ETHNICITY AND CONTRACEPTIVE USE IN KENYA

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This research report is submitted in partial fulfillment of the Master of Arts in Demography and Population Studies, in the Faculty of Humanities (School of Social Sciences), at the University of the Witwatersrand

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DECLARATION

I, Mercy Wangari Nyaga, declare that this research report is my original work. It is being submitted to the School of Social Science, Faculty of Humanities, University of the Witwatersrand, Johannesburg. It is being submitted in partial fulfillment of the requirements for the Degree of Master of Art in the field of Demography and Population Studies.

To the best of my knowledge, it has not been submitted before in part or in full for any degree examination at this or any other university.

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Mercy Nyaga

_____ of _____ 2016

DEDICATION

I dedicate the success of this work to almighty God. I would also like to dedicate this work to my parents Mr. Nyaga and the late Mrs. Nyaga, as well as my fiancé Mr. Peter Muriungi.

ACKNOWLEDGEMENTS

I am eternally grateful to Almighty God for His goodness and mercies to me. He has been a pillar of strength throughout this work. All the glory and honor is to Him.

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LIST OF ABBREVIATIONS AND ACRONYMS

ICPD	International Conference on population and Development
FPAK	Family Planning Association of Kenya
KDHS	Kenya Demographic and Health Survey
KEMRI	Kenya Medical Research Institute
KNBS	Kenya National Bureaus of Statistics
MOH	Ministry of Health
NCAPD	National Council for Population and Development
PRB	Population Reference Bureaus
SRH	Sexual Reproductive Health
TFR	Total Fertility Rate

ABSTRACT

Background

Ethnicity is widely known to affect all aspects of an individual's life. Ethnic groups differ in traditional values and attitudes toward fertility and related health behaviors. Therefore, these values and belief systems shape attitudes towards contraception. The significance of ethnicity on the use of contraceptives has been neglected in sub-Saharan Africa. Fertility transitions have been widely attributed to the increased use of contraceptives among women worldwide.

Given that ethnicity plays an important role in post-colonial Kenya, the aim of this study is to examine the relationship between ethnicity and contraceptive use in Kenya. The study addressed two specific objectives (1) to examine the level of contraceptive use in Kenya's ethnic groups, and (2) to examine the socio-economic and demographic factors that affect contraceptive use in Kenya's ethnic groups.

Methodology

The study utilized data from the Kenya Demographic and Health Survey 2008-2009.The target population was women of reproductive ages(15-49 years). Out of a total sample size of 8,444 women, the study sample was restricted to 4,482 women who were sexually active. Objective 1 was achieved using percentage distributions and chi-square tests, while objective 2 was achieved by using binary logistic regression. Stata version 12 was utilized for management and analysis of the data.

Results

The results showed that ethnicity was a significant predictor of contraceptive use in Kenya. Results showed that there was a difference in contraceptive use among ethnic groups in Kenya. Fifty-one percent (51%) of Kkem, 47% of Luhya, 44% of Cushitic and 38% of Luo used contraceptives; while in general only 44% of women of reproductive

age in the sample used contraceptives. It also showed that the Luo ethnic group were 0.18 less likely to use contraceptive compared to the Kkem. The selected demographic and socio-economic factors were significantly associated with contraceptive use; such as education, wealth status, place of residence and age of respondent.

Conclusion

The study has shown that ethnicity and selected demographic and socioeconomic indicators affect use of contraceptives, and play a vital role in the reproductive behaviors among women. Therefore, it is imperative that ethnicity and those factors be considered when designing and implementing policies aimed at improving the uptake of contraceptive use among women of reproductive age.

CHAPTER 1: INTRODUCTION

1.1 Background

Ethnicity is an influential factor in Africa that affects all aspects of an individual's life. For most of the Africancountries, ethnic belonging is astronger reference than national identity (Bauni et al., 2000). In multi-ethnic societies and communities, ethnic identification is a factor in socioeconomic development over and above those normally present in the homogeneous communities (Yieke, 2010).

Ethnicity is deeply embedded in the structure of a society, that is the network of structure or position that people occupy in relation to each other as individuals or groups (Bauni et al., 2000). An individual's cultural attachment and identity determines his or her behavior, including their reproductive health (Bauni et al, 2000; Simard, 2009).In African countries; where ethnic identities are very strong; availability, accessibility and distribution of resources are mostly done along ethnic considerations. This implies that thesocio-economic status of individuals or groups tend to be associated with ethnicity (Lewicka, 2005).

Kenya is a multi-ethnic country, where each ethnic grouphas always had its own homeland and distinctive language (Makoloo, 2005). Each ethnic group is defined along linguistic lines, and common language brings people from disparate regions together in a social relationship (Takyi & Addai, 2002). Due to family lineage, ethnicity provides family members with the sense of cultural location and social identification according to their ethnic belonging (Bauni et al., 2000). This results to childbearing taking place in the context of lineal relationships with the acceptance of ethnic beliefs, practices and customs (Takyi & Addai, 2002). Lingual similarities allow for the grouping of Kenyan ethnic groupsinto three broad linguistic groups. These include the bantu-related group which consist of the Kikuyu, the Kamba, the Meru, the Embu, the Kisii Mijikenda/Swahili and the Luhya. The second ethnicgroup is the Niloticsgroup, which is dominated by the Luos, Kalenji, and Masaai. While the third ethnic group is the Nilo-Hamatic or Cushitic-related group, which includes Somalis and other smaller ethnic groups in the country. The smaller

ethnic groups are mainly found in the Northern, Northeast and coastal regions of the country (NCR, 1993; Makoloo, 2005).

The use of family planning services is believed to reduce the fertility globally (World Bank, 2009). Due to use of contraceptive, it has helped to prevent an estimated 2.7 million infant deaths and the loss of 60 million of healthy life in a year (Darron et al, 2008). Therefore, the promotion and encouragement of contraceptives within countries with high birth rates has had a positive impact in reducing poverty and hunger (Cleland, 2006). The use of contraceptives could also increase and promote women's empowerment and long-term environmental sustainability (Lakew et al 2013). In the past years, family planning programmes have increased the contraceptive prevalence from less than 10% to about 60%, and changed the fertility transitions from high to low in many developing countries. In some of these countries, this has brought down the number of births per women from around six to three births per women (Cleland et al; 2006).

However, the contraceptive prevalence varies amongst African countries, especially in Sub-Saharan Africa (PRB, 2011). In Kenya, specifically, the introduction of family planning and contraceptives by the government started as early as 1957 (Luoma et al., 2010). Accessibility of family planning to the Kenyan population was put in place by the government and family planning non-governmental organizations (Magadi& Curtis, 2003; Blacker et al., 2005). The aim of the national family planning strategy of Kenya was to increase the quality and sustainability of family planning services to all who needed the service (MOH 1996: 25), hence the availability of various contraceptivesgave women the opportunity to make decisions regarding their desired number of children, and spacing. Due to the increase in the use of contraceptives, Kenya's total fertility rate went from being one of the highest to the most rapid fertility decline ever recorded. The Total Fertility Rate (TFR) declined from 8.1 births per woman in 1978 to 4.7 per woman in 1998 (Blacker et al., 2005).

Many studies have found significant differences in various settings between ethnic groups, given their traditions, values, attitudes and perceptions on fertility and health-related behavior (Addai, 1999; Addai and Trovato 1999; Tawain, 1997; Garenne, 2006; Jenum et

al., 2005; Arnaldo, 2004; Wildsmith and Raley,2006). Research also suggests that ethnicity affects an individual's sexuality, sexual behaviors and contraceptive use (Dzordzomenyoh, 2012). It is therefore important to consider ethnicity when looking at contraceptive use, given the association between ethnic groups and fertility and health-related behavior, and the influence of ethnic variations on the fertility transition (Takyi & Addai, 2002).

1.2 Problem Statement

Contraceptive prevalence in Kenya increased from 7% in 1978 to 45.5% in 2010 (KNB &ICF macro, 2010). Even though contraceptive use increased over the years in Kenya, unmet need for contraception remains as high as 25% in 2009 amongst women of reproductive age (PRB, 2010). It is estimated that one in four married women of reproductive age have an unmet need for family planning, which is about 1.4 million Kenyan women of reproductive age (United Nation, 2013).

The unmet need for contraceptives has also increased the number of unintended pregnancies, resulting inabortions as well as unwanted and unplanned births. Annually, there are 300 000 abortions in Kenya and 46 per 1000 women of reproductive age, has said to have undergone an abortion (Hussain, 2012).Therefore, many women have found itdifficult to meet their fertility desire and it has been estimated that most Kenyan women experience at least one unintended pregnancy (KNB &ICF, macro, 2010).In fact, about 1.8million married Kenyan women have an unintended pregnancy annually (NCAPD, 2011). If this continues, these women will continue to experience increased risk of pregnancy complications and maternal mortality.

