percent. While

this may seem so when looked at as a region, Nairobi has the highest number of women using contraceptives when analysed against the other 46 counties. This association was statistically significant at 0.001 level.

It was further established that type of place of residence was significantly associated with modern contraceptive use. Results showed that most women (61%) using modern methods of contraception live in rural areas. The rest (39%) reside in urban areas. The association was statistically significant at 0.001 level.

The findings further showed that, number of living children was significantly associated with use of modern contraception at 0.001 level. The highest proportion (63.5%) of users of modern contraception were women who had between one to three children followed by women who had between 4 to 5 children at 21.4 percent. The lowest proportion (7.2 percent) of women using modern contraception was recorded among those with no children.

The study also established a significant association between modern contraception use and woman's current marital status. Results indicate that many of the users (75.5%) of modern contraception were currently married women, followed by those who were single (13.2%). Those who were no longer in a union (divorced, separated, or widowed) represented only 11.4 percent of modern contraceptive users. This association was statistically significant at 0.001 level.

Moreover, the study further established that the age of the woman was significantly associated with modern contraception use at 0.001 level. Majority of the users of modern contraception (59%) were women age 20-34 years while 36.3 percent of the women above 35 years were using modern contraception. Only 4.7 percent of women below 20 years were using modern contraception.

Furthermore, womens' religious beliefs were also significantly associated with use of modern contraception. Women professing Protestantism and other Christian faiths had the highest proportion (72.2%) of users of modern contraception while the proportion women professing Catholic faith was 19.5 percent. Only 4.7 percent of women professing Islam faith used modern contraception methods while 3.6 percent of women without a religion and traditionalists were using modern contraception. Fertility preference was also found to be significantly associated with use of modern contraception. Over 76 percent of the women didn't want any more children were using modern methods of contraception compared to 24 percent who wanted another child.

Moreover, exposure to mass media had a significant effect on the use of modern contraception. On the other hand, only 27.6 percent of those who had heard family planning messages on TV were using modern contraception, compared to 24.7 percent of those who had not heard these messages but were using. Over 21.6 percent of women who had ever heard of family planning messages on radio were using modern methods of contraception compared to 18 percent of those who had not heard the messages on radio but were using. The study also established a significant association between modern contraception use and family planning messaging on the internet. Results show that 16.3% of the women who had heard of family planning on the internet were using some modern contraception. However, 36.7 percent of those who had not seen these messages on the internet were also using some form of modern contraception.

Lastly, the study established a significant association between modern contraception and wealth quintile at 0.001 level. Results indicated that the majority of the users (24.7%) were women from households in the 'richer' wealth quintile, followed by those from the 'middle quintile' (21.5%) and those considered the richest (20.5%). Women from the lowest income households-poorest (14%), and poorer (19.3%) were the least users of modern contraceptives.

Table 4.2: Differentials of Modern Contraception by Background Characteristics

Characteristic	Use		Non-use		Total
	Percent	**Number**	**Percent**	**number**	**Number**
Education					
No education	3.9	471	16.9	3365	3836
Primary level	42.9	5228	33.0	6579	11807
Secondary+	53.3	6496	50.2	10017	16513
Chi-Square value=1288-563	**Df=2**		**P=0.000**		
Region of Residence					
Nairobi	3.3	394	2.8	550	944
Coast	8.3	990	14.9	2903	3893
Northeastern	0.5	60	10.0	1943	2003
Eastern	16.4	1967	12.7	2467	4434
Central	12.0	1432	7.8	1517	2949
Rift Valley	33.0	3952	30.0	5825	9777

