"CORRELATES OF FERTILITY PREFERENCE OF KENYAN WOMEN: EVIDENCE FROM THE 1993 KENYAN DEMOGRAPHIC AND HEALTH SURVEY"

BY

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THIS THESIS IS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN POPULATION STUDIES
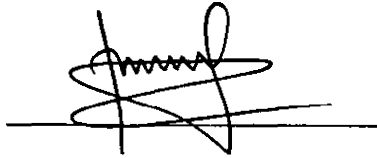
UNIVERSITY OF NAIROBI
POPULATION STUDIES AND RESEARCH INSTITUTE

AUGUST 1998

DECLARATION

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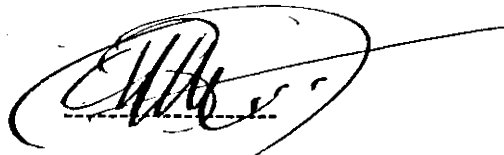
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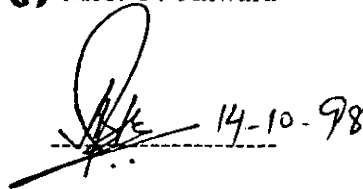university supervisors.

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i

DEDICATION

This thesis is dedicated to my parents and my siblings.

ACKNOWLEDGEMENTS

First and foremost, I am greatly indebted to the German Academic Exchange Service (DAAD) for awarding me a scholarship which enabled me to pursue this course at the Population Studies and Research Institute (PSRI), University of Nairobi. I would also like, once again, to thank The Windle Charitable Trust for their scholarship assistance which enabled me to undertake a Post-graduate diploma programme at the same institute before the Masters programme and their willingness to sponsor me for the Masters programme in case I failed to find sponsorship elsewhere.

I am very grateful to my supervisors Dr. M. Kimani and Mrs. P. Akwara of the Population Studies and Research Institute, University of Nairobi for their tireless supervision and guidance and the keen interest they took in my work from its inception to its completion. My thanks are also due to Dr. L. Ikamari of PSRI who supervised my corrections after my oral examination. P. Ochuka and J. Murage have tirelessly rendered me their computer expertise; hence, I am greatly indebted to both of them.

I would also like to express my deep appreciation to the entire members of staff of PSRI, members of the PSRI library, my colleagues and the entire university community at large who in diverse ways assisted in the completion of this work.

Last but not least, my utmost gratitude goes to my parents, brothers, sisters, friends and relatives for their encouragement and moral support.

ABSTRACT.

Inspite of the usefulness and availability of fertility preference data, study on fertility preferences which can be regarded as precursors of actual fertility performance have received only a minimal attention from researchers and hence there is a wide gap of knowledge on the correlates of fertility preference of women in developing countries in general and in Kenya in particular.

The objective of this study was to examine the correlates of fertility preference of Kenyan women by isolating the demographic, socio economic and socio cultural variables that are significantly associated with fertility preference and eventually make relevant recommendations to policy makers and further researchers in the field based on the results of the study. The study population consisted of 7,540 Kenyan women of child bearing ages of 15-49 covered in the Kenyan Demographic and Health Survey (1993). The dependent variable which is fertility preference was represented by two variables. These were ideal number of children and desire for more children. In total twelve independent variables that were hypothesized to bear association with ideal family size and desire for more children were included in the study. Among these variables, five of them were demographic (number of living children, number of living sons, current age of wife, duration of marriage and child loss experience); another five were socio economic (education level of husband, education level of wife, occupation of husband, work status of wife and current place of residence); and the remaining two were socio cultural variables (ethnicity and religion).

The techniques of data presentation and analysis that were employed included cross tabulation analysis, multiple linear regression analysis and multiple logistic regression analysis.

From the cross tabulations it was observed that there is a consistency between the two variants representing fertility preference in reflecting fertility preferences of a woman. There are indications from the cross tabulations that a woman who wants to stop childbearing is more likely to state a lower ideal family size than one who still wants to have some more children.

The results indicated that the desire for more children is significantly associated with all the explanatory variables. This has also been found to be true in the case of ideal family size with the exception of two explanatory variables namely, occupation of husband which failed to be significantly associated with ideal family size at the 1 percent level of significance and work status of wife which failed the test both at the 5 percent and the 1 percent levels of significance.

Multiple regression technique was used to regress ideal family size on the demographic, socio-economic and socio-cultural variables based on 7,540 cases for which information is available. In this case, ideal family size is a continuous variable taking values 1, 2, 3,.... which represent the number of children the respondent cited as her ideal number of children. On the other hand, logistic regression technique was employed to regress desire for more children on the variables considered based on 4,569 cases for which information on the specefic variables are available. In this case the independent variable is desire (non-dsesire) for more children which is a dichotomous outcome taking the value 1 if the respondent desires another child and 0, otherwise.