The 1994 International Conference on Population and Development (ICPD) emphasised the importance of Sexual Reproductive Health (SRH) in ensuring individuals' well-being and social development. The ICPD put women and young people on the global agenda, emphasizing their right to choose their preferred method of contraception (ICPD, 1994). However, ethnicity has been found to be an influential factor in choosing whether women choose to use contraception or not in the developed world (Soler et al., 2010). The

influence of ethnicity on contraceptive use, however, has not been fully investigated in the African context. Given the high rates of fertility, and the mix of ethnic variations, traditions and cultures in Africa it is important to investigate whether there is such an association within the African continent (Takyi and Addai, 2002).

It is important to acknowledge that ethnic groups vary in their acceptability of contraceptive practices (Agadjanian, 2013). In the first phase of the fertility transition in the UK, for instance, minor ethnic groups were less accepting of contraceptives andthis resulted in significantly low levels of contraceptive uptake compared to the whiteethnic groups (Sexana et al., 2006). In Africa, a study conducted in Niger and Senegal found that women resisted the utilization of family planning services and especially the use of contraceptives, due to their cultural setting and other social factors (Aurig, 2013).

1.3 Research Question

What is the relationship between ethnicity and contraceptive use in Kenya?

1.4 Research Aim and Objectives

The main aim of this study was to examine the relationship between ethnicity and contraceptive use.

The specific objectives of this study are:

1) To determine the level of contraceptive use in Kenya.

2) To examine the socio-economic and demographic factors influencing ethnic differentials in contraceptive use in Kenya.

1.5 Justification

Given the need to further reduce fertility levels in Kenya, the relationship between contraceptive use and ethnicity should be established. Ikamari (2005) observed that ethnic groups have their own socio-cultural ideologies about reproduction and those ideologies are composed of norms, beliefs, values and different practices that are either more or less likely to affect the reproductive performance in certain communities.

Other studies have also found that ethnic variations in the timing of marriage and childbearing have been explained by ethnic norms, ideals and beliefs (Addai and Trovato, 1999; Arnaldo, 2004). While some scholars have found thatinequalities ineducation exist between ethnic groups as well (Alwy et al., 2004). Studies that have focused on ethnicity and contraceptive use among men have found that some ethnic groups, such as the Kikuyu, were influenced by western ideas such aseducation and media. This increased the knowledge and value placed on contraception, in comparison to other ethnic groups, such as theMasaai. Therefore, this study intends tolook at ethnicity as the key predictor of contraceptive use among women in Kenya.

Kenya developed a population policy and established a family planning programme with an aim to reduce the population growth rate. Kenya, subsequently initiated a fertility transition through government-led actions (Koome et al., 2005; Ian et al., 2009). As a result of these programmes, increased contraceptive prevalence rates helped reduce the TFR and decrease the unmet need for family planning in Kenya. Therefore, the study will update the existing literature, since most of the literatures on ethnicity are outdated. The study will also increase the body of knowledge regarding the influence of ethnicity on contraception among women in Kenya.

The study will assist Family Planning programmes and organizations, such as Family Association Planning of Kenya (FPAK), the National Council for Population and Development (NCPD) and Ministry of Health (MOH) to increase the service delivery points in all the regions using effective measures to allow women to choose their reproductive and contraceptive methods of choice.

1.6 Definition of Terms

1.6.1 Fertility rate

The number of children a woman would bear if she were to surviveto the end of her childbearing years (15-49 years) (World Bank, 2014).

1.6.2 Ethnicity

Shared cultural practices, perspectives and distinctions that set apart one group of people from another.

1.6.3 Contraceptive use

Devices or methods used to interfere with ovulation such as drugs, sexual practices or surgical procedures.

1.6.4 Contraceptive method

A method that interferes with the normal process of ovulation, fertilization and implantation (UNFPA, 2010). According to the DHS Report (2011) contraceptive methods are grouped into two categories: modern methods and traditional methods. Modern methods include female sterilization, male sterilization, the pill, the IUD, injectable, implants (such as Norplant), the female condom, the male condom, locational amenorrhea method (LAM), emergency contraception, the diaphragm, and foam/jelly. Traditional methods include periodic abstinence, withdrawal, and any country-specific traditional methods.

CHAPTER 2: LITERAURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This section presents the review of relevant literature and the theoretical framework used to examine the contraceptive use. Several studies on contraceptive use have identified demographic and socioeconomic determinants of contraceptive use. The literature below consistently established that the demographic and socioeconomic variations in Sub-Saharan Africa influence the uptake of contraceptive use (Adetunji, 2000; Bbaale et al., 2011; Duflo et al., 2010; Kimani, 2006; Maina, 2009).

2.2 Determinants of Contraceptive Use

2.2.1 Education

Previous studies have identified education as a key determinant of contraceptive use. Education delays the onset of fertility by increasing the women's bargaining power within a relationship with regards to the choice of contraceptive method. Education also equips a girl child with a better ability to process and gather information, and therefore increase their knowledge about contraception (Duflo et al., 2010). According to a study conducted in Uganda, it was found that women with higher education were more likely to use any method of contraception, compared to those with no education (Bbaale and Mpuga, 2011). This study goes on to state that the importance of female education in fertility choice cannot be underestimated, and the benefit increases with the level of education. A study conducted by Olatekan and Olufunmi (2000) found that educated women in Nigeria were more likely to use contraception, and thereforedecrease their fertility (Olatekan and Olufunmi, 2012). While another study, conducted by Adetunji (2000), provided evidence that women living in urban areas with higher level of education married later and were more likely to use contraceptives, thus reducing their childbearing years and their total number of children. Poor Malawian women with lower levels of education are less likely to

use contraceptives, compared to those who are rich and educated (Palamuleni, 2014). Furthermore, in Kenya, women with higher education and who belonged to wealthy quintiles were found to have higher contraceptive use compared to the poor and less educated (Ettrah, 2011). This identifies the importance of education on the use of contraceptives.

2.2.2 Rural / Urban differentials

The use of contraceptives varies across sub-regions in Africa with wide variations within the countries as well (White and Speizer, 2007). A study conducted on contraceptive differentials in sub-Saharan Africa found that even though contraceptive prevalence in the five countries has been increasing, urban contraceptive use remains higher than rural contraceptive use (Margolis et al., 2013). White and Speizer's (2007) study found that women residing in rural Zambia were less likely to use contraceptives compared to those living in urban areas. Furthermore, the study concluded that there are rural-urban differentials in contraceptive use, despite existing knowledge on contraceptive methods in both areas. Africans living in rural areas are less likely to use contraceptives, and have more unintended births, compared to those living in urban areas (Rustein, 2005). The reasons for this is that women in urban areas have better access to family planning, and often desire fewer children due to a higher and more expensive standard of living in urban areas (Ayuob, 2004). Additionally, the accessibility and availability of family planning services in rural areas is a challenge compared to urban areas (Shapiro, 2011). In Kenya in particular it was found that women living in the northern and eastern regions have lower levels of contraceptives use, compared to those living in central regions; and women living in slums have lower contraceptive use and higher fertility levels (Ettarh, 2011). Furthermore, Naanyua (2012) found that Kenyan women living in rural areas were less likely to use contraceptives due to inadequate sensitisation and awareness (Naanyu et al., 2012).

2.2.3 Wealth status

According to a study that looks at contraceptive use among the women in 55 African countries, although contraceptive use is increasing over time, the use of contraceptives among the poor is still low. The gap in the contraceptive use between the poor and the middle class seems to be increasing over time, although the gap is wider in the richer countries (Gakido and Vayena, 2007). According to another study that looks at the relationship between wealth and contraceptive use in 13 sub-Saharan African countries, wealthier women were more likely to use contraceptives and meet their fertility intentions, compared to poor women who may not have the same opportunities to access modern family planning services (Creanga, et al., 2011). Furthermore, in Uganda women belonging to richer wealth quintiles had a higher contraceptive uptake compared to those with lowest wealth quintile (Bbaale and Mpuga, 2011).

In Nigeria, wealthier women with more autonomy had were 15 times more likely to the use of contraceptives than poor women with less autonomy. In Namibia, wealthier women were also 5.5 times more likely to use contraceptives, compared to their poor counterparts (Bamimuye et al., 2013). In addition, a study conducted in South Africa found that women living in communities that were wealthier had a greater likelihood of using contraceptives, compared to women living in communities that were poorer. The reason was that wealthier communities had better access to all the family planning services when compared to the poor communities (Stephenson et al., 2008).