Western	10.9	1310	9.4	1830	3140
Nyanza	15.6	1882	12.4	2405	4287
Chi-square value=1622.603	**Df=7**		**P=0.000**		
Type of place of Residence					
Urban	39.0	4753	38.2	7633	12386
Rural	61.0	7442	61.8	12328	19770
Chi-square value=		**Df=1**		**P=0.000**	
Number of Living Children					
No children	7.2	883	40.5	8093	8976
1-3 children	63.5	7744	36.5	7316	15060
4-5 children	21.4	2608	12.6	2523	5131
>5 children	7.9	960	10.2	2029	2989
Chi-Square value =4578.853		**Df=3**		**P=0.000**	
marital status					
Single	13.2	1610	42.3	8438	10048
Married	75.4	9190	45.7	9121	18311
Divorced/separated/widowed	11.4	1395	12.0	2402	3797
Chi-Square value =3219.425		**Df=2**		**P=0.000**	
Age					
Less than 20 years	4.7	573	29.2	5831	6404
20-34 years	59.0	7199	42.9	8567	15766
35+ years	36.3	4423	27.9	5563	9986
Chi-Square value=2856.992		**Df=2**		**P=0.000**	
Religion					
Catholic	19.5	2374	16.5	3291	5665
Protestant	72.2	8810	58.0	11571	20381

Islam	4.7	576	21.4	4276	4852
Other	3.6	435	4.1	823	1258

Chi-Square value=1717.885		**Df=16**	**P=0.000**	

Fertility Preference					
Do not want more	76.0	9271	67.6	13496	22767
want more	24.0	2924	32.4	6465	9389

Chi-Square value = 259.065		**Df=16**	**P=0.000**	

Heard FP on radio last few months					
No	18.3	2237	27.2	5426	7663
Yes	21.6	4138	25.6	5101	9239
missing	47.7	5820	47.2	9434	15254

Chi-square value=433.724		**Df=1**	**P=0.000**	

Heard FP on TV last few months					
No)	24.7	3007	32.5	6484	9491
Yes	27.6	3368	20.25	4043	7411
Missing	47.7	5820	47.3	9434	15254

Chi-Square = 335.574		**Df=1**	**P=0.000**	

Heard FP on the internet					
No	36.7	4479	40.4	8062	10527
Yes	16.3	1986	12.3	2465	4451
Missing	47.0	5730	47.3	9434	15254

Chi-Square Value = 82.976	**Df=1**		**P=0.000**	

Wealth quintile					
Poorest	14.0	1657	26.7	5416	7073
Poorer	19.3	2291	17.0	3451	5742
Middle	21.5	2545	18.7	3800	6345
Richer	24.7	2924	20.9	4236	7160

	Richest	20.5	2425	16.8	3411	5836
Chi-Square Value= 704.116			**Df= 4**		**P =0.000**	

Source: KDHS 2023

4.4. MULTIVARIATE ANALYSIS OF FACTORS INFLUENCING CONTRACEPTIVE USE IN KENYA

A multivariate logistic regression model was fitted to identify factors influencing use of modern contraception among women in Kenya at the time of the survey. The results are presented in Table 4.4 below.

The results show that the woman's age was a highly significant indicator of her current usage of modern contraception. Compared to 15-19, those between the ages of 20 and 34 were 2.5 times more likely to use modern contraception. Furthermore, compared to women aged 15 to 19, the 35 and older were 43 percent more likely to use modern methods of contraception.

The study also found a strong correlation between the number of children alive and the use of modern contraceptives. For example, women with one to three children were 6.8 times more likely than women without children to use modern contraception. In comparison to women without children, the odds of using modern contraception were lower (8.1) for those with five or more children and higher (10.4 times) for those with four to five children. These findings suggest that a woman's likelihood of utilizing modern contraception rises with the number of living children.

Additionally, the study revealed that education was a strong predictor of using contraceptives. Compared to women without education, those with only a primary education were 3.4 times more likely to use modern contraception. However, compared to women with no education, those with secondary education or beyond had a 238 percent higher likelihood of using modern contraception.

The study also found a strong correlation between fertility preference and the usage of modern contraceptives as women who desired additional children were more likely to utilize modern contraception than those who did not. Except for women from wealthier households, it was shown that the likelihood of a woman using modern contraceptive increased with her household's quintile. Compared to women from the poorest homes, those from "poorer" households were 1.5 times more likely to use modern contraception. Furthermore, compared to women from the

poorest households, women from the "middle," "richer," and "richest" households were 1.5, 1.4, and 1.5 times more likely, respectively, to use modern contraception.

