FACTORS INFLUENCING REGIONAL DIFFERENTIALS IN UNMET NEED FOR FAMILY PLANNING IN KENYA

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DECLARATION

I declare that this research project is my own original work. It is being submitted for the degree of Master of Arts in Population Studies at the University of Nairobi. To the best of my knowledge, it has not been submitted before in part or in full for any degree or examination at this or any other university:

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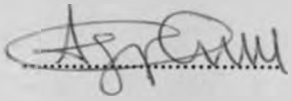
Mushira Christopher Agweyu (Q50/63686/2010)		16.11.2012

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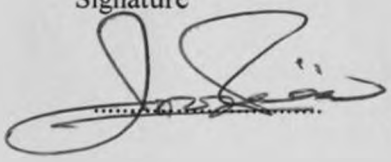
Prof. John O. Oucho Population Studies and Research Institute University of Nairobi		22/11/12
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Dedication

To the Agweyu family.
We rise and fall as one unit. I love you always.

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God bless you all.

ABSTRACT

Kenya has been reported to exhibit very significant variations in the uptake of contraceptive methods across the eight provinces. Unmet need for contraception tends to mirror this phenomenon with Nairobi and Central provinces recording the lowest levels of unmet need whereas Rift Valley and Nyanza report the highest levels. Many of the findings that are published and disseminated tend to focus on the global picture on unmet need for family planning in Kenya as country and quite often the true picture of family planning needs in the country is masked in the regional statistics.

This study uses frequency distributions as well as bivariate and multivariate methods (chi-square and logistic regression) to describe the association of the dependent variable of unmet need for family planning with seven covariates (age, level of education, knowledge of contraceptive method, number of living children, place of residence, religion and household wealth). Chi-square tests show that there is a strong association between age and unmet need for family planning across all the provinces. Coast, Nyanza, Rift Valley and Western provinces show a high level of unmet need at younger ages (15-34). In these four provinces, the highest proportion of this unmet need is for spacing. Nairobi, Central and Eastern Provinces show a high level of unmet need at older ages (35-49). In these three provinces the greater proportion of these are clustered as having unmet need for limiting births. Chi square test for level of education and unmet need show a strong association between married women who have attained primary school education and unmet need. Nairobi and North Eastern provinces have a greater proportion of married women with unmet need with secondary education and no education respectively. It is important to note that the greater proportion of the unmet need felt in Nairobi, Central, Eastern and Rift valley is for limiting births. In contrast the vast majority of the unmet need felt in Coast Nyanza, Western and North Eastern is for spacing. This is an indicator of the early age at marriage in this cluster of provinces.

Regression analyses reveal that age, number of living children, level of education and household wealth hold statistical significance in determining unmet need for family planning. The various components of unmet need for contraception namely; spacing, limiting and overall unmet need, varied considerably across the provinces. The regression model for spacing births revealed that married women with primary level education living in Central province were 30 times more likely to experience unmet need to postpone births than their counterparts who had no education.

It is recommended that future researchers conduct qualitative studies on this same topic to further enrich the knowledge on the reasons why women who do not wish to continue childbearing or wish to postpone childbearing do not use any form of modern birth control. Qualitative studies for variables that have shown some level of significance including religion need to be explored further.

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LIST OF ACRONYMS AND ABBREVIATIONS

CBS – Central Bureau of Statistics

CBD – Community Based Distribution

CPR – Contraceptive Prevalence Rate

DHS – Demographic Health Survey

FP – Family Planning

HIV – Human Imuno-deficiency Virus

KNBS –Kenya National Bureau of Statistics

LAPM - Long Acting and Permanent Method

LARC – Long Acting and Reversible Contraceptive

MDGs - Millennium Development Goals

MoH – Ministry of Health

NCAPD - National Coordinating Agency for Population and Development

PRB - Population Reference Bureau

PSRI – Population Studies and Research Institute

UN – United Nations

UNFPA – United Nations Population Fund

UNICEF – United Nations Children's Fund

USAID - US Agency for International Development

WHO – World Health Organisation

OPERATIONAL DEFINITIONS

Unmet need for family planning: In this study, unmet need for family planning will refer to the condition of wanting to avoid or postpone childbearing but not using any method of contraception.

Unmet need for spacing: The condition of wanting to ***postpone*** childbearing but not using any method of contraception.

Unmet need for limiting: The condition of wanting to ***avoid*** births but not using any method of contraception

Post partum amenorrhea – The infertile interval after birth may last from a minimum of about 3 months to 1.5 years, depending particularly on the duration and intensity of breastfeeding.

Contraceptive Prevalence: Contraceptive prevalence is conventionally expressed as the proportion of married women of reproductive age using contraception.

Reproductive rights: The right to embrace certain human rights that are already recognised by national laws, international human rights documents. These rights rest on the recognition of all couples and individuals to decide freely and responsibly the number, spacing and timing of their children and to have the information and means to do so, and the right to attain the highest standard of sexual and reproductive health.

Marriage: In this study the term 'married woman' will refer to any woman who is in a legally recognised marital union in Kenya or cohabiting with a spouse in a marriage-like setting.

CHAPTER ONE

1.0 INTRODUCTION

According to the demographic transition theory first developed by Adolphe Landry and later by Frank Notestein, fertility only declined in Europe following continued industrialisation and modernisation, which changed the economic and social structure of society, in particular urban populations and loss of some functions of the family (Szreter 1993). This led to changes in family structure including fertility preference which ultimately resulted in fertility decline. It is the ready access to contraceptive services through modernisation and improved health care that culminated in the satisfaction of unmet need created by diminished fertility preferences. The demographic transition theory brings out clearly the role the other 2 demographic variables – *mortality* and *migration* - play in reducing fertility. With decrease in infant and child mortality, it is argued that parents no longer desire to have large families and as a consequence fertility should decline. Rural urban migration plays an important role in the transformation of economies from rural/agricultural based ones to urban and industrial ones.

More than 100 million women in developing countries, or about 17 percent of all married women, would prefer to avoid a pregnancy but are not using any form of family planning. Demographers and health specialists refer to these women as having an *unmet need* for family planning[1]—a concept that has influenced the development of family planning programs for more than 30 years. According to the World Health Organization (WHO), over the past decade, rising rates of contraceptive use have reduced unmet need for family planning in most countries (UNFPA 2010). In some countries, however, unmet need remains persistently high (more than

[1] Refers to the unmet need algorithm used to compute estimates of unmet need that are shown in DHS final reports, This definition has varied over time.

one-fifth of married women) or is increasing, indicating that greater efforts are needed to understand and address the causes of unmet need.

Unmet need has received an unprecedented level of scrutiny since it became a Millennium Development Goal (MDG) indicator[2] (indicator 5.6) in 2008. Unmet need for contraception can lead to unintended pregnancies, which pose risks for women, their families, and societies. In developing countries, about one-fourth of pregnancies are unintended—that is, either unwanted or mistimed (wanted later) – WHO 2010. One particularly harmful consequence of unintended pregnancies is unsafe abortion: An estimated 18 million unsafe abortions take place each year in developing regions, contributing to high rates of maternal death and injury in these regions. In addition, unwanted births pose risks for children's health and wellbeing and contribute to rapid population growth in resource-strapped countries.

According WHO, each year 210 million women become pregnant. More than a quarter of these are unintended. This reflects the failure of family planning programmes to meet the contraceptive needs of all women at risk of unintended pregnancies. Difficulty of access to preferred methods of contraception, incorrect or inconsistent use of contraception methods and potential method failure are not easily resolved and can lead to unintended pregnancies. Other reasons for unwanted pregnancies include forced or unwanted sexual intercourse and lack of women empowerment over sexual reproductive health matters. All these dynamics invariably have an effect on maternal morbidity and mortality. The 2008-9 KDHS data shows that there are striking regional variations in unmet need for family planning. This leads us to conclude that the use of contraception varies markedly from region to region within Kenya. The DHS data also show significant differences between the national average and region specific levels of unmet need for family planning. Many studies have been conducted to explain the factors associated

[2] The MDG5 indicator "universal access to reproductive health" is spelled out in the Programme of Action of the International Conference on Population and Development (ICPD)

with the high unmet need in sub Saharan Africa, Kenya included. However, if you narrow down to regional level we find that the factors affecting one region's unmet contraception may not necessarily be the same across all the regions. Moreover, the significance of these factors will also vary from region to region.

Kenya was among the early leaders in family planning in Africa, with a programme that was comprehensive, reached all communities, and had strong political leadership, from the 1960s up until the mid-1990s. As a result, the average number of births per woman dropped from about eight in the late 1970s to around five births per woman in the mid-1990s. During the 1990s, however, the family planning programme was weakened because the HIV epidemic emerged, donor funding declined, and political leadership was diverted to other challenges.

One reason for fertility remaining high, at 4.6 births per women today, is due to the unmet need for family planning (KNBS and ICF Macro, 2010). One of every four married women in Kenya says that she would like to space her next pregnancy by two years or more, or not have any more children, but she is not using family planning. This is the unmet need for family planning. High unmet need for family planning leads to more than one million unplanned pregnancies every year in Kenya. Consequences of unplanned pregnancies include unsafely performed abortions, high-risk births, maternal deaths, and high fertility which weigh heavily on the Kenyan economy. Something can and must be done to mitigate the heavy cost of these consequences.

1.1 PROBLEM STATEMENT

From a reproductive health-based and rights-based perspective, all women should have access to methods for avoiding unintended pregnancy. Couples and individuals have the right to decide freely and responsibly the number, spacing and timing of their children. Fulfilling this right is an important intervention for improving maternal health, child health and improving the overall well-being of individuals as well as entire families. In Kenya only a small proportion (one in four) of women who want to limit or space their births are using any form of contraception. Additionally, and what is most alarming is that, variations in unmet need for family planning are strikingly noteworthy across the provinces of Kenya. According the June 2010 policy brief published by National Coordinating Agency for Population and Development (NCAPD), there are wide differences in unmet need for family planning across the provinces in Kenya where Nyanza and Rift Valley provinces record levels as high as 32 and 31 percent respectively whereas Nairobi and Central record lower levels of about 15 percent each.

The reasons for these variations between provinces are not fully understood and would provide the much needed empirical evidence for addressing the barriers impeding women's access to contraceptive services. Meeting this unmet need for contraception would go a long way in ensuring that unintended pregnancies are greatly reduced and cases of unsafe abortions are significantly averted. Furthermore, the KDHS 2008/9 report states that 55% of married women in Kenya are not using contraception. The reasons why they are not using any family planning method are of great interest to programme managers and policy makers.

One of the intermediate variables that determines use or non-use of family planning methods is knowledge of contraceptive methods. The KDHS affirms that knowledge of methods is a prerequisite for making a decision to initiate contraceptive use. The survey data goes ahead to confirm that awareness of family planning methods is generally very widespread across the country. However, the 2008/9 data also bring out the remarkable regional variations where

provinces like North Eastern recorded less than half of all women surveyed having heard of any method.

In 2008, Kenya embarked on a new and ambitious development strategy dubbed Kenya Vision 2030. Of interest to this study, is the Social Pillar through which Kenya seeks to improve health systems by bridging the inequalities that currently exist across Kenya. In order to reduce equalities in access to health care and improve key areas where Kenya is lagging, especially in lowering infant and maternal mortality it important to understand which inequalities exist and more importantly why they exist.

Specific strategies in this development blueprint involve: provision of a robust health infrastructure network; and improving the quality of health service delivery to the highest standards and promotion of partnerships with the private sector. In addition, the Government will provide access to those excluded from health care due to financial reasons (Kenya Vision 2030). Empirical evidence on who exactly is excluded and why they are excluded is a gap that this study will attempt to fill.

Researchers have conducted numerous studies to establish the motivation of women with respect to contraceptive use. However a great deal still needs to be done to establish the reasons behind the differences that occur regionally when these factors are examined vis-a-vis unmet need in a developing country like Kenya. There is overwhelming evidence that equity in access to contraceptive services remains a dream when it comes to the poor in developing countries (Berer 2011). A report by the National Aids and Sexually transmitted infections Control Programme (NASCOP) in March 2011 revealed that men in rural Northern Kenya were having to wash and re-use condoms because they were both too scarce and too expensive to throw away after one use. Condoms are free at government health centres but reports like what was presented by NASCOP in Northern Kenya raise questions about who exactly is accessing these critical services.

This study is very important in filling the knowledge gap pertaining to socio-economic, demographic and socio cultural factors that contribute to the regional differences in unmet need for contraception. Researchers and social scientists in general continue to grapple with the question: why women who say they would prefer to postpone or discontinue childbearing do not use contraceptives while other women in the same country with similar desires adopt family planning methods. This seemingly irrational behaviour is the key interest of this study. By unearthing the key factors associated with regional variations in unmet for contraception, this question will be answered.

1.2 General Objective:

The objective of this study is to establish the factors that influence regional variations in unmet need for family planning across the eight regions/provinces of Kenya using data from the KDHS 2008/9.

1.3 Specific Objective

1. To identify and analyse factors that are associated with unmet need for family planning across the eight provinces in Kenya.

1.4 JUSTIFICATION

Kenya has one of the fastest growing populations in the world despite the desire of many Kenyan women and men for better spaced, smaller families. This high growth rate has profound implications for development and quality of life in Kenya. Rapid population growth and the unmet need for family planning if not addressed adequately and urgently, will have a number of detrimental effects on development and quality of life in Kenya. One quarter of currently married women in Kenya have an unmet need for family planning, which remains unchanged since 2003.

Unmet need is evenly split between women who want to wait two or more years before having their next child (spacers) and those who want no more children (limiters). – KDHS 2008/9.

Despite a relatively high level of contraceptive use, the 2008-09 KDHS data indicate that unplanned pregnancies are common in Kenya. Overall, 17 percent of births in Kenya are unwanted, while 26 percent are mistimed (wanted later). Overall, the proportion of births considered unwanted has decreased slightly, compared with the 2003 KDHS, while the proportion mistimed has hardly changed at all.

Sinding, Ross, and Rosenfield (1994) showed that in nearly all countries that had specified demographic targets, fully satisfying the unmet need for contraception would result in contraceptive prevalence rates higher than the established targets. An estimate of the unmet need for contraception in a population is necessary to determine the maximum potential demand for family planning service (NCAPD, 2011). Findings from this study will inform policy and programme through the various explanation we will derive by assessing the relationship between various parameters.

This study will also provide insights into existing knowledge on the relationship between unmet need for FP and maternal mortality / morbidity and Infant mortality. Although it is sometimes said that a large population is good for economic growth, that can be true only if there are a healthy workforce, enough jobs, educated workers, and modern infrastructure (Ojakaa 2008). One way for Kenya to achieve the objectives of *The Vision 2030* is through reproductive health services and helping women to plan and space their pregnancies.

According to the 2008-09 Kenya Demographic and Health Survey (2008-09 KDHS), the contraceptive prevalence rate (CPR) (the proportion of currently married women age 15-49 who are using *any* contraceptive method—modern or traditional) is 46 percent. CPR among *all* women age 15-49 is 32 percent, and, among sexually active unmarried women, 50 percent. The level of use of *modern* contraceptive methods is 28 percent among all women and 39 percent

among currently married women (KNBS and ICF Macro, 2010). Offsetting the balance of unmet need for contraception would undoubtedly see Kenya's contraceptive prevalence rate increase significantly.

DeGraff (1996) adopts a health-based measure to unmet need by considering all non-users who are capable of conceiving, who are exposed to the risk of pregnancy and who if they were to become pregnant would experience a high risk of mortality of their expected child, their living children and themselves. In her study DeGraff suggests that such a measure could be used when evaluating family planning programmes from a health policy perspective. The approach compliments the preference based approach by highlighting the additional health benefits of contraceptive use.

In Kenya, however, it is clear that factors affecting family planning use are region specific and require different approaches in areas of high unmet need than those that have been successful in Nairobi and Central regions (Omwango and Khasakhala, 2006). What approaches can we then propose to bridge the gap in unmet need for FP in provinces that are lagging behind? Expanding access to family planning and reproductive health services should not be done in a uniform fashion across all the eight provinces. Multi-faceted approaches that take into account the country's vision 2030 as well the Millennium Development Goals (MDGs) should be considered when addressing the thorny issue of unmet need for family planning.