2.2.4 Fertility intention

Women's fertility intention has a significant impact on contraceptive use by Kenyan women (Ibisomi and Fostso, 2010). The use of contraceptives allows women to meet their fertility intention by giving them the opportunity to decide the number of births they desire, as well as the timing of each birth due to increased access to safe and effective methods of fertility control (Moreland and Talbird, 2006; Williamson et al., 2009). A study conducted in Kenya on contraceptive use and unmet need showed that women who desired to continue with childbearing within two years are less likely to use contraceptives, compared to those who

do not want more children; while the use of contraceptives increases as the number of children women have increases (Ettarh, 2011). Furthermore, an Indonesian study also showed that women who do not want more children are more likely to use contraceptives, compared to those who want more children. Thus the study found that women with more than 3 children are more likely to use contraceptives, compared to those with only 1 or 2 children as these women had met their fertility intention (Rahayu et al., 2009).

2.2.5 Marital status

Marital status is a significant determinant of contraceptive use (Abdulla, 2014). Although much research focuses on married women when looking at contraceptive use (Adetunji, 2012), in some communities some childbearing takes place before marriage. Therefore, it is important to look at contraceptive use among never married, married and formerly married women. It is reported that an estimated 56% of married women use contraceptives worldwide, but only 19% of married women in sub-Saharan Africa use contraceptives (Margolis et al., 2013). Furthermore, in most of sub-Saharan Africa countries, contraceptive use is higher among single women compared to married women (Adetunji, 2012). A study conducted in Zimbabwe shows that the pattern of contraceptive use among single, sexually active women are 5 times more likely to use contraceptives than their married counterparts (Adetunji, 2000). Another study conducted on protective behaviour among young women in sub-Saharan Africa, found that there is an increase in contraceptive use among single women, while there is a decline among married women (Cleland et al., 2006). Therefore, marital status is a predictor of contraceptive use.

2.3 Ethnicity and Contraceptive Use

Ethnicity is known to affect people's views and acceptance of contraception, thus affecting their reproductive behaviour (Takyi and Addai, 2002). However, the evidence showing the extent to which ethnicity influences the reproductive behaviour of Africanwomen remains low. Studies that examined the effect of ethnicity on contraceptive use, however, have found that contraceptive use varies in developed countries and even within sub-Saharan

Africa (Takyi and Addai, 2000). A study conducted in the US found that black and Hispanic women were more likely to use condoms as a method of contraception than white women (Soler et al., 2000).In addition, one study found that white women were more likely to practice contraception at first intercourse than black and Hispanicwomen (Manning et al., 2000).

In Africa, a study conducted on contraceptive use in Nigeria, stated that ethnicity is an important factor that shapes the behavior pattern; specifically, health-seeking behavior (Obasohan, 2015). The study's findings showed that health care utilization, especially contraceptive use for women of reproductive ages, was lower among the Hausa /Fulani /Kanuri/ Seriberi (HFKS) than other ethnic groups (Obasohan, 2015). Similar results were observed in another Nigerian study on contraceptive use which showed that contraceptive use is higher among the Yoruba ethnic group, and lowest amongst women in the Hausa ethnic group (Palamuleni et al., 2013). Dzordzomenyoh (2012) also found that ethnicity is a predictor ofcontraceptive usein Ghana, and both males and females belonging to the Ewe ethnic group were more likely to use contraception than the other ethnic groups. While in Kenyait was found that Kikuyu and Meru men were more likely to use contraceptives compared to Luo and Luhya men (Muvandi, 2003), however this study only examined men's contraceptive use and not that of women. Another Kenyan study on the prevalence and determinants of unintended pregnancies among women in Nairobi found that Luo and Luhya women had a higher likelihood of unintended pregnancy compared to Kikuyu (Ikamiri et al., 2013), which means that these women were potentially not using contraceptives.In addition, another study showed that the differences in contraceptive use of women by ethnic groups was a result of differences in their demographic and socio-economic characteristics (Addai, 1999).

2.4 Theoretical and Conceptual Framework

2.4.1. Proximate determinants of fertility

Bongaarts' proximate determinant of fertility framework is an analytical framework that John Bongaarts adapted from Davis and Blake. (Bongaarts, 1978).Bongaarts referred to

the intermediate variables as the 'proximate determinants' of fertility. Bongaarts realized that Davis and Blake's framework for analyzing the determinants of fertility was difficult to incorporate into a quantitative reproductive model (Bongaarts, 1982). Bongaarts, therefore, introduced seven (7) proximate determinants 1) marriage and marital disruption, 2) contraceptive use and effectiveness, 3) prevalence of induced abortion, 4) duration of postpartum infecundability, 5) waiting time to conception, 6) risk of intrauterine mortality and 7) onset of permanent sterility. Bongaarts also identified demographic, socio-economic, cultural and environmental factors as indirect determinants that operate through intermediate determinants to affect fertility; such as education, age, wealth status, religion, and ethnicity (Bongaarts, 1978).

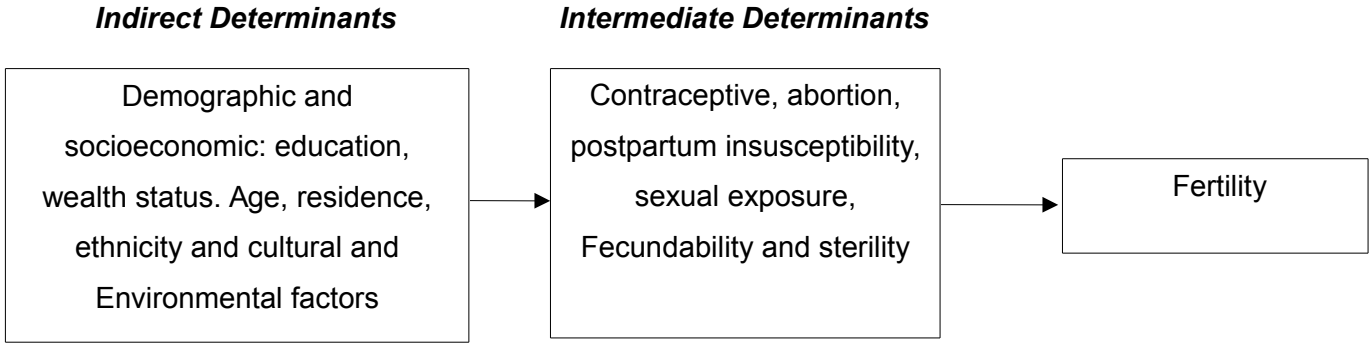

Figure 2.1: Proximate Determinants Framework

Contraception has been identified as a proximate determinant that influencesfertility and ethnicity, as ademographic and cultural factor respectively, which operates through proximate determinants to influence fertility (Bongaarts, 1978) (Figure 2.1).

2.4.2. Conceptual framework

The influence of ethnicity on contraceptive use is not fully understood (Bauni, 2000; Soler et al., 2010), and therefore for this study the key predictor variable is ethnicity and the influence of ethnicity on contraceptive use will be examined. The conceptual framework has been adapted from Bongaarts' (1978) proximate determinants framework. According to Bongaarts (1978) the framework identifies socio-economic, cultural and environmental factors as indirect determinants of fertility; while intermediate variables directly affect

fertility. Bongaarts' (1982) framework identifies seven direct determinants of fertility as mentioned above. This framework has been adapted by focusing on the influence of ethnicity on contraceptive use on fertility (Figure 2.2).

The key predictor variable is ethnicity in which its impact on contraceptive use will be examined. Ethnicity and the demographic and socio-economic factors are assumed to affect contraceptive use in Kenya.

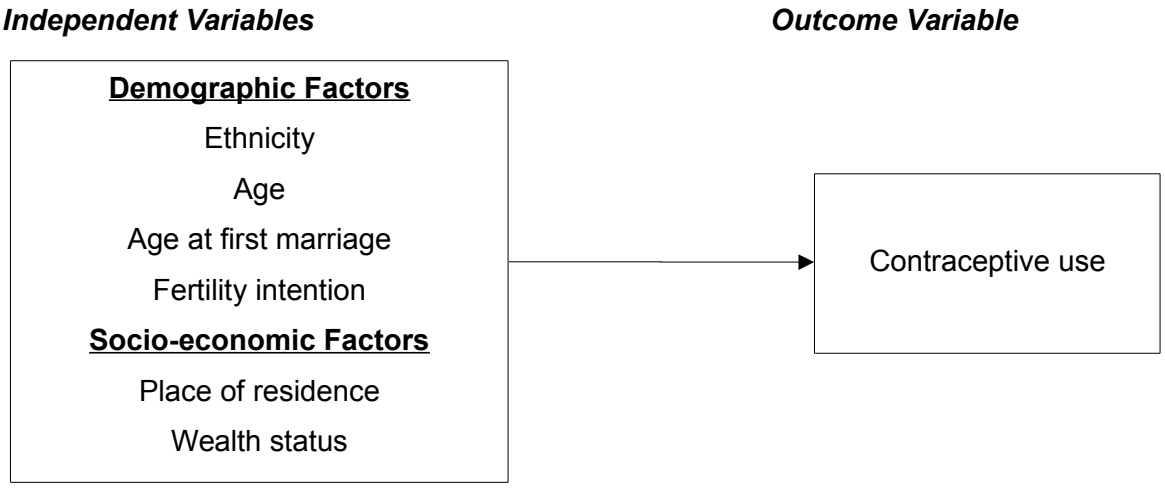

Figure 2.2: Conceptual Framework adapted for the study on Ethnicity and Contraceptive Use in Kenya (Bongaarts, 1978)

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents an overview of the study area and data source. This chapter also presents details of the study design, study population, sample size, variables used for analysis and ethics.