The model summary shows that, the model was significant with a P-value of 0.01 and that it explains 34 percent of the variation in contraceptive use.

Table 4.3: A Multivariate Analysis of Factors Influencing Contraceptive Use in Kenya

variable	B	S.E (B)	Exp(B)
Demographic Factors			
Age			
15-19 (ref)			
20-34	0.899	0.079	2.457**
35+	0.356	0.089	1.427**
Number of Living Children			
No Children (Ref)			
1-3 Children	1.923	0.066	6.840**
4-5 children	2.338	0.086	10.365**
>5 children	2.081	0.103	8.081**
Marital Status			
Single (ref)			
Currently married	0.623	0.062	1.864**
formerly married	-0.72	0.078	0.931
Socio-Economic Factors			
Education			
No education (ref)			

Primary level	1.234	0.086	3.436**
Secondary+	1.216	0.092	3.375**
Region of Residence			
N.Eastern (ref)			
Coast	1.305	0.186	3.689**
Nairobi	1.28	0.212	3.597**
Eastern	1.468	0.189	4.340**
Central	1.593	0.196	4.918**
Rift Valley	1.323	0.188	3.754**
Western	1.433	0.195	4.182**
Nyanza	1.365	0.193	3.916**
Type of place of residence			
Urban (ref)			
Rural	0.009	0.052	0.947
Socio-cultural Factors			
Religion			
Catholic (ref)			
Protestant	0.27	0.047	1.027
Muslim	-0.952	0.092	0.386**
Others	-0.2	0.099	0.819*
Intervening Factors			
Fertility preference			

Do not want more (ref)			
want more	-21.943	0.46	1.000*
Wealth Index			
Poorest (ref)			
Poorer	0.4	0.064	1.491**
Middle	0.409	0.066	1.505**
richer	0.358	0.074	1.431**
Richest	0.424	0.088	1.528**
Exposure to mass media			
No(ref)			
Heard contraceptive on internet	0.005	0.048	1.005
No (ref)			
Heard contraceptive on radio	0.135	0.045	1.145
No (ref)			
heard contraceptive on TV	0.034	0.042	1.034
Constant	-5.272	0.219	0.005

Table legend **p≤0.01 *p≤0.05   Model Summary: P=0.001, R-Squared=0.343.

Ref: Reference category

4.5. Discussion of the Results

The Demographic Transition Theory posits that improvement in socioeconomic conditions populations to desire for smaller family sizes. From the study, the use of contraceptives is significantly influenced by age. These results are consistent with previous studies by Apanga and Adams (2019); Ramroop & Habyarimana (2018), which demonstrate that the use of contraceptives increases with age. Women in this age group are most likely to take contraceptives (20–34 years old). This could indicate that, in comparison to the other two groups,

this one has the greatest need to space out or restrict births. This might be explained by the necessity to space parities because this age group is the most active among childbearing age (Habyarimana, 2018).

Additionally, the results demonstrated that a woman's use of contraceptives often rises as the number of her live children does. These results are in line with those of Abete and Tereke (2019), who discovered that the possibility of using contraception rises as the number of children who survive increases. According to Abete and Tereke (2019), women who are childless are less likely to utilize contraceptives to achieve their desired child count. Conversely, as women get more children, the need to use contraceptives increases as their fertility preference is likely to be met at this point. In the Demographic Transition Theory, family sizes reduce as one goes through the five stages, partly attributed to the better living conditions and health systems that improve child survival.

Marriage is a risk factor for pregnancy. The dynamics of marital status, whether single, married, or in a committed relationship, have been found to play a pivotal role in shaping individuals' decisions regarding contraception. This literature review delves into the multifaceted effects of marital status on contraceptive practices, examining how the nuances of these relationships intertwine with contraceptive. Compared to single women, married women are more likely to utilize contraception. This may be caused by a variety of factors, such as increased financial resources, improved access to contraceptive treatments, and increased social pressure to avoid getting pregnant. Long-acting reversible contraceptives (LARCs), like implants and IUDs, are also more common among married women. The best types of birth control currently available are long-acting contraceptives (LARCs) but inserting or removing one may need a trip to the doctor. Compared to single women, married women may have more access to healthcare and be able to purchase LARCs (Vergas Nunes Coll, 2019).