Explaining the importance of meeting family planning needs of Kenya requires a critical understanding of the vulnerable group of adolescents who from statistics in the KDHS are exposed to very early ages at first birth. One of the key reasons why it is important to address the adolescent reproductive health needs is the fact that children born to very young mothers are predisposed to higher risks of illness and death. This is due to the limited exposure by young mothers to reproductive health services and information. Adolescent mothers are also more

likely to experience complications during pregnancy and less likely to be prepared to deal with them which leads to higher risk of maternal deaths (KDHS report 2008-9).

Because of their early entry into child bearing, young mothers are less likely to advance their academic goals and ambitions. This in turn affects their socio-economic status and limits their access to reproductive health services (WHO 2007). A policy brief published by the Family Health International in 2007 affirms that women in sub Saharan Africa are waiting longer to marry. The article goes on to confirm that the rate of teenage marriage has decreased in Niger by 14 percent over the last two decades. Protecting young women from unintended pregnancies will by extension protect their health. The study published the United Nations Children Fund (UNICEF) showed that women under the age of 20 are at least twice as likely as older women to die during childbirth (UNICEF, 2000).

Understanding the factors associated with regional variations in unmet need for contraception will provide very useful empirical knowledge needed for decision making regarding availing and promoting the use of birth control methods across the country. The findings from this study will be widely used for advocacy, the development of region-sensitive family planning policies, and the implementation and monitoring of family planning programs.

1.5 Scope and Limitations of this study

This study will be limited to data derived from the women's questionnaire provided in the Kenya Demographic Health Survey (KDHS) of 2008/9. From the operational definition of unmet need the study will focus only on *currently married women*. The primary caveat of this study therefore is that it will only consider women who stated that they were currently married or living together. Out of the 8444 women interviewed during the survey, 4682 were currently married and 359 were living together constituting 59.7% of all the women interviewed (KDHS 2008/9) to whom the analysis in this study will be limited.

Unmet need can be estimated using twelve different measures, each having a unique combination of criteria. Due to the complexity involved in consideration all the delimitations of unmet need, this study will only consider the definition of unmet need used by the KDHS. It is important to note that the magnitude of unmet need for contraception among unmarried women is significant. It is difficult to include this group in our study given the difficulty in ascertaining the frequency of sexual intercourse as this varies widely in this group.

All married women using contraception will be considered as having no unmet. Thus the need for an alternative family planning method will be ignored. Similarly unmet need among women experiencing contraceptive failure will also be omitted[3]. The study will also limit itself to Kenya's provinces (also referred to as regions in this study). As demarcated in the map of Kenya provided in Appendix 1.

1.6 Assumption of this study

The main assumption of this study is that all fecund women in a union are sexually active and need to adopt a family planning method if they want to limit child bearing or space births.

1.7 RESEARCH QUESTIONS

1. What are the demographic factors influencing the variations in unmet need for contraception across the eight regions of Kenya?

2. What are the cultural factors influencing the variations in unmet need for contraception across the eight regions of Kenya?

3. What are the socioeconomic factors influencing the variations in unmet need for contraception across the eight regions of Kenya?

[3] Some consider these women to have a need for more effective contraception; this concept, however, has never been incorporated in the DHS definition of unmet need.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

A vast body of literature exists on the factors associated with unmet need for family planning. It is therefore important to filter through this extensive literature and identify the critical studies that will enable us answer some of the questions posed in the preceding chapter of this study. This chapter therefore focuses on exploring the existing literature on the concept of unmet need for family planning with a view to establishing what other researchers have unveiled in their empirical studies as well the various theories that have been put forward to explain the concept of unmet need for family planning. Moreover, this chapter will illustrate the theoretical framework as well as the operational model that will form the basis of this study.

2.1 Theoretical and Empirical Literature

Unmet need for family planning is a concept which has evolved since 1960 when surveys of contraceptive knowledge, attitude and practices (KAP) highlighted a discrepancy between women's fertility intentions and their contraceptive behaviour. A number of studies have established factors that contribute to the unmet need for family planning. They include among others, serious obstacles preventing women from using contraception such as access to and quality of services, lack of information, worries about health side effects opposition from husbands (Bongaarts et al 1994; Casterline et al. 1996; Westoff et al. 1991)

Originally, unmet need referred to married women who do not want a birth in the future but are not practicing contraception. Later, the definition was broadened to include married women (nonusers) who want a future birth, but not within the two years following the interview. From current status data of the type collected in Demographic and Health Surveys (DHS), a married woman is defined to have an unmet need for contraception if she is not in one of the

following groups: a current user of contraceptives; a currently pregnant or amenorrheic woman who was using a contraceptive at conception; a currently pregnant or amenorrheic woman whose pregnancy was reported as intentional; an infecund woman; and a fecund woman who wants a child in less than two years.

Debate on expanding the definition of unmet need continues. Arguments have been made to include unmarried women (and they have been included in some analyses), to include health reasons for need and to include women who want no more children but who are using ineffective contraceptives (Westoff 1991). Additionally, the measure of unmet need has always been assumed to refer to women, although a correspondence between women's and couples' unmet need has sometimes been presumed as well. Recently, men's unmet need has been defined and studied, using DHS data from Ghana and Kenya (Ngom 1997). That analysis considered only unmet need for limiting childbearing, but also included those using traditional contraceptive methods who said that they wanted no more children.

According to the 2008-9 Kenya DHS, there has been a substantial increase in contraceptive use since the late 1970s, from 7 percent of married women in 1978 to the current 46 percent in 2008-09. The contraceptive prevalence rate remained the same between 1998 and 2003, but it increased slightly between 2003 and 2008-09. The increase in the overall CPR can be attributed to increased use of modern methods. Between 2003 and 2008-09 use of modern methods increased among currently married women from 32 to 39 percent, while use of traditional methods decreased slightly over the same period, from 8 to 6 percent among currently married women (CBS, MOH and ORC Macro, 2004; KNBS and ICF Macro, 2010).

The 2008-09 KDHS further shows that married women in urban areas are more likely to use a contraceptive method (53 percent) than their rural counterparts (43 percent). Although use of modern methods is generally higher in urban areas (47 percent) than in rural areas (37 percent), female sterilisation is slightly more common among rural women than among urban

women. The same survey shows that married women in Central province continue to have the highest contraceptive prevalence rate (67 percent), followed by Nairobi (55 percent) and Eastern province (52 percent). The lowest level of family planning use is recorded in the North Eastern province, at 4 percent.

The better educated a woman is, the more likely that she uses contraception. Sixty percent of married women with secondary education or more use a contraceptive method compared with 40 percent of women with incomplete primary education and only 14 percent of those who never attended school (KNBS and ICF Macro 2010). The findings in a study conducted by Ojakaa (2008) on the fertility transition in Kenya reveal that the total unmet need for contraception decreases with a woman's age, level of education, household wealth, exposure to family planning messages and employment. All these factors according this study are significantly related to total unmet need for family planning.

An unmet need for contraception exists because there is a cost associated with practicing contraception or a lack of information about it (Bongaarts, Bruce 1995). The term "cost" is used here in the broadest sense to include not just expenses for commodities, travel, and services, but also health, psychological, and social considerations brought into play as women decide whether or not to adopt or continue a method (Easterlin, 1975). According to US National Research Council, virtually every society, even those where contraception is not practiced, human fertility falls considerably short of its biological maximum. This is as a result of use modern contraceptives which is higher in urban areas than in rural areas.

In regions where Islam is prevalent, studies have shown that birth spacing was more of a function of lactation amenorrhea (non-susceptibility to conception due to breast feeding) because the accompanying period of post-partum abstinence followed the direction of the 40 day rule – common to Islam custom (Lesthaeghe, 1981)

Kenya has an explicit population policy with precise demographic objectives. The goals and objectives of Kenya's population policy include: improvement of the standards of living and quality of life of the people; full integration of population concerns into the development process; motivating and encouraging Kenyans to adhere to responsible parenthood; promotion of the stability of the family; empowerment of women, elimination of retrogressive socio-cultural practices such as female genital mutilation, and integration of the youth, the elderly and persons with disabilities into the mainstream of national development.

All these should ideally influence programmes and services offered particularly when it comes to fertility control. However, the fact on the ground is that some regions have experienced a much more accelerate rate of demographic transition than others. Studies have shown that even in the developed world, unmet need for family planning, although minimal, still exists. According to Klijzing (2000), some level of unmet need is likely to exist in every country, developing and developed alike, even where family planning is widely used. The standard formulation of unmet need includes all fecund women who are living in a marital or non-marital union (and thus are presumed to be sexually active), who are not using any method of contraception and who either do not want to have any more children or want to postpone their next birth for at least two more years (Westoff 1995).

A new study published in 2012 by researchers at Johns Hopkins university shows that fulfilling unmet need for contraception demand by women in developing countries could reduce global maternal mortality by nearly a third, a potentially remarkable improvement for one of the world's most vulnerable demographic (Lancet 2012). Unwanted fertility and unmet contraceptive needs are still high in many developing countries, and women are repeatedly exposed to life-threatening pregnancy complications that could be avoided with access to effective contraception (Bradley, 2012).

The Lancet study draws on maternal mortality and survey data from the United Nations and World Health Organisation to estimate the annual number of maternal deaths in 172 countries and the share that could not be preventable by the use of contraception. The study revealed that birth control reduces health risks by delaying first pregnancies, which carry higher risks in very young women, cutting down on unsafe abortion, which account for approximately 13% of all maternal deaths in developing countries and controlling the dangers associated with pregnancies that are too closely spaced. Satisfying unmet need for contraception could prevent another 104 000 maternal deaths per year (29% reduction).

2.1.1 Place of residence

In the DHS comparative Reports no. 14 which looks at the new estimates of unmet need for family planning, Westoff (2006) argues that there is no instance in countries outside sub-Saharan Africa in which unmet need for family planning exceeds that in rural areas except for Moldovia. Within sub Saharan Africa, however, unmet need in the cities exceeds the estimates for rural areas in 9 of the 31 countries studied. Westoff attributes these urban-rural differences to accessibility to family planning services in cities, the desire for more children in rural areas and greater education in urban areas.

In his paper on spatial analysis of contraceptive use and unmet need in Kenya, Ettarh (2011) concluded that the prevalence of unmet need for contraception in Nairobi slums (27.7%) is much higher than the value in urban areas across Kenya (15.5%). This according to Ettarh, reflects the challenges of providing health and family planning services to residents in these informal settlements. Ettarh goes on to recommend that there is need for further investigation into the patterns of prevalence of contraceptive use in Kenya which transcend the district boundaries, as this may guide the prioritization of regions for family planning programmes.

2.1.2 Contraceptive Method mix and Unmet Need

The term method mix refers to the percentage distribution of contraceptive users (or acceptors) by method. Contraceptive method mix provides a profile of the relative level of use of different contraceptive methods. A broad method mix suggests that the population has access to a range of different contraceptive methods. Contraceptive use has become more common in developing countries and much of this increase has been in the form of modern methods of fertility control (Gille, 1985). These methods include; male condoms, female condoms, combined oral contraceptives, progestin-only pills, IUDs, injectables, implants, emergency contraceptives, CycleBeads, and voluntary sterilization. and vaginal methods. The use of these methods has grown more than the use of traditional methods, such as periodic abstinence (rhythm), withdrawal, and folk methods (Robey et al., 1992). The increased use of effective family planning methods is the primary cause of dramatic fertility declines in many developing countries (Rutenberg et al., 1991; Bongaarts et al., 1990). A number of surveys show that modern methods account for much of the increase in contraceptive prevalence (Robey et al., 1992).

A policy brief published by the US Agency for International Development (USAID) in 2006, highlights the evidence that has shown substantial unmet need for long acting and permanent methods (LAPM) in sub Saharan Africa. According to the evidence in the paper, there is a significant discrepancy between women who wish to stop child bearing and the proportion that are using LAPM. Data from demographic health surveys conducted in sub Saharan Africa between 2003 and 2005 show that more than 20 percent of women in nine of the 11 countries surveyed do not want more children. However the discrepancy is that in each of the nine countries, fewer than 7 percent of the women are using LAPM. Although short term methods provide protection for many of the women who want to limit child bearing, these women are

entitled to choice of methods. Unfortunately due to lack of knowledge or access, they are unable to utilise LAPM which could be a good option for them given their reproductive intentions.

Table 2.1 Trends in unmet need for family planning in Kenya

	1993	1998	2003	2009
Unmet need for family planning, limiting (%)	14.1	9.9	10.1	12.8
Unmet need for family planning, spacing, (%)	21.4	14	14.4	12.9
Unmet need for family planning, total, (%)	35.5	23.9	24.5	25.6

Source: Kenya Demographic Health Surveys

The table above summarises the trends in unmet need for family planning from 1993 to 2009 in Kenya. From the table we can clearly see that unmet need for limiting births dropped significantly between 1993 and 1998. These gains were diminished when unmet need for limiting increased to 10.1% in 1998 and then to 12.8 percent in 2009. This suggests that family planning policy and programme need to be repositioned to focus more on a contraceptive method mix that emphasises the promotion of long-acting and permanent methods for women who would like to stop child bearing. The table further illustrates the trends for unmet need for spacing births which have generally declined from 21.4% in 1993 to 12.9%. This could be an indication that short term methods being promoted in the country are bearing fruit.

Total unmet need for contraception has declined since 1993 from 35.5% to 25.6 % in 2009. This national average shows impressive and steady gains in fulfilling unmet need in Kenya. However, as this study will seek to confirm, it is important for us to understand the variations that exist between the eight provinces and thus promote very region-specific interventions with a view to bridging the gap of unmet need in the country even further.

2.1.3 Number of Living Children and Unmet Need

The number of surviving children has been shown to influence a family's desire to limit their size. As the number of family size increases so does the desire to limit the number of children. In a study conducted in Ethiopia, Bhargava 2007, shows the importance of variables

such as maternal education for smaller family size, and that variables reflecting desired family size are strong predictors of the numbers of children born to women. Overall, the results from this study indicated that counselling couples about small family size and increasing the utilization of health care services can lower fertility in Ethiopia (Bhargava 2007). In Kenya, the 2008-9 KDHS report shows that the proportion of married women using modern contraceptive methods increases with the number of living children.

2.1.4 Religion and Unmet Need

Religion has for a long time received a lot of attention in the field of demography; more so its role in influencing fertility. Many studies have shown that the association between religion and fertility is often apparent as opposed to real, with the actual effect being that of the socio-economic attribute of the group (Mcquillan 2004). The study by Mcquillan unveils that religion plays an influential role when three conditions are satisfied: first, the religion articulates behavioural norms with a bearing on fertility behaviour; second, the religion holds the means to communicate these values and promote compliance; and, third, religion forms a central component of the social identity of its followers. Lutz (1987 illustrated the diminishing effect of religion on fertility. Lutz asserts that in the Arab countries, culture and religion tend to have strong positive effects on fertility. Across cultures, Catholicism has a fertility-increasing effect but it-like the effect of all religions except Islam-is diminishing over time.

2.1.5 Education and Unmet Need

Education is a key determinant of fertility preferences and behaviour. For this study however we will be interested in how important education is in determining unmet need for contraception. Several hypotheses have been put forward to explain the influence of education on fertility preferences. One school of thought posits that an individual woman's own schooling experience influences subsequent fertility behaviour, As future parents, children who attend

school learn something that attitudes and plans and so they limit their child bearing later on when they enter reproductive age.

Past studies document the relationship of female education to the decline in fertility (Singh and Casterline, 1985). According to one study, education can influence women's reproduction in several ways: by increasing knowledge of fertility, increasing socioeconomic status, and changing attitudes about fertility control (Castro and Juarez, 1994). Education may also affect the distribution of authority within households, whereby women may increase their authority with husbands, and affect fertility and use of family planning (Bertrand et al., 1993). Caldwell (1982) sees education as a vehicle by which people learn more Western views about the family, which leads to a more child centred parenting approach, and to different definitions of acceptable child care. This may lead to a demand for fewer children, and consequently, the use of contraceptives to prevent or to space childbirth. Education is closely linked to the use of contraception: more educated women are more likely to use family planning (Kasarda et al., 1986, Robey et al., 1992). Data from the countries where the Demographic and Health Surveys (DHS) have been conducted demonstrate the relationship between education and the use of family planning (Robey et al., 1992).