3.2 Study Area

Kenya borders the Indian Ocean in the South East, and the neighboring countries are Tanzania, Uganda, Sudan, Ethiopia and Somalia. Kenya has a land area of 580 000km and is divided into eight provinces. The population in 2015 was estimated at 47.8 million people (KNBS, 2015).

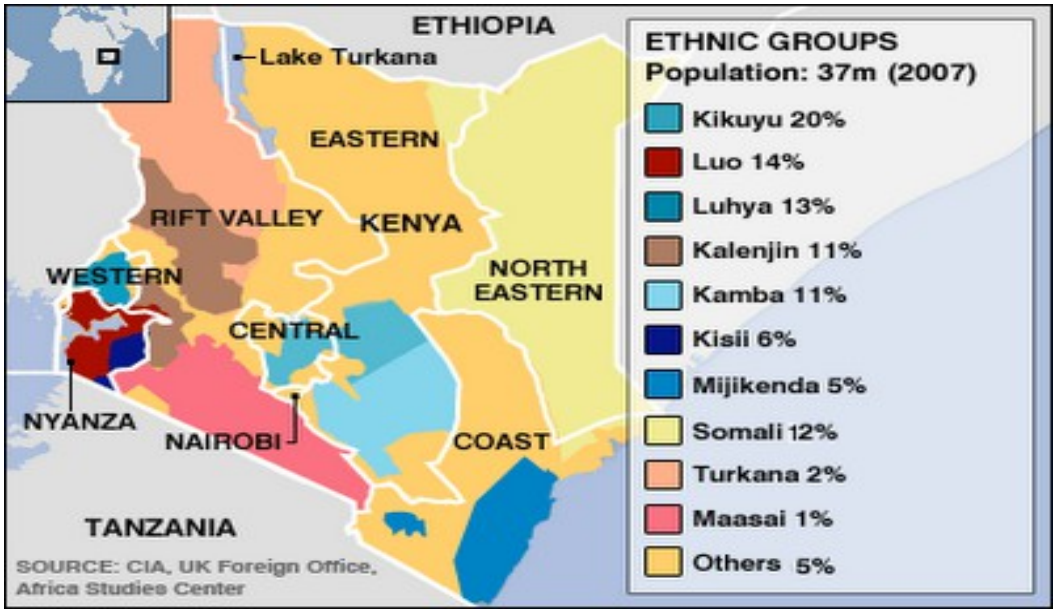

Figure 3.1: Map of Kenya, showing the distribution of ethnic groups by provinces (Source: UK Foreign Office Africa Studies Center)

The official languages are Swahili and English, but Kenya also has numerous indigenous languages. Kenya consists of diverse ethnic groups, based on the2009 census the

population includes the following ethnic groups: Kikuyu (20%), Luhya (14%), Luo (13%), Kalenjin (11%), Kamba (11%), Kisii (6%), Mijikenda(5%), Somali(12%), Turkan (2%), Maasai (1%), andother African ethnic groups(5%). Furthermore, Kenya's population is very diverse and is home to most of Africa's linguistic and ethno-racial groups. It is believed to have 42 communities, although Bantus (67%) and Nilotes (30%) account for majority of the population; followed by Cushitic, Arab, Indian, and European groups.

3.3 Date Source

The study made use of the Kenyan Demographic and Health Survey (KDHS) of 2008-2009. The KDHS is a nationally representative sample survey of 8,767 women of reproductive ages (15-49) (KNBS & ICF macro, 2010). The individual recode, which is based on women's questionnaire, provided the necessary information regarding the demographic and socio-economic variables necessary to examine the use of modern methods of contraceptives in Kenya.

3.4 Study Design

The study used cross-sectional data, and the information collected was drawn from a sample of the Kenyan population. (KNBS & ICF macro, 2010).

3.4.1 Study population

The study focused on Kenyan women of reproductive ages(15-49), who were sexually active. The final sample was derived from 8,444 women who were interviewed (KNBS & ICF macro, 2010).

3.4.2 Sample size

Out of the survey sample of 8,444 women in the 2008-2009 dataset, the sample size for the study was 4,482 women - women who reported to be sexually active. Those reported to be in-fecund, never had sex, pregnant, amenorrhea and menopausal were dropped from the final sample in order to include only those who were current contraceptive users.

3.4.3 Questionnaire design

Three types of questionnaires were used for 2008-2009 KDHS, the household questionnaire, women's questionnaire and men's questionnaire. The questionnaires were translated from English to local languages. However, this study uses the women's questionnaire only (KNBS & ICF Macro, 2010). The women's questionnaire gave important information on women of reproductive ages (15-49);including background information, reproductive history, knowledge and use of family planning, and fertility preferences.

3.5 Variables

Table 3.1: Dependent Variable and Operational Definition

Main Outcome Variable	**Operational Definition**
Contraceptive use and intention (Using modern method, Using traditional method, Non-user, Intends to use, does not intend to use)	*Recoded* 0 Not using contraceptives 1 Using contraceptive methods (using modern method and using traditional methods)

Table 3.2: Independent Variables and Operational Definition

Main Independent Variable	**Operational Definition**
Ethnicity (Embu, Kalenjin, Kamba, Kikuyu, Kisii, Luhya, Luo, Masai, Meru, Mijikenda/Swahili,Somali, Taita/Taveta, Other)	*Recoded* 1 Kkem (Embu, Kamba,Kikuyu,Meru,Taita,Kisii, Mijikenda/Swahili) 2 Luhya 3 Cushitic (Kalenjin, Masaai) 4 Luo 5 Others (Somalia/ Others)
Control Variables	**Operational Definition**
Age Age of respondents in single ages 15-49	*Recoded* 1 15-24 2 25-34 3 35+

Age at first marriage Age at first marriage in single ages 9-48	*Recoded* 1 <18 years 2 18+ years
Fertility Intention Measured by **DFC** (Desire for children); Women's fertility intention to stop/continue childbearing Responses: 1) Wants within 2 years 2) Wants after 2 years 3)Wants, unsure timing 4) Undecided 5) Wants no more	*Recoded* 1 Respondents who desire to have more children (wants within and after 2 years combined) 2 Undecided/Unsure 3 Respondents who desire to stop childbearing
Place of Residence Urban/rural	*Recoded* 1 Urban 2 Rural
Wealth Status Respondents classified into five wealth indexes: 1)Poorest 2) Poorer 3) Middle 4) Rich 5) Richest	*Recoded* 1 Poor (Poorest and Poorer) 2 Middle 3 Rich (Richer and Richest)
Marital Status Current marital status: 1)Never married 2) Married 3) Living together 4) Widowed 5) Divorced 6) Not living together	*Recoded* 0 Never married 1 Married (married and living together) 2 Formerly married (widowed, divorced and not living together)

3.6 Research Hypothesis

H_0: There is no association between ethnicity and contraceptive use in Kenya.

H_1: There is an association between ethnicity and contraceptive use in Kenya.

3.7 Statistical Package

Stata 12.0 was used to analyze and manage the data.

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3.8 Data Analysis

The data analysis has been done using descriptive and analytical techniques. The data has been analysed at three levels; namely univariate, bivariate and multivariate analysis. Univariate analysis was done using descriptive statistics in order to describe the background characteristics of respondents with percentage distributions. The bivariate analysis was conducted to answer objective one and the multivariate analysis was conducted to answer objective two. The statistical tests were all conducted at a 5% level of significance and 95% confidence interval.

Objective 1: to examine the levels of contraceptive use in Kenya's ethnic groups.

The chi-square test of association was used to examine if there was an association between ethnicity and contraceptive use in Kenya. The test is used to determine whether the ethnicity variable is related or independent of the contraceptive variable (Steinberg, 2011).

The formula:

$$x2 = \sum \frac{(o-e)2}{e}$$

Where:
x^2= chi-square:
0= observed frequency
E= expected frequency
Df= Degree of freedom (n-1)

(Hamilton, 2003)

Furthermore, cross-tabulations on the utilisation of contraceptive use among different ethnic group and other socio-economic and demographic factors.