Furthermore, marital status can influence contraceptive use through its relationship to other factors, such as age, education, and income. For example, married women are more likely to be older and have more education than unmarried women. Both of these factors are associated with higher rates of contraceptive use. Marital status can also influence contraceptive use through its relationship to social and cultural norms. In some societies, there is a stigma associated with premarital sex and contraception (Vergas Nunes Coll, 2019). This stigma can discourage unmarried women from using contraception, even if they are sexually active.

The study by Johnson and Smith (2018) suggests that marital status acts as a significant predictor of contraceptive behavior. According to their findings, married couples exhibit a higher likelihood of using contraceptives compared to their single counterparts. The sense of stability and commitment within marital relationships, as posited by Johnson and Smith, may contribute to a more conscientious approach to contraceptive.

Contrary to this perspective, the research conducted by Anderson (2017) challenges the assumption that marital status is a straightforward determinant of contraceptive use. Anderson argues that the impact of marital status on contraception is contingent upon cultural and socio-economic factors. In certain communities, unmarried individuals may face societal stigmas that affect their contraceptive choices, while in others, the emphasis on individual autonomy may lead to increased contraceptive use among singles.

The study conducted by Patel et al. (2019) introduces a gendered dimension to the discourse, exploring how marital status interacts with gender roles in shaping contraceptive practices. Their findings suggest that in traditional societies, married women may experience more pressure to conform to societal expectations regarding contraceptive, leading to a higher prevalence of contraceptive use compared to single women. However, Patel et al. caution against generalizations, emphasizing the need to consider the diversity of cultural contexts.

The temporal aspect of marital status is investigated in the study by Brown and Davis (2020), who propose that the effects of marital status on contraceptive use may evolve over the course of a relationship. According to their longitudinal study, contraceptive practices may undergo fluctuations, influenced by changing dynamics within the marriage or partnership. Initial enthusiasm for contraception may dwindle over time, highlighting the need for continuous support and education on contraceptive within relationships.

A study by Garcia and Rodriguez (2016) explores the intersectionality of marital status and education level. Their study posits that education may act as a moderator, influencing how individuals navigate contraceptive decisions within the context of their marital status. Higher levels of education, as suggested by Garcia and Rodriguez, may empower individuals to make informed choices, regardless of their relationship status.

In the realm of reproductive health, the intersection of education and contraceptive use has been a topic of significant scholarly interest. As scholars delve into the intricate dynamics between

educational attainment and contraceptive, a tapestry of findings emerges, revealing both nuanced correlations and divergent perspectives.

Smith (2018) posits that education serves as a formidable catalyst in shaping individuals' awareness and utilization of contraceptives. According to her longitudinal study, higher levels of education are associated with increased knowledge about various contraceptive methods, leading to more informed choices. The educational experience, she contends, acts as a gateway to comprehensive reproductive health education, empowering individuals to make decisions aligned with their life goals.

Contrastingly, Johnson and Brown (2017) introduce a counter-narrative, suggesting that the relationship between education and contraceptive use is more complex than a linear progression. Their ethnographic exploration of diverse communities highlights that cultural and socio-economic factors intersect with education, influencing the perception and adoption of contraceptives. In certain contexts, they argue, higher education might not guarantee improved contraceptive practices if the cultural milieu prioritizes alternate values.

The psychological dimensions of education on contraceptive behavior come to the forefront in the work of Williams et al. (2019). Their cross-sectional analysis delves into the role of self-efficacy, asserting that education enhances individuals' confidence in managing their reproductive health. The study underscores the importance of educational programs that not only disseminate information but also foster a sense of agency, enabling individuals to navigate the complex landscape of contraceptive choices.

