FACTORS INFLUENCING COUPLES' FERTILITY PREFERENCES IN KENYA

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DECLARATION

I hereby declare that this project is my original work, and that it has not been presented in this or any other university for an academic award.

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DEDICATION

I wish to dedicate this work to my parents, Peter Maina and Margaret Maina, who taught me the value of hard work and endurance, my entire family and population scientists who work relentlessly to ensure the world is a better place.

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ABSTRACT

Fertility preference is an issue of great significance in the developing nations particularly Kenya where to date, fertility rates remain considerably high despite the recently reported declines. Studies reveal that the preferences of fertility are actually significant in determining the society's fertility levels because the fertility behavior of the future has a high likelihood of falling under the effect of currently observed fertility inclinations. The measurements of fertility preference are often defined as desired family size, ideal number of children, desire for additional children and fertility intentions. Measuring fertility intentions, and determining the extent to which they predict fertility behavior, is important for population policy and the implementation of family planning programs. The objective of this study was to establish the factors associated with fertility preference amongst couples in Kenya. The study utilized secondary data from the Kenya demographic health survey 2014 with a study population of 5,265 couples. Fertility preference, the dependent variable for the study was desire for additional children. The selected independent variables for the study were classified into three categories, that is, economic, cultural, and demographic factors. The economic factors included education, type of residence, work status and region of residence. The cultural factor considered was religion. The demographic factors included age, spousal age gap, sex composition of living children and infant mortality. The Multinomial logistic regression model was the main method of analysis. Descriptive statistics reveal that majority of the couples had the same fertility preference, resided in the rural areas and were from the Rift valley region of Kenya. In addition, majority of the couples belonged to the protestant/other Christian religion and both the husband and wife were working. Majority of the couples also reported education attainment for both the husband and the wife as primary education and below, had a spousal age gap of zero to five years and had not experienced infant/child mortality. Cross tabulation analysis found that an association existed between couple fertility preference and the selected variables apart from the work status of the husband and infant/child mortality. From the results of the full model for the likelihood ratio tests, it was observed that the type of place of residence, the region of residence, age of a man and woman as well as the spousal gap were statistically significant and thus influence the desire for additional children among couples in Kenya. On the other hand, religion, education, working status, infant or child mortality experience and the gender composition of existing children among a couple are not statistically significant determinants of desire for additional children among couples in Kenya. The results from the multinomial analysis revealed that it was more likely for couples from the rural settlements to have the same fertility preference compared to those from urban settlements. Region of residence was also observed to be key in desire for additional children, where it was observed that couples from the North Eastern region of Kenya were more likely to desire additional children compared to couples from other regions of Kenya. In addition, same fertility preference was observed among couples where the wife was aged 35 years and above. In regard to spousal age it was observed that with increased age gap, desire for additional children for both the husband and the wife decreased. The study has identified Region of residence as a key factor that is associated with a couple's fertility preference. Desire for additional children is very high among couples from the

North Eastern region of Kenya. This region happens to be the region with the highest total fertility rate (6.4) in the country. The region has also been experiencing a slow decline in fertility levels. As such, it will be beneficial for policy maker and duty bearers to pay close attention in promoting couple-focused interventions such as inclusion of men in the promotion of adoption of family planning, as it was evident from the study that there is a high desire for additional children among husbands from this region, and generally, majority of the couple had same fertility preference. The data used in this study was more quantitative than qualitative. Future researchers can adopt a mixed method approach where the qualitative aspect is incorporated in order to provide additional and detailed information on attitude, cultural and social beliefs as well as behavior in regard to fertility preference amongst couples.

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CHAPTER ONE
INTRODUCTION

1.1 Background to the study

Fertility preference is a term used to refer to children numbers that an individual or a couple wishes to have in their lifetime. A couple has basic human rights to their fertility preference that enables them to make decisions freely and responsibly regarding the number, spacing, sex composition as well as the timing of their children (Maggwa and Obare, 2016; Howse, 2014; Nishimura, 2012). Hence, the fulfillment of this right entails a significant intervention that improves child, maternal and couple's health, as well as for the improvement of the overall welfare of the families (Saha & Bairagi, 2007). According to Mastroianni (2015), childbearing and fertility preference and motivation are intricate with behavioural, cultural as well as ideological experiences and backgrounds, varying in contingence with the socio-economic rate of development within a community (Khraif *et al.,* 2017). Information on the fertility preferences of men and women provides family planning programmes with an assessment of trends in ideal family size, the prevailing need for contraception, and the extent of unwanted and mistimed pregnancies. Data on fertility preferences can also be useful as an indicator of future fertility trends.

Fertility behaviour and population growth and its impact on economics in developing nations are a concern because of recent trends. The recent decades have seen fertility experiencing changes in a rapid manner in Kenya. The population size of Kenya has changed all the way from approximately 5.4 million in the 1950's to around 38.6 M in the year 2009, at which the entire fertility rate ranged from 4.9 in the year 2003, and as at 2008/2009, records have shown that the fertility rate was at a rate of 4.6 (Chege & Susuman, 2016). This figure reveals that there has been a stall in terms of fertility. Studies by Chege & Susuman (2016) and KNBS and ICF Macro, have shown that; in the early 1980's, the typical family in Kenya had an average of eight children, but for the last 30 years, fertility rates have fallen by 44 per cent to 4.5 children, but this decline has not been adequate for the Kenyan National Council for Population and Development (NCPD) and the United Nations Population Fund (UNFPA) which works closely together. In two

recently governmental papers, the UNFPA, in conjunction with the Government Kenya (2014) has outlined a major plan to lessen fertility by an additional 42 per cent to 2.6 children per every couple by the year 2030.

Kenya is in the stage of demographic transition characterized by substantial decline in mortality and persistent relatively high fertility. Currently women in Kenya have on average (TFR) 3.9 children and a contraceptive prevalence (CPR) of 58 per cent (KNBS and ICF Macro, 2014). The high TFR combined with low CPR, low death rate (14.02 deaths per 1000 women), high birth rate (34.6 births per 1000 population) and low infant mortality (estimated at 39 deaths per 1000 live births) could be contributing towards high population growth in Kenya (Republic of Kenya 2014). As Kenya progresses to develop, it is expected that its fertility rate will supposedly go down (Chege & Susuman, 2016). As at 2014, Kenya had an annual population growth rate of 2.6 per cent, and a population of 43.2 million of which 42per cent are persons with the age 15 and below (Government of Kenya, 2014). The Total Fertility Rate, or the expected average number of children for every family over the course of her lifetime, has reduced from 6.1 children per woman in the year 1990 to 3.9 children per woman in the year 2014. Kenya is on the trail to a well-designed population age structure that will enable it to experience a demographic share.

Previous studies have been carried out in relation to couple fertility preferences. Findings have shown that high fertility preference among couples remains one of the banes of development in countries (Regnier - Loilier *et al*., 2011). Statistical evidence has shown that fertility rate among couples in the sub-Saharan Africa is listed amongst the highest ones world over as a result of high fertility desires and unmet needs for contraception. Statistical evidence has shown that couples fertility in West African countries ranges from 4.0 in Ghana to 7.0 in Niger, though there is evidence of slight decrease in few countries. For instance, couple fertility preference in Nigeria (5.5) is higher compared to that of Ghana and Liberia, though the countries are in the same region of West Africa. It was 4.0 in Ghana and 5.2 in Liberia in 2008 and 2007 respectively though the highest were among the countries like Niger (7.0), Mali (6.6) and Burkina Faso (5.9) (Dinç *et al*., 2007). Fertility desire of men and women is a strong indicator of future childbearing and

also a factor in population growth of developing countries. Bongaart (1994) stressed that fertility level of couples would not go below fertility desire even if unmet need of couples for contraception were satisfied. Casterline and Roushdy (2007) explained that decline in fertility desire was necessary for further decline in fertility.

Findings from Kenya have shown that contraception has been utilized by couples in cases where a spouse has intentions for ceasing childbearing (Askew, Maggwa and Obare, 2016). Couple studies have also revealed that agreements or a disagreement among couples has a strong bearing in the realization of fertility preferences (Chege & Susuman, 2016). Byland, Zborover & Kroefges (2015) has also shown that fertility preference among couples can be affected by several factors including; the age, the number of living children, sex; antiretroviral therapy's enrolment among the HIV infected persons, a partner's inclination towards having children or the belief that a partner needs other children as well as the possession of knowledge concerning a person's HIV-AIDS status (Frini, 2014).

Although the reasons for child bearing and fertility intentions are literary recorded in past studies in Kenya, majority of the scholars have paid a focus on the women, with only a few focusing on men. Others have focused on HIV-positive persons. There has been minimal focus on the couples yet fertility intentions usually are a joint decision between the husband and the wife. This presents a missed chance for the comprehension of fertility preferences among couples, despite their numbers being above half the entire Kenyan population (Nasir, 2012). It is on this backdrop that this study seeked to establish factors that influence couple's fertility preferences in Kenya.

1.2 Problem Statement

There still exists wide variations and slow pace of decline in fertility levels in Kenya, in spite of the decline of fertility throughout the world over the years (Munshi and Myaux, 2006). High fertility preference among couples prevails in Kenya that has hindered fertility decline in the country because preference for large families often leads to high fertility. As much as National and global initiatives have been put in place to ameliorate rapid population growth and its adversities (GOK, KPSA 2013). Total fertility rate (TFR)

in Kenya still remains high at 4.6, while Contraceptive Prevalence rate (CPR) for all methods is limited at 46 per cent (Okech *et al.*, 2011). Evidence from Kenya confirms that the most children even in the marriage life are not as a result of desire, and are mostly outcomes of undesirable pregnancies. Generally, couples tend to have as many children as possible especially within the traditional set up. Statistically, the mean ideal number of children among couples remains at 3.6 (KDHS, 2014). If this goal will be achieved, fertility desire of couples will be one of the considerations. Though a slight decline in fertility preferences has been reported in Kenya, there seems to have been a stall, where the fertility rates has remained high, implying a higher preference among couples, mostly at the average rate of 4.1 number births for a couple (Chege & Susuman, 2016). For a country whose national demographic target is to reduce the total fertility rate (TFR) to 2.6 by 2030, this desirable number of children is considerably high.

Irani (2014) carried out an assessment on contraceptive usage among couples in urban Kenya and revealed that high rates of fertility preference have prevailed, which have hampered fertility declines. Anyara & Hinde (2006) did an investigation on fertility preference and revealed that about seven per cent of females in Kenya do not utilize contraceptives as a result of religious principles, hence; fertility preference remains high. In most of the previous studies, measures of reproductive health and sexual outcome have been based mostly on report of women in reproductive ages, while a few previous studies have focused on men. Previous studies have not been sufficient in revealing partners' knowledge, opinion and experiences about fertility behaviour. Studies have not represented couples position on fertility behavior in Kenya, hence; there is a research gap to be filled. Focusing on couples offers the opportunity to know the couple centered characteristics that influence fertility behaviour and also the consistency between husbands and wives in their fertility behaviour (Koffi, Adjiwanou, Becker, Olaolorun, and Tsui, 2012). Sound knowledge on these factors will help in formulating programmes and policies that will stimulate fertility reduction in Kenya. Therefore; this study aimed to establish the factors that are associated with fertility preference amongst couples in Kenya.

1.3 Objectives of the study

The research questions for this study were;

I. Which are the economic factors that influence couples' fertility preferences in Kenya?
II. Which are the cultural factors that influence couples' fertility preferences in Kenya?
III. Which are the demographic factors that influence couples' fertility preferences in Kenya?

This study's general objective was to establish the factors associated with fertility preference amongst couples in Kenya.

The specific objectives of this study included;

i. To establish the economic factors that affect couple's fertility preferences in Kenya.
ii. To establish the cultural factors that affect couple's fertility preferences in Kenya.
iii. To establish the demographic factors that affect couple's fertility preferences in Kenya

1.4 Justification of the study

Fertility preferences are important measures for estimating levels of unwanted or mistimed fertility, forecasting fertility, and assessing unmet need for contraceptives. They inform and advice population policy and family planning programs and also contribute to existing literature on fertility studies. Kenya has been experiencing a slow pace in fertility decline and variations in fertility levels in the different regions of Kenya and as such it is important to determine the drivers of these fertility preference differentials in the country as they tend to mask the national averages. The measure of fertility preferences among couples has been a question of concern among social scientists as to whether the stated intentions eventually translate into behavior and whether they can be used as an effective means of projecting future fertility behavior.