In most societies, marriage defines the onset of the socially acceptable time for childbearing and is the most predominant context for childbearing (Ikamari 2005). Education has been shown to delay the age which women enter into marital union. Using 1998 Kenya Demographic and Health Survey data Ikamari (2005) showed that education has a statistically significant and strong positive effect on a woman's age at first marriage. As a consequence, level of education women is expected to have an effect on unmet need for family planning in society.

2.1.6 Knowledge of Modern Methods and Unmet Need

A comparative study of trends and determinants of fertility in Kenya and Uganda (Blacker 2005) shows that between 1980 and 2000, Kenya experienced a sharp fall in fertility

from 8 births per woman to around 5 children. This 40% drop in the total fertility rate was attributed to increased contraceptive use in the country. The Kenya Government had, during this period, pursued active promotion of family planning services through the health system.

Awareness of modern contraceptive methods has continued to be very high in Kenya with the 2008-9 KDHS revealing that the proportion of currently married women who had heard of at least one family planning method exceeds 90% in categories by age, place of residence, education and household wealth. Exceptions were found among women with no education, women in the lowest wealth quintile and women in North Eastern province, where less than half of married women had heard of any method.

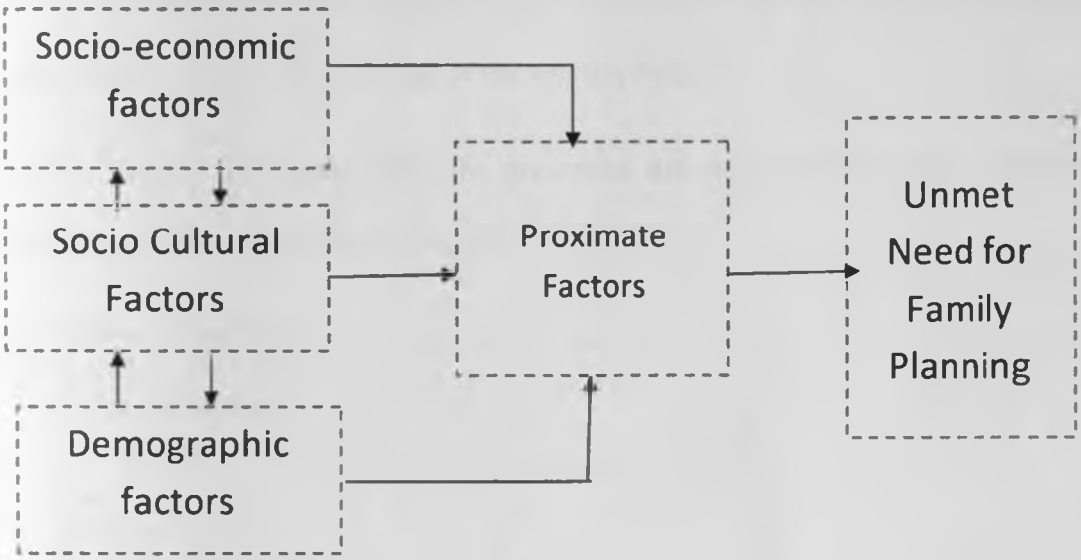
2.1.7 Household Wealth Index and Unmet Need

Numerous studies have shown that poverty is associated with the level of household wealth .Key among these is a study by Ojakaa (2008) which reveals that total unmet need decreases with a woman's household wealth. The rate of unintended pregnacies were found to be strongly assocaition with household wealth (Forest, 1991; Williams, 1991;Anderson, 1981). The rate of unintended births increased by 44% among poor women but declined among women who were at or above 200% of the poverty level between 1994 and 2001 (Finer and Henshaw, 2006). In a study conducted in Chile, women aged less than 25 years old of low socioeconomic status were more likely than their peers living in households of better socioeconomic status to have unplanned childbearing (Herold, Thompson, and Valenzuela, 1994). Women in the low economic wealth index have also been found to have a higher need to space child births while, the rate of unmet need to limit births was higher among women in the high household wealth index. (Nur et.al, 2009). Other studies have not shown any significant effect of poverty on unmet need for contraception.(Eggleston 1999).

2.2 CONCEPTUAL FRAMEWORK

This study will employ the Casterline et al. Conceptual framework of 1997

Fig 2 – Conceptual Framework



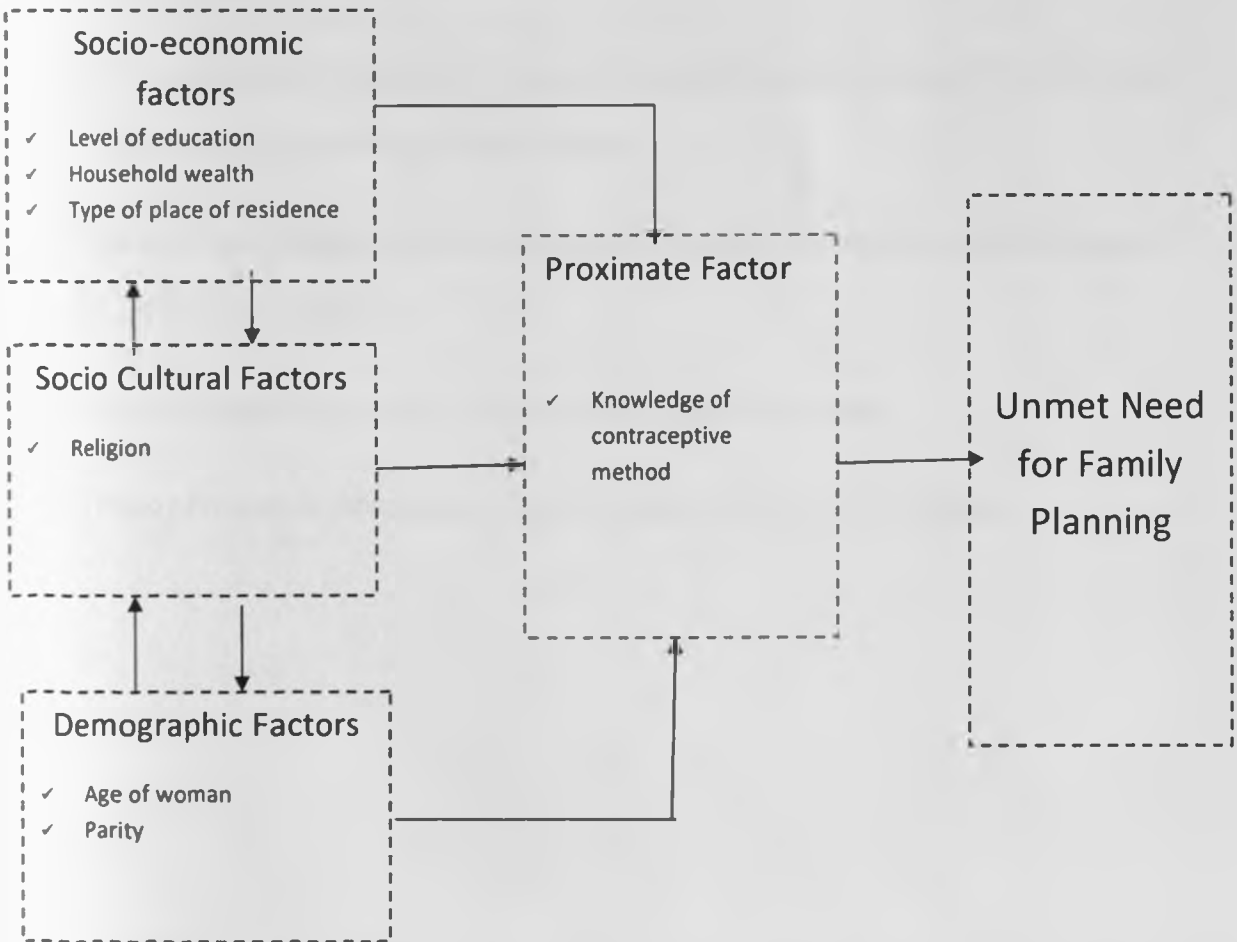
Source: Modified from Bongaarts J. (1978) A framework for Analyzing the proximate determinants of fertility

2.3 OPERATIONAL FRAMEWORK

The operational framework below looks at the factors outlined in the conceptual framework in more details. We can clearly discern from the diagram below that the background factors influencing unmet need for FP include region of residence, level of education. Other important factors include religion, ethnicity, age of the woman, parity.

All these factors act together with the proximate determinant which here is contraceptive knowledge to result in unmet need for family planning.

Fig 3 – Operational Framework



Source: Modified from Bongaarts J. (1978) A framework for Analyzing the proximate determinants of fertility.

2.4 OPERATIONAL HYPOTHESES

1. Increased levels of education are associated with lower unmet need for FP across all the provinces in Kenya.
2. Higher socio economic status is strongly associated with lower levels of unmet need for family planning in Kenya
3. Unmet need for family planning differs by region of residence. Women from more modernised areas are expected to have lower unmet need for contraception than those from less developed parts of the country.
4. Women with higher number of living children have a higher unmet need for limiting than those with fewer numbers of living children.
5. Increased knowledge of modern contraceptive methods is associated with lower unmet need for family planning.
6. Religion determines the level of unmet need for family planning
7. Place of residence determines the level of unmet need for family planning

CHAPTER THREE

3.0 DATA AND METHODOLOGY

3.1 Introduction

This study used data from the 2008-09 KDHS. Descriptive statistics were used to describe the basic features of the data. Bivariate analysis will be used to show the relationship between unmet need for limiting and spacing and socio- demographic variables as well as intermediate variables. Multivariate analysis was used to establish predictors across the eight provinces of Kenya as identified in the 2008-9 KDHS. Data were obtained for all currently married women aged between 15-49 years sampled from the 2008-09 Kenya Demographic Health Survey (KDHS).

3.2 Descriptive statistics

Frequencies were used to describe the background variables in order to understand the distribution of each of the variables analysed in this study.

3.3 Bivariate Analysis

Cross tabulation were used at the bivariate level of analysis to test for association between background, proximate and outcome variables.

Chi-square test, denoted as χ^2, was be used to test significance of association between each independent and dependent variable.

H_0: There is no significant association between variable X_1 [*Unmet Need*] and variable X_2 [*All the independent variables*[4]].

H_1: There is a significant association between variable X_1 [*Unmet Need*] and variable X_2[*All the independent variables*].

[4] Refer to table 3.1 for detailed definition of variables

Where H_0 is the null hypothesis to be tested and H_1 is the alternative. X_1 is a dependent variable [*unmet need*] and X_2 can be an independent variable, in which case the Chi-square test gives the probability value (p-value) by which the observed values deviate from the expected values; hence testing for the hypothesis that the two variables cross tabulated are independent of each other. If the p-value is greater than the given alpha value (0.001; 0.05, 0.01), then there is no significant association between the two variables. H_0 is accepted and H_1 is rejected. On the other hand, if the p-value is less than the given alpha value, such as0.001; 0.05 or 0.01, then there is a statistically significant association between the two variables. H_1 is thus accepted and H_0 rejected.

The χ^2 statistics is computed as;

$$\chi^2 = \Sigma \frac{(0 - E)^2}{E}$$

3.4 Multivariate analysis

This study will use logistic regression to identify the best fitting model to describe the relationship between the dependent (unmet need) and a set of independent variables for each of the eight provinces.

Using this multiple regression we expect to predict the net effect of socio-economic, socio-cultural and demographic variables on the dependent variable.

3.5 Dependent variable:

Unmet need: This refers to a measure of whether a woman who wants to avoid becoming pregnant is not using any modern method of contraception. The unmet need group includes all fecund women in a union, who either do not want any more children or who wish to postpone the birth of their next child for at least two more years but are not using any method of

contraception. The unmet need group also includes all pregnant women whose pregnancies were unwanted or mistimed or who unintentionally became pregnant because they were not using contraception.

3.6 Independent Variables

The independent variables utilized in the Kenya DHS analysis will include: *age*, *educational attainment, number of living children, household wealth index*, *religion, place of residence* and *knowledge of family planning method.*

3.7 DEFINITION OF VARIABLES

Table 3.1 – Variables

	Variable	Variable type	Measurement
1.	Unmet need for Family Planning	Dependent	Yes = 1 No = 0
2.	Region	Independent	Nairobi = 1 Central = 2 Coast = 3 Eastern = 4 Nyanza = 5 Rift Valley = 6 Western = 7 North Eastern = 8
3.	Education	Independent	No Education = 1 Primary = 2 Higher / Secondary =3
4.	Religion	Independent	Catholic = 1 Protestant = 2 Muslim = 3 Other religion = 4
5.	Age	Independent	15 – 24 = 1 25 – 34 = 2 35- 49 = 3
6.	Knowledge of modern family planning methods	Intervening	Knows no modern method = 1 Knows Modern Method = 2
7.	Type of place of residence	Independent	Rural = 1 Urban = 2
8.	Household Wealth	Independent	Low = 1 Average/medium = 2 High = 3
9.	Number of Living Children	Independent	Parity 0= 1 Parity 1+ Parity 3+ Parity 4+

CHAPTER FOUR

DIFFERENTIALS IN UNMET NEED FOR CONTRACEPTION IN KENYA

4.1 Introduction

This chapter begins by describing the distribution of respondents according to the study variables. It then proceeds to present the bivariate analysis computed from the study sample of currently married women who participated in the KDHS 2008-9 for the selected variables against unmet need. In order to facilitate comparison of the eight provinces each variable has been analysed separately taking into account all the eight provinces. Unmet need for contraception has been disaggregated into unmet need for limiting childbirths, unmet need for spacing births and the summation of the two gives the total unmet need for family planning.

4.2 Characteristics of study population

This study is based on 5041 currently married women who were interviewed out of the total 8444 women who participated in the 2008-09 KDHS. Out of the 5,041 women, 470 were from Nairobi, 565 were from Central, 718 were from Coast, 699 were from Eastern, 805 were from Nyanza, 757 from Rift Valley, 603 from Western and 424 from North Eastern province. The following descriptive analysis is based on the results presented in table 4.1.

Protestants are the most dominant religion in all the provinces apart from Coast and North Eastern provinces where Muslim women accounted for 44.8% and 98.1% respectively. Nyanza had the highest proportion of Protestants (80%) of the study population in Nyanza.