Objective 2: To examine the demographic and socioeconomic factors that affect contraceptive use in Kenya's ethnic groups

In order to achieve objective two, logistic regression was undertaken to assess the effect of ethnicity on contraceptive use, both with (adjusted model) and without (unadjusted model) control variables. This was done by running independent variables (demographic and socio-economic) variables against the outcome variable (contraceptive use). Binary logistic regression, which produces odds ratios (OR), was used to indicate the nature of the relationship between the independent and outcome variables. Binary logistic regression was performed as the outcome variable was a dichotomous variable.

The formula:

$$\text{Log it } [p(x) = \log\left[\frac{p(x)}{1-p(x)}\right] = \beta o+\beta_1 x_1+\beta_2 x_2+_3\beta x_3+.....i$$

Where:

$\log\left[\frac{p(x)}{1-p(x)}\right]$ = log-odd ratio,

β0= beta for intercept
β1= beta for predictor variable
i= variation in the model.

(Bryman, 2009)

3.9 Ethical Considerations

The study used the KDHS 2008-2009, which is a secondary dataset. No personal information or names were identified in the dataset. Therefore, the confidentially of the respondents were guaranteed. Ethical clearance for the data collection for the KDHS 2008-2009 was originally approved by the scientific and ethical review committee of KEMRI.

CHAPTER 4: RESULTS

4.1 Introduction

This chapter shows the results of the univariate, bivariate and multivariate analysis of the KDHS 2008-2009 data for women of reproductive ages, which was conducted to assess the two objectives of the study. The background characteristics of respondents are shown in the first part of the chapter. This is followed by the bivariate analysis, which assesses contraceptive use by ethnic groups and socio-demographic characteristics using the chi-square test and cross-tabulations. The final part of the chapter presents an unadjusted and adjusted binary logistic regression, to show whether there is an association between contraceptive use and ethnicity, as well as selected socio-demographic characteristics.

4.2 Background Characteristics

Figure 1 showed the distribution of Kenyan contraceptive users. It shows that more than half of the respondents are not using contraceptives (56%), while 44% of respondents are currently using at least one form of contraception.

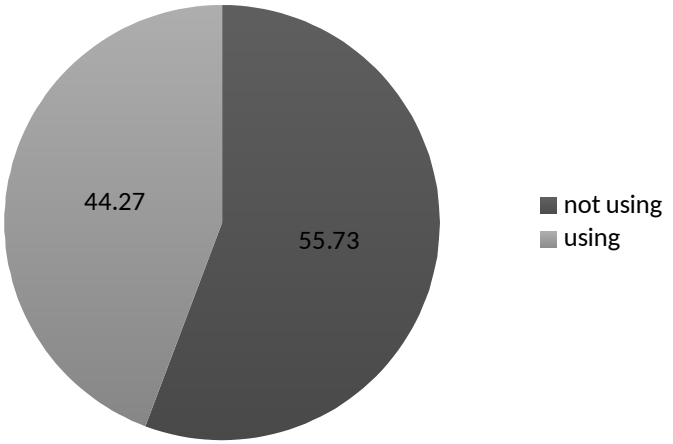

Figure 4.1: Percentage Distribution of Contraceptive Use among Women Aged 15-49 in Kenya

Table 4.1 shows that respondents of the aged 24-34 years made up 37% of reproductive aged females, followed by respondents over age 35 years (34%); while only 29% of

respondents were aged between 15-24 years. In addition, the average (mean) age of the respondents in the sample population was 30years. The majority of the respondents were married (68%), while 19% of the respondents had never been married, and approximately 13% of respondents had been formerly married (divorced or widowed). The percentage distribution of age at first marriage showed that the majority of the respondents had been married after the age of 20 years (53.5%), while 46.5% were married below the age of 20 years (Table 4.1).

Table 4.1: Percentage Distribution of All Respondents by Background Characteristics, Kenya 2008-2009

Independent variable	Frequencies	Percentage %
Ethnicity		
Kkem	2,264	50.51
Luhya	682	15.22
Cushitic	429	9.57
Luo	604	13.48
Others	503	11.22
Age		***Mean: 30.8***
15-24	1,294	28.83
25-34	1,650	36.81
35+	1,540	34.4
Marital Status		
Not married	852	19
Married	3,068	68.5
Formerly married	562	12.5
Age at First Marriage		***Mean: 19.3***
Under 20 years' old	2,084	46.5
0ver 20 years' old	2,398	53.5
Desire for Children		
Yes (want more)	2,025	45.18
Undecided	528	11. 78
No (does not want more)	1,929	43.04
Place of Residence		
Urban	1,595	35.6
Rural	2,887	64.4
Education		
No education	570	12.7
Primary	2,271	50.7
Secondary	1,158	25.8
Higher	483	10.8
Wealth status		
Poor	1,333	29.7
Middle	753	16.8
Rich	2,396	53.5

An interesting observation was that the desire to have more children and not to have more children was almost the same among the respondents, at 45% and 43% respectively. Only 12% of respondents were unsure about the desire to have more children. The majority of the respondents resided in rural areas (64%), compared to those who resided in urban areas (36%).

The percentage distribution of level of education showed that over half of the respondents had primary education (51%), followed by secondary education (26%). Approximately, 13% of the respondents had no education, while 11% had attained tertiary education. The percentage distribution of wealth status showedthat 53% were rich, 30%had been classified as poor, and only 17% of respondents belonged to the middle class.

4.3 Contraceptive Use by Ethnic Groups

Figure 2 show that approximately 49% of Kkem women did not use contraceptives, while 53% of Luhya women did not use contraceptive. Amongst Cushitic women, 56% did not use contraceptive and 62% of the Luo women did not use contraceptives. Finally, 83% of women in other ethnic groups did not use contraceptives, while 17% did.

Figure 4.2: *Percentage Distribution of Contraceptive Use by Ethnicity among Women Aged 15-49, Kenya 2008-2009*

Table 4.2 shows the percentage distribution of characteristics of respondents of reproductive age (15-49) years, based on their ethnic groups. This allows for a comparison of demographic and socio-economic characteristics of respondents by ethnic group.

Table 4.2: Percentage Distribution of Selected Characteristics among Ethnic Groups, Kenya 2008-2009

Ethnicity		Kkem	Luhya	Cushitic	Luo	Others	Total
Marital Status							
Never married	N	450	144	102	131	25	852
	%	19.88	21.11	23.78	21.69	4.97	19.01
Married	N	1,519	449	290	384	426	3,068
	%	67.09	65.84	67.6	63.58	84.69	68.45
formerly married	N	295	89	37	89	52	562
	%	13.03	13.05	8.62	14.74	10.34	12.54
Total	**N**	**2,264**	**682**	**429**	**604**	**503**	**4,482**
	%	**100**	**100**	**100**	**100**	**100**	**100**
					Pearson chi2(8)=94.9488		***Pr=0.000***
Fertility Intention							
Want more	N	969	313	186	287	270	2,025
	%	42.8	45.89	43.36	47.52	53.68	45.18
Undecided	N	214	83	38	75	118	528
	%	9.45	12.17	8.86	12.42	23.46	11.78
Want no more	N	1,081	286	205	242	115	1,929
	%	47.75	41.94	47.79	40.07	22.86	43.04
Total	**N**	**2,264**	**682**	**429**	**604**	**503**	**4,482**
	%	**100**	**100**	**100**	**100**	**100**	**100**
					Pearson chi2(8) = 146.9766		***Pr = 0.000***
Place of Residence							
Urban	N	872	257	58	238	170	1,595
	%	38.52	37.68	13.52	39.4	33.8	35.59
Rural	N	1,392	425	371	366	333	2,887
	%	61.48	62.32	86.48	60.6	66.2	64.41
Total	**N**	**2,264**	**682**	**429**	**604**	**503**	**4,482**
	%	**100**	**100**	**100**	**100**	**100**	**100**
					Pearson chi2(4) = 105.4575		***Pr = 0.000***
Education Level							
No education	N	144	29	47	15	335	570
	%	6.36	4.25	10.96	2.48	66.6	12.72
Primary	N	1,175	390	240	381	85	2,271
	%	51.9	57.18	55.94	63.08	16.9	50.67
Secondary	N	680	194	107	152	25	1,158
	%	30.04	28.45	24.94	25.17	4.97	25.84
Higher	N	265	69	35	56	58	483
	%	11.7	10.12	8.16	9.27	11.53	10.78
Total	**N**	**2,264**	**682**	**429**	**604**	**503**	**4,482**
	%	**100**	**100**	**100**	**100**	**100**	**100**
					Pearson chi2(12) = 1.6e+03		***Pr = 0.000***
Wealth Status							
Poor	N	444	231	201	172	285	1,333
	%	19.61	33.87	46.85	28.48	56.66	29.74
Middle	N	432	112	77	93	39	753
	%	19.08	16.42	17.95	15.4	7.75	16.8
Rich	N	1,388	339	151	339	179	2,396

	%	61.31	49.71	35.2	56.13	35.59	53.46
Total	**N**	**2,264**	**682**	**429**	**604**	**503**	**4,482**
	%	**100**	**100**	**100**	**100**	**100**	**100**
						Pearson chi2(8) = 365.2593 Pr = 0.000	

A large percentage of respondents were married, particularly amongst Kkem women compared to Cushitic women (24%) and Luo women (22%). Furthermore, in all ethnic groups, less than 15% of respondents had been formerly married. Results show that nearly half of the respondents in all ethnic groups desired more children.