This study's findings will benefit the National Council for Population and Development (NCPD) because it helps in setting objectives for substantial demographic pointers like; Kenya's total fertility rates to decrease from the current rate of 4.6 in the year 2009 to the expected fertility rate at 2.6 by 2030, plus a further reduction of fertility to 2.1 by the year 2050. Correspondingly, the findings generated in this study may be greatly important in informing the trends of the natural growth so that the rate could get reduced from approximately 2.5% in the year 2009 to a rate of 1.5% by the year 2030. With a progression rate of about 2.9% per cent in every year, the growth of the population is anticipated to rise to double rates to approximately 77 million people by the year 2030 (NCPD, 2012).

Additionally, a comprehensive examination of fertility preference will provide additional information to the existing body of literature relating to fertility preferences as well as reproductive matters in Kenya. The study will as well act as an indicator on the responsibility and the extent to which the national and county governments as well as the existing family planning platforms have played in regard to assisting persons to realize their intended fertility. This study's findings will be of great help to Kenya's government as well as family planning bodies in Kenya in designing suitable programs, and to or enrich the existing ones in order to improve the degree at which the population achieve fertility preferences, which in turn make sure the country is meeting the laid down developmental goals.

1.5 Scope and limitations of the study

In this study, secondary data from 2014 KDHS (Kenya Demographic Health Survey) data set was used. It focused on the couple responses. The KDHS data set comprises of information related to the married people or those living together as spouses who have both made a declaration that they are married, and also with complete individual questionnaires. Fundamentally, the file used is a result of connecting two files previously designated on the basis of whom the files have declared as partners. This is because fertility preferences are highly dependent the negotiation process between the spouses.

Ideally the couple data set is generated by merging two files of data for people who have declared that they are married and the individual questionnaires are complete. This posed a limitation for this study since there was no sole response by the couple about their fertility preference but the fertility preference responses were based on an individual, that is the husband and the wife. To overcome this manipulation was done on the data to generate what was perceived to be the couple's fertility preference. Additionally, the matched data does not factor in the polygamy families.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of literature on the studies that have been undertaken to explain the factors influencing fertility preferences among couples. The chapter begins with a definition of the measurements of fertility, then a review of theoretical perspectives on fertility preference, followed by the empirical review of the factors that are associated with fertility preference and finally the conceptual and operational frameworks adopted for the study.

Fertility preference is an issue of great significance in the developing nations particularly Kenya where to date, fertility rates remain considerably high despite the recently reported declines. Fertility preference studies define people's fertility preferences differently (Goldstein, Lutz & Testa, 2003). These measurements could be termed as desired family size, ideal number of children desire for additional children and fertility intentions. They have been used to describe and estimate the number of children that people actually want to have. Fertility preferences are the indicators of general attitudes and possible future course of fertility. Studies reveal that the preferences of fertility are actually significant in determining the society's fertility levels because the fertility behaviour of the future has a high likelihood of falling under the effect of currently observed fertility inclinations as explained by Wachira, (2001). Measuring fertility intentions, and determining the extent to which they predict fertility behaviour, is important for population policy and the implementation of family planning programs.

2.2 Theoretical Perspectives

Fertility preference in Kenya can be explained in the context of the Economic theory of fertility as well as the Value of Children theory that was proposed by Hoffman and Hoffman in 1973.

2.2.1 Economic theory of fertility

From the economic fertility theory, children have been equated as household goods. This means that children usually are viewed as liabilities and compete with the goods to the extent that couples are forced to make rational decisions whether to have an additional child or not based on their economic situations at that moment (Becker, 1960; Caldwell, 1976; Mahmud and Ringheim, 1997). The factors that act in control of fertility related decisions on family size include: education; cost of fertility regulation; potential output of children and demand for children (Easterline, 1973; Singh and Casterline, 1985). Formal education heightens a person's consciousness on the real and perceived costs and utilities of children (DeRose et al, 2002). Caldwell's (1982) wealth flow theory emphasizes on the value of large families in less developed countries. According to Caldwell, there is a direct link between family structure and fertility. He argues that there are only two major forms of family structure, differing principally in the direction of wealth flows among generations. In 'primitive' and `traditional' societies, net wealth flows are primarily upward from younger to older generations. In these kind of societies, the economically rational decision is to have as many surviving children as possible (within the constraints imposed by biology), because each additional child adds positively to a parent's wealth, security in old age, and social and political well-being.

This theory is relevant in this study because; owing to the fact that fertility preferences are influenced by economic transformations as herein stated, fertility seems to be the outcome of a couple's rational and conscious decision-making. Irrespective of the type of society, couples are expected to balance the costs of having children against the expected economic, social, and psychological gains they could obtain through them.

2.2.2 Value of children theory

Hoffman and Hoffman in 1973 proposed the value of children theory that reviews four key reasons which explain why children value needs to be studied: these reasons include; motivation of fertility regulations, anticipation of compensations that may be essential for the achievement of small family sizes, prediction of fertility motivations as well as trends of population, and the consideration of children value in parent-child relationships. In

those nations that are less developed, children are known to have great economic value in the present as well as a support for parents in the old age. In countries that are developed, children are considered as a liability to the economy. Hoffman and Hoffman (1973) have conceptualized the value of children in relation to psychological satisfaction in a way that; children are also known to provide ties for primary groups, fun, stimulation and feelings of creativity. To some parents, children provide feelings of power, and also a means of societal comparison.

This shows that fertility preferences are driven by various reasons, which influence why a couple would like to have additional children or not. The preferences of a couple in turn affect fertility trends in the developing world. This theoretical scheme is relevant fertility studies as it helps in determining transformations that could result in a reduced or increased desire for children amongst couples. It comprises of five categories of factors that include children value, costs of raising the children, substitute value sources as well as facilitators (Wulifan, Brenner, Jahn & De Allegri, 2016). From these variables, it is possible to evaluate the factors that drive fertility preferences among couples as per the objectives of this study.

2.3 Empirical Review

2.3.1 Education level

Education is a major determining factor of a couple's life style and status, and also the position in the society. Research has consistently revealed that the level of educational attainment affects the reproductive behavior of a couples, use of contraceptives, fertility, in addition to attitudes as well as the cognizance related to a family's health. More specifically, husbands and wives who have attained at least a primary level education have a higher likelihood of using up-to-date birth control methods compared to the uneducated ones as stated by Clements and Madise (2004). A study carried out by Johnson-Hanks (2007) revealed a curvilinear relationship between fertility and education, implying that; with a diffident education level, fertility preference levels are likely to increase, and with high levels of education, the fertility preferences among couples tend to decline.

In families where the wife has little educational achievements, it is more likely that the couple can agree on issues relating bearing additional children, and also that the husband's educational achievements have a stronger effect on the fertility intentions of the wife as opposed to the wife's individual education. A study that was carried out by NSF (2006) demonstrates that; in Benin, Ghana, Chad, Zambia, Mozambique and Kenya, a high percentage of couples that lack formal education have a likelihood of agreeing to have an additional child as opposed to couples where the wife has acquired formal education. When a wife's educational achievements are lower than those of her husband, her influence on decisions related to fertility preference and contraceptive use may reduce. Nonetheless, in about seven out of fourteen listed countries including Benin, Zambia, Namibia, Ghana, Malawi, Chad and Zimbabwe, the percentage of couples who are in agreement with each other on the issue of wanting an additional child is often lower in cases where the husband has attained higher educational levels than the wife. By contrast, in Uganda and Rwanda, a higher percentage of couples usually reach an agreement regarding having other children in cases where a wife's education surpasses her husbands (Adhikari 2010).

A study carried out by Kodzi, *et al* (2010) revealed that fertility preference has an inverse relationship with education levels among couples, which gives the implication that that the level of education shows a decreasing effect on decisions regarding family size. Given the fact that; averagely, husbands have a higher likelihood to have higher education or have similar educational achievements as their wives, children demand by couples having high educational achievement tends to be low. A study that was carried out by Brase (2016) revealed that low fertility outcomes in such households may not be associated with the woman's advanced control over fertility preference. Studies have argued that; educational achievements usually enhance economic independence and overall couple's decision making relating reproductive health within their marriage. However, educational achievements are expected to influence a woman's reproductive independence through enhanced couple negotiation and communication.

2.3.2 Work Status

The connection existing between occupation and fertility preferences among couples is widely acknowledged in demographic studies. A study carried out by Sennott and Yeatman (2012) in Malawi revealed that events that occur resulting in someone's economic situations are likely to alter a couple's plan for childbearing. For example, job losses may result in the postponement of childbearing to provide time for households to regain economic steadiness before adding another member of the family. By contrast, when a spouse begins a new occupation, this could speed up the childbearing plans of a woman. Frequent alterations in preferences of fertility may possibly reflect economic uncertainties that are common in the developing nations (Johnson-Hanks 2005, 2007; Agadjanian, 2005) like Malawi, in which employment could be scarce.

A study by Bankole *et al* (1995) that was carried out focusing on the Yoruba community of Nigeria has revealed that fertility preferences are lower for those wives who are married to spouses whose occupation are outside the agricultural field as opposed to those working in the agricultural field. In addition, Nwakeze (2010) in his study "Gender and Labour Force Participation in Nigeria" also observed that working can have the effect of depressing fertility through the mechanism of competition for a woman's personal resources; especially time.

Ayehu (2008), carrying out a study among the Meru community of Kenya has revealed that those couples that have high level occupation status are more likely to have low preference on childbearing as compared to ones with and middle and lower status occupations, hence; there exists an inverse link between fertility preferences amongst couples and their occupation.

2.3.3 Type of place of residence

Normally, urban areas are accompanied by better access to a number of resources such as education and the media that expose the residents to new ideas. Consequently, couples who live in the urban set up may be expected have higher level agreements on limiting their family sizes as opposed to those living in the rural set up (Khasakhala, 2011). However, studies have shown that spousal agreements related to fertility preference do

not show substantial variations by residence in the majority of the countries in the world. Several studies done in the Kenyan and Malawian context have exhibited that a greater proportion of couples living in the urban set up are in agreement in regard to childbearing intentions compared with those living in rural areas (Gebreselassie, 2008; Anyara and Hinde, 2006).

In their study, Teller and Gebreselassie (2009) revealed that fertility transition from high to low levels in rural areas, that is related to socio-economic changes, has been lagging far behind urban areas in the largest part of the sub-Saharan Africa. Literature shows that in Ethiopia and other African nations, the lag is so striking. The overall fertility rates (TFR) have fallen below the replacement levels at 2.1 births per woman in Ethiopia's Addis Ababa, however, it is at 3.5 births per woman in towns, and has remained above six births per woman for every couple in countryside areas, in which eighty-four per cent of the country's population lives (CSA, 2001).

2.3.4 Region of residence

Previous studies in Kenya have shown that region of residence has an effect on the desire for additional children. Ekisa and Hinde (2006) found that fertility levels were higher in the Western and Coast provinces while Kimondo (2003) found that, the highest proportion of married men desiring additional children resides in Coast province. Janet (2016), also discovered that region was a significant factor that influenced the desire for additional children. She observed that married men from North Eastern were 16.459 times more likely to desire additional children compared to married men from Nairobi.

In the Kenya Demographic Health Survey 2014, it also emerged that, the proportion of married women who want no more children is highest in Eastern (60 per cent) and Nyanza (58 per cent) and lowest in North Eastern (6 per cent). (KNBS and ICF Macro, 2014).

2.3.5 Religion

Cleland and Wilson 1987 observed that religion has an impact on fertility behavior. The fertility patterns are similar in culturally homogenous groups, in this case same religion

groups. The National Health Statistics Reports in the United States indicated a trend in the fertility intention of men and women which varied across races and religions. In reference to religion, Catholics were observed to have fewer children compared to the Protestants; however, fertility intention was high among the Mormons and Hispanics, regardless of their religion, and lowest among the Jews and those with no religion.

Munshi and Myaux (2006) observed that changes in reproductive behavior occur within religious groups; and assumed that social interactions among the women cannot be substituted with other interventions. Entwisle et al, (1996) and Rogers and Kincaid (1981) showed homogeneity of choices in villages in the contraceptive preferences. It must be as a result of the diffusion of contraceptive information through interpersonal networks (Rogers et al, 1999). Since individuals locate within the social networks, their child bearing attitudes, preferences, decisions, and behavior may arise from the social learning and influence with the interactions of kin, relatives, peers (Bernardi et al, 2007).