Table 4.1 – Percentage distribution of respondents according to selected characteristics by Province

		Nairobi (N=470) %	Central (N= 565) %	Coast (N=718) %	Eastern (N=699) %	Nyanza (N=805) %	Rift Valley (N=757) %	Western (N=603) %	N. Eastern (N= 424) %
Religion	Catholic	19.6	23.2	6.7	32	18	20.5	19.1	0
	Protestant	65.1	75.6	37.7	52.2	80	71.3	74.6	1.4
	Muslim	7	0.2	44.8	14	1.2	0.9	6.1	98.1
	Other religions	8.3	1.1	10.7	1.7	0.7	7.3	0.2	0.5
Wealth	Low	0	11.7	37.7	39.5	40.7	48.6	45.1	79.2
	Medium	0.2	26.5	11	25.3	22	16.4	22.4	5.7
	High	99.8	61.8	51.5	35.2	37.3	35	32.5	15.1
Number of living children	0	11.1	5	7.5	3	5.5	3.7	5	6.1
	1-2.	57.7	37.2	33.6	30.9	32.2	28	29.4	19.1
	3-4.	21.5	37	29	36.1	29.6	29.7	27.9	29
	5+	9.8	20.9	29.9	30	32.8	38.6	37.8	45.8
Education	No Education	2.8	1.2	27.9	19.3	2.5	22.7	5.3	88.2
	Primary	27.7	63.4	52.1	57.9	69.3	52.3	67.3	8.3
	Secondary/Higher	69.6	35.4	20.1	22.7	28.2	25	27.4	3.5
Age	15-24	20.6	15.8	28.4	19.3	33.5	26.9	25.9	25.9
	25-34	44.5	42.1	39.7	40.8	38.1	39.2	38.5	36.8
	35-49	34.9	42.1	31.9	39.9	28.3	33.8	35.7	37.3
Knowledge of FP method	No method	7	10.3	8.6	7.4	10.2	7.4	7.3	9
	Traditional	0	0.2	0.1	0	0	0.1	0	0.2
	Modern	93	89.6	91.2	92.6	89.8	92.5	92.7	90.8

		Nairobi (N=470)	Central (N= 565)	Coast (N=718)
Place of residence	Rural	0	83.4	54.6
	Urban	100	16.6	45.4
Unmet Need	Met need	84.9	83.5	73.3
	spacing	6.6	5.8	16.6
	limiting	8.5	10.6	10.2
	total unmet need	15.1	16.4	26.8

Source: Primary analysis of 2008-9 KDHS

Eastern (N=699)	Nyanza (N=805)	Rift Valley (N=757)	Western (N=603)	N. Eastern (N= 424)
93.4	80	85.2	77.3	82.3
6.6	20	14.8	22.7	17.7
79	68.2	67	70.8	81.8
9.3	17.4	14.9	15.8	16.7
11.7	14.4	18.1	13.4	1.4
21	31.8	33	29.2	18.1

The distribution of currently married women according to household wealth index showed that Nairobi, Central and Coast recorded the highest proportions of women in the high household wealth segment (98.8%, 61.8% and 51.5% respectively). Nairobi and Central provinces also reported the lowest proportions of currently married women in the low wealth segments (0% in Nairobi and 11.7% in Central). All the other provinces, reported the majority of currently married women sampled in the low household wealth segment.

Table 4.1 further shows that Nyanza, Rift Valley, Western and North Eastern provinces all have the largest proportion of currently married women with more than 5 children. Nairobi, Central and Coast provinces all have the highest proportion of women having 1 to 2 children. Eastern province had the majority of women (36.1%) studied having 3-4 living children.

Level of educational attainment is distributed in much the same way for most of the provinces. All the provinces apart from Nairobi and North Eastern provinces had the largest number of currently married women with primary education as the highest level of educational attainment. Nairobi had the vast majority of women with secondary or higher education (69% of all currently married women sampled) whereas North Eastern province reported 88.2% of all women sampled as having no education.

All the provinces reported that most of the currently married women were aged between 25 and 34 apart from Central and North Eastern provinces. Central province had an equal proportion (42.1%), of women aged 25-34 and 35- 49. It is also worth noting that Central province recorded the lowest proportion of women currently married in age group 15- 24; suggesting perhaps that women in Central province will, on average, get married later than their counterparts from the other provinces. North Eastern on the other hand reported the bulk of currently married women sampled as being aged between 35 and 49.

All the provinces reported high proportions of women having a high level of awareness of methods. Nairobi recorded the highest level of knowledge with 93% of the study population confirming knowledge of at least one modern method of FP. The frequency analysis of place of residence shows the distribution of married women in urban or rural areas across the eight provinces. Apart from Nairobi, the vast majority of the sample populations reside in rural areas. However, it should be noted that Coast province has almost equal proportions of married women living in rural and urban areas (45.4% and 54.6% in urban and rural areas respectively).

The distribution of unmet need and its components (spacing and limiting) was also analysed for the study population across all the eight provinces. The analysis shows that Nairobi and Central Province recorded the lowest levels of total unmet need (15.1% and 16.4% respectively). On the other hand Nyanza and Rift Valley provinces reported the highest levels of total unmet need (31.8% and 33% respectively)

4.3 Bivariate analysis of factors that influence unmet need for family planning

Cross-tabulations and chi-square tests were computed for women who are currently married for each variable that was selected for this study. Each variable was computed against all the provinces and the differentials recorded against unmet need for spacing, limiting and overall unmet need. The following bivariate analysis is based on the results presented in tables 4.2, 4.3 and 4.4.

4.3.1 Characteristics associated with unmet need for spacing births across the provinces in Kenya

Cross tabulation and chi square tests for unmet need for spacing births across all the provinces shows that there is statistical significance for the variables: household wealth index, number of living children, education, and age, knowledge of modern method and place of residence. Table 4.2 illustrates that there is a strong association between unmet need for spacing births and the household wealth index for married women residing in Nairobi, Eastern and Rift Valley provinces. The number of living children married women who reside in Central, Nyanza, Rift Valley and Western provinces have is also significantly associated with the unmet need for spacing these women express.

Education was found to be significantly associated with the level of unmet need for spacing birth in Central, Coast, Eastern and Nyanza provinces. The findings in table 4.2 reveal that age was a significant factor in all the eight provinces in determining the unmet need for spacing births. Here it should be noted that married women in the age groups 15 – 24 and 25 – 34 recorded the highest levels of unmet need for spacing births unlike their counterparts aged 35-49. This could be due to the fact that many women the younger age groups might still desire to have more children but would prefer to have them appropriately spaced. Knowledge of modern contraceptive method only showed statistical significance in North Eastern province ($p < 0.05$). Low access to contraceptive services could be cited as an explanation for the high unmet need to

space births for married women who know at least one modern contraceptive method. The findings further reveal that type of of place of residence in Nyanza province is significantly associated with unmet need for contraception among married women. 15% of all rural women in unions were reported as having unmet need for spacing births compared to 2.4% of their urban counterparts.

Table 4.2 – Cross-tabulations and Chi-square tests for characteristics associated with unmet need for spacing births across the provinces in Kenya

		Nairobi (N=470) (%)	Central (N= 565) (%)	Coast (N=718) (%)	Eastern (N=699) (%)	Nyanza (N=805) (%)	Rift Valley (N=757) (%)	Western (N=603) (%)	N. Eastern (N= 424) (%)
Religion	Catholic	(1.9)	(0.7)	(0.8)	(2.9)	(3.9)	(3)	(4.3)	(0)
	Protestant	(3.4)	(5.1)	(4.9)	(4)	(13.3)	(10.3)	(10.1)	(0)
	Muslim	(0.9)	(0)	(8.9)	(2.4)	(0.2)	(0)	(1.3)	(16.7)
	Other religions	(0.4)	(0)	(1.9)	(0)	(0)	(1.6)	(0)	(0)
		x^2=4.217; sig=0.239; df=3	x^2=2.987; sig=0.394; df=3	x^2=5.883; sig=0.117; df=3	x^2=9.939; sig=0.019; df=3	x^2=3.186; sig=0.364; df=3	x^2=3.385; sig=0.336; df=3	x^2=6.857; sig=0.077; df=3	x^2=1.640; sig=0.440; df=3
Wealth	Low	–[5]	(1.1)	(7.5)	(5.2)	(8.4)	(9)	(8.8)	(13)
	Medium	(0)	(1.2)	(1.5)	(1.9)	(3.6)	(2.8)	(3.2)	(1.2)
	High	(6.6)	(3.5)	(7.5)	(2.3)	(5.3)	(3.2)	(3.8)	(2.6)
		x^2=0.071; sig=0.047; df=2	x^2=1.651; sig=0.438; df=2	x^2=3.833; sig=0.147; df=2	x^2=7.668; sig=0.022; df=2	x^2=4.625; sig=0.099; df=2	x^2=11.240 sig=0.004; df=2	x^2=5.526; sig=0.063; df=2	x^2=0.331; sig=0.848; df=2
Number of living children	0	(1.7)	(0.5)	(0.7)	(0.1)	(0.5)	(0.3)	(0.8)	(0.9)
	1-2.	(3.2)	(3.4)	(6)	(3.3)	(7.8)	(6.3)	(6.5)	(3.3)
	3-4.	(1.1)	(1.1)	(5.3)	(3.6)	(6.2)	(4.5)	(5.3)	(6.6)
	5+	(0.6)	(0.9)	(4.6)	(2.3)	(2.9)	(3.8)	(3.2)	(5.9)
		x^2=7.459; sig=0.059; df=3	x^2=9.040; sig=0.029; df=3	x^2=3.036; sig=0.386; df=3	x^2=1.797; sig=0.616; df=3	x^2=26.785 sig=0.000; df=3	x^2=17.015 sig=0.001; df=3	x^2=16.111 sig=0.001; df=3	x^2=5.320; sig=0.150; df=3

[5] There were no cases of married women in the low household wealth index recorded in Nairobi province

		Nairobi (N=470) (%)	Central (N= 565) (%)	Coast (N=718) (%)	Eastern (N=699) (%)	Nyanza (N=805) (%)	Rift Valley (N=757) (%)	Western (N=603) (%)	N. Eastern (N= 424) (%)
Education	No Education	(0.6)	(0.4)	(5.4)	(2.4)	(0.5)	(3)	(1)	(15.6)
	Primary	(1.7)	(4.6)	(9.7)	(6)	(13.8)	(9.1)	(11.6)	(0.7)
	Secondary/Higher	(4.3) x^2=5.895; sig=0.052; df=2	(0.9) x^2=11.951; sig=0.003; df=2	(1.4) x^2=12.137; sig=0.002; df=2	(0.9) x^2=8.043; sig=0.018; df=2	(3.1) x^2=8.952; sig=0.011; df=2	(2.8) x^2=4.439; sig=0.109; df=2	(3.2) x^2=3.127; sig=0.207; df=2	(0.5) x^2=2.021; sig=0.364; df=2
Age	15-24	(3.4)	(1.6)	(7.4)	(3.4)	(10.2)	(6.1)	(7.6)	(5.4)
	25-34	(2.3)	(3.7)	(6.5)	(4.4)	(6)	(7.7)	(7.3)	(7.3)
	35-49	(0.9) x^2=20.631; sig=0.000; df=2	(0.5) x^2=15.882; sig=0.000; df=2	(2.6) x^2=24.402; sig=0.000; df=2	1.4 x^2=23.152; sig=0.000; df=2	(1.2) x^2=59.160 sig=0.000; df=2	(1.2) x^2=40.536 sig=0.000; df=2	(0.8) x^2=53.180 sig=0.000; df=2	(4) x^2=6.522 sig=0.038; df=2
Knowledge of FP method	No method	(0.4)	(0.5)	(1.8)	(1)	(2)	(1.3)	(1.2)	(0.5)
	Modern	(6.2) x^2=0.016; sig=0.898; df=1	(5.3) x^2=0.068; sig=0.794; df=1	(14.8) x^2=0.824; sig=0.364; df=1	(8.3) x^2=1.154; sig=0.283; df=1	(15.4) x^2=0.286; sig=0.593; df=1	(13.6) x^2=0.332; sig=0.564; df=1	(14.6) x^2=0.001; sig=0.977; df=1	(16.3) x^2=4.158; sig=0.041; df=1
Place of residence	Rural	--	(4.4)	(6.8)	(8.7)	(15.0)	(13.1)	(16.4)	(12.5)
	Urban	(6.6) x^2: a;	(1.4) x^2=1.462; sig=0.227; df=1	(9.7) x^2=1.028; sig=0.311; df=1	(0.6) x^2=0.021; sig=0.884; df=1	2.4 x^2=4.377; sig=0.036; df=1	(1.8) x^2=0.610; sig=0.435; df=1	(3.6) x^2=0.012; sig=0.912; df=1	(4.2) x^2=3.440; sig=0.064; df=1

a. No statistics have been computed because type of place of residence is a constant

Source: Primary analysis of 2008-9 KDHS

4.3.2 Characteristics associated with unmet need for limiting births across the provinces in Kenya

The findings shown in Table 4.3 illustrate the relationship between unmet need for limiting births with the characteristics from the study variables. The findings reveal that religion, wealth index, number of living children, education, age, knowledge of modern family planning methods and place of residence were associated with unmet need for limiting births and statistically significant in different provinces as discussed below.

Religion was statistically significant in Central and Eastern provinces in terms of its association with unmet need for limiting births. In these two provinces Protestants and Catholics are the majority religious groups but this does not seem to deter married women from desiring to limit births. The teachings in these two religions do not promote the use of modern contraception (Mcquillan 2004) According to the results; household wealth index is associated with unmet need for limiting births in Eastern and Nyanza. In both these province the majority of women desiring to limit birth are in the low and medium wealth indices. The number of surviving children was significantly associated with unmet need for limiting births in all the provinces apart from North Eastern. Women who have 3-4 and 5+ living children expressed the desire to limit births more that those who had no children or 1-2 children.

The findings reveal a significant association between education and unmet need to limit child bearing in Central, Eastern, Nyanza and Rift Valley provinces. The vast majority of married women who expressed the desire to end child bearing in all these four provinces had attained primary school education. This is an indication that although this section of the demographic may have all the knowledge and required attitude towards adopting a method to stop child bearing, but may not necessarily be socio-economically empowered to access required services in order to fulfil this need.

Similar to unmet need for spacing birth discussed above, age was found to be strongly associated with unmet need for limiting births in all the provinces except North Eastern. However, the difference here is that the majority of married women expressing the desire to limit births fall in the age group 34-49. Rift Valley province recorded 9.6% of married women aged 34-49 expressing desire to limit births but not using any contraception. Central province recorded 7.1% married women in the same age group with unmet need to limit births. These findings expose the often masked picture when statistics are presented as global figures.

Knowledge of modern methods is associated with unmet need for limiting births in Rift Valley province. The high level of knowledge of modern methods in this province (17.7% of married women) does not translate to actual usage of methods to limit births. Type of place of residence is related to unmet need for limiting childbearing in the Rift Valley and Western Provinces. Married women residing in rural areas of these two provinces expressed the highest unmet need for limiting child bearing (16.8% in Rift valley and 21.1 % in Western province). Westoff (2007) attributes these urban-rural differences to accessibility to family planning services in cities, the desire for more children in rural areas and greater education in urban areas. The results also reveal that rural women in marital unions residing in Central province experience unmet need for limiting at considerably higher level (9.2%) than that for spacing (4.4%).