Results indicated that women in "other" ethnic groups were less educated, compared to Kkem and Luo women who were the most educated. Furthermore, over half of the "other" ethnic groups had no education (67%), while only 25% of Luo women and 6% of Kkem women had no education. Results further showed that 63% of Luo women had primary education, while 17% of "other" ethnic groups had primary education. Furthermore, 61% of Kkem women were rich, compared to Cushitic women (35%).

Table 4.2 presents results from the bivariate analysis of contraceptive use by demographic and socio-economic characteristics. The cross-tabulation by row was used to describe demographic and socio-economic characteristics of contraceptive users. The results show that ethnicity, marital status, education, wealth status, age, place of residence and desire for children are significant predictors of contraceptive use - at the 5% level of significance.

Table 4.3: Percentage Distribution of Contraceptive Use by Background Characteristics of Women aged 15-49 years, Kenya 2008-2009

Characteristic		Not using contraceptives	Using contraceptives	Total
Marital Status				
Not married	N	629	223	852
	%	73.83	26.17	100
Married	N	1,447	1,621	3,068
	%	47	52.84	100
Formerly married	N	422	140	562
	%	75.09	24.91	100
Total	**N**	**2,498**	**1,984**	**4,482**
	%	**56**	**44.27**	**100**
			Pearson chi2(2)=289.7037P-value=0.000	
Education				
No education	N	508	62	570
	%	89.12	10.88	100
Primary	N	1,230	1,041	2,271
	%	54	45.84	100

Secondary	N	551	607	1,158
	%	47.58	52.42	100
Higher	N	209	274	483
	%	43.27	56.73	100
Total	**N**	**2,498**	**1,984**	**4,482**
	%	**56**	**44.27**	**100**
			Pearson chi2(3)=321.4417	***P-value=0.000***
Wealth Status				
Poor	N	937	396	1,333
	%	70.29	29.71	100
Middle	N	374	379	753
	%	49.67	50.33	100
Rich	N	1,187	1,209	2,396
	%	50	50	100
Total	**N**	**2,498**	**1,984**	**4,482**
	%	**56**	**44.27**	**100**
			Pearson chi2(3)=162.9986	***P-value=0.000***
Age				
15-24	N	819	473	1,292
	%	63.39	36.61	100
25-34	N	770	880	1,650
	%	46.67	53.33	100
35+	N	909	631	1,540
	%	59.03	40.97	100
Total	**N**	**2,498**	**1,984**	**4,482**
	%	**56**	**44.27**	**100**
			Pearson chi2(3)=92.4470	***P-value=0.000***
Place of Residence				
Urban	N	834	761	1,595
	%	52.29	47.71	100
Rural	N	1,664	1,223	2,887
	%	58	42.36	100
Total	**N**	**2,498**	**1,984**	**4,482**
	%	**56**	**44.27**	**100**
			Pearson chi2(3)=11.9162	***P-value=0.001***
Desire of Children				
Want more	N	1,239	786	2,025
	%	61	38.81	100
Undecided	N	383	145	528
	%	72.54	27.46	100
Want no more	N	876	1,053	1,929
	%	45.41	54.59	100
Total	**N**	**2,498**	**1,984**	**4,482**
	%	**56**	**44.27**	**100**
			Pearson chi2(3)=168.1243	***P-value=0.000***
Age at First Marriage				
Under 20 years' old	N	1,338	1,117	2,455
	%	55	45.5	100
Over 20 years' old	N	1,160	867	2,027
	%	57	42.77	100
Total	**N**	**2,498**	**1,984**	**4,482**
	%	**56**	**44.27**	**100**
			Pearson chi2(3)=3.3452	***P-value=0.067***

Table 4.3 shows hat73% of women who were not married did not use contraceptives; while47% of married women did not use contraceptives. For formerly married women, 75% did not use contraceptives. Data analysis showsthat89% of respondents with no education did not use contraceptives, while 54% of respondents with primary education did not use contraceptives. For respondents with secondary education, around 48% did not use contraceptives while 43% of respondents with a higher education did not use contraceptives.

For wealth status, results show that approximately 70% of respondents who classified themselves as poor did not use contraceptives, while 49% of those belonging in the middle class did not use contraceptives. In addition, half of those (50%) of those that were rich did not use contraceptives. Furthermore, results show that 63% of respondents aged 15-24 did not use contraceptives; while 47% of respondents aged 24-34 years did not use contraceptives.

Just over half (52%) of the respondents who live in urban areas did not use contraceptives, while 58% of those who live in rural areas did not use contraceptives. Furthermore,61% of respondents with intention of having more children did not use contraceptives, and75% of respondents who are unsure whether to continue bearing more children or stop bearing children did not use contraceptives. However, 45% of respondents who had the intention to stop bearing more children did not use contraceptives.

Table 4.4: Unadjusted Odds Ratios from the Binary Logistic Regression of the Association between Selected Characteristics of Women and Contraceptive Use, Kenya 2008-2009

Dependent Variable	Contraceptive Use	OR	P-Value	CI
Main Independent Variable				
Ethnicity	Kkem (RC)	1.00		
	Luhya	0.84	0.040	0.70 - 0.99
	Cushitic	0.74	0.005	0.61 - 0.92
	Luo	0.57	0.000	0.48 - 0.69
	Others	0.19	0.000	0.15 - 0.24
Demographic Variables				
Age	15-24 (RC)	1.00		
	25-34	1.98	0.000	1.71 - 2.97
	35+	1.20	0.018	1.03 - 1.40
		1.00		
Marital status	Never married (RC)	0.00	0.000	
	Married	3.16	0.000	2.67 - 3.74
	Formerly married	0.94	0.595	0.73 - 1.20

Age at first marriage	<=19years old (RC)	1.00		
	=>20years old old	0.99	0.976	0.89 - 1.12
Desire for children	Want more (RC)	1.00		
	Undecided	0.60	0.000	0.48 - 0.74
	Want no more	1.90	0.000	0.58 - 0.70
Socioeconomic Variables				
Place of residence	Urban (RC)	1.00		
	Rural	0.805	0.001	0.71 – 0.91
Education	No education(RC)	1.00		
	Primary	6.94	0.000	5.26 - 9.14
	Secondary	9.03	0.000	6.77 - 12.04
	Higher	10.74	0.000	7.81 - 14.78
Wealth status	Poor (RC)	1.00		
	Middle	2.40	0.000	1.99 - 2.89
	Rich	2.41	0.000	2.09 - 2.78

Table 4.4shows that the odds of using contraceptives for Luhya women was 0.83 lower compared to Kkem women (the reference category), 0.74 lower for Cushitic women, 0.57 lower for Luo women and 0.18 lower for “other” ethnic groups compared to those of Kkem women.

Age is a significant predictor of contraceptive use. Women aged 25-34 and 35 years and above were significantly associated with contraceptive use, at the 5% level of significance. Results indicated that those aged 25-34 years are 1.9 times more likely to use contraceptives compared to those aged 15-24 years. Respondents over the age of 35 years, on the other hand, were 2times more likely to use contraceptives compared to those of aged 15-24 years.

Respondents who were married were 3 times more likely to use contraceptives compared to those who had never been married. However, there was no significant difference in the use of contraceptives for those who had been formerly married and those who had never been married. Age at first marriage was insignificantly associated the use of contraceptives between respondents that married below the age of 20 years and those that married over the age of 20 years.

However, fertility intention was a significant predictor of contraceptive use. The results indicated that those who were unsure about whether or not to bear more children were 0.60 times less likely to use contraceptives, compared to those who want to have more children. Furthermore, those who did not desire more children were 1.9 times more likely to use contraceptives compared to those who want more children. Respondents living in rural areas were 0.81 times less likely to use contraceptives than those in urban areas. While, results show that as the level of education increases, the odd of using contraceptives increases as well. For instance, respondents with primary education were 6 times more likely to use contraceptives compared to those with no education; and those with secondary education were 9times more likely to use contraceptives than those with no education. On the other hand, those with a tertiary education were10 times more likely to use contraceptives compared to those with no education. The wealth status was a significant predictor of contraceptive use, at the 5% level of significance. As the results showed that the middle and rich class were both 2 times more likely to use contraceptives.