Findings from a Kenya case study by Wachira (2001) revealed that Muslims had the highest level of desire for additional children (56.6 per cent) while the Catholics were at 42 per cent and Protestants at 43.4 per cent.

2.3.6 Age and Spousal Age-gap

Age gap among spouses is often correlated with a high fertility rate, and it has over and over been recorded that wives who are young are often given pressure by their elder companions to give birth to many children contrary to their wish. It has been stated that young females, especially those whose marriages are arranged have less power of decision making in their marriages (Haberland, 2003). The bargaining power of women matters mainly in cases where their preference for more children is high, for instance in cases when their age is way lower than that of their husband. With as small age gap, conflicts of interest among couples tend to be few (Tao, 2009).

The pattern of marriage where the age gap existing amongst partners favors the decisions made by the husband is a crucial indicator for measuring the position and status of a woman in a society. This implies that; he becomes the dominant decision-maker on family related issues and intensifies his diverse socio-economic and socio-demographic

supremacy since he is viewed to possess higher levels of knowledge and experiences as a result of the age and gender difference (Haddad, 2012). A study carried in the Indian context by Das *et al.* (2011) established that the age divergence among couples influences fertility levels through three main mechanisms. First of all, evidence has shown that fecundability shows slight variations with the husband's age, therefore, age divergence affects the couples' fertility. The difference in age is as well positively linked to the dissolution risk in marriage via widowhood before a woman's reproductive age ends. The age gap that exists between couples reduces gradually with increasing women's' status, and so the enhancement of her societal status, and as the gap between the partners increases; the lower the status of women in the in society, the more marginalized they are (Haddad, 2012).

Khasakhala (2011) revealed that smaller groups with fertility levels that are lower than the national average are the ones where the age, marriage as well as the use of contraceptives play an imperative part in fertility preference levels. This is predominantly among the Kikuyus, the Embu and the Meru, therefore; the typical explanation of Kenya's fertility transitions being under the influence of escalations in age in marriage as well as contraceptive usage could be relevant to the ethnicities. These findings are consistent with those from a number of research studies carried out in the Kenyan context. The studies attribute the declining fertility to the result of increasing age of first marriage in most ethnic groups in Kenya (Blacker et al, 2005; UNICEF, 2008). These findings show consistency with a study carried out in Pakistan, which described that the majority of married women in the Pakistanian context often produce 1 child by the time they reach the age of twenty years, and usually within their first year in marriage (NIPS, 2001).

2.3.7 Sex Composition of living children

It is apparent that sex composition of children born of a couple previously and are living has an effect on their fertility preferences. In a study that was carried out in Tharu (Rural of Nepal) by Pramila *et al* (2014) it emerged that there was a high sex ratio and short spacing of births following a female child. Families with female children only had a

higher likelihood of getting additional children compared to the rest, with next planning for birth being strongly influenced by the current sex composition in a family.

The demographic and health surveys in Nepal for 1996, 2001, 2006 and 2011 also indicate higher sex ratio depicting son's preference behaviour. In Kenya, Wachira (2001) observed that majority of the families where daughters were more than the sons indicated their preference for having more children as opposed to the ones with more sons, or the ones with an equal number daughters and sons.

2.3.8 Mortality rate

A study done by Adsera (2006) revealed that the rates of infant mortality significantly influence fertility preferences amongst couples, through its effect on children supply and eventually the fertility control motivation. Evidence from past research indicates that the sub-Saharan African countries usually follow a particular classic demographic transition pattern, where fertility declines are simultaneous with a decrease in the rates of infant mortality, and these are associated with the aspect of modernization which is characterized with improved health facilities and socioeconomic development. Evidence from earlier studies has also shown that a reduction in infant mortality rates is projected to result in decreasing demands for additional children, which escalates the anticipated return on investment in the quality of children that could result in a further decrease in fertility preference. In the Kenyan context, Chege & Susuman, (2016) established high preferences for children among families having child loss experiences at 43.6 per cent compared to those without experience of child loss standing 35.1 per cent. Therefore, a couple's preference for children bearing is considerably linked previous child losses.

2.4 Summary of literature

The association between the level of education and desire for additional children is inverse. A study carried out by Johnson-Hanks (2007) revealed a curvilinear relationship between fertility and education, implying that; with a diffident education level, fertility preference levels are likely to increase, and with high levels of education, the fertility preferences among couples tend to decline. Studies have also argued that; educational

achievements usually enhance economic independence and overall couple's decision making relating reproductive health within their marriage.

The association between the desire for additional children and works status cannot be gainsaid. A study carried out by Sennott and Yeatman (2012) in Malawi revealed that events that occur resulting in someone's economic situations are likely to alter a couple's plan for childbearing. For example, job losses may result in the postponement of childbearing to provide time for households to regain economic steadiness before adding another member of the family. By contrast, when a spouse begins a new occupation, this could speed up the childbearing plans of a woman. Frequent alterations in preferences of fertility may possibly reflect economic uncertainties that are common in the developing nations (Johnson-Hanks 2005, 2007; Agadjanian, 2005) like Malawi, in which employment could be scarce.

Place of residence has been proven to have an effect on the desire for additional children. In their study, Teller and Gebreselassie (2009) revealed that fertility transition from high to low levels in rural areas, that is related to socio-economic changes, has been lagging far behind urban areas in the largest part of the sub-Saharan Africa. Several studies done in the Kenyan and Malawian context have exhibited that a greater proportion of families living in the urban set up are in agreement in regard to childbearing intentions compared with those living in rural areas (Gebreselassie, 2008; Anyara and Hinde, 2006). Khasakhala, (2011) observed that in Kenya, families who live in the urban set up usually have a higher level of agreement on limiting their family sizes as opposed to those living in the rural set up. In addition, the region of residence has been recorded tohave an effect on the desire for additional children. From the Kenya Demographic Health Survey 2014, it emerged that, the proportion of married women who want no more children is highest in Eastern (60 per cent) and Nyanza (58 per cent) and lowest in North Eastern (6 per cent). (KNBS and ICF Macro, 2014).

Cleland and Wilson 1987 observed that religion has an impact on fertility behavior. The fertility patterns are similar in culturally homogenous groups, in this case same religion groups. Findings from a Kenya case study by Wachira (2001) revealed that Muslims had

the highest level of desire for additional children (56.6 per cent while the Catholics were at 42per cent and Protestants at 43.4per cent).

Age and spousal age gap are also important factors that influence fertility preference behavior. Haberland (2003), argued that young females, especially those whose marriages are arranged have less power of decision making in their marriages. The bargaining power of women matters mainly in cases where their preference for more children is high, for instance in cases when their age is way lower than that of their husband. With as small age gap, conflicts of interest among couples tend to be few (Tao, 2009).

It is also evident that sex composition plays a major in fertility decision making. Pramila *et al* (2014) in his study in Tharu-Nepal established that there was a high sex ratio and short spacing of births following a female child. Families with female children only had a higher likelihood of getting additional children compared to the rest, with next planning for birth being strongly influenced by the current sex composition in a family.

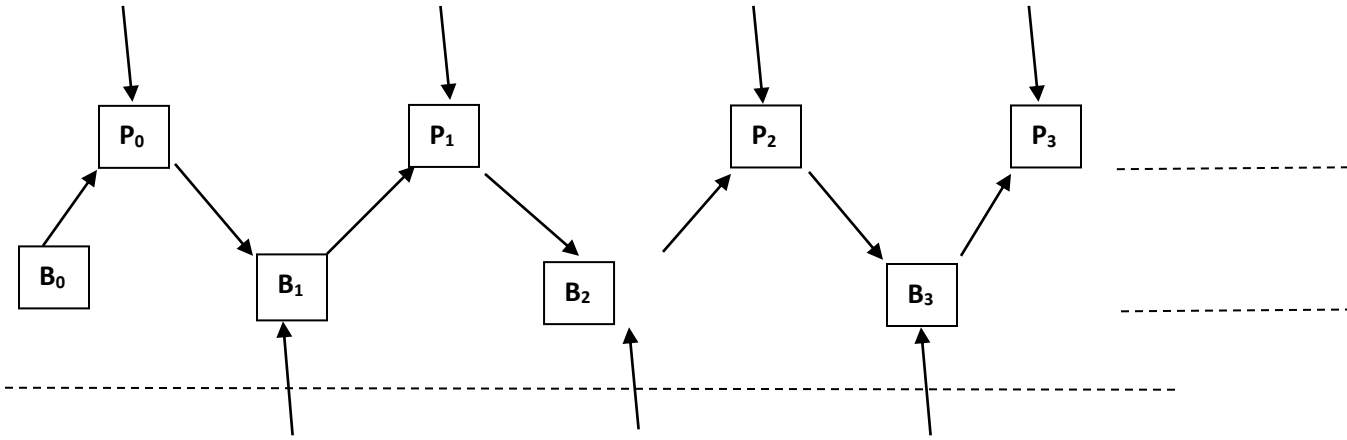
Child loss experience has an influence on fertility preference. A study done by Adsera (2006) revealed that the rates of infant mortality significantly influence fertility preferences amongst couples, through its effect on children supply and eventually the fertility control motivation.

2.5 Conceptual and Operational Framework

This study adopted the Pullum (1980) framework for fertility preference. In his Model, Pullum proposes that every couple at every time has an entire preference function, which describes the relative utility of each family size that they could possibly have. That function together with their current family size will generate their statements about preference for additional children.

He argued that the relationship between fertility preferences and actual transitions to higher parities in the lifetime of a specific woman may be presented as follows:

Figure 1: Pullum's preference function model



Source: Pullum (1980)

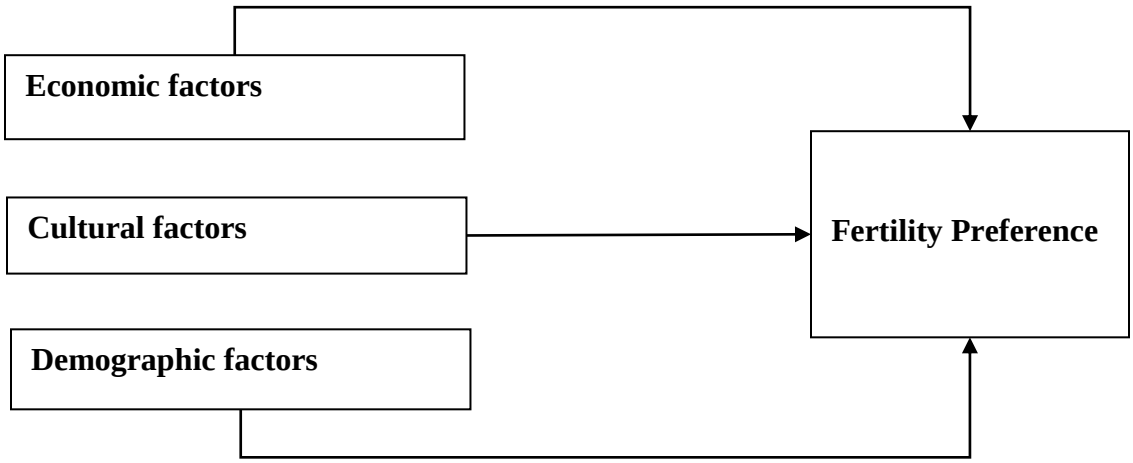
Here BO is the woman's own date of birth or some other stating event, such as date of marriage, and Bi is the date of her i-th childbirth. During the time interval (Bi, Bi + 1) the woman has parity i. (If there is substantial infant mortality it will be worthwhile to modify the process so that index i refers to the number of living children). The sequence P0, PI, etc., refers to the ideal family size that would be stated while the woman was at parity i or family size i. The arrows from Pi to Bi+1 represent the impact of a preference (stated as total desired family size or preference of another child) upon a subsequent birth event. The arrows from Bi to Pi represent the revision of a preference as a result of a birth and include a possible upward revision of desired family size as a result of a birth previously not planned. The relationship is not deterministic. Arrows directed vertically down to Pi represent the effects of other characteristics of the woman upon her stated preference including secular trends in norms of her reference group. The vertical arrows directed upward toward the Bi represent the effects other than preferences, which determine the transition to higher parities for example fecundability and contraceptive failure (Pullum 1980).