Table 4.3 – Cross-tabulations and Chi-square tests for characteristics associated with unmet need for limiting births across the provinces in Kenya

		Nairobi (N=470) %	Central (N= 565) %	Coast (N=718) %	Eastern (N=699) %	Nyanza (N=805) %	Rift Valley (N=757) %	Western (N=603) %	N. Eastern (N= 424) %
Religion	Catholic	(1.3)	(2.3)	(0.7)	(5.4)	(3.1)	(4.4)	(2.7)	(0)
	Protestant	(6.2)	(7.8)	(3.8)	(5.7)	(11.3)	(12.5)	(10.3)	(0)
	Muslim	(0.6)	(0.2)	(4.6)	(0.1)	(0)	(0.1)	(0.5)	(1.4)
	Other religions	(0.4) x^2=1.422; sig=0.700; df=3	(0.4) x^2=11.789; sig=0.008; df=3	(1.1) x^2=0.022; sig=0.999; df=3	(0.4) x^2=19.032; sig=0.000; df=3	(0) x^2=3.677; sig=0.299; df=3	(1.1) x^2=1.696; sig=0.6387; df=3	(0) x^2=1.126; sig=0.771; df=3	(0) x^2=0.117; sig=0.943; df=3
Wealth	Low	-	(2.1)	(4.2)	(5.7)	(7.8)	(10.4)	(6.8)	(1.2)
	Medium	(0)	(2.8)	(1.3)	(3.7)	(2.7)	(2.5)	(3.3)	(0)
	High	(8.5) x^2=093; sig=0.760; df=1	(5.7) x^2=4.750; sig=0.093; df=2	(4.7) x^2=0.803; sig=0.669; df=2	(2.3) x^2=10.019; sig=0.007; df=2	(3.9) x^2=10.726; sig=0.005; df=2	(5.2) x^2=5.507; sig=0.064; df=2	(3.3) x^2=2.609; sig=0.271; df=2	(0.2) x^2=0.367; sig=0.832; df=2
Number of living children	0	(0)	(0)	(0)	(0.1)	(0.1)	(0.3)	(0)	(0)
	1-2.	(4)	(1.2)	(1.8)	(1.6)	(2.5)	(1.3)	(1)	(0)
	3-4.	(2.6)	(4.4)	(2.9)	(3.7)	(3.4)	(4.9)	(2.8)	(0.2)
	5+	(1.9) x^2=14.313; sig=0.003; df=3	(5) x^2=36.834; sig=0.000; df=3	(5.4) x^2=27.086; sig=0.000; df=3	(6.3) x^2=27.909; sig=0.000; df=3	(8.4) x^2=44.025; sig=0.000; df=3	(11.6) x^2=56.844; sig=0.000; df=3	(9.6) x^2=49.856; sig=0.000; df=3	(1.2) x^2=3.734; sig=0.292; df=3
Education	No Education	(0.4)	(0.4)	(3.2)	(1.1)	(0.6)	(4.2)	(0.8)	(1.4)
	Primary	(2.8)	(8)	(5.8)	(9)	(11.3)	(11.4)	(9)	(0)
	Secondary/Higher	(5.3)	(2.3)	(1.1)	(1.6)	(2.5)	(2.5)	(3.6)	(0)

		Nairobi (N=470)	Central (N= 565)	Coast (N=718)	Eastern (N=699)	Nyanza (N=805)	Rift Valley (N=757)	Western (N=603)	N. Eastern (N= 424)
		x^2=1.474; sig=0.479; df=2	x^2=7.387; sig=0.025; df=2	x^2=4.205; sig=0.122; df=2	x^2=13.671; sig=0.001; df=2	x^2=9.220; sig=0.010; df=2	x^2=11.782; sig=0.003; df=2	x^2=0.140; sig=0.933; df=2	x^2=0.814; sig=0.666; df=2
Age	15-24	(1.1)	(1.1)	(1.1)	(1.4)	(1.6)	(1.8)	(1.2)	(0)
	25-34	(2.6)	(2.5)	(2.6)	(4)	(5.1)	(6.6)	(3)	(0.2)
	35-49	(4.9) x^2=9.864; sig=0.007; df=2	(7.1) x^2=16.636; sig=0.000; df=2	(6.4) x^2=37.210; sig=0.000; df=2	6.3 x^2=7.834; sig=0.020; df=2	(7.7) x^2=50.640; sig=0.000; df=2	(9.6) x^2=36.436; sig=0.000; df=2	(9.3) x^2=46.576; sig=0.000; df=2	(1.2) x^2=5.715; sig=0.057; df=2
Knowledge of FP method	No method	(0.4)	(0.7)	(1)	(0.9)	(2.1)	(0.4)	(1.2)	(0)
	Modern	(8.1) x^2=0.274; sig=0.601; df=1	(9.9) x^2=1.023; sig=0.312; df=1	(9.1) x^2=0.484; sig=0.486; df=1	(10.9) x^2=0.002; sig=0.964 df=1	(12.3) x^2=2.958 sig=0.085; df=1	(17.7) x^2=6.850; sig=0.009; df=1	(12.3) x^2=0.250; sig=0.617; df=1	(1.4) x^2=0.617; sig=0.432; df=1
Place of residence	Rural	-	(9.2)	(4.0)	(11.3)	(11.9)	(16.8)	(21.1)	(1.2)
	Urban	(8.5) a	(1.4) x^2=0.528; sig=0.467; df=1	(6.1) x^2=1.057; sig=0.304; df=1	(0.4) x^2=1.290; sig=0.256; df=1	(2.5) x^2=0.645; sig=0.422; df=1	(1.3) x^2=7.456; sig=0.006; df=1	(1.8) x^2=4.451; sig=0.035; df=1	(0.2) x^2=0.004; sig=0.947; df=1

a. No statistics have been computed because type of place of residence is a constant

Source: Primary analysis of 2008-9 KDHS

4.3.3 Characteristics associated with overall unmet need for family planning across the provinces in Kenya

Table 4.4 presents the findings of cross tabulation and chi square tests for overall unmet and the characteristics derived from the study variables. The findings show that there is an association with statistical significance for Household wealth index, Number of living children, Education, Age, Knowledge of modern FP methods and Type of place of residence in different provinces.

Household wealth was found to be associated with overall unmet need in Central, Eastern, Nyanza, Rift Valley and Western provinces. Whereas the majority of married women residing in Eastern, Nyanza, Rift Valley and Western who express a high need for overall family planning but are not using any methods are classified in the low wealth index, the results show that their counterparts in Central province with the similar need are classified in the high wealth index. The reason for these variations could be due to issues relating to access to methods and in particular access the preferred type of method. In an unpublished project report, Nyauchi (2011) unveils that household wealth is significant determinant of a woman's unmet need for family planning. As such, rural areas which record significantly lower household wealth indices are more likely to exhibit higher levels of unmet need for contraception.

The bivariate analysis of number of living children and overall unmet need for family planning shows a strong association between these two variables. For all the provinces apart from Nairobi, Western and North Eastern province, it is very evident that as the number of living children increases for our study population, so does the level of unmet need, a view shared by Ojakaa (2008). Rift Valley province experienced the highest level of unmet need (15.4%) for currently married women with more than five living children.

The results in table 4.4 reveal that education is associated with overall unmet need for family planning in Nairobi, Central, Coast, Eastern, Nyanza and Rift Valley provinces. All these provinces have the highest proportion of married women with overall unmet need having attained primary level education with the exception of Nairobi. (9.6%) of women with secondary education in Nairobi province expressed the desire to use a contraceptive method to postpone or end childbearing but were not using any method. The variable on place or residence when cross-tabulated against unmet need was found to have statistical significance in Nyanza and Rift valley provinces. The highest unmet need for family planning is felt by rural women in both Rift Valley (29.9%) and Central (13.6%).

Age was found to be associated with overall unmet need in Nairobi. Knowledge of modern family planning methods is associated with overall unmet need in North Eastern province. It was found that 17.7% of currently married women who know at least one modern method experience unmet need for FP. The effect of religion in unmet need for family planning was not easy to establish since it was not found to have any statistically significant in the eight provinces.

Table 4.4 – Cross-tabulations and Chi-square tests for characteristics associated with overall unmet need for FP across the provinces in *Kenya*

		Nairobi (N=470) %	Central (N= 565) %	Coast (N=718) %	Eastern (N=699) %	Nyanza (N=805) %	Rift Valley (N=757) %	Western (N=603) %	N. Eastern (N= 424) %
Religion	Catholic	(3.2)	(3)	(1.5)	(8.3)	(7)	(7.4)	(7)	(0)
	Protestant	(9.6)	(12.9)	(8.7)	(9.7)	(24.6)	(22.8)	(20.4)	(0)
	Muslim	(1.5)	(0.2)	(13.5)	(2.5)	(0.2)	(0.1)	(1.8)	(18.1)
	Other religions	(0.8)	(0.4)	(3)	(0.4)	(0)	(2.7)	(0)	(0)
		x^2=1.816; sig=0.611; df=3	x^2=7.599; p=0.055; df=3	x^2=4.436; p=0.218; df=3	x^2=4.988; p=0.173; df=3	x^2=6.880; p=0.076; df=3	x^2=2.302; p=0.512; df=3	x^2=4.159; p=0.245; df=3	x^2=1.809; p=0.405; df=3
Wealth	Low	-	(3.2)	(11.7)	(10.9)	(16.2)	(19.4)	(15.6)	(14.2)
	Medium	(0)	(4)	(2.8)	(5.6)	(6.3)	(5.3)	(6.5)	(1.2)
	High	(15.1)	(9.2)	(12.2)	(4.6)	(9.2)	(8.4)	(7.1)	(2.8)
		x^2=0.178; p=0.673; df=1	x^2=6.368; p=0.041; df=2	x^2=4.497; p=0.106; df=2	x^2=16.674; p=0.000; df=2	x^2=17.785 p=0.000; df=2	x^2=18.256 p=0.000; df=2	x^2=7.785; p=0.012; df=2	x^2=0.151; p=0.927 df=2
Number of living children	0	(1.7)	(0.5)	(0.7)	(0.2)	(0.6)	(0.6)	(0.8)	(0.9)
	1-2.	(7.2)	(4.6)	(7.8)	(4.9)	(10.3)	(7.6)	(7.5)	(3.3)
	3-4.	(3.7)	(5.5)	(8.2)	(7.3)	(9.6)	(9.4)	(8.1)	(6.8)
	5+	(2.5)	(5.9)	(10)	(8.6)	(11.3)	(15.4)	(12.8)	(7.1)
		x^2=5.948; p=0.114; df=3	x^2=14.977 p=0.002; df=3	x^2=15.212 p=0.002; df=3	x^2=12.599; p=0.006; df=3	x^2=9.381; p=0.025; df=3	x^2=14.292 p=0.003; df=3	x^2=5.807; p=0.121; df=3	x^2=3.554; p=0.314; df=3
Education	No Education	(1)	(0.8)	(8.6)	(3.5)	(1.1)	(7.2)	(1.8)	(17)
	Primary	(4.5)	(12.6)	(15.5)	(15)	(25.1)	(20.5)	(20.6)	(0.7)

		Nairobi (N=470)	Central (N= 565)	Coast (N=718)	Eastern (N=699)	Nyanza (N=805)	Rift Valley (N=757)	Western (N=603)	N. Eastern (N= 424)
	Secondary/Higher	(9.6) x^2=6.102; p=0.047; df=2	(3.2) x^2=19.481 p=0.000; df=2	(2.5) x^2=18.721 p=0.000; df=2	(2.5) x^2=16.591; p=0.000; df=2	(5.6) x^2=21.602 p=0.000; df=2	(5.3) x^2=18.804 p=0.000; df=2	(6.8) x^2=2.280; p=0.320; df=2	(0.5) x^2=2.700; p=0.259; df=2
Age	15-24	(4.5)	(2.7)	(8.5)	(4.8)	(11.8)	(7.9)	(8.8)	(5.4)
	25-34	(4.9)	(6.2)	(9.1)	(8.4)	(11.1)	(14.3)	(10.3)	(7.5)
	35-49	(5.8) x^2=6.215; p=0.045; df=2	(7.6) x^2=0.990; p=0.610; df=2	(9) x^2=3.224; p=0.199; df=2	7.7 x^2=1.893; p=0.388; df=2	(8.9) x^2=2.549; p=0.280; df=2	(10.8) x^2=2.815; p=0.245; df=2	(10.1) x^2=2.480; p=0.289; df=2	(5.2) x^2=3.048 p=0.218; df=2
Knowledge of FP method	No method	(0.8)	(1.2)	(2.8)	(1.9)	(4.1)	(1.7)	(2.4)	(0.5)
	Modern	(14.3) x^2=0.247; p=0.619; df=1	(15.2) x^2=1.012; p=0.314; df=1	(23.9) x^2=1.532; p=0.216; df=1	(19.2) x^2=0.533; p=0.465; df=1	(27.7) x^2=3.001; p=0.083; df=1	(31.3) x^2=2.910; p=0.088; df=1	(26.9) x^2=1.159; p=0.690; df=1	(17.7) x^2=4.908; p=0.027; df=1
Place of residence	Rural	a	(13.6)	(15.9)	(20.0)	(27.0)	(29.9)	(37.5)	(13.7)
	Urban	(15.1) a	(2.8) x^2=0.026; p=0.872; df=1	(10.9) x^2=2.415; p=0.120; df=1	(1.0) x^2=1.002; p=0.317; df=1	(4.8) x^2=5.328; p=0.021; df=1	(3.2) x^2=7.992; p=0.005; df=1	(5.5) x^2=2.231; p=0.135; df=1	(4.5) x^2=3.154; p=0.076; df=1

a. : No statistics have been computed because type of place of residence is a constant

Source: Primary analysis of 2008-9 KDHS

CHAPTER FIVE

UNMET NEED FOR CONTRACEPTION IN KENYA'S PROVINCES

5.1 Introduction

This chapter presents the findings from the multivariate analysis that was conducted using multiple logistic regression analysis. Multivariate analysis was used in order to establish the net effect of each variable on unmet need. This analysis was performed on the three components of unmet need; unmet need for spacing births, unmet need for limiting child bearing and overall unmet need for family planning (summation of unmet need for spacing and unmet need for limiting).

Therefore, three separate models were run in order to establish the factors that determine the effect of the seven study variables on unmet need. The first model looks at unmet need for limiting child bearing; the second model examines unmet need for spacing births; the third model focuses on overall unmet need for contraception in the eight regions of Kenya. The results that have p-values less than 0.001, 0.05 and 0.01 are discussed for each of the model.

5.1 Factors that determine unmet need for family planning to space births

Table 5.1 shows the results of the regression analysis on factors that influence unmet for spacing births across the eight provinces in Kenya. The findings reveal that household wealth is a significant factor that determines the level of unmet need for spacing births in Western and Rift Valley provinces. Married women in the medium household wealth index were more likely to experience unmet need for spacing births in both provinces. Rift valley province further shows that women in the high household wealth index were more than 2.5 times more likely to experience unmet need for spacing births than their counterparts in the low household wealth index.

The findings further show that the number of living children has a significant effect on unmet need for spacing for married women in Coast province. The education of women also shows statistical significance with unmet need for spacing births. Central, Coast, Nyanza and Western province all revealed that women with primary level education were more likely to experience unmet need for spacing births with married women from Central province having primary level education being more than 30 times more likely to experience unmet need to space births than their uneducated counterparts.

Age of married woman is a significant factor that determines unmet need for spacing across all the eight provinces in Kenya. Women aged 25-34 from Western province were found to have the highest likelihood (23.539 times higher than women aged 15-24) to experience unmet to space births. North Eastern province was the only province that reported a significant association between place of residence and unmet need for spacing. Married women living in urban areas in North Eastern province were found to have a 4.7 times higher likelihood to experience unmet need for spacing than women who reside in rural areas in the same province. This leads us to accept our alternate hypothesis (H_1) and reject our null hypothesis (H_0) that urban areas experience lower unmet need for family planning than rural areas.

From these findings it is can be seen that factors that affect unmet need for spacing births influence the eight provinces in different ways. Western Kenya shows the greatest need to space births particularly at ages 24-35. Education was found to be a very significant factor in determining unmet need for spacing in Central province

Table 5.1 – Factors that determine unmet need for family planning to space births

		Nairobi (N=470) Odds ratio Exp.(ß)	Central (N= 565) Odds ratio Exp.(ß)	Coast (N=718) Odds ratio Exp.(ß)	Eastern (N=699) Odds ratio Exp.(ß)	Nyanza (N=805) Odds ratio Exp.(ß)	Rift Valley (N=757) Odds ratio Exp.(ß)	Western (N=603) Odds ratio Exp.(ß)	N. Eastern (N= 424) Odds ratio Exp.(ß)
Wealth	Low(RC)								
	Medium	†	1.874	1.023	1.474	1.299	2.726***	2.665**	2.140
	High	0.000	0.902	0.869	1.142	1.031	2.590**	1.866	2.814
Number of living children	0(RC)								
	1-2.	0.697	2.409	0.223***	0.160	0.370	0.358	0.468	0.737
	3-4.	0.267	1.441	0.592	0.472	1.316	1.463	0.923	0.899
	5+	0.526	0.475	0.886	0.856	1.467	0.985	1.023	1.328
Education	No Education(RC)								
	Primary	5.515	30.863***	2.351**	1.614	3.987**	0.842	3.406**	1.057
	Secondary/Higher	0.529	0.008***	2.222**	1.941	1.585	1.276	1.224	0.389
Age	15-24(RC)								
	25-34	16.101*	6.598**	5.606*	9.311*	9.659*	6.112*	23.539*	2.786**
	35-49	3.346	8.721**	2.383***	3.857*	3.961*	6.271*	12.016*	1.990
Knowledge of FP method	No method(RC)								
	Traditional		1.078	1.340	†	†	1.419	†	0.270
	Modern	0.713	0.000	0.000	1.298	1.071	0.000	0.999	0.000
Place of residence	Rural(RC)								
	Urban	†	1.207	1.118	1.144	0.694	1.310	1.462	3.754***

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*

Source: Primary analysis of 2008-9 KDHS

RC : Reference Category

†: Omitted

5.2 Factors that determine unmet need for family planning to limit births

Table 5.1 shows the results of the regression analysis on factors that influence unmet for limiting child bearing across the eight provinces in Kenya. According to the findings, religion is significantly associated with unmet need to limit births in Central and Eastern provinces. Women from the Muslim or other faiths were less likely to experience unmet need to limit child bearing than their Catholic counterparts ($p < 0.01$).