Table 4.5shows the multivariate logistic regression results with all the independent socio-economic and demographic variables, run against contraceptive use simultaneously.

Table 4.5: Adjusted Odds from Multivariate Logistic Regression Examining the Likelihood of Contraceptive Use of Women in Kenya 2008-2009, according to the Specified Characteristics

Dependent Variable	Contraceptive Use	OR	P-Value	CI
Main independent variable				
Ethnicity	Kkem	1.00		
	Luhya	0.90	0.291	0.45-1.09
	Cushitic	0.84	0.153	0.67-1.07
	Luo	0.56	0.000	0.46-0.69
	Others	0.37	0.000	0.26-0.49
Demographic Variables				
Age	15-24 (RC)	1.00		
	25-34	1.13	0.225	0.93-1.34
	35+	0.51	0.000	0.41-0.63
Marital status	Never married(RC)	1.00		
	Married	4.61	0.000	3.79-5.89
	Formerly married	1.05	0.788	0.78-1.39
Age at first marriage	<=19years old (RC)			
	=>20years old		0.557	0.89-1.23
Desire for children	Yes (want more) (RC)	1.00		
	Undecided	1.15	0.247	0.91-1.46
	No want no more	2.49	0.000	2.10-1.97

Socioeconomic Variables				
Place of residence	Urban (RC)	1.00		
	Rural	1.08	0.407	0.90-1.29
Education	No education(RC)	1.00		
	Primary	3.88	0.000	2.82-5.29
	Secondary	5.39	0.000	3.83-7.57
	Higher	7.48	0.000	5.12-10.92
Wealth status	Poor (RC)	1.00		
	Middle	1.74	0.000	1.47-2.21
	Rich	1.80	0.000	0.03-0.06

RC=Reference Category, *p<0.05 denotes significance as the tests were run at a 95% significance level

Multivariate logistic regression was run in order to identify the importance of all variables in relation to each other and in relation to contraceptive use. It is noted that some of variables which were significant in the bivariate analysis become insignificant in this model, specifically the place of residence. Holding all the other variables constant, the results showed that the Luhya and Kalenjin/ Masaai ethnic groups were not significantly associated with contraceptive use. However, results showed that ethnicity remained a significant predictor of contraceptive (p-value = 0.000) among Luo women and women from" other" ethnic groups. A slight increase was seen in the likelihood of using contraceptives for women in the Luo ethnic group as they were 0.57 less likely to use contraceptives compared to the reference category in model 1 (unadjusted), and 0.56 times less likely in model 2 (adjusted).

Results showed that age was still a significant predictor of contraceptive use at the 5% level of significance and the odds of using contraceptives for respondents aged 35 years and abovewere0.51 times less likely to use contraceptives, compared to those of aged 15-24 years. However, there was no significant difference in the use of contraceptives for women aged 15-24 and 25-34 years.

The results showed that married women were 4 times more likely to use contraceptives compared to those who were never married. However, there were no significant differences in the use of contraceptives for those who were formerly married and those who were never married. Furthermore, fertility intention remained a significant predictor of contraceptive use. Women who desire no more children were 2.48 times more likely to use contraceptives, compared to those who did not want more children. However, there was no

significant difference among those women who were unsure of whether they wanted more children or not.

Results show that there was no significant difference in contraceptive use among respondents living in urban and rural areas. Furthermore, as education level increased, the higher the odds of using contraceptives. Furthermore, those with a higher education level were 3times more likely to use contraceptives, compared to those with no education. Those with a secondary education were 5 times more likely to use contraceptives, and those with a tertiary education were 7 times more likely to use contraceptives; compared to those with no education.

Wealth status was also a significant predictor of contraceptive use. The results show that respondents belonging to the middle class were 1.7 times more likely to use contraceptives, while respondents belonging to the rich class were 1.8 times more likely to use contraceptives compared to those who belong in the poor class.

CHAPTER 5: DISCUSSION

The purpose of this study was to examine whether the use of contraceptives differs among ethnic groups and whether selected demographic and socio-economic factors were associated with contraceptive use in Kenya. Results showed that there were differences in contraceptive use among various ethnic groups, in particular between Kkem and Luo women of reproductive age. Furthermore, the results indicated that age, marital status, fertility intention, education and wealth status were significant predictors of contraceptive use in Kenya.

The results showed that the use of contraceptives differ among the ethnic groups. The Kikuyu/Kamba/Embu/Meru (Kkem) women are more likely to use contraceptives, compared to Luowomen. This finding was supported by a study conducted on fertility in Kenya in 2012, which indicated that Kikuyu/Embu/Meru women had the lowest fertility rate in the country (Bauni et al., 2012). The study found that Kikuyu/Embu/Meru women hadthe highest contraceptive prevalence rate, even after controlling for socio-economic and demographic factors (Bauni et al., 2012). This phenomenon couldbe explained by the historical events that might have influenced the use of contraceptives. The Kikuyu/Meru/Embu were among the first ethnic groups to be influenced by European colonisation, and the influence of the Europeans had profound effects on their way of life. This is especially true of their health behavior, compared to “other” ethnic groups (Bauni et al.,2000). Secondly, this could also be due to the low socio-economic status among “other” ethnic groups (Bauni et al., 2012). Luo cultural beliefs have been found to have hindered the contraceptive use among many Luo women, as they believe that some contraceptives interfere with the fecundity, fertility and even virility of women by causing harm and injury to the uterus (Nangendo, 2012). On the other hand, and contrary to the findings of this study, a study conducted in rural western Kenya in 2015 showed no differences in contraceptive use among the ethnic groups in western Kenya (Bakibinga et al., 2015). However, the study looked at only the western province; which contains ethnic groups with the same, or similar, cultural beliefs and norms. This study, however, was substantiated by a study conducted on ethnicity and contraceptive use in Ghana in 2004. The Ghanaian study found

differences in contraceptive use among different ethnic groups in the country (Dzordzomrenyoh, 2004).

A study conducted in Nigeria in 2015 found that current contraceptive use among women of reproductive age (15-49) significantly varied by ethnicity (Obasohan, 2015). In particular, this study found lower contraceptive use among the Hausa/Fulani/Kanuri/seriberi (HFKS), but higher contraceptive use among Yoruban women. The author stated that this was due to the influence of cultural beliefs and practices on childbirth fertility-related behavior associated with the HFKS ethnic group of northern Nigeria (Obasohan, 2015).

This study found that Cushitic women were the least educated, while Kkem and Luo women were most educated, in addition, a large percentage of Kkem women fell were rich compared to their Cushitic counterparts. Notably, among all the ethnic groups, the majority of respondents were married - this may explain why the percentage of those who desired and did not desire more children was the same across all the four ethnic groups. Thus, the observed fundamental differences in contraceptive use by ethnic groups among the respondentscould are largely explained by differences in demographic, socio-economic and cultural factors that characterize the Kkem, Luhya, Cushitic and Luo ethnic groups. In fact, the selected demographic and socio-economic factors played a fundamental role in the use of contraceptive use; namely age, marital status, fertility intention, education and wealth status.

One study found that the age of women was an important predictor of contraceptive use (Ayoub, 2005). It was observed from Ayoub's study that women aged15-24 and 25-34 years had no difference in contraceptive use; while women aged 35 years and above were 0.51 times less likely to use contraceptives compared to women aged 15-24 years (Ayoub, 2005). This could be explained by the fact that women of these ages were less fertile, entering menopause or wereeven infecund. However, according to a study conducted in Kenya in 2011, it was found that women above 30 years of age were more likely to use contraceptives (Ettrah, 2011). Conversely, a study conducted in Indonesia on contraceptive patterns found that women aged 30-49 years were less likely to use contraceptives compared to those aged 15-29 (Rahayu et al., 2009).On the other hand, a study conducted

on contraceptives in Kenya in 2014 found that women under the age of 18 years old were less likely to use contraceptive compared to the women aged 19years and above (Abdulla, 2014). Women aged 15-29 years, however, are sexually active and therefore it is assumed that uptake of contraceptives would be animportant wayto prevent unwanted and unplanned pregnancies (Rahayu et al., 2009).

With regard to age at first marriage, the results shown on table 4.1 indicate that majority of the women marry above the age of 20. However, there were only slight differences in contraceptive use between women whose age at first marriage was below 20 years of ageand those who were above 20 years of age (47% and 53% respectively). Furthermore, both bivariate and multivariate analysis results showed that there was no difference in contraceptive use between these two groups of women. The findings of this study were in contrast to a study that was conducted on marital and non-marital contraception in Sub-Saharan Africa that found that age at first marriage affected the use of contraceptives and delayed childbearing among women who marry at later stage (Adetunji, 2012).The Adetunji (2012) study, however, found that never married women were more likely to use contraceptives to prevent unintended or unplanned pregnancies.