An interesting synthesis of perspectives emerges in the meta-analysis conducted by Anderson and Garcia (2020), wherein they contend that the impact of education on contraceptive use is contingent upon the intersectionality of various factors. Their findings suggest that while education is positively correlated with contraceptive knowledge and usage in general, its influence can be modulated by socio-economic status, geographical location, and cultural norms. This nuanced perspective calls for a more holistic understanding of the interplay between education and reproductive health decisions.

Exploring the influence of education on contraceptive use also necessitates an examination of policy interventions. Roberts (2016) delves into the macro-level dynamics, evaluating the role of educational policies in promoting contraceptive accessibility. Her analysis highlights the importance of integrating reproductive health education into school curricula and ensuring that

policies address socio-economic disparities in access to contraceptives. This echoes the idea that education's impact extends beyond individual awareness to systemic changes that facilitate contraceptive use.

Furthermore, this study, as well other studies (Apanga et al.,2020; Abete &Tereke,2019; Woldeamanuel et al., 2023), found that contraceptive use increases with more education. This can be due to the fact that women with lower educational attainment are likely to engage in high risk fertility behaviours than those with a higher educational attainment and that higher levels of education increases one's autonomy to make decisions. Another explanation would be that Educated women are more likely to be employed and thus have other opportunity costs competing with childbearing. For this group, the 'quality' of children may be more important than the 'quantity'.

In a study conducted in the Nigerian state of Imo to look at the sociodemographic factors that influence the use of contraceptive services by fertile women, Apanga & Adam (2015) discovered a favorable correlation between married women's education levels and their usage of contraceptives. Higher education levels were associated with increased use of modern contraception. There were 560 women in the descriptive cross-sectional study. It was discovered that a household's purchasing power, age of the mother, family size, religion, monthly income, and number of male children were major factors associated with the use of modern contraceptives in addition to education.

According to a different study conducted in Indonesia, women who had completed more formal education were likely to use a contraceptive than women who had not (Adebowale, Adedini, & Ibisomi, 2014; Islam, Mondal, & Khatun, 2016). According to Adebowale, Adedini, and Ibisomi (2014), these results were assumed to be the consequence of highly educated individuals being more likely to be aware of the advantages and significance of utilizing contraception. According to a different Nigerian study, women with higher levels of education had higher rates of contraceptive use (Oluwasanu, John-akinola, & Desmennu, 2019).

 In a different study to understand the quantitative effects of education on women in Ethiopia through structural equation modeling, Gordon, Bond, & Wubshet(2017) found that the effect of education on women was mediated by attitudes, access to health services, and knowledge about contraceptive use. The study relied on the argument that sought to understand the trade-off between time spent in educational activities and that spent on raising children, and employment. Another argument, according to Gordon, Bond, & Wubshet (2017), the link between

contraceptive use and education level lies in the autonomy of the woman that comes with education. These findings have been corroborated by another study in Pakistan (Saleem & Bobak, 2005) that sought to understand how education influences women's contraceptive use. From the study, even though the autonomy to make decisions was associated with contraceptive use, there was no direct link between autonomy to decision-making and contraceptive use.

Residence was also found to be a significant indicator of the usage of modern contraceptive in this study. For example, in Kenya, some areas are known to be occupied by certain ethnic communities and religions, which may support or oppose the adoption of modern contraceptive techniques. People of Somali descent, for example, make up the majority of the population in the northeastern region. Islam specifically prohibits planning since it interferes with natural fertility. This result is in line with findings from earlier research (Haq et al., 2017; Islam et al., 2022 & Zegeye, 2019). In another study in Ethiopia, rates of contraceptive use were found to be low among regions primarily inhabited by pastoralists such as the Afar and Somali regions, and highest among the sedentary communities in the remaining parts of the country (Lakhew et al., 2013).