In Eastern and Nyanza provinces, women within the medium household wealth index were more than 2 times more likely to experience unmet need for family planning than women in the low household wealth index. This suggests that women within the medium wealth index have increased knowledge and awareness about birth control and would therefore desire to do something about it even when there are obstacles that may limit their access to family planning services. The results show a significant association between the number of living children and desire to limit births in Central, Eastern, Rift Valley and Nyanza provinces. Women in central province with 3-4 children are less likely to have unmet need for family planning. This could be explained by the fact that women in this province will have reached their peak fertility and may have already adopted an effective method to limit births hence the relatively lower need to limit child bearing compared to other provinces. In Rift Valley and Nyanza province however, the results show that women with 5 children or more are less likely to experience unmet need than their counterparts with no children. Increased use of effective family planning methods could be a factor that explains this general drop in unmet need for family planning as parity increases (Rutenberg et al., 1991; Bongaarts et al., 1990).

Women from Coast, Nyanza and Rift Valley province with secondary education were found to have a greater likelihood to experience unmet need to limit births than those in the reference category who had no education. Education here appears to increase awareness on the

importance of contraception use and a method of controlling fertility and hence increases their desire to limit births (Bhargava 2007). Education of the mother could also influence unmet need for family planning by increasing the survival rate of children and hence lowering the demand for children (Easterlin 1980)

Table 5.3 Factors that determine unmet need for family planning to limit births

		Nairobi (N=470) Odds ratio Exp.(ß)	Central (N= 565) Odds ratio Exp.(ß)	Coast (N=718) Odds ratio Exp.(ß)	Eastern (N=699) Odds ratio Exp.(ß)	Nyanza (N=805) Odds ratio Exp.(ß)	Rift Valley (N=757) Odds ratio Exp.(ß)	Western (N=603) Odds ratio Exp.(ß)	N. Eastern (N= 424) Odds ratio Exp.(ß)
Wealth	Low(RC)								
	Medium	†	1.260	0.985	2.098**	2.215**	0.920	0.819	0.307
	High	0.000	0.787	0.836	1.850	1.298	0.000	0.865	0.000
Number of living children	0(RC)								
	1-2.	0.000	0.000	0.000	0.213	0.208	0.376	0.000	0.000
	3-4.	0.526	0.096*	0.507	0.227*	0.729	0.195*	0.139*	0.000
	5+	0.668	0.571	0.708	0.490**	0.683	0.600**	0.476**	0.675
Education	No Education(RC)								
	Primary	2.159	2.841	2.150	0.736	1.802	1.296	0.627	3.885E7
	Secondary/Higher	1.400	1.564	2.731**	1.669	2.016**	2.155**	0.842	3.972
Age	15-24(RC)								
	25-34	0.465	2.205	0.255***	1.208	0.167*	0.451	0.597	0.000
	35-49	0.436**	0.489	0.323*	0.807	0.448*	0.642	0.363***	0.253
Knowledge of FP method	No method(RC)								
	Traditional	†	0.633	1.532	†	†	0.256**	†	0.000
	Modern	0.941	0.000	1.523E10	0.895	2.056**	0.000	1.196	1.573E13
Place of residence	Rural(RC)								
	Urban	†	0.932	1.147	1.742	2.296**	0.760	0.784	0.670

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*

Source: Primary analysis of 2008-9 KDHS

RC : Reference Category

†: Omitted

5.3 Factors that determine overall unmet need for family planning

Table 5.1 shows the results of the regression analysis on factors that influence total unmet across the eight provinces in Kenya. The findings show that age, number of living children, household wealth, education and place of residence were significant factors that contribute to unmet for contraception among married women. Women in Central province with primary level education show a remarkably higher likelihood (8 times that of women with no education) to experience overall unmet for contraception. The results show that there is a strong association between the level of education and overall unmet need in Central province. The finding can be explained by the fact that although many of the married women who have attained primary education may want to control their fertility, they may not always s be armed with the tools to do so. Education can influence women's reproduction in several ways: by increasing knowledge of fertility, increasing socioeconomic status, and changing attitudes about fertility control (Castro and Juarez, 1994). Many of these criteria may be fulfilled but some particularly improvement of socio-economic status might not always be fulfilled with primary level education.

Women aged 25- 34 from Coast, Eastern and Western provinces were found to experience the highest probability of having overall unmet need for family planning with those living in Eastern and Western having a more than 3 times likelihood to experience unmet need for FP than those aged 15-24. Place of residence was found to be a significant factor that can contribute to overall unmet need in North eastern province. Women in urban area of the province were more than 3 times more likely to have unmet need for FP than those residing in rural areas. This conforms to the earlier finding that levels of knowledge on modern methods of contraception as extremely low in North Eastern province more so in the rural areas. This relatively low level of awareness on birth control invariably contributes to lower desire to access and use contraception.

Table 5.1 Factors that determine overall unmet need for family planning

		Nairobi (N=470) Odds ratio Exp.(ß)	Central (N= 565) Odds ratio Exp.(ß)	Coast (N=718) Odds ratio Exp.(ß)	Eastern (N=699) Odds ratio Exp.(ß)	Nyanza (N=805) Odds ratio Exp.(ß)	Rift Valley (N=757) Odds ratio Exp.(ß)	Western (N=603) Odds ratio Exp.(ß)	N. Eastern (N= 424) Odds ratio Exp.(ß)
Wealth	Low(RC)								
	Medium	0.000	1.476	0.997	1.956**	1.745**	1.593**	1.507	1.856
	High	0.000	0.842	0.843	1.653	1.133	1.193	1.267	2.298
Number of living children	0(RC)								
	1-2.	0.382	0.328	0.142*	0.127***	0.232**	0.255**	0.167**	0.666
	3-4.	0.338**	0.364***	0.494**	0.270*	0.896	0.554**	0.368**	0.819
	5+	0.561	0.529**	0.775	0.574**	0.964	0.664***	0.621	1.234
Education	No Education(RC)								
	Primary	3.868	8.252***	2.414**	0.975	2.807**	1.048	1.283	1.261
	Secondary/Higher	0.870	2.124***	2.580**	1.830**	1.865**	1.781**	1.002	0.439
Age	15-24(RC)								
	25-34	2.251	1.767	1.739**	3.610*	1.431	1.309	3.087*	2.190
	35-49	0.821	1.075	0.863	1.507***	0.936	1.437	1.272	1.576
Knowledge of FP method	No method(RC)								
	Traditional	0.000	0.757	1.454	1.139	1.542	0.711	1.119	0.243
	Modern	0.806	0.000	7.982E9	†	†	0.000	†	0.000
Place of residence	Rural(RC)								
	Urban	†	1.132	1.125	1.414	1.177	0.957	1.071	3.382**

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*

Source: Primary analysis of 2008-9 KDHS

RC : Reference Category

†: Omitted

The evidence presented in the preceding analysis supports the premise that was set out at the beginning of this study that there are specific factors that influence unmet need across the regions of Kenya. The evidence reveals is a lot to be done in ensuring that married women access and utilise birth control methods that enable them to space or limit births when they choose to, have done so through investment. Central province for example, shows that married women with secondary education or higher, were more than 8 times as likely to experience unmet need for contraception ($p < 0.05$) than their counterparts with no education. Given that the Central province has among the lowest rates of unmet need (16%) among married women, we can clearly deduce that education of women to secondary or higher levels has had a tremendous influence on the married women's desire to control their fertility.

The evidence further shows that the number of surviving children is strongly associated with unmet need in some of the provinces. The results show married women residing in Nyanza, Rift Valley and Western provinces experience higher likelihood of experiencing unmet need for FP as parity increased. It can be inferred that in these provinces there have been improvements in child health and therefore more children are surviving leading to the increased need to space and limit births by married women. In these three provinces a woman with five children or more is on average 1.5 times more likely to have unmet need for FP than her counterpart who does not have any children. Therefore these data may raise interesting questions about how improved child survival in these provinces, may call for accelerated efforts in the push for policy and programme formulation that enhances women's access to both short term and long acting and reversible contraception (LARCs) as a way to ensure that women who wish to postpone or limit child bearing can do so without hindrance.

Nyanza and Eastern province showed statistical significance between household wealth and unmet need for family planning. From the findings, women within the higher wealth index

were less likely to experience unmet need that those in the lower wealth indices. This could be an indication to focus programmes in these two provinces on bridging the household wealth gap that exists and impacts significantly on women access to birth control services.

Although the variable on Religion was found to have statistical significance in Nyanza province, we have omitted it from this discussion because of the relatively small number of cases that were analysed for the three aspects of unmet need for family planning. Subdividing the cases significantly reduces the sample size and hence increases the standard error. This would call into question the reliability and validity of the findings. With a p-value of less than 0.05, women from Nyanza professing the Protestant faith were more likely to have unmet need for family planning than their catholic counterparts. This could be explained by the large proportion of Protestants[6] in Nyanza province.

The findings from North Eastern province did not show a consistent relationship with unmet need for family planning. Again here the subdivided cases of a sample that was already relatively small may be responsible for this lack of consistency in the findings from North Eastern province. The lack of consistency does not allow for conclusive deductions or comparisons with the other eight provinces. However, the multivariate analysis shows a high level of significance between unmet need and region of residence among women residing in North Eastern province. Married women residing in urban areas of the province showed a higher likelihood of experiencing unmet need for family planning particularly to space births.

[6] More than 80% of all married women sampled in Nyanza were reported to be of the Protestant faith. Refer to the frequency distribution in table 4.1

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter presents a snapshot of this study and attempts to make a general conclusion and recommendations based on the results obtained from the study analysis

6.1 Summary and Conclusion

Preventing unwanted pregnancy for all women in Kenya must be looked at as an intervention that is central to both reproductive health rights as well as a human right. Through the analysis of variables that influence unmet need for controlling births as well as the scrutiny of past studies that have been undertaken in this area, it has been revealed that there are clear differences in the way women access and use contraceptive methods to postpone or limit births across the eight provinces in Kenya. Ensuring that women's reproductive rights are universally upheld would significantly reduce the levels of unintended pregnancy among married women and in turn improve the quality of life of couples and families. Married women should therefore be targeted with interventions for fertility control. Interventions to address unmet need for contraception in Kenya should be region-specific.

The study findings have shown that providing contraceptives alone or increasing knowledge/awareness of modern methods of fertility control is not enough to reduce unmet need for family planning. Education of women plays a central role in influencing unmet need for family planning. Women function within a gendered ecosystem in which the ability to negotiate fertility related outcomes is often improved through education (more importantly through

secondary and higher education). Recognising the role education plays in influencing the level of unmet need is part of the solution.

These findings provide evidence to strengthen what had previously been documented on addressing unmet need in Kenya. This study confirms that there are significant variations in the levels and also the type of unmet need for controlling fertility. Unmet need for spacing is more pronounced in some regions (namely Nairobi and Central province) in comparison to others whereas that for limiting births is a priority (namely Rift Valley, Western and Nyanza province). Joint actions must therefore be made very explicit when designing policy and programmes planning, coordination and implementation to address the gaps identified.

From the findings Central province has generally shown tremendous advancement in terms of fertility transition. Central province has been more closely associated with British colonial occupation and settlement than any other province in the Kenya, hence the greater influence of modernization (Bauni et al 2000). Household wealth has been seen to play an important role in determining unmet need for FP in Nyanza and Eastern province. The low proximity of these provinces to modern socio-economic infrastructure including communication, health and education could be factors that if addressed can reverse the current trends.

6.2 Recommendations for policy and programme:

In order to bridge those inequalities that are currently being experienced in Kenya with regard to unmet need for family planning, targeted and region specific interventions comprising of policies, programmes and strategies must be put in place to address the specific needs being felt be each one of the regions. From the findings it is clear that unmet need for spacing in Western, Nyanza and Rift valley provinces is a primary concern and needs to be given more attention through the provision of the relevant information, education and communication but more importantly through ensuring greater access to appropriate birth control methods for the

affected populations. Nairobi and Central provinces have shown an elevated need for limiting birth in comparison to other provinces. This need for limiting has contributed considerably to the total unmet need in these provinces. It is recommended that family planning programmes should be designed to meeting the growing needs of these populations to as long acting and reversible methods of contraception

Promoting community based distribution (CBD) approaches is an important strategy to adopt if Kenya desires to meet some of the immense inequalities that currently exist between the provinces. A CBD approach would ensure that the cost of accessing birth control services is significantly reduced. As the results show, household wealth is a critical factor that determines unmet need for family planning particularly in Nyanza and Eastern provinces. Reducing the cost of accessing services would ensure that women in the lower segments of wealth and the marginalised communities are reached with contraceptive services.

The findings show that proximity to large urban centre ensures that adjacent populations and communities are able to access quality health care including contraceptive services but more importantly information and awareness that increases a woman's desire to do something about her fertility. With the current decentralised system of governance, it is important that Kenya invests in expanding and strengthening more regional urban hubs that would enhance access to modern social amenities including education and health care. Urban centres have greater access to all forms of media (KDHS report 2008-9) compared with rural areas. Media is essential for improving people's knowledge and awareness of what is going on around them. This study also shows that as the number of living children increases so does the desire for married women to have fewer children. It can therefore be inferred that policies and programmes that promote the survival of children can motivate women to desire greater use of contraception.

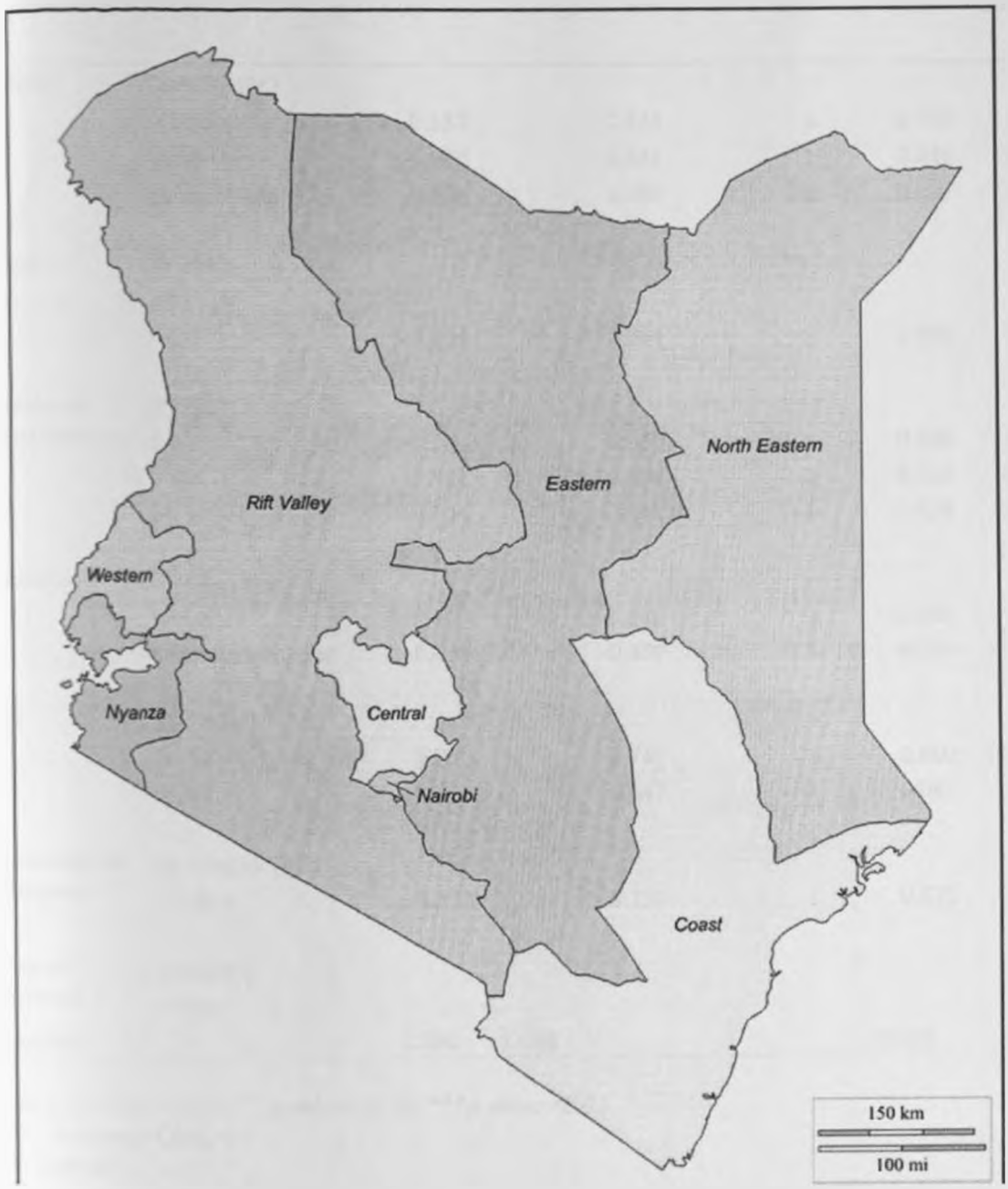
6.3 Recommendations for further research:

Some of the limitations in this study provide important direction for future research in the area of unmet need for family planning. A qualitative study to examine how some of the factors that relate to behaviours particularly religious cultural norms beliefs that may in one way or another influence the level of unmet need for family planning within the regions of Kenya which are to a very large extent demarcated by ethnicity.