The findings of this study showed that the majority of women in Kenya were married, and from the bivariate results shown that82% of married women use contraceptives compared to 11% of women who have never been married. Furthermore, the results from this study showed that women who were married were four (4) times more likely to be using contraceptives compared to those who had never been married. The results obtained were supported by a study conducted in Kenya, which found that married women were more likely to use contraceptives compared to those who have never been married and who were formerly married (Abdulla, 2014). This means that the majority of married women were preventing unintended and unplanned pregnancies, and hence they reduced the chance of abortion. A study conducted on the use of, and unmet need for, contraception in Kenya showed that married women represented the biggest proportion of contraceptive users. On the other hand, never married and formerly married were less likely to use contraceptives (Ettarah, 2011). This could be explained by the fact that marriage give couples a chance to communicate about the desired number of children and about their

use of family planning; and therefore increases the use of contraceptives (Irani et al., 2014). Furthermore, marriage allows for the onset of the risk of conception (Adetunji, 2012).

Results on table 4.6 further showed that fertility intention was also an important predictor of contraceptive use. Women who did not want more children were more likely to use contraceptives in order to fulfill their fertility intention. Furthermore, women who did not want more children were twice as likely to use contraceptives compared to those who wanted more children. However, half of the women who were unsure whether to have children or not were not using contraceptives. The results of this study were consistent with a study conducted on low use of contraception in Africa, which found that woman who desired more children and those who were unsure of whether they wanted more children used short-term contraception in order to be able to space their birth (Creanga et al., 2011). The study further reported that women wanted to space childbearing, rather than limiting childbearing (Creanga et al., 2011).

In addition, education level also plays a very important role in determining whether contraceptives are used. Results obtained in this study show that as the level of education increases, the odds of using contraceptives also increases. The findings of this study are similar to studies conducted on contraceptive use among women which found that as the level of education increases, the likelihood of contraceptive use also increases (Palamuleni et al., 2014, Crenga et al., 2011, Adebowale et al., 2014, Ayoub, 2005). The reason for this is that education is an important tool for women's empowerment and it provides women with more information about family planning and its benefits.This could be attributed to the fact that women spend a longer time in school, thus leaving them with fewer childbearing years (Palamuleni et al, 2014). Another study conducted on the consequences of high fertility found that the more years' women stay in school, thelower the fertility rate and the more likely they areto use contraceptives (Chowdhury, 2010).

Results in table 4.6 showed that women in the rich and middle wealth quintilesare more likely to be using contraceptives compared to women in poor wealth quintiles. This is an indication that women in rich and middle quintiles have more access to services that offer

family planning. Poor women did not have the access to contraceptive and reproductive health services that rich women have (Creanga et al., 2011). Despite the fact that family planning is free for all in government hospitals, the poor are unable to access the health facilities that provide the free services. This is often because the public health services are far away, while most of the private clinics that offer the service are very expensive which hinders the poor affordability of these contraceptives (Oketh et al., 2011). This finding is consistent with studies which found that women in poor wealth quintiles do not use contraceptives as much as those in the rich and middle quintiles. This may be because many women are unemployed and without a steady income, which affects their access to contraceptives especially in cases where healthcare services are far (Creanga et al., 2011; Palamuleni et al., 2013;Gillespi et al., 2007).

In the unadjusted logistic regression model, the results obtained showed that women residing in urban areaswere more likely to use contraceptives compared to those residing in rural areas. These resultsare similar to a study conducted in Uganda, which found that women residing in urban areasare two times more likely to use contraceptives compared to those residing in rural areas (Bbaale, 2011). Similar findings havealso been found in a study conducted on the trends in contraceptive use in Kenya, which found that women living in urban areaswere two (2) times more likely to use contraceptives than women living in rural areas (Oketh et al., 2011). Urban areas have wide variations in terms of access of health and reproductive services, family planning facilities, accessibility of information from mass media, and also the living conditions which are more conducive than that of rural areas that lack adequate health services which thus hinder the use of contraceptives (Oketh et al., 2011).

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study established there is a difference in contraceptive use among ethnic groups. In general, contraceptive prevalence among women of reproductive age (15-49 years) in the sample was low. This indicates that the use of contraceptives among women of reproductive ages had not met the national target of 56% by 2015, and all the ethnic groups in Kenya are also below this national target.

Given the association between ethnicity and contraceptive use, it is necessary to implement strategies to improve the uptake of contraceptives among the ethnic groups in Kenya. This indicates the distribution of family planning by the government and non-government organizations, which should be more efficient and directed to minority ethnic groups with low contraceptive uptake. In particular, this would benefit women who are poor, living in the rural areas, and women who have low accessibility to resources.

Both bivariate and multivariate findings indicate an association between ethnicity and contraceptive use. Therefore, decisions made by women in Kenya on family planning are influenced by which ethnic group they belong to. Family planning should be encouraged among ethnic groups, in order to reduce inequality of access and increase contraceptive uptake between women of different socioeconomic and ethnic groups. This would bridge the gap between the major ethnic groups and the minority groups, where unintended pregnancies are more common among the poor, as well as among women who are less educated and live in rural areas.

The study has shown that ethnicity and selected demographic and socioeconomic indicators affect contraceptive use, and play a vital role in the reproductive behaviours of women. Therefore, ethnicity and those demographic and socio-economic factors should be considered when assessing and evaluating policies aimed at improving the uptake of contraceptive use among Kenyan women. Contraceptive policies in Kenya need to be directed towards the ethnic groups who display low contraceptive use, in order to reach the

national target. Furthermore, advocacy groups at community level could be established, especially in those areas where women from minority ethnic groups with low contraceptive uptake reside. This will increase the awareness of family planning, and also lead to cultural and attitudinal changes towards contraceptive use. Furthermore, ensuring increased uptake of contraceptives would reduce the high fertility rate, unwanted or unplanned pregnancies, and abortion rates.

6.2 Recommendations

From the research findings, the study has shown that use of contraceptives among women in Kenya is affected by ethnicity. In order to achieve the target contraceptive prevalence rate in the Kenyan Vision 2030, and assure that minority ethnic groups are included in family planning policies, the following recommendations are made.

Although family planning should be directed to all women, the current policies on family planning need to have a particular focus on ethnic groups that reported low contraceptive use. Furthermore, policies also need to have a direct focus on women who are poor and residing in rural areas of Kenya, where affordability and accessibility of health services is low. This can be achieved by ensuring access to family planning services is free for both women and men in rural areas. This could be done by designing health services in rural areas with supported family planning outreach activities that use social and health care workers.

The government and non-governmental organizations need to increase the support to community based family planning services, and assure that community based distributors reach minority ethnic groups in rural and poor communities. Furthermore, health care workers should be provided training on how to provide quality care, referral, and communication skills clients from different ethnic and cultural backgrounds, and provide a variety of family planning method choices that are culturally-acceptable.

Particular attention is needed to be directed towards the women in Luo ethnic groups and other minority ethnic groups, given that their contraceptive uptake is particularly low. This can be achieved by improving communication and education programmes on family

planning in areas in which the reside. Such communication education programmes should aim to improve the knowledge of Luo women on issues of reproductive health; and examine the positive and negative myths, beliefs and values that may be impacting on theirs and their partners' attitudes and behaviours toward contraceptive use. This study found that these ethnic groups have shown the lowest odds of contraceptive use, and thus at higher risk of unwanted or unplanned pregnancies which could lead to a higher probability of abortions.However, further qualitative research is required in order to investigate the perceptions, myths, and beliefs that Luo women may have towards reproductive health, and contraceptive use in particular.

Further research is required to investigate the relationship between ethnicity and contraceptive use, in order to better understand the socio-cultural barriers women of different ethnic groups face in accessing of family planning services. A qualitative study that follows women in different ethnic groups through the stages of their reproductive lives would assist to identify the barriers they face in deciding to use contraceptives, and any obstacles they may experience in accessing family planning services.

6.3 Limitations

The study is limited by the use of cross-sectional data and therefore it is not possible to establish a causal relationship between ethnicity, as well as demographic and socio-economic variables, and contraceptive use. The data also does not specify the cultural factors that exist in different ethnic groups, and such perceptions and attitudes toward the use of contraceptives by ethnic groups may play a determining role in whether women from these ethnic groups decide to use contraceptives or not.

The dataset used is based on self-reported data, and therefore participants may have underreported the occurrence of unprotected sex; in which case many of those would have been left out of the sample used for this study.

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