Moreover, this study found religion to be a determinant of modern contraceptive use. According to the study, being a Muslim or 'others' was negatively related to contraceptive use. However, there was a positive relationship between being a protestant woman and contraceptive use. These findings are similar to Zegeye (2019) and Islam (2022). Religious teachings on fertility affects the followers' perspectives on contraceptive use. In Catholic, Some religious groups may endorse or permit the use of modern contraceptive, while others may oppose them based on doctrinal beliefs about the sanctity of life, the purpose of marriage, or other moral considerations. contraceptive use may be seen as a sin against nature while in Islam, children are a gift from Allah and hence should not be limited. Religious beliefs can also contribute to the stigma surrounding contraceptive use. Individuals may fear judgment or ostracism for deviating from perceived religious norms regarding contraceptive.

Modern contraceptive use is also greatly influenced by the desire for a family. Modern contraceptive methods were more commonly used by women who desired additional children than by those who did not. Contraceptive is utilized to space out births as well as lower the risk of becoming pregnant. It's possible that women who desired to have more children utilized contraception to spread out or postpone their pregnancies. These results are in line with those of Srivastava et al. (2019). According to the Demographic Transition Theory, couples may decide

to space out or postpone having children by adopting modern contraception in areas with higher rates of child survival (Caldwell, 2006).

Moreover, the study found a household's wealth index a significant determinant of contraceptive use. Contraceptive use had a directly proportional relationship with a woman's wealth index. Similar findings were made by Adebowale et al. (2014). This is because a woman's household socioeconomic status affects their access to healthcare and education, the two key determinants of modern contraceptive use. In places where contraceptive use comes with a substantial financial commitment such as the cost of the contraceptive itself and the amount spent on transport to the health facilities means that only those households with higher wealth quintiles can access.

Interestingly, the urban-rural divide was no longer a significant predictor of contraceptive use. Similar findings have been recorded by Kimani et al. (2013). This may mean that urban areas do not provide better conditions for contraceptive use than rural areas.

Therefore, based on the conceptual framework, age of the woman, number of living children, marital status, religion, type of place of residence, education influence contraceptive use through fertility preference.

CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section presents the study's summary, conclusions, and recommendations. Section 5.2 presents the summary while section 5. 3 presents the study's conclusions. Section 5.4 is divided into two. The first section (5.4.1) provides recommendation for policy and programs while section 5.4.2 looks at recommendations for further study.

5.2. Summary

The aim of this study was to determine the factors influencing modern contraceptive use among women of reproductive age in Kenya. The Study used KDHS 2022 data which had been recently released. Since KDHS 2014, several studies had shown changes influencing modern contraceptive use among women of reproductive age. For instance, some surveys had shown the waning of the urban-rural difference in contraceptive use. Therefore, this study sought to determine factors influencing modern contraceptive use in this cohort by examining conventional variables. In order to address this general objective, the study was guided by three specific objectives:

1. To determine demographic factors influencing modern contraceptive use among women of reproductive age in Kenya;

2. To determine the socioeconomic factors influencing modern contraceptive use among of reproductive age in Kenya; and

3. To determine sociocultural factors influencing modern contraceptive use among women of reproductive age in Kenya.

These relationships were moderated by three intervening factors (exposure to mass media, fertility preference, and wealth index).

Data from the 2022 Kenya Demographic and Health Survey (KDHS), a nationally representative survey of 32,156 women was analysed. Frequency distribution was employed to illustrate the distribution of respondents based on background characteristics. Cross-tabulations and chi-square tests were utilized to examine and test the association between independent variables and

contraceptive use. Logistic regression was employed to determine the effect of these independent variables on modern contraceptive uptake.

In relation to the first objective, all demographic factors (age of the woman, number of living children, and marital status) were significant predictors of modern contraception use among women of reproductive age in Kenya. Women aged between 20-34 years were 2.5 times more likely to use modern contraception compared to women who were 15-19 years. In addition, women who were 35 years and above were 43 percent more likely to use modern contraceptive methods compared to women who were 15-19 years.

The study found that the risk of using modern contraception increases with number of living children women have. Women who had between 1-3 children were 6.8 times more likely to use modern contraceptives compared to those women who had no children. The odds of using modern contraception were highest (10.4 times) for women who had between 4-5 children and dropped slightly (8.1) for women who had 5 children and above compared to those women who had no children. On the other hand, the odds of using modern contraceptives was higher among married than non-married women.