As pointed out from the onset, this study is primarily focused on analysing the unmet need for family planning among married women and those in a union. Evidently, there are women who may not be in any union but desire to postpone or limit child bearing. It is equally important to consider these women in future studies that may seek to establish the factors contributing to regional differentials in unmet need for family planning. This group of women would consist of young women and adolescents who become sexually active before entering into any union. It is important that the variations that exist within Kenya's regional borders be investigated and understood so that appropriate steps can be employed to address the needs of this important demographic.

APPENDICES

APPENDIX A: MAP OF KENYA SHOWING PROVINCIAL BOUNDARIES



Source: Central Bureau of Statistics 2004

1 Nairobi
1 Central
2 Eastern
3 Coast
4 Nyanza
6 – Rift valley
7 - Western
8 – North Eastern

APPENDIX B1 – Factors that determine unmet need to space births in Nairobi Province

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds ratio Exp.(ß)
Religion	Catholic (RC)					
	Protestant	0.337	0.874	1	0.700	1.401
	Muslim	-0.580	0.833	1	0.486	0.560
	Other religions	-0.428	1.080	1	0.692	0.652
Wealth	Low(RC)					
	Medium					†
	High	-20.304	4.019E4	1	1.000	0.000
Number of living children	0(RC)					
	1-2.	-0.361	0.922	1	0.696	0.697
	3-4.	-1.321	0.806	1	0.101	0.267
	5+	-0.514	0.811	1	0.526	0.526
Education	No Education(RC)					
	Primary	1.707	0.940	1	0.069	5.515
	Secondary/Higher	-0.636	0.489	1	0.193	0.529
Age	15-24(RC)					
	25-34	2.779	0.742	1	0.000	16.101*
	35-49	1.208	0.647	1	0.062	3.346
Knowledge of FP method	No method(RC)					
	Modern	-0.338	0.798	1	0.671	0.713
Place of residence	Rural(RC)					
	Urban					†
Constant		-2.830	1.088	1	0.009	0.059

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX B2 – Factors that determine unmet need to space births in Central Province

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds ratio Exp.(ß)
Religion	Catholic (RC)					
	Protestant	18.568	1.580E4	1	0.999	1.158E8
	Muslim	19.338	1.580E4	1	0.999	2.501E8
	Other religions	-0.133	4.319E4	1	1.000	0.876
Wealth	Low(RC)					
	Medium	0.628	0.599	1	0.294	1.874
	High	-0.103	0.505	1	0.838	0.902
Number of living children	0(RC)					
	1-2.	0.879	0.949	1	0.354	2.409
	3-4.	0.365	0.700	1	0.602	1.441
	5+	-0.744	0.716	1	0.299	0.475
Education	No Education(RC)					
	Primary	3.430	1.172	1	0.003	30.863***
	Secondary/Higher	1.410	0.532	1	0.008	0.008***
Age	15-24(RC)					
	25-34	1.887	0.838	1	0.024	6.598**
	35-49	2.166	0.730	1	0.003	8.721**
Knowledge of FP method	No method(RC)					
	Traditional	0.075	0.651	1	0.908	1.078
	Modern	16.231	4.019E4	1	1.000	0.000
Place of residence	Rural(RC)					
	Urban	0.188	0.508	1	0.711	1.207

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX B3 – Factors that determine unmet need to space births in Coast Province

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds ratio Exp.(ß)
eligion	Catholic (RC)					
	Protestant	-0.122	0.577	1	0.832	0.885
	Muslim	-0.105	0.387	1	0.786	0.900
	Other religions	0.201	0.356	1	0.573	1.222
ealth	Low(RC)					
	Medium	0.022	0.335	1	0.947	1.023
	High	-0.140	0.413	1	0.734	0.869
umber of ing children	0(RC)					
	1-2.	-1.500	0.578	1	0.009	0.223***
	3-4.	-0.525	0.353	1	0.137	0.592
	5+	-0.121	0.296	1	0.682	0.886
ducation	No Education(RC)					
	Primary	0.855	0.437	1	0.051	2.351**
	Secondary/Higher	0.799	0.382	1	0.036	2.222**
ge	15-24(RC)					
	25-34	1.724	0.366	1	0.000	5.606*
	35-49	0.868	0.307	1	0.036	2.383***
nowledge of method	No method(RC)					
	Traditional	0.293	0.348	1	0.401	1.340
	Modern	-18.313	4.019E4	1	1.000	0.000
ace of sidence	Rural(RC)					
	Urban	0.112	0.309	1	0.717	1.118

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
*: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX B3 – Factors that determine unmet need to space births in Coast Province

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds ratio Exp.(ß)
Religion	Catholic (RC)					
	Protestant	-0.122	0.577	1	0.832	0.885
	Muslim	-0.105	0.387	1	0.786	0.900
	Other religions	0.201	0.356	1	0.573	1.222
Wealth	Low(RC)					
	Medium	0.022	0.335	1	0.947	1.023
	High	-0.140	0.413	1	0.734	0.869
Number of living children	0(RC)					
	1-2.	-1.500	0.578	1	0.009	0.223***
	3-4.	-0.525	0.353	1	0.137	0.592
	5+	-0.121	0.296	1	0.682	0.886
Education	No Education(RC)					
	Primary	0.855	0.437	1	0.051	2.351**
	Secondary/Higher	0.799	0.382	1	0.036	2.222**
Age	15-24(RC)					
	25-34	1.724	0.366	1	0.000	5.606*
	35-49	0.868	0.307	1	0.036	2.383***
Knowledge of FP method	No method(RC)					
	Traditional	0.293	0.348	1	0.401	1.340
	Modern	-18.313	4.019E4	1	1.000	0.000
Place of residence	Rural(RC)					
	Urban	0.112	0.309	1	0.717	1.118

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX B4 – Factors that determine unmet need to space births in Eastern Province

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds ratio Exp.(ß)
Religion	Catholic (RC)					
	Protestant	18.548	1.125E4	1	0.999	1.136E8
	Muslim	18.409	1.125E4	1	0.999	9.885E7
	Other religions	19.189	1.125E4	1	0.999	2.156E8
Wealth	Low(RC)					
	Medium	0.388	0.388	1	0.317	1.474
	High	0.132	0.429	1	0.758	1.142
Number of living children	0(RC)					
	1-2.	-1.831	1.147	1	0.110	0.160
	3-4.	-0.750	0.474	1	0.113	0.472
	5+	-0.155	0.378	1	0.681	0.856
Education	No Education(RC)					
	Primary	0.429	0.630	1	0.447	1.614
	Secondary/Higher	0663	0.484	1	0.171	1.941
Age	15-24(RC)					
	25-34	2.231	0.521	1	0.000	9.311*
	35-49	1.350	0.406	1	0.001	3.857*
Knowledge of FP method	No method(RC)					
	Modern	0.261	0.313	1	0.576	1.298
Place of residence	Rural(RC)					
	Urban	0.134	0.643	1	0.834	1.144

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX B5 – Factors that determine unmet need to space births in Nyanza province.

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds ratio Exp.(ß)
Religion	Catholic (RC)			3		
	Protestant	19.944	1.567E4	1	0.999	4.588E8
	Muslim	19.549	1.567E4	1	0.999	3.089E7
	Other religions	19.814	1.567E4	1	0.999	4.027E8
Wealth	Low(RC)			2		
	Medium	0.262	0.280	1	0.349	1.299
	High	0.030	0.318	1	0.924	1.031
Number of living children	0(RC)			3		
	1-2.	-0.993	0.635	1	0.118	0.370
	3-4.	0.275	0.354	1	0.438	1.316
	5+	0.383	0.314	1	0.222	1.467
Education	No Education(RC)			2		
	Primary	1.383	0.659	1	0.036	3.987**
	Secondary/Higher	0.461	0.264	1	0.81	1.585
Age	15-24(RC)			2		
	25-34	2.268	0.433	1	0.000	9.659*
	35-49	1.376	0.390	1	0.000	3.961*
Knowledge of FP method	No method(RC)					
	Modern	0.069	0.318	1	0.829	1.0.71
Place of residence	Rural(RC)					
	Urban	-0.366	0.347	1	0.292	0.694

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX B6 – Factors that determine unmet need to space births in Rift Valley province

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds ratio Exp.(ß)
Religion	Catholic (RC)			3		
	Protestant	-0.296	0.441	1	0.501	0.743
	Muslim	-0.402	0.413	1	0.330	0.669
	Other religions	-18.904	1.413E4	1	0.999	0.000
Wealth	Low(RC)			2		
	Medium	1.003	0.355	1	0.005	2.276
	High	0.952	0.386	1	0.014	2.590
Number of living children	0(RC)			3		
	1-2.	-1.026	0.818	1	0.209	0.358
	3-4.	0.381	0.360	1	0.291	1.463
	5+	-0.015	0.306	1	0.961	0.985
Education	No Education(RC)			2		
	Primary	0.172	0.405	1	0.672	0.842
	Secondary/Higher	0.244	0.309	1	0.431	1.941
Age	15-24(RC)			2		
	25-34	1.810	0.467	1	0.000	6.112*
	35-49	1.836	0.392	1	0.000	6.271*
Knowledge of FP method	No method(RC)			2		
	Traditional	0.305	0.391	1	0.371	1.419
	Modern	-16.991	4.019E4	1	1.000	0.000
Place of residence	Rural(RC)			1		
	Urban	0.270	0.402	1	0.501	1.310

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX B7 – Factors that determine unmet need to space births in Western province

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds ratio Exp.(ß)
Religion	Catholic (RC)			3		
	Protestant	20.594	4.019E4	1	1.000	8.785E8
	Muslim	20.227	4.019E4	1	1.000	6.091E8
	Other religions	20.398	4.019E4	1	1.000	7.225E8
Wealth	Low(RC)			2		
	Medium	0.980	0.425	1	0.021	2.665**
	High	0.624	0.429	1	0.146	1.866
Number of living children	0(RC)			3		
	1-2.	-0.760	0.673	1	0.259	0.468
	3-4.	-0.080	0.431	1	0.852	0.923
	5+	0.023	0.371	1	0.951	1.023
Education	No Education(RC)			2		
	Primary	1.226	0.630	1	0.052	3.406**
	Secondary/Higher	0.202	0.431	1	0.511	1.224
Age	15-24(RC)			2		
	25-34	3.159	0.598	1	0.000	23.539*
	35-49	2.486	0.528	1	0.000	12.016*
Knowledge of FP method	No method(RC)					
	Modern	-0.001	0.467	1	0.998	0.999
Place of residence	Rural(RC)					
	Urban	0.380	0.410	1	0.355	1.462

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*

RC : Reference Category

†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX B8 – Factors that determine unmet need to space births in North Eastern.

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds ratio Exp.(ß)
Religion	Catholic (RC)					
	Protestant	-0.094	3.274E4	1	1.000	0.910
	Muslim	19.922	2.842E4	1	0.999	4.488E8
Wealth	Low(RC)					
	Medium	0.761	0.594	1	0.200	2.140
	High	1.035	0.746	1	0.165	2.814
Number of living children	0(RC)					
	1-2.	-0.305	0.676	1	0.652	0.737
	3-4.	-0.107	0.473	1	0.821	0.899
	5+	0.284	0.352	1	0.420	1.328
Education	No Education(RC)					
	Primary	0.055	0.886	1	0.950	1.057
	Secondary/Higher	-0.944	1.048	1	0.367	0.389
Age	15-24(RC)					
	25-34	1.025	0.469	1	0.029	2.786**
	35-49	0.688	0.363	1	0.058	1.990
Knowledge of FP method	No method(RC)					
	Traditional	-1.310	0.756	1	0.083	0.270
	Modern	-19.565	4.019E4	1	1.000	0.000
Place of residence	Rural(RC)					
	Urban	1.323	0.494	1	0.007	3.754***

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX C1 – Factors that determine unmet need to limit childbearing in Nairobi province

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	-0.031	0.872	1	0.971	0.969
	Muslim	0.444	0.790	1	0.574	1.559
	Other religions	0.150	1.092	1	0.890	1.162
Wealth	Low(RC)					
	High	18.702	4.019E4	1	1.000	0.000
Number of living children	0(RC)					
	1-2.	-19.143	5.535E3	1	0.997	0.000
	3-4.	-0.642	0.538	1	0.233	0.526
	5+	-0.404	0.519	1	0.436	0.668
Education	No Education(RC)					
	Primary	0.770	0.598	1	0.439	2.159
	Secondary/Higher	0.337	0.426	1	0.430	1.400
Age	15-24(RC)					
	25-34	-0.765	0.628	1	0.223	0.465
	35-49	-0.829	0.413	1	0.044	0.436**
Knowledge of FP method	No method(RC)					
	Modern	-0.061	0.768	1	0.936	0.941
Place of residence	Rural(RC)					
	Urban					†

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX C2 – Factors that determine unmet need to limit childbearing in Central province.

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	-2.049	1.173	1	0.081	0.129
	Muslim	-2.225	1.142	1	0.051	0.108**
	Other religions	20.787	4.019E4	1	1.000	1.066E9
Wealth	Low(RC)					
	Medium	0.231	0.418	1	0.580	1.260
	High	-0.239	0.361	1	0.509	0.787
Number of living children	0(RC)					
	1-2.	-20.187	7.323E3	1	0.998	0.000
	3-4.	-2.348	0.654	1	0.000	0.096*
	5+	-0.561	0.337	1	0.096	0.571
Education	No Education(RC)					
	Primary	1.044	0.974	1	0.284	2.841
	Secondary/Higher	0.447	0.360	1	0.214	1.564
Age	15-24(RC)					
	25-34	0.791	0.703	1	0.260	2.205
	35-49	-0.715	0.376	1	0.057	0.489
Knowledge of FP method	No method(RC)					
	Traditional	-0.458	0.558	1	0.412	0.633
	Modern	-20.026	4.019E4	1	1.000	0.000
Place of residence	Rural(RC)					
	Urban	-0.071	0.481	1	0.883	0.932
Constant		0.755	1.212	1	0.533	2.128

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX C3 – Factors that determine unmet need to limit childbearing in Coast province.

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	0.175	0.671	1	0.794	1.191
	Muslim	0.234	0.476	1	0.623	1.264
	Other religions	0.144	0.451	1	0.749	1.155
Wealth	Low(RC)					
	Medium	-0.015	0.409	1	0.971	0.985
	High	-0.180	0.484	1	0.710	0.836
Number of living children	0(RC)					
	1-2.	-18.874	5.346E3	1	0.000	0.000
	3-4.	-0.680	0.433	1	0.116	0.507
	5+	-0.346	0.339	1	0.308	0.708
Education	No Education(RC)					
	Primary	0.766	0.534	1	0.152	2.150
	Secondary/Higher	1.005	0.469	1	0.032	2.731**
Age	15-24(RC)					
	25-34	-1.365	0.483	1	0.005	0.255***
	35-49	-1.129	0.312	1	0.000	0.323*
Knowledge of FP method	No method(RC)					
	Traditional	0.426	0.450	1	0.343	1.532
	Modern	23.447	4.019E4	1	1.000	1.523E10
Place of residence	Rural(RC)					
	Urban	0.137	0.373	1	0.714	1.147

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX C4 – Factors that determine unmet need to limit childbearing in Eastern province

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	-0.616	0.780	1	0.430	0.540
	Muslim	-1.152	0.786	1	0.142	0.316
	Other religions	-3.322	1.231	1	0.007	0.036***
Wealth	Low(RC)					
	Medium	0.741	0.368	1	0.044	2.098**
	High	0.615	0.318	1	0.106	1.850
Number of living children	0(RC)					
	1-2.	-1.547	1.126	1	0.169	0.213
	3-4.	-1.484	0.456	1	0.001	0.227*
	5+	-0.714	0.298	1	0.017	0.490**
Education	No Education(RC)					
	Primary	-0.307	0.567	1	0.588	0.736
	Secondary/Higher	0.512	0.380	1	0.178	1.669
Age	15-24(RC)					
	25-34	0.189	0.493	1	0.702	1.208
	35-49	-0.214	0.295	1	0.468	0.807
Knowledge of FP method	No method(RC)					
	Modern	-0.110	0.486	1	0.802	0.895
Place of residence	Rural(RC)					
	Urban	0.555	0.687	1	0.419	1.742

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX C5 – Factors that determine unmet need to limit childbearing in Nyanza province

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	19.214	1.579E4	1	0.999	2.210E8
	Muslim	19.016	1.579E4		0.999	1.814E8
	Other religions	-0.170	1.981E4	1	1.000	0.844
Wealth	Low(RC)					
	Medium	0.795	0.352	1	0.024	2.215**
	High	0.261	0.392	1	0.506	1.298
Number of living children	0(RC)					
	1-2.	-1.571	1.053	1	0.136	0.208
	3-4.	-0.317	0.355	1	0.372	0.729
	5+	-0.381	0.284	1	0.179	0.683
Education	No Education(RC)					
	Primary	0.589	0.612	1	0.336	1.802
	Secondary/Higher	0.701	0.298	1	0.019	2.016**
Age	15-24(RC)					
	25-34	-1.789	0.408	1	0.000	0.167*
	35-49	-0.804	0.252	1	0.000	0.448*
Knowledge of FP method	No method(RC)					
	Modern	0.721	0.322	1	0.025	2.056**
Place of residence	Rural(RC)					
	Urban	0.831	0.4020	1	0.039	2.296**

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX C6 – Factors that determine unmet need to limit childbearing Rift Valley province.

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	0.321	0.463	1	0.489	1.378
	Muslim	-0.007	0.443	1	0.988	0.993
	Other religions	-0.689	1.192	1	0.563	0.502
Wealth	Low(RC)					
	Medium	-0.083	0.281	1	0.768	0.920
	High	0.535	0.347	1	0.123	0.585
Number of living children	0(RC)					
	1-2.	-0.979	0.831	1	0.239	0.376
	3-4.	-1.636	0.440	1	0.000	0.195*
	5+	-0.511	0.256	1	0.046	0.600**
Education	No Education(RC)					
	Primary	0.259	0.375	1	0.490	1.296
	Secondary/Higher	0.768	0.304	1	0.012	2.155**
Age	15-24(RC)					
	25-34	-0.797	0.417	1	0.056	0.451
	35-49	-0.443	0.232	1	0.056	0.642
Knowledge of FP method	No method(RC)					
	Traditional	-1.363	0.622	1	0.028	0.256**
	Modern	20.147	4.019E4	1	1.000	0.000
Place of residence	Rural(RC)					
	Urban	-0.274	0.412	1	0.505	0.760
Constant		-1.049	0.556	1	0.059	0.350

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*

RC : Reference Category

†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX C7 – Factors that determine unmet need to limit childbearing Western province

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	18.063	4.019E4	1	1.000	6.991E7
	Muslim	17.858	4.019E4	1	1.000	5695E7
	Other religions	17.672	4.019E4	1	1.000	4.732E7
Wealth	Low(RC)					
	Medium	-0.200	0.387	1	0.606	0.819
	High	-0.145	0.412	1	0.725	0.865
Number of living children	0(RC)					
	1-2.	-19.836	7.279E3	1	0.998	0.000
	3-4.	-1.971	0.567	1	0.001	0.139*
	5+	-0.742	0.360	1	0.039	0.476**
Education	No Education(RC)					
	Primary	-0.467	0.580	1	0.421	0.627
	Secondary/Higher	-0.172	0.304	1	0.571	0.842
Age	15-24(RC)					
	25-34	-0.516	0.554	1	0.352	0.597
	35-49	-1.014	0.327	1	0.002	0.363***
Knowledge of FP method	No method(RC)					
	Modern	0.179	0.465	1	0.700	1.196
Place of residence	Rural(RC)					
	Urban	-0.243	0.439	1	0.580	0.784

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX C8 – Factors that determine unmet need to limit childbearing North Eastern province.

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	14.828	3.254E4	1	1.000	2.751E6
	Muslim	-0.170	2.756E4	1	1.000	0.844
Wealth	Low(RC)					
	Medium	-1.182	1.857	1	0.525	0.307
	High	17.156	7.571E3	1	0.998	0.000
Number of living children	0(RC)					
	1-2.	-15.733	6.438E3	1	0.998	0.000
	3-4.	-15.146	3.883E3	1	0.997	0.000
	5+	-0.393	1.193	1	0.742	0.675
Education	No Education(RC)					
	Primary	17.475	1.015E4	1	0.999	3.885E7
	Secondary/Higher	1.379	1.140E4	1	1.000	3.972
Age	15-24(RC)					
	25-34	-15.934	3.243E3	1	0.996	0.000
	35-49	-1.373	1.186	1	0.247	0.253
Knowledge of FP method	No method(RC)					
	Traditional	-17.163	5.786E3	1	0.998	0.000
	Modern	30.386	4.144E4	1	1.000	1.573E13
Place of residence	Rural(RC)					
	Urban	-0.400	1.851	1	0.829	0.670

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX D1 –Factors that determine overall unmet need for family planning in Nairobi province

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	0.176	0.624	1	0.778	1.192
	Muslim	0.029	0.577	1	0.961	1.029
	Other religions	-0.088	0.786	1	0.911	0.916
Wealth	Low(RC)					
	Medium					0.000
	High	-20.381	4.019E4	1	1.00	0.000
Number of living children	0(RC)					
	1-2.	-0.963	0.627	1	0.124	0.382
	3-4.	-1.085	0.461	1	0.019	0.338**
	5+	-0.578	0.452	1	0.201	0.561
Education	No Education(RC)					
	Primary	1.353	0.750	1	0.071	3.868
	Secondary/Higher	-0.139	0.327	1	0.671	0.870
Age	15-24(RC)					
	25-34	0.812	0.429	1	0.058	2.251
	35-49	-0.197	0.338	1	0.560	0.821
Knowledge of FP method	No method(RC)					
	Modern	-0.215	0.563	1	0.702	0.806
Place of residence	Rural(RC)					
	Urban					†

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX D2 –Factors that determine overall unmet need for family planning in Central province

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	-0.927	0.969	1	0.339	0.396
	Muslim	-0.795	0.938	1	0.397	0.452
	Other religions	21.146	4.019E4	1	1.000	1.526E9
Wealth	Low(RC)					
	Medium	0.389	0.353	1	0.270	1.476
	High	-0.172	0.301	1	0.568	0.842
Number of living children	0(RC)					
	1-2.	-1.115	0.739	1	0.131	0.328
	3-4.	-1.010	0.406	1	0.013	0.364***
	5+	-0.636	0.314	1	0.043	0.529**
Education	No Education(RC)					
	Primary	2.110	0.845	1	0.013	8.252***
	Secondary/Higher	0.753	0.299	1	0.012	2.124***
Age	15-24(RC)					
	25-34	0.569	0.451	1	0.207	1.767
	35-49	0.072	0.299	1	0.808	1.075
Knowledge of FP method	No method(RC)					
	Traditional	-0.278	0.431	1	0.519	0.757
	Modern	-19.889	4.019E4	1	1.000	0.000
Place of residence	Rural(RC)					
	Urban	0.124	0.353	1	0.725	1.132

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX D3 – Factors that determine overall unmet need for family planning in Coast province.

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	0.016	0.466	1	0.972	0.016
	Muslim	0.045	0.322	1	0.888	1.046
	Other religions	0.219	0.310	1	0.466	1.245
Wealth	Low(RC)					
	Medium	-0.003	0.279	1	0.990	0.997
	High	-0.170	0.335	1	0.611	0.843
Number of living children	0(RC)					
	1-2.	-1.952	0.546	1	0.000	0.142*
	3-4.	-0.706	0.291	1	0.015	0.494**
	5+	-0.254	0.240	1	0.289	0.775
Education	No Education(RC)					
	Primary	0.881	0.354	1	0.013	2.414**
	Secondary/Higher	0.948	0.307	1	0.002	2.580**
Age	15-24(RC)					
	25-34	0.553	0.285	1	0.053	1.739**
	35-49	-0.147	0.223	1	0.510	0.863
Knowledge of FP method	No method(RC)					
	Traditional	0.374	0.301	1	0.214	1.454
	Modern	22.800	4.019E4	1	1.000	7.982E9
Place of residence	Rural(RC)					
	Urban	0.118	0.255	1	0.644	1.125

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX D4 – Factors that determine overall unmet need for family planning in Eastern province.

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	-0.160	0.725	1	0.826	0.853
	Muslim	-0.595	0.728	1	0.414	0.551
	Other religions	-0.492	0.734	1	0.502	0.611
Wealth	Low(RC)					
	Medium	0.671	0.279	1	0.016	1.956**
	High	0.503	0.294	1	0.087	1.653
Number of living children	0(RC)					
	1-2.	-2.065	0.834	1	0.013	0.127***
	3-4.	-1.308	0.343	1	0.000	0.270*
	5+	-0.555	0.249	1	0.026	0.574**
Education	No Education(RC)					
	Primary	-0.025	0.430	1	0.954	0.975
	Secondary/Higher	0.604	0.307	1	0.049	1.830**
Age	15-24(RC)					
	25-34	1.284	0.363	1	0.000	3.610*
	35-49	0.410	0.242	1	0.090	1.507***
Knowledge of FP method	No method(RC)					
	Modern	0.130	0.358	1	0.716	1.139
Place of residence	Rural(RC)					
	Urban	0.346	0.488	1	0.478	1.414
Constant		-1.563	0.777	1	0.044	0.210

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX D5 – Factors that determine overall unmet need for family planning in Nyanza province.

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	20.591	1.590E4	1	0.999	8.757E8
	Muslim	20.207	1.590E4	1	0.999	5.968E8
	Other religions	19.716	1.590E4	1	0.999	3.650E8
Wealth	Low(RC)					
	Medium	0.557	0.231	1	0.016	1.745**
	High	0.125	0.259	1	0.631	1.133
Number of living children	0(RC)					
	1-2.	-1.459	0.539	1	0.007	0.232**
	3-4.	-0.110	0.263	1	0.675	0.896
	5+	-0.037	0.224	1	0.870	0.964
Education	No Education(RC)					
	Primary	1.032	0.506	1	0.041	2.807**
	Secondary/Higher	0.623	0.207	1	0.003	1.865**
Age	15-24(RC)					
	25-34	0.359	0.269	1	0.182	1.431
	35-49	-0.066	0.215	1	0.759	0.936
Knowledge of FP method	No method(RC)					
	Modern	0.433	0.253	1	0.086	1.542
Place of residence	Rural(RC)					
	Urban	0.163	0.273	1	0.551	1.177

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX D6 – Factors that determine overall unmet need for family planning in Rift Valley province.

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	-0.013	0.350	1	0.971	0.987
	Muslim	-0.236	0.330	1	0.475	0.790
	Other religions	-1.049	1.145	1	0.360	0.350
Wealth	Low(RC)					
	Medium	0.466	0.233	1	0.046	1.593**
	High	0.177	0.269	1	0.512	1.193
Number of living children	0(RC)					
	1-2.	-1.368	0.611	1	0.025	0.255**
	3-4.	-0.591	0.285	1	0.038	0.554**
	5+	-0.409	0.218	1	0.060	0.664
Education	No Education(RC)					
	Primary	0.047	0.293	1	0.873	1.048
	Secondary/Higher	0.577	0.229	1	0.012	1.781**
Age	15-24(RC)					
	25-34	0.269	0.296	1	0.364	1.309
	35-49	0.363	0.205	1	0.076	1.437
Knowledge of FP method	No method(RC)					
	Traditional	-0.341	0.338	1	0.313	0.711
	Modern	-19.975	4.019E4	1	1.000	0.000
Place of residence	Rural(RC)					
	Urban	-0.043	0.296	1	0.883	0.957

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX D7 – Factors that determine overall unmet need for family planning in Western province.

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	20.767	4.019E4	1	1.000	1.045E9
	Muslim	20.407	4.019E4	1	1.000	7.291E8
	Other religions	20.573	4.019E4	1	1.000	8.604E8
Wealth	Low(RC)					
	Medium	0.410	0.296	1	0.166	1.507
	High	0.236	0.309	1	0.444	1.267
Number of living children	0(RC)					
	1-2.	-1.790	0.603	1	0.003	0.167**
	3-4.	-1.000	0.334	1	0.003	0.368**
	5+	-0.477	0.270	1	0.077	0.621
Education	No Education(RC)					
	Primary	0.249	0.438	1	0.570	1.283
	Secondary/Higher	0.002	0.225	1	0.992	1.002
Age	15-24(RC)					
	25-34	1.127	0.347	1	0.001	3.087*
	35-49	0.240	0.250	1	0.337	1.272
Knowledge of FP method	No method(RC)					
	Modern	0.113	0.349	1	0.747	1.119
Place of residence	Rural(RC)					
	Urban	0.068	0.306	1	0.823	1.071

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

APPENDIX D8 – Factors that determine overall unmet need for family planning in North Eastern province.

		Log of Odds (ß)	S.E.	d.f.	p-value	Odds Ratio (Exp. ß)
Religion	Catholic (RC)					
	Protestant	0.047	3.275E4	1	1.000	1.048
	Muslim	19.948	2.841E4	1	0.999	4.604E8
	Other religions	-22.679	2.841E4	1	0.999	0.000
Wealth	Low(RC)					
	Medium	0.618	0.577	1	0.284	1.856
	High	0.832	0.732	1	0.256	2.298
Number of living children	0(RC)					
	1-2.	-0.406	0.668	1	0.543	0.666
	3-4.	0.200	0.464	1	0.666	0.819
	5+	0.210	0.338	1	0.534	1.234
Education	No Education(RC)					
	Primary	0.232	0.878	1	0.792	1.261
	Secondary/Higher	-0.822	1.042	1	0.430	0.439
Age	15-24(RC)					
	25-34	0.784	0.450	1	0.081	2.190
	35-49	0.455	0.340	1	0.181	1.576
Knowledge of FP method	No method(RC)					
	Traditional	-1.415	0.750	1	0.059	0.243
	Modern	-19.475	4.019E4	1	1.000	0.000
Place of residence	Rural(RC)					
	Urban	1.219	0.484	1	0.012	3.382**

*Note: *p-value< 0.001; **p-value < 0.05; ***p-value <0.01*
RC : Reference Category
†: Omitted

Source: Primary analysis of 2008-9 KDHS

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