The author further argues that fertility decisions are based on the current assessment of costs and benefits of the next birth and that decision is made on one birth at a time. After each birth, a couple make a decision to have another birth, postpone another birth or stop

reproduction, based on the constantly changing payoff structure which is sensitive to changes in the economic and social circumstances. The change in the preference can be influenced by certain factors that can either be economic, cultural or demographic.

While this study did not seek to test the model vigorously, it utilized it and hypothesise that a couple's desire for additional children is influenced by the economic, cultural, and demographic variables. From the this, the following conceptual framework was used;

Figure 2: Conceptual Framework

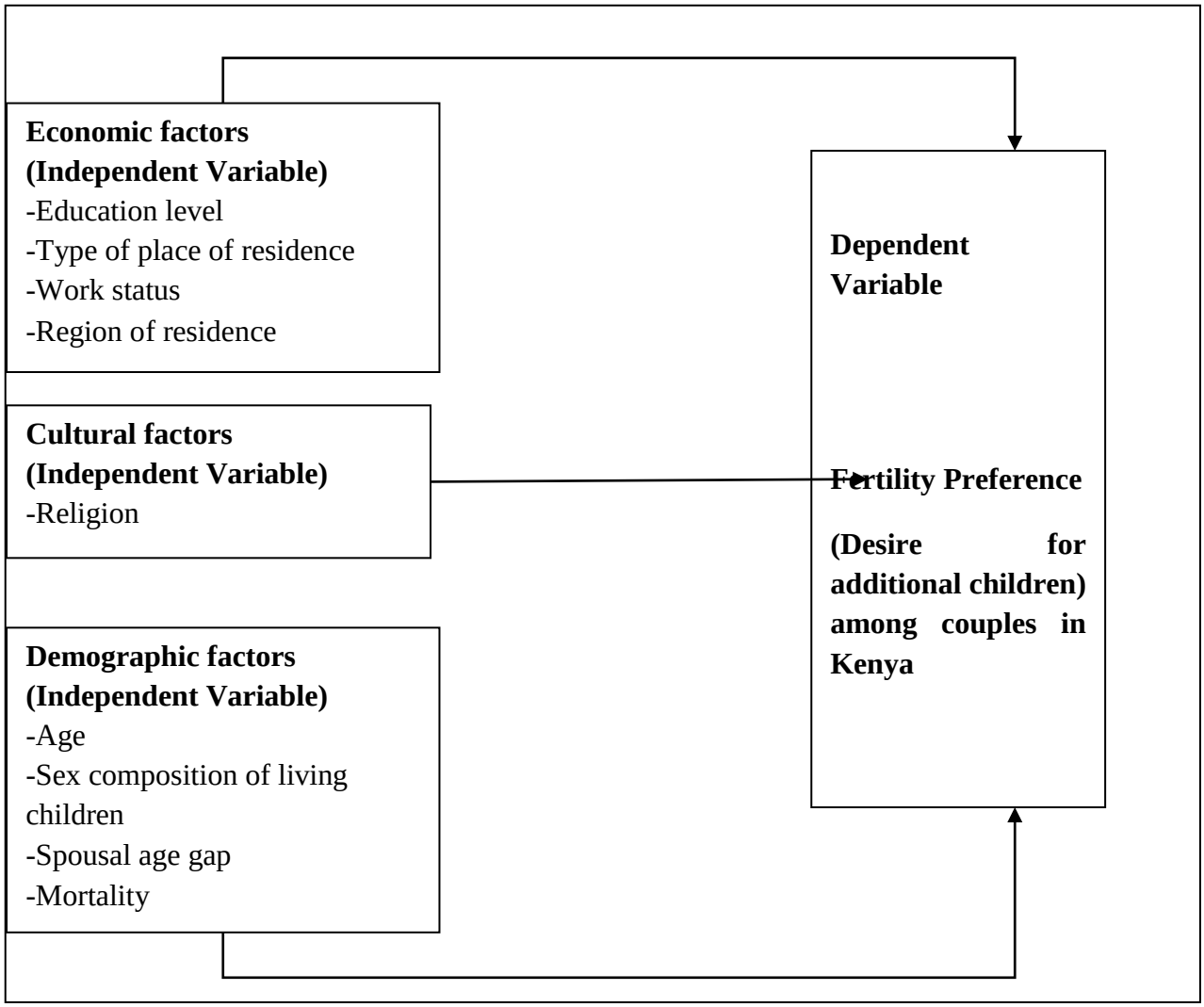


Independent variables **Dependent variable**

Source; Adopted from Pullum (1980)

The study operationalized the model as follows;

Figure 3: Operational Framework



Source; Adopted and modified from Pullum (1980)

Operational Hypothesis;

The operational hypotheses for the study were;

- There is a negative relationship between the wife's and husband's education attainment and the desire for additional children.
- There is a relationship between place of residence and the desire for additional children; couples in urban areas are likely to desire fewer children.
- There is a relationship between region of residence and the desire for additional children; couples from Nairobi will the hypothesised to desire less children compared to couples from other regions.
- There is a relationship between Religion and the desire for additional children; couples belonging to the Muslim religion will be hypothesized to desire more children compared to couples belonging to other religions.
- There is a negative relationship between work status of the wife and the desire for additional children for a couple.
- There is a positive relationship between work status of the husband and the desire for additional children for a couple.
- There is a negative relationship the age of a husband and wife and the desire for additional children for a couple.
- The is a positive relationship between the spousal age gap and the desire for additional children for a couple.
- There is a positive relationship between infant/child mortality and the desire for additional children for a couple.
- There is a negative relationship between current sex composition and desire for additional children for a couple.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter presents source of data and methods of data analysis. The source of data is discussed first and thereafter the methods of data analysis are described. The variables to be studied and analysed are also presented.

3.2 Data source

The study utilised secondary data from the 2014 Kenya Demographic and Health Survey (KDHS). KDHS data set contains information obtained from a national-based survey that is carried out by the Kenya National Bureau of Statistics (KNBS) in conjunction with other government agencies. Kenya Demographic and Health Survey make use of several questionnaires to gather statistical information like household information relating to women, men, children and so forth.

For this study, we the fertility preference of a couple was defined as the "desire for additional children". In the 2014 KDHS, to establish fertility intentions, women who were either not pregnant or unsure about their pregnancy status were asked the following question: *Would you like to have (a/another) child or would you prefer not to have any (more) children?* A different question was posed to women who were pregnant at the time of the survey. Pregnant women were asked: *After the child you are expecting now, would you like to have another child or would you prefer not to have any more children?* Women who indicated that they wanted another child were asked how long they would like to wait before the birth of the next child. Finally, women were asked the total number of children they would like to have if they were to start childbearing afresh. For the men, the questions were framed differently depending on whether one's wife was pregnant or not. Questions included: *Would you like to have (a /another) child or would you prefer not to have any (more) children?* to the respondent whose wife/partner was not pregnant, and "*After the child(ren) you and your (wife(wives)/partner(s)) are expecting now, would you like to have another child, or would you prefer not to have any more children?*" to

the respondent whose wife (wives)/partner(s) was pregnant. Other data captured that relate to the different sets of independent variables hypothesized to affect desire for more children including number of living children, highest education level, work status of the respondent, religion, place of residence, age of respondent, number of living sons and child loss experience.

This study utilized the couple data, which normally is obtained by linking two distinct files namely the women data file and the man data file. The linking entails merging the two data files based on those who indicated to have been married or living together, that is, man and woman who both declared to be married or living together, and with completed individual interviews (questionnaires). The number of couples interviewed was 5,265, which formed the sample for this study.

3.3 Data Manipulation and variables

Given the nature of data obtained from KDHS, it was prudent to perform some simple but very important data manipulations to achieve outcome variable of interest, i.e. fertility preference of a couple. For this study, we defined the fertility preference of a couple as the "desire for additional children".

Fertility preference was captured in six categories for each of the two gender distinct files, and this forms the basis of our manipulation. For instance, we can generalize woman preference as,

$$y_{ij} = \begin{cases} 1, & have\ another \\ 2, & undecided \\ 3, & wants\ no\ more \\ 4, & sterilized \\ 5, & declared\ infecund \\ 6, & never\ had\ sex \end{cases}$$

Where y_{ij} is the fertility preference of woman *i* in household *j*. Similar generalization holds for men preference.

Our dependent variable therefore called for transformations taking into account women and men (defined as a couple) individual preferences. This transformation is

straightforward, as calls for merging fertility preferences for a woman and man from the same household, to complete a couple classifications. For instance, if in a household, the woman's preference is to have another child, and in the same household the man's preference is to have another, then we define a couples' preference as both having same preference. The same classification holds where both the woman and man from same household want no more children. On the other hand, if the woman's male preference is to have no more children but the man's desire is to have another, we define that couples' preference as Husbands wants more. Cases where either of the partners are sterilized, declared infecund or never had sex were categorized as 'others' for the couple.

The newly generated couple's fertility preference takes the generalized form with four different dummy coded categories as indicated below;

$$Y_{ij} = \begin{cases} 1, & Husbands\ wants\ more \\ 2, & Wife\ wants\ more \\ 3, & Same\ preference \\ 4, & Others \end{cases}$$

Where Y_{ij} is the fertility preference of couple i in household j.

Independent variables on the other hand are straight forward and required minimal manipulations.

Table 3.1: Variables and their measurement

Variable	Definition
Dependent Variable	
Couple fertility preference	Husbands wants more=1, Wife wants more=2, Same preference=3, Others=4
Independent Variable	
Wife Educational Attainment	No education=0, Primary =1, Secondary+=2
Husband Educational Attainment	No education=0, Primary =1, Secondary+=2
Type of place of residence	Urban =0, Rural =1.
Region	Coast=1, North Eastern=2, Eastern=3, Central=4, Rift valley=5, Western=6, Nyanza=7, Nairobi=8.
Religion	Roman catholic =1, Protestant/other Christian =2, Muslim =3, Other=4.
Wife work status	Not working=0, Working=1
Husband work status	Not working=0, Working=1
Wife age	15-24=1, 25-34=2, 35+=3
Husband age	15-24=1, 25-34=2, 35+=3
Spousal age gap	Age of Husband<Age of wife= 0, 0-5= 1, 6-10= 2, 11+=3
Couples' Sex Composition	Boys=Girls=0, Boys<Girls=1, Boys>Girls=2
Infant/Child mortality	Experienced death of a child=1 No experience of death of a child=2

3.4 Methods of data analysis

The study utilized descriptive, cross tabulation and Multinomial Logistic Regression approaches for data analysis. The graphical approach such as box plots was adopted to identify outliers within the data. Further, in order to test for multicollinearity the study utilized the variance inflation factor (VIF).

3.4.1 Descriptive statistics

Descriptive statistics are used to examine the basic distribution characteristics of each variable of interest. For this study descriptive measures such as frequency distributions and percentages were used to describe the characteristics of the target population.

3.4.2 Cross tabulation

Cross tabulation is a statistical tool that is used to analyse categorical data and it helps understand how two different variables are related to each other. For this study, cross tabulations with chi square test was carried out to test for association between the dependent and independent variables.

3.4.3 Multinomial Logistic Regression

When an outcome of interest is categorical in nature, it becomes impossible to carry out formal regression statistical tests such as multiple regression to test for relationships between variables. This calls for use of other tests such as the logistic regression, also known as the binomial logistic regression, which predicts the probability that an observation falls into one of two categories of a dichotomous dependent variable based on one or more independent variables that can be either continuous or categorical.

Multinomial logistic regression is an extension of the binomial logistic regression, and is used to predict a nominal dependent variable given one or more independent variables. It's very useful in instances where a dependent variable is no longer dichotomous and therefore consists of more than two unordered categories. The model fits multiple logistic regressions on a multi-category unordered response variable that has been dummy coded. The response variable Y is categorical in nature with K+1 categories: $Y \in (0,1 \ldots K)$.

Given the nature of the dependent variable (couples fertility preference) which was categorical (K=5), the study therefore used a multinomial logistic regression approach in establishing factors associated with fertility preferences among couples in Kenya. The reference category was chosen and hence the remaining reference levels formed the non-reference K categories having a linear regression function with the regression parameters given as:

$$\beta_j = (\beta_{1j}, \beta_{2j}, \cdots\cdots\cdots\cdots \beta_{pj}) \; where \; j = 0,1, \ldots . \mathrm{K}, (K = 5)$$

and a set of predicator variable vector with *p* independent variables,

$$\dot{X}_i = (X_{1p}, X_{2p}, \cdots\cdots\cdots\cdots X_{ip}) \; where \; i = 1,2,3, \cdots\cdots\cdots, n$$

In the multinomial logit model with a polytomous outcome Y_{ij}, and *p* predictors $x_1, x_2, x_3 \ldots\ldots x_p$, , we assume that the log-odds of each response follow a linear model given by;

$$\log\left[\frac{P(x_1, x_2, x_3 \ldots \ldots . x_p)}{1 + P(x_1, x_2, x_3 \ldots \ldots . x_p)}\right] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \ldots\ldots\ldots + \beta_p X_p$$

This can be re-expressed in terms of the individual category outcome probability by solving for the unique probabilities to give:

$$P(x_1, x_2, x_3 \ldots \ldots . x_p) = \frac{e^{(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots\cdots\cdots\cdots + \beta_p X_p)}}{1 + e^{(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots\cdots\cdots\cdots + \beta_p X_p)}}$$

For a given predictor x_i, the coefficient β_j gives the change in log odds of the outcome associated with a unit increase in x_i, for arbitrary fixed values for the remaining predictors $x_1, x_2, x_3 \ldots\ldots x_p$ The exponentiated regression coefficient exp (β_j) represents the odds ratio associated with a one unit change in x_i (O' Connell,2006)

3.4.3.1 Multinomial Logistic Regression Parameter Estimator

We aimed to obtain the value of parameter estimates β_j and test for their significance effect on corresponding explanatory variables. In this model, we adopt the log-likelihood function in estimating for model parameter estimates, which is easy to compute compared to the likelihood function to obtain the maximum likelihood estimates. To maximize the log-likelihood function, we obtain the derivative of *l* (β_j) with respect to the unknown parameters, which are the coefficients. As illustrated in Equation below:

$$\frac{\delta l(\beta)}{\delta \beta_j} = \sum_{i=1}^{n} [(\dot{X}_i \beta_1) Y_{i1} + (\dot{X}_i \beta_2) Y_{i2} + \cdots + (\dot{X}_i \beta_2) Y_{i1}] - \sum_{i=1}^{n} \left(\frac{e^{\sum_{k=1}^{j} x_i \beta_k}}{1 + e^{\sum_{k=1}^{j} x_i \beta_k}} \right)$$

Hence the betas are estimated as: $\hat{\beta} = (X'X)^{-1}(X'y)$,, X is a matrix of the predictors in the multinomial logistic model, (Shakhawat *et al*, 2012).

3.4.3.2 Assessment of fitted model

Once we have fitted the and therefore obtained coefficient estimates, it remains prudent that we assess the importance of each of the exploratory variables. The Wald $\chi 2$ statistics and likelihood ratio tests are used to assess the contribution of individual explanatory variables to a given model. In this study, we used the Wald statistic, which is analogous to t-test in linear regression, to perform model assessment.

It is defined as a ratio of the square of the regression coefficient to the square of the standard error of the coefficient and is asymptotically distributed as a chi-square distribution.

$$W_j = \frac{\beta_j^2}{SE_{\beta_j}^2}$$

The overall goodness of fit of the model is then tested. (Shakhawat *et al*, 2012)

3.4.3.3 Goodness of Fit

Our interest here was to evaluate how well a fitted model described the response variable. This involved investigating how the values predicted by the model are close to observed values. Most statistical packages provide statistics that are used to measure the usefulness of the model and that are similar to the coefficient of determination R^2 in linear regression such as the Cox & Snell given below;

$$R^2 = 1 - \left\{\frac{L_o}{L_m}\right\}^{2/n}$$

Where *L*o is a model with intercept only and *Lm* is a full model. This R^2 value is a very important statistic since it indicates how useful the exploratory variables are in predicting the response variable, and hence, used to determine the convergence of a multinomial logistic regression. (Shakhawat *et al*, 2012)

3.4.3.4 Model Assumptions

Part of the process in analysing data using multinomial logistics regression involves testing for assumptions to ensure the right model is in use. This study took into considerations the below assumptions relevant to our model of interest.

(i) Dependent variable is measured at nominal level (categorical)

(ii) Dependent variable need not be normally distributed

(iii) There should be no multicollinearity between independent variables.

(iv) Logistic regression does not assume a linear relationship between the dependent and independent variable but a linear relationship between the log of the response and exploratory variables.

(v) The error term is independent and there is no assumption of a normal distribution.

(vi) There should be no outliers, (Shakhawat *et al*, 2012).

CHAPTER FOUR

FACTORS THAT INFLUENCE COUPLE FERTILITY PREFERENCE

4.1 Introduction

This chapter presents the study results illustrating how the selected economic, cultural and demographic factors influence couples' fertility preferences in Kenya. The first part presents the descriptive analysis of the background characteristics of the study population. The second part presents the cross tabulation with Chi-square test results showing the association of the variables the third part presents the multivariate analysis results to establish factors that influence fertility preference among couples in Kenya and finally the discussion is presented.

4.2 Back ground characteristics of the study population

Table 4.1 below presents the percentage distribution of the study's 5,265 respondents in regard to their fertility preference, economic, cultural and demographic characteristics.

Table 4.1: Characteristics of study population.

Variable	Per cent	N=5,265
Fertility preference		
Couple fertility preference		
Husbands wants more	13.3	702
Wife wants more	5.3	278
Same preference	71.0	3738
Others	10.4	547
Economic factors		
Wife Educational Attainment		
No education	12.7	667
Primary	56.9	2997
Secondary+	30.4	1601
Husband Educational Attainment		
No education	8.7	459
Primary	53.1	2796
Secondary+	38.2	2010
Type of place of residence		
Urban	36.6	1928
Rural	63.4	3337
Wife work status		
Not working	28.3	1490

Working	71.7	3775
Husband work status		
Not working	1.0	51
Working	99.0	5214
Region		
Coast	11.8	620
North Eastern	4.2	219
Eastern	16.8	883
Central	11.4	598
Rift valley	29.0	1529
Western	9.3	492
Nyanza	14.7	774
Nairobi	2.8	150
Cultural factors		
Wife Religion		
Roman catholic	18.9	997
Protestant/other Christian	67.5	3556
Muslim	11.4	600
Other	2.1	112
Husband Religion		
Roman catholic	21.3	1119
Protestant/other Christian	62.8	3307
Muslim	11.8	619
Other	4.2	220
Demographic factors		
Wife age		
15-24	23.2	1220
25-34	45.7	2407
35+	31.1	1638
Husband age		
15-24	5.9	312
25-34	37.4	1970
35+	56.7	2983
Spousal age gap		
Age of Husband<Age of wife= 0	5.1	271
0-5	46.0	2421
6-10	33.6	1767
11+	15.3	806
Couples' Sex Composition		
Boys=Girls	26.3	1976
Boys<Girls	37.5	1904
Boys>Girls	36.2	1385
Infant/Child mortality		
Experienced death of a child	1.8	97
No experience of death of a child	98.2	5168

Source: Analysis 2014 KDHS

The results show that majority of the couples (71per cent) had the same fertility preference, with only 5.3 per cent of the couples indicating a higher desire for additional children by the wife. In reference to the economic factors, majority of these couples reported primary education as the highest level of education attained by both the husband (53.1 per cent) and the wife (56.9 per cent). Majority (63.4 per cent) of the couples were from the rural areas. Ninety-nine per cent of the couples reported the husband to be working with 71.7 per cent of the couples reporting the wife to be working. On region of residence, majority of the couples were from Rift Valley (29 per cent) with the least representation being Nairobi with 2.8 per cent of the respondents. For the cultural factor religion, majority of the couples professed Protestant/other Christian as the religion they belong to for both husband (62.8 per cent of the couples) and wife (67.5 per cent of the couples). In regard to the demographic factors, majority of the couples (45.7 per cent) reported the wife to be aged between 25years and 34years with 23.2 per cent being aged between 15years and 24years. On the other hand, majority of the couples (56.7 per cent) reported the husband to be aged 35years and above with 5.9 per cent being aged between 15years and 24years. Majority (46 per cent) of the couples reported a spousal age of between zero and five years with only 5.1 per cent reporting a spousal age gap where the age of husband was less than that of the wife. In regard to the couple sex composition, 37.5 per cent of the couples indicated they had more girls than boys, 36.2 per cent indicated they had more boys than girls with 26.3 per cent reported equal number of boys and girls. Majority of the couples (98.2 per cent) reported to have not had a child loss experience with only a minor 1.8 per cent reporting child loss experience.

4.3 Factors associated with desire for additional children among couples in Kenya

In this section, the factors that are associated with the couple fertility preferences are discussed. Table 4.2 below, summaries the percentage distribution of the couple fertility preference by economic, cultural and demographic variables with the chi-square test statistics.

Table 4.2: Percentage distribution of the couple fertility preference by economic, cultural and demographic factors with Chi-square test

Study variables	Couple fertility preference				
	Husband wants more	Wife wants more	Same preference	Others	Total N=5,265
Wife Educational Attainment					
No education	22.0	3.1	66.9	7.9	667
Primary	13.2	5.9	69.8	11.2	2997
Secondary+	10.0	5.1	75.0	9.9	1601
X^2 = 71.068; P = 0.00; df = 6					
Husband Educational Attainment					
No education	21.8	2.6	68.8	6.8	459
Primary	14.1	5.7	69.6	10.6	2796
Secondary+	10.3	5.3	73.4	10.9	2010
X^2 = 55.526; P = 0.00; df =6					
Type of place of residence					
Urban	13.5	4.8	69.9	11.8	1928
Rural	13.2	5.6	71.7	9.6	3337
X^2 =8.174; P =0.043; df = 3					
Wife work status					
Not working	16.0	3.2	71.7	9.2	1490
Working	12.3	6.1	70.7	10.9	3775
X^2 =31.637; P =0.00; df = 3					
Husband work status					
Not working	17.6	5.9	70.6	5.9	51
Working	13.3	5.3	71.0	10.4	5214
X^2 =1.762; P =0.623; df = 3					
Region					
Coast	13.2	3.5	69.4	13.9	620
North Eastern	33.3	0.5	65.3	0.9	219
Eastern	11.7	6.7	72.0	9.6	883
Central	12.2	6.5	73.7	7.5	598
Rift valley	13.2	4.4	71.2	11.2	1529
Western	13.2	7.1	68.3	11.4	492
Nyanza	11.2	6.7	71.2	10.9	774
Nairobi	11.3	2.0	74.7	12.0	150
X^2 =137.016; P=0.00; df = 21					
Wife Religion					
Roman catholic	13.9	4.9	70.8	10.3	997
Protestant/other Christian	11.8	6.0	71.3	10.9	3556
Muslim	20.8	1.8	69.8	7.5	600

Other	16.1	3.6	69.6	10.7	112
X^2 =56.298; P =0.00; df = 9					
Husband Religion					
Roman catholic	13.0	5.0	72.0	10.0	1119
Protestant/other Christian	12.0	6.1	71.0	10.9	3307
Muslim	20.7	2.3	69.0	8.1	619
Other	15.0	2.7	71.4	10.9	220
X^2 =52.862; P =0.00; df = 9					
Wife age					
15-24	10.1	1.2	79.2	9.5	1220
25-34	15.7	4.0	67.6	12.8	2407
35+	12.3	10.2	70.0	7.6	1638
X^2 =183.847; P =0.00; df = 6					
Husband age					
15-24	7.7	0.0	84.3	8.0	312
25-34	13.6	2.1	72.7	11.6	1970
35+	13.8	7.9	68.5	9.8	2983
X^2 =119.576; P =0.00; df = 6					
Spousal age gap					
Age of Husband<Age of wife= 0	19.2	4.8	65.3	10.7	271
0-5	12.4	5.0	73.3	9.3	2421
6-10	13.8	6.1	69.7	10.5	1767
11+	13.2	4.6	68.9	13.4	806
X^2 =25.704; P =0.002; df = 9					
Couples' living children Sex Composition					
Boys=Girls	12.0	5.1	72.3	10.7	1385
Boys<Girls	13.5	6.2	70.0	10.3	1976
Boys>Girls	14.1	4.5	71.1	10.2	1904
X^2 =8.832; P =0.183; df = 6					
Infant/Child mortality					
Experienced death of a child	19.6	5.2	67.0	8.2	97
No experience of death of a child	13.2	5.3	71.1	10.4	5168
X^2 =3.560; P =0.313; df = 3					

Source: Analysis 2014 KDHS

As earlier hypothesised, results indicate there is a relationship between desire for additional and education attainment for both the husband and the wife. For both cases where the wife and the husband had no formal education, 22 per cent of the couples indicated that the husband desired more children. In the case where the highest education level attained was primary school education by the wife, 13 per cent of the couples

reported that the husband desired more children, six per cent reported the wife desired more children and 70 per cent reported same preference. Where the highest level of education attained by the husband was primary school education, 14 per cent of the couples reported that the husband desired more children, six per cent reported that the wife desired more children and 70 per cent reported same preference. Where the highest level of education attained by the wife was secondary school education, 10 per cent of the couples reported that the husband desired more children, five per cent reported that the wife desired more children and 75 per cent reported same preference. Where the highest level of education attained by the husband was secondary school education, 10 per cent of the couples reported that the husband desired more children, five per cent reported that the wife desired more children and 73 per cent reported same preference.

A relationship was also established between the type of place of residence and couple fertility preference. Majority of the couples reported same preference for both categories of type of place of residence with 69.9 per cent of the couples from the urban and 71.7 per cent of the couples from the rural reporting same preference. For the couples residing in the urban settlements, 14 per cent of them reported husbands to desire more children and 5 per cent of them reported the wife desired more children. For those from the rural settlements, 13 per cent of the couples reported the husband to desire more children with six per cent of them reporting the wife to desire more children.

The work status of a woman was found to have a relationship with a couple's fertility preference. It was found that 16 per cent of the couples where the wife was working reported the husband to desire more children, three per cent reported the wife desired more children and 72 per cent reported same preference. For couples where wife was not working, 12 per cent reported the husband desired more children, six per cent reported the wife desired more children and 71 per cent reported same reference.

It was observed that there exists a relationship between the region of residence and a couple's fertility preference. Majority of the couples across the various regions reported same preference.

A relationship between religion and a couple's fertility preference was also established. For couples where the wife belonged to the Roman Catholic religion ,14 per cent of them reported husband desired more children, five per cent reported the wife desired more children and 71 per cent reported same preference. Where the woman belonged to the protestant/other Christian religion, 12 per cent of the couples indicated that the husband desired more children, six per cent reported the wife desired more children and 71 per cent reported same preference. For the couples where the woman belonged to the Muslim religion, 21 per cent reported that the husband desired more children, a minimum two per cent reported the wife desired more children and 70 per cent reported same preference. For couples where the wife's religion was under the 'other' religion category, 16 per cent of them reported the husband desired more children, four per cent reported the wife desired more children and 70per cent reported same preference. For couples where the husband belonged to the roman catholic religion ,13 per cent of them reported the husband desired more children, five per cent reported the wife desired more children and 72 per cent reported same preference. Where the husband belonged to the protestant/other Christian religion, 12 per cent of the couples indicated the husband desired more children, six per cent reported the wife desired more children and 71 per cent reported same preference. For the couples where the husband belonged to the Muslim religion, 21 per cent reported that the husband desired more children, two per cent reported the wife desired more children and 69 per cent reported same preference. For couples where the husband's religion was under the 'other' religion category, 15 per cent of them reported the husband desired more children, three per cent reported the wife desired more children and 72 per cent reported same preference.

A relationship was established between the age of both the husband and the wife and a couple's fertility preference. For couples where the wife was aged 15 to 24 years, 10 per cent reported the husband desired more children, one per cent reported the wife wanted more children and 71 per cent reported same preference. Where the wife was aged 25 to 34 years, 16 per cent reported the husband wanted more children, four per cent reported that the wife wanted more children and 68 per cent reported similar preference. For couples where the wife was aged 35 years and above, 1 per cent reported the husband wanted more children, 10 per cent reported the wife wanted more children and 70 per

cent reported same preference. For couples where the husband was aged 15 to 24 years, seven per cent reported the husband desired more children, there was no case where the wife wanted more children and 84 per cent reported same preference. Where the husband was aged 25 to 34 years, 14 per cent reported the husband wanted more children, two per cent reported that the wife wanted more children and 73 per cent reported similar preference. For couples where the husband was aged 35 years and above, 14 per cent reported the husband wanted more children, eight per cent reported the wife wanted more children and 69 per cent reported same preference.

The relationship between spousal age gap and a couple's fertility preference was established. For couples where the age of husband was less than that of the wife, 19 per cent of them reported the husband desired more children, five per cent reported the wife desired more and 65 per cent reported same preference. For cases where the spousal age gap was between zero and five years, 12 per cent of the couples reported the husband desired more children, five per cent indicated the wife desired more children and 73 per cent indicated same preference. Where the spousal age gap was between six and ten years, 14 per cent of the couples reported the husband desired more children, six per cent reported the wife desired more children and 70 per cent reported same preference. For cases where the spousal age gap was above ten years, 13 per cent of the couples indicated the husband desired more children, five per cent reported the wife desired more children and 69 per cent reported same preference.

Results also indicated relationship between a couple's sex composition and the fertility preference. For couples where the number of boys was equal to the number of girls, 12 per cent indicated that the husband desired more children, five per cent indicated that the wife wanted more children and 72 per cent indicated same preference. For couples where the number of boys was less than the number of girls, 13 per cent reported that the husband desired more children, six per cent reported the wife desired more children and 70 per cent reported same preference. Further, for couples where the number of boys was more than the number of girls, 14 per cent reported that the husband desired more children, five per cent reported that the wife desired ore children and 71 per cent reported same preference.

It was established that there was no association between a couple's fertility preference and child mortality as well as between the work status of the man and a couple's fertility preference.

4.4 Factors influencing desire for additional children among couples in Kenya

As earlier indicated in the methodology section, this study applied a multinomial logistic regression to assess factors that influence fertility preference among couples, given the categorical nature of the dependent variable. Before proceeding with analysis and inference, it was important to perform possible pre-tests on model assumptions so that the eventual results were reliable.

4.4.1 Model Assumptions

The first assumption that requires the dependent variable (couple fertility preference) to be measured at nominal level and categorical in nature was quite straightforward as observed in Table 4.3. Additionally, no formal tests for normality on the dependent variable were deemed necessary considering the relaxed restriction of normality under multinomial regression. On the other hand, test for multicollinearity among independent variables was based on the variance inflation factor (VIF). Multicollinearity occurs when two or more independent variables are highly correlated with each other, and therefore limiting the ability to detect which variable contributes to the elucidation of the dependent variable. Performing this task in SPSS is quite an exhaustive undertaking that requires one to use either of the independent variables as a dependent variable in linear regression mode.

Table 4.3: Collinearity Statistics

Model	Tolerance	VIF
Type of place of residence	.937	1.067
Woman Education	.786	1.272
Region	.867	1.153
Woman religion	.637	1.571
Man religion	.650	1.538
Woman work status	.861	1.161
Man work status	.992	1.008
Woman age	.422	2.370
Man age	.375	2.666
Spousal age gap grouped	.644	1.552
Child mortality	.976	1.025
Couples gender composition	.990	1.010

a. Dependent Variable: Man age

Multicollinearity results are captured in Table 4.3: Collinearity Statistics above with the age of man being modelled as a dependent variable. The variance inflation factor (VIF) is basically a reciprocal of the tolerance and is used to determine if multicollinearity exists between independent variables. Several rules of thumbs have been proposed but it has been generally accepted that the threshold for multicollinearity is a VIF of 3. A VIF greater than 3 suggests slight likelihood of multicollinearity, a VIF greater than 5 suggests quite a high likelihood that there is evidence of multicollinearity whereas for VIF above 10 it is considered there is definite multicollinearity among the independent variables. Based on this criteria, we are confident that our assumption of no multicollinearity has not been violated. Our final pretest of assumption involved checking for any outliers in the data by exploring all the variables of interest. A further examination of extreme values table summaries did not reveal any outliers.

4.4.2 Statistical Model Results

The overall measure of the model fitted is provided. Typically, the "Final" row provides the likelihood ratio tests against the one where it's assumed all the parameter coefficients are zero, also known as a null model. In other words, it helps assess whether the added variables in the model are statistically significant and thus improve the model compared to the intercept only model. The computation of the chi-square statistic is the difference between -2 log likelihood values for the full model and intercept only model. The

computed p-value is less than 0.05, an indication that the final model predicts the couple fertility preference much better than the null model.

Table 4.4:Model Fitting Information

	Model Fitting Criteria			Likelihood Ratio Tests		
Model	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	8094.716	8114.422	8088.716			
Final	7823.789	8434.691	7637.789	450.927	90	.000

Results from the full model for the likelihood ratio tests are presented in Table 4.5. It is observed that the type of residence and the region of residence, age of a man and woman including the spousal gap were statistically significant and thus influence the desire for additional children among couples in Kenya. On the other hand, it is evident from the likelihood ratio tests that religion of both the man and woman as well as working status of the couple, education attainment, infant or child mortality among a couple, and the gender composition of existing children among a couple are not statistically significant determinants of desire for additional children.

Table 4.5: Likelihood ratio tests

Effect	-2 Log Likelihood of Reduced Model	Likelihood Ratio Tests		
		Chi-Square	df	Sig.
Intercept	7637.789[a]	0.000	0	
Residence_type	7647.560	9.771	3	.021
Woman_education	7650.012	12.222	6	.057
Man_education	7646.323	8.534	6	.202
Woman_religion	7647.364	9.575	9	.386
Man_religion	7644.102	6.313	9	.708
Woman_work_status	7639.929	2.140	3	.544
Man_work_status	7638.623	.833	3	.841
Womans_age	7697.002	59.213	6	.000
Mans_age	7671.935	34.146	6	.000
Spousal_age_gap	7660.992	23.203	9	.006
Couples_sex_composition	7645.752	7.963	6	.241
Child_mortality	7641.911	4.122	3	.249
Region	7711.285	73.496	21	.000

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

Finally, results for the estimated multinomial logistic regression coefficients follow in Table 4.6. For purposes of interpretation, the reference category for the couple fertility preference was “others”, i.e. those couples who indicated their desire to have additional

children to be different from either same preference, husband wanted more or the wife preferred more, which included the responses sterilized, declared infecund or never had sex. This implies that three levels of estimation were performed for the categories in the dependent variable. The Exp (B) column represents the odds ratios for the predictors. An odds ratio (OR) greater than 1 indicates that the outcome is more likely to occur in the comparison group compared to the reference group. An OR less than 1 indicates that the outcome is more likely to occur in the reference group compared to the comparison group.

Husbands wants more children (See annex1 for odds)

- The odds of a couple having a husband who desires more children are 0.525 (52.5%) if the husband is in the age group of 15-24 years and 0.730 (73%) where the husband is in the age group of 25-34 years. This implies that it is more likely to find a couple where the husband desires more children for couples that have a husband who is aged 35years and above.
- Where the age of husband was less than that of the wife, the odds of the husband wanting more children is 2.668 (166.8% higher) compared to a spousal age gap of at least 11 years. Where the spousal age gap is between 0-5 years, these odds are 1.842 (84.2% higher), and 1.611 (61.1% higher) for a spousal age gap of 6-10 years.
- Couples residing in the North Eastern province of Kenya have very high odds of having a husband who wants more children compared to couples in Nairobi province. Other provinces with couples whose husbands desire is to have more children compared to Nairobi include Central province, Rift Valley and Western province. On the other hand, Coast, Eastern and Nyanza provinces have much less odds compared to Nairobi.

Wife wants more children (See annex1 for odds)

- The odds of a couple having a wife who desires more children are 0.315 (31.5%) if the wife is in the age group of 15-24 years and 0.369 (36.9%) where the wife is in the age group of 25-34 years. This implies that it is more likely to find a couple

where the wife desires more children for couples that have a wife who is aged 35years and above.

- The odds of a couple having a wife who desires more children are very high for couples where the husband is in the age group of 15-24 years. This implies that it is more likely to find a couple where the wife desires more children for couples that have a husband who is aged 15-24years compared to couples that have a husband aged 35 years and above.
- Where the age of husband was less than that of the wife, the odds of the wife wanting more children is 1.733 (73.3% higher) compared to a spousal age gap of at least 11 years. Where the spousal age gap is between 0-5 years, these odds are 1.893 (89.3% higher), and 1.69 (69% higher) for a spousal age gap of 6-10 years, compared to a spousal age gap of eleven years and above.

Couples with same preference for additional children (See annex1 for odds)

- The odds of a couple living in an urban setting having same preference for additional children is 0.772 compared to couples living in rural areas. In other words, couples living in the urban setting are 22.8% times less likely to have similar preference compared to their rural counterparts.
- The odds of a couple with a wife aged between 15-24years having the same preference for additional children are 1.037 (3.7% higher) compared to a couple with a wife aged 35years and above. This implies that it is more likely to find a couple with the same preference for additional children if the wife is in the age group of 15-24 years compared to a couple where the wife is aged 35 years and above. On the other hand, the odds of a couple with a wife aged between 25-34years having the same preference for additional children is 0.635 compared to a couple with a wife aged 35years and above. This implies that couples where the wife is aged 25-34years are 36.5% less likely to have same preference for additional children compared to couples where the wife is aged 35 years and above.
- If the age of husband was less than that of the wife, the odds of the couple wanting more children is 1.284 times higher compared to a spousal age gap of at

least 11 years. Where the spousal age gap is between 0-5 years, these odds are 1.594, and 1.326 for a spousal age gap of 6-10 years.

- Couples residing in the North Eastern region of Kenya have very high odds of having same preference for additional children compared to couples in Nairobi province. Other regions with couples with higher odds of having similar preference for desire for more children compared to Nairobi include Central and Eastern regions. On the other hand, Coast, Nyanza, Rift valley and Western provinces have much less odds compared to Nairobi.

Table 4.6: Parameter estimates for multinomial logistic regression

Variable	**Categories**	**Husband wants more versus other (Log odds)**	**Wife wants more versus other (Log odds)**	**Same preference versus other (Log odds)**
	Intercept	-0.232	-1.719*	2.086***
Residence(rural)	Urban	-0.066	-0.12	-0.259**
Woman's education (sec+)	No education	0.193	-0.009	-0.312
	Primary	0.023	-0.047	-0.238
Man's education (sec+)	No education	0.43	0.175	0.223
	Primary	0.281	0.145	0.009
Woman religion (other)	Roman Catholic	-0.068	-0.003	-0.095
	Protestant/Other Christian]	-0.26	0.139	-0.025
	Muslim	0.119	-0.747	0.411
man religion (other)	Roman Catholic	-0.035	0.56	0.162
	Protestant/Other Christian	-0.06	0.64	0.03
	Muslim	-0.274	0.927	-0.232
work_status (woman (working)	Not working	0.194	0.025	0.12
work_status(man) (working)	Not working	0.547	0.607	0.472
Age of woman [35+]	[Womans_age=15-24]	-0.019	-1.156***	0.036
	[Womans_age=25-34]	-0.099	-0.998***	-0.455**
Age of man [35+]	[Mans_age=15-24]	-0.644*	1.628***	0.057
	[Mans_age=25-34]	-0.315*	-1.074	-0.149
Spousal_age_gap	Husband Age<Wife Age	0.981***	0.55	0.25

(11 +)	age_gap=0-5	0.611***	0.638**	0.466**
	age_gap=6-10	0.477***	0.525**	0.283***
Child sex composition (Boys>Girls]	Boys=Girls	0.051	0.091	-0.014
	Boys<Girls	0.157	-0.224	0.026
Child death (none)	Experienced	0.403	-0.581	0.106
Region (Nairobi)	Coast	-0.249	0.293	-0.361
	North Eastern	3.02***	1.31	2.179***
	Eastern	-0.01	1.119	0.063
	Central	0.4	1.202	0.354
	Rift Valley	0.024	0.607	-0.103
	Western	0.067	1.049	-0.15
	Nyanza	-0.018	1.077	-0.055

Reference categories in brackets

4.5 Discussion

The study results established that type of place of residence is a factor that influences a couples' fertility preference but only where there is same preference. Majority (63.4%) of the study participants were from the rural settlements. It was observed that it was more likely to find a couple with the same fertility preference for couples living in rural settlements compared to their urban counterparts who were reported to be 22 per cent less likely to have same preference. This is contrary to the argument that normally urban areas are accompanied by better access to a number of resources and as such it is expected that couples who live in the urban set up may have higher level agreements on limiting their family sizes as opposed to those living in the rural set up (Khasakhala, 2011). In addition, studies in the Malawian and Kenyan context have shown that a greater proportion of the couples living in the urban settlements are often in agreement on their child bearing intentions compared to those living in rural settlements (Gebreselassie, 2008; Anyara and Hinde, 2006).

Region of residence was also established as a factor that influences a couple's fertility preference. It was established that generally couples from North Eastern region had very high odds of desiring more children compared to couples in Nairobi. The odds of a couple from North Eastern having a husband who desiring additional children were 20.489, and the odds of a couple from this region having the same fertility preference was

8.834 compared to couples in Nairobi. This implies that a couple from the North Eastern region of Kenya was 19.489 times more likely to have a husband who desired more children compared to a couple in Nairobi. This is consistent with the findings by Janet (2016) where she observed that married men from North Eastern region of Kenya were 16.459 times more likely to desire additional children compared to their counterparts in Nairobi. In additional it was also established that it is more likely to find a couple with the same fertility preference in North Eastern region of Kenya compared to Nairobi.

Age was yet another factor that was established to have an association with the couple's fertility preference. In reference to the wife's age, past studies have associated lower age-groups amongst women with higher desire for additional children. A study by Seannot and Yeatman (2012) established that desire to stop childbearing was rare among younger women. However, the study findings contradict this since the results show that it is less likely to find a couple where the wife desired more children for cases where the wife was in the age groups 15-24 and 25-34 compared to the comparison group which was 35 years and above. It was also observed that it was more likely to find a couple with the same preference for additional children for couples where the wife was in the age group of 15-24 years compared to a couple where the wife is aged 35 years and above.

Paying attention to the age of the husband, study results indicate that it is associated with desire for additional children. The odds of a couple having a husband who desires more children are 0.525 (52.5%) if the husband is in the age group of 15-24 years and 0.730 (73%) where the husband is in the age group of 25-34 years. This implies that it is more likely to find a couple where the husband desires more children for couples that have a husband who is aged 35years and above. This contradicts the findings by Janet (2016) where she observed that the desire for additional children decreases as age increases amongst married men in Kenya. She found that married men in the age groups 15-24; 25-34 and 35-44 were 5.761; 5.463 and 3.086 times more likely to desire additional children respectively compared to those in the 45-54 age-group. The study also revealed that it is more likely to find a couple where the wife desires more children for couples that have a husband who is aged 15-24years compared to couples that have a husband aged 35 years and above.

Spousal age gap is often correlated with a high fertility rate, and it has over and over been recorded that wives who are young are often given pressure by their elder companions to give birth to many children contrary to their wish. The bargaining power of women matters mainly in cases where their preference for more children is high, for instance in cases when their age is way lower than that of their husband. With as small age gap, conflicts of interest among couples tend to be few (Tao, 2009). However, the study findings revealed that as the spousal age gap increases, the desire for more children for both the husband and the wife decreases. In addition, it was established that it was more likely to find same preference for additional children among couples whose spousal age gap was ten years and below compared to couples whose spousal age gap was eleven years and above which was the reference category.

Interestingly, this study did not establish a statistically significant association between religion, education, work status, experience of infant or child mortality as well as the sex composition of a couple's living children on the desire for additional children among couples in Kenya. This contradicts past research which associates these factors with fertility preference. In reference to religion, for instance, Cleland and Wilson 1987, observed that religion has an impact on fertility behaviour, and that fertility patterns are often similar in culturally homogenous groups (in this case religion). In regard to education, a study by NSF (2006) established that when a wife's educational attainment is lower than that of her husband, her influence on decisions related to fertility preference and contraceptive use may reduce. In addition, findings by Kodzi, et al (2010) revealed that fertility preference has an inverse relationship with education levels among couples, which gives the implication that a high level of education shows a decreasing effect on desire for additional children.

Past research has also associated experience of infant and child mortality as well as sex composition of a couple's living children with fertility preference. It has been argued that the prevalence of high infant and child mortality is a contributor to the high fertility rates in Sub Saharan African countries, where with high infant mortality rates, high fertility is often seen as a medium of increasing the chances of precluding lineage extinction (Makinwa –Adebusoye,2001). In a study by Adsera (2006) it emerged that the rates of

infant mortality significantly influence fertility preferences amongst couples, through its effect on children supply and eventually the fertility control motivation. In Kenya, Wachira (2001) established a high desire for more children among women who had experienced child loss in comparison to those who had not experienced child loss. Studies have also indicated that sex composition of children born of a couple previously and are living has an effect on their fertility preferences. For instance, study results of a study carried out in Tharu (Rural of Nepal) by Pramila et al (2014) revealed that there was a high sex ratio and short spacing of births following a female child. Also, in Kenya, Wachira (2001) observed that majority of the families where daughters were more than the sons indicated their preference for having more children as opposed to the ones with more sons, or the ones with an equal number daughters and sons.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the study, conclusion and recommendations for further research and policy. The recommendations are based on study findings.

5.2 Summary

The general objective of this study was to determine factors that are associated with a couple's fertility preference in Kenya. An attempt was made to examine how selected economic, cultural and demographic variables influence a couple's fertility preference in Kenya. The study utilised data from the 2014 Kenya Demographic and Health Survey (KDHS) carried out by the Kenya National Bureau of Statistics (KNBS), and a total of 5,265 couples were studied. A Multinomial logistic regression analysis was adopted to test for relationships between the selected variables. This method of analysis was used since the dependent variable consisted of more than two unordered categories.

It was established that, for the selected economic variables, there was a statistically significant association between type of place of residence, region of residence and couple's fertility preference. For the selected demographic variables, a significant association was observed between the age of both the husband and the wife and a couple's fertility preference. It was observed that it was more likely to find a couple with the same fertility preference amongst couples from the rural settlement compared to those in urban settlements. Couples from the North Eastern region of Kenya were also more likely to have a husband who desire more children compared to couples from other regions. Couple's from this region were also more likely to have the same fertility preference compared to couples from other regions of Kenya. The study established that it was more likely to find a couple where the husband desires more children for couples that have a husband who is aged 35years and above, it was more likely to have a couple where the wife desired more children for cases where the wife was aged 35 years and above and more likely to find same fertility preference among couples of where the wife

was aged 15-24years. The study also revealed that as the spousal age gap increases, the desire for more children for both the husband and the wife decreases. In addition, it was established that it was more likely to find same preference for additional children among couples whose spousal age gap was ten years and below compared to couples whose spousal age gap was eleven years and above which was the reference category.

The study did not find a statistically significant association between the selected cultural variable, religion, and a couple's fertility preference. In addition, it was observed that from the selected economic variables, there was no statistically significant association between education and work status and a couple's fertility preference in Kenya. Further, from the selected demographic variables, there was also no statistically significant association between infant/child mortality and sex composition of a couple's living children and the fertility preference among couples in Kenya.

5.3 Conclusion

The study was able to achieve its three specific objectives; to establish the economic factors that affect couple's fertility preferences in Kenya, to establish the cultural factors that affect couple's fertility preferences in Kenya and to establish the demographic factors that affect couple's fertility preferences in Kenya. The study identified the significant associations between the selected variables and a couple's fertility preference that influence a couple's fertility preference. These include, the economic variable type of place of residence and region of residence as well as the demographic variables, age and spousal age gap. However, from the selected variables, the study established that there was no association between the economic variables work status and education, cultural variable, religion, as well as demographic variables sex composition of a couple's living children and infant/child mortality and a couple's fertility preference in Kenya. In addition, it was also established that there was no association between the demographic variable 'child/infant mortality' and a couple's fertility preference.

5.4 Recommendations

5.4.1 Recommendation for Policy

Study results indicate that the desire for additional children amongst couples is very high among couples from the North Eastern region of Kenya. This region happens to be the region with the highest total fertility rate (6.4) in the country. The region has also been experiencing a slow decline in fertility levels. As such, it will be beneficial for policy maker and duty bearers to pay close attention in promoting region-focused interventions such as inclusion of men in the promotion of adoption of family planning, as it was evident from the study that there is a high desire for additional children among husbands from this region, and generally, majority of the couple had same fertility preference. It would also be beneficial to have a population policy that is regional based such that each region within Kenya has a population policy that has been customized based on the unique factors that affect the population dynamics of that region.

Fertility preference rates in Kenya are still considerably high. As per the Kenya demographic and health survey report for 2014, the mean ideal number of children for a couple in Kenya is 3.6 (KNBS and ICF Macro, 2014). For a country aiming total fertility rate of 2.6 by 2030 and 2.1 by 2050 this number is still considerably high. Deliberate interventions need to be adopted focusing on the major factors that influence a couple's fertility preference such as type of place of residence, region of residence, age and spousal age gap.

5.4.2 Recommendation for further research

This study relied on secondary data which was obtained through cross-sectional research. It would be beneficial to conduct a longitudinal study that follows individuals and couples during their fertility timespan to understand how the fertility preferences change and are realized over time. This would provide additional evidence of such fertility preference changes and the factors that influence them.

The data used in this study was more quantitative than qualitative. Future researchers can adopt a mixed method approach where the qualitative aspect is incorporated in order to

provide additional and detailed information on attitude, cultural and social beliefs as well as behaviour in regard to fertility preference amongst couples.

Kenya has been experiencing a slow pace in fertility decline and variations in fertility levels in the different regions and as such a comparative study can be conducted to establish the factors that determine couple fertility preference differentials in the country as they tend to mask the national averages.

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Annexes

Annex 1: Parameter estimates for multinomial logistic regression

Couple_fertility_preference[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Husband wants more	Intercept	-.232	.619	.140	1	.708			
	[Residence_type=Urban]	-.066	.127	.273	1	.601	.936	.730	1.200
	[Residence_type=Rural]	0[b]			0				
	[Woman_education=No education]	.193	.270	.511	1	.475	1.213	.715	2.058
	[Woman_education=Primary]	.023	.151	.023	1	.879	1.023	.761	1.376
	[Woman_education=Secondary+]	0[b]			0				
	[Man_education=No education]	.430	.299	2.068	1	.150	1.538	.855	2.764
	[Man_education=Primary]	.281	.139	4.064	1	.044	1.324	1.008	1.741
	[Man_education=Secondary+]	0[b]			0				
	[Woman_religion=Roman Catholic]	-.068	.419	.026	1	.871	.934	.411	2.124
	[Woman_religion=Protestant/Other Christian]	-.260	.399	.426	1	.514	.771	.353	1.685
	[Woman_religion=Muslim]	.119	.576	.043	1	.837	1.126	.364	3.481
	[Woman_religion=Other]	0[b]			0				
	[Man_religion=Roma Catholic]	-.035	.320	.012	1	.914	.966	.516	1.808
	[Man_religion=Protestant/Other Christian]	-.060	.294	.041	1	.839	.942	.530	1.676
	[Man_religion=Muslim]	-.274	.510	.289	1	.591	.760	.280	2.066
	[Man_religion=Other]	0[b]			0				
	[Woman_work_status=Not working]	.194	.143	1.835	1	.176	1.214	.917	1.607
	[Woman_work_status=Working]	0[b]			0				
	[Man_work_status=Not working]	.547	.683	.640	1	.424	1.727	.453	6.594
	[Man_work_status=Working]	0[b]			0				
	[Womans_age=15-24]	-.019	.251	.006	1	.938	.981	.599	1.605

	[Womans_age=25-34]	-.099	.166	.356	1	.551	.906	.654	1.254
	[Womans_age=35+]	0[b]			0				
	[Mans_age=15-24]	-.644	.376	2.934	1	.087	.525	.251	1.097
	[Mans_age=25-34]	-.315	.175	3.243	1	.072	.730	.518	1.028
	[Mans_age=35+]	0[b]			0				
	[Spousal_age_gap=<0]	.981	.321	9.362	1	.002	2.668	1.423	5.002
	[Spousal_age_gap=0-5]	.611	.200	9.287	1	.002	1.842	1.244	2.729
	[Spousal_age_gap=6-10]	.477	.182	6.845	1	.009	1.611	1.127	2.302
	[Spousal_age_gap=11+]	0[b]			0				
	[Couples_sex_composition=Boys=Girls]	.051	.149	.119	1	.730	1.053	.786	1.410
	[Couples_sex_composition=Boys<Girls]	.157	.150	1.097	1	.295	1.170	.872	1.568
	[Couples_sex_composition=Boys>Girls]	0[b]			0				
	[Child_mortality=Experienced death of a child]	.403	.440	.838	1	.360	1.496	.632	3.541
	[Child_mortality=No experience of death of a child]	0[b]			0				
	[Region=Coast]	-.249	.396	.396	1	.529	.780	.359	1.693
	[Region=North Eastern]	3.020	.839	12.965	1	.000	20.489	3.959	106.029
	[Region=Eastern]	-.010	.381	.001	1	.979	.990	.469	2.089
	[Region=Central]	.400	.397	1.014	1	.314	1.492	.685	3.251
	[Region=Rift Valley]	.024	.365	.004	1	.948	1.024	.501	2.094
	[Region=Western]	.067	.397	.029	1	.866	1.069	.491	2.327
	[Region=Nyanza]	-.018	.382	.002	1	.963	.983	.465	2.077
	[Region=Nairobi]	0[b]			0				
Wife wants more	Intercept	-1.719	1.013	2.878	1	.090			
	[Residence_type=Urban]	-.120	.166	.522	1	.470	.887	.640	1.228
	[Residence_type=Rural]	0[b]			0				
	[Woman_education=No education]	-.009	.379	.001	1	.980	.991	.471	2.082
	[Woman_education=Primary]	-.047	.189	.063	1	.801	.954	.659	1.381
	[Woman_education=Secondary+]	0[b]			0				
	[Man_education=No education]	.175	.446	.153	1	.695	1.191	.497	2.856

	[Man_education=Primary]	.145	.176	.685	1	.408	1.156	.820	1.631
	[Man_education=Secondary+]	0[b]			0				
	[Woman_religion=Roman Catholic]	-.003	.640	.000	1	.997	.997	.284	3.499
	[Woman_religion=Protestant/Other Christian]	.139	.617	.051	1	.821	1.150	.343	3.855
	[Woman_religion=Muslim]	-.747	.878	.724	1	.395	.474	.085	2.647
	[Woman_religion=Other]	0[b]			0				
	[Man_religion=Roma Catholic]	.560	.514	1.189	1	.276	1.751	.640	4.792
	[Man_religion=Protestant/Other Christian]	.640	.484	1.750	1	.186	1.897	.735	4.899
	[Man_religion=Muslim]	.927	.770	1.451	1	.228	2.527	.559	11.425
	[Man_religion=Other]	0[b]			0				
	[Woman_work_status=Not working]	.025	.205	.015	1	.902	1.026	.686	1.534
	[Woman_work_status=Working]	0[b]			0				
	[Man_work_status=Not working]	.607	.841	.521	1	.471	1.835	.353	9.544
	[Man_work_status=Working]	0[b]			0				
	[Womans_age=15-24]	-1.156	.384	9.058	1	.003	.315	.148	.668
	[Womans_age=25-34]	-.998	.198	25.385	1	.000	.369	.250	.544
	[Womans_age=35+]	0[b]			0				
	[Mans_age=15-24]	-21.628	0.000		1		5.094		
	[Mans_age=25-34]	-1.074	.260	17.074	1	.000	.342	.205	.569
	[Mans_age=35+]	0[b]			0				
	[Spousal_age_gap=<0]	.550	.435	1.596	1	.206	1.733	.738	4.069
	[Spousal_age_gap=0-5]	.638	.256	6.210	1	.013	1.893	1.146	3.128
	[Spousal_age_gap=6-10]	.525	.239	4.811	1	.028	1.690	1.057	2.702
	[Spousal_age_gap=11+]	0[b]			0				
	[Couples_sex_composition=Boys=Girls]	.091	.190	.230	1	.632	1.095	.755	1.588
	[Couples_sex_composition=Boys<Girls]	-.224	.199	1.273	1	.259	.799	.541	1.180
	[Couples_sex_composition=Boys>Girls]	0[b]			0				
	[Child_mortality=Experienced death of a child]	-.581	.589	.976	1	.323	.559	.176	1.772

	[Child_mortality=No experience of death of a child]	0[b]			0				
	[Region=Coast]	.293	.692	.180	1	.672	1.341	.345	5.206
	[Region=North Eastern]	1.310	1.442	.825	1	.364	3.707	.219	62.643
	[Region=Eastern]	1.119	.663	2.851	1	.091	3.061	.835	11.218
	[Region=Central]	1.202	.676	3.164	1	.075	3.327	.885	12.513
	[Region=Rift Valley]	.607	.656	.856	1	.355	1.834	.507	6.631
	[Region=Western]	1.049	.677	2.401	1	.121	2.856	.757	10.771
	[Region=Nyanza]	1.077	.664	2.631	1	.105	2.935	.799	10.782
	[Region=Nairobi]	0[b]			0				
Same preference	Intercept	2.086	.493	17.901	1	.000			
	[Residence_type=Urban]	-.259	.101	6.525	1	.011	.772	.633	.942
	[Residence_type=Rural]	0[b]			0				
	[Woman_education=No education]	-.312	.222	1.971	1	.160	.732	.473	1.132
	[Woman_education=Primary]	-.238	.116	4.171	1	.041	.788	.628	.990
	[Woman_education=Secondary+]	0[b]			0				
	[Man_education=No education]	.223	.254	.765	1	.382	1.249	.759	2.057
	[Man_education=Primary]	.009	.108	.007	1	.934	1.009	.816	1.247
	[Man_education=Secondary+]	0[b]			0				
	[Woman_religion=Roman Catholic]	-.095	.348	.075	1	.785	.909	.460	1.798
	[Woman_religion=Protestant/Other Christian]	-.025	.331	.006	1	.939	.975	.510	1.866
	[Woman_religion=Muslim]	.411	.463	.789	1	.374	1.508	.609	3.736
	[Woman_religion=Other]	0[b]			0				
	[Man_religion=Roma Catholic]	.162	.260	.387	1	.534	1.176	.706	1.958
	[Man_religion=Protestant/Other Christian]	.030	.239	.016	1	.900	1.031	.645	1.647
	[Man_religion=Muslim]	-.232	.403	.331	1	.565	.793	.360	1.746
	[Man_religion=Other]	0[b]			0				
	[Woman_work_status=Not working]	.120	.115	1.104	1	.293	1.128	.901	1.412
	[Woman_work_status=Working]	0[b]			0				

	[Man_work_status=Not working]	.472	.611	.596	1	.440	1.603	.484	5.308
	[Man_work_status=Working]	0[b]			0				
	[Womans_age=15-24]	.036	.200	.033	1	.855	1.037	.701	1.534
	[Womans_age=25-34]	-.455	.135	11.326	1	.001	.635	.487	.827
	[Womans_age=35+]	0[b]			0				
	[Mans_age=15-24]	.057	.286	.040	1	.841	1.059	.604	1.857
	[Mans_age=25-34]	-.149	.141	1.116	1	.291	.862	.654	1.136
	[Mans_age=35+]	0[b]			0				
	[Spousal_age_gap=<0]	.250	.266	.881	1	.348	1.284	.762	2.162
	[Spousal_age_gap=0-5]	.466	.157	8.804	1	.003	1.594	1.172	2.169
	[Spousal_age_gap=6-10]	.283	.142	3.949	1	.047	1.326	1.004	1.753
	[Spousal_age_gap=11+]	0[b]			0				
	[Couples_sex_composition=Boys=Girls]	-.014	.118	.015	1	.902	.986	.783	1.241
	[Couples_sex_composition=Boys<Girls]	.026	.118	.047	1	.828	1.026	.814	1.294
	[Couples_sex_composition=Boys>Girls]	0[b]			0				
	[Child_mortality=Experienced death of a child]	.106	.386	.076	1	.783	1.112	.521	2.372
	[Child_mortality=No experience of death of a child]	0[b]			0				
	[Region=Coast]	-.361	.299	1.462	1	.227	.697	.388	1.252
	[Region=North Eastern]	2.179	.788	7.638	1	.006	8.834	1.884	41.412
	[Region=Eastern]	.063	.290	.048	1	.827	1.065	.604	1.879
	[Region=Central]	.354	.307	1.334	1	.248	1.425	.781	2.600
	[Region=Rift Valley]	-.103	.276	.138	1	.711	.903	.525	1.552
	[Region=Western]	-.150	.303	.244	1	.621	.861	.475	1.559
	[Region=Nyanza]	-.055	.289	.036	1	.850	.947	.537	1.668
	[Region=Nairobi]	0[b]			0				

a. The reference category is: Others.

b. This parameter is set to zero because it is redundant.