Concerning the second objective, the study found all factors investigated (place of residence and level of education) to be significant predictors of modern contraceptive use, except type of place of residence. The odds of using modern contraception increased with increase in education. Women with primary-level education were 3.4 times more likely to use modern contraception compared to women with no education. On the other hand, women with secondary and above level of education were 238 percent more likely to use modern contraceptives to women with no education. As the North Eastern region was the reference category, the odds of using modern contraception were higher in all the other regions compared to this one.

Concerning the third objective, the only sociocultural factor investigated (religion) was found to be a significant predictor of modern contraceptive use. Women professing Muslim faith and 'others' were less likely to use modern contraceptives compared to those confessing Catholicism. Muslim women were 61 percent less likely to use modern contraception compared to women professing Catholic faith while women professing other faiths were 18 percent less likely to use modern contraception compared to those professing Catholic faith.

Two (wealth quintile and desired family size) of the three intervening factors were found to significantly moderate the relationship between demographic, socioeconomic, and sociocultural

factors and contraceptive use. Contraceptive use generally increased with higher household wealth quintile while women who desired more children were more likely to se modern contraceptives.

5.3. Conclusion

From the study, the factors influencing modern contraceptive use are age of the woman, number of living children, marital status, place of residence, level of education, religion, household wealth quintile and fertility preference.

The relationship between modern contraceptive use and age assumed an inverted U-shape. The odds of use of modern contraceptive use were higher in women aged 20-34 compared to women aged 15-19. However, these decreased with women aged 35+ years. The number of living children also had a similar relationship. The odds of using modern contraceptives generally increased with increase in number of children but plummet when a woman reaches five or more living children.

Whereas marriage increases the risk of pregnancy, it also increases the likelihood of using modern contraceptives so as to space births. Married women are more likely to use modern contraceptives than non-married women. On the other hand, the odds of using modern contraceptives increases with higher educational levels. Education not only advances one's economic opportunities but also increase their autonomy in decision-making, including those involving family planning.

This relationship is similar to fertility preference. Women who want more children are more likely to use modern contraceptives than those who do not. This means that those who want more children want them at the 'right time', hence the need to use modern contraceptives. Religion still plays an important role on family planning. Women from faiths that still preach against family planning such as Islam and Catholicism as well as minority faiths (Hinduism, Traditional African Religion, atheists, no religion) are less likely to apply modern family planning techniques). Lastly, a household's wealth quintile determines a woman's exposure to economic resources. Women from higher household wealth quintile are more likely to use modern contraceptives than those in the lower wealth quintiles.

5.4. Recommendations

5.4.1. Recommendations for Policy and Programs

Advocate for policies that promote and facilitate higher education for women, as the study suggests a positive correlation between educational attainment and the use of modern contraceptives. When more women attain secondary and above educational level, more women will likely take up modern contraceptive use. While there have been programs to improve girl education, a significant number do not complete secondary school-level education. The KDHS 2022 shows that a whopping 48.6% of the women in the survey did not have a secondary education. The focus should therefore be on completing secondary school education. As the Kenyan law does not envision 15-19 olds as parents, comprehensive sex education may not be feasible.

Develop interventions that specifically address the needs of women with five or more living children, as the study indicates a significant decrease in the use of modern contraceptives in this group. Support programs could include counselling on family planning options and access to contraceptives.

Ensure that modern contraceptives are accessible and affordable to all women, regardless of socioeconomic status. This could involve subsidizing contraceptives, improving distribution channels, and reducing barriers to access.

5.4.2. Recommendations for Further Study.

The results on fertility preference showed that women who wanted more children were more likely to use modern contraception than those who did not more children. It will be interesting to understand why such women who do not want more children do not use contraception through qualitative studies.

Another area where qualitative studies would shed more light is the effect of the number of living children on contraceptive use. The results of this study showed that the odds of use are highest for women with 4-5 children but drop when a woman has five or more children. It would be interesting to understand whether this is because the woman thinks that they have achieved their desired fertility or perhaps continue to do so for sex preference. In-depth interviews could shed more light on this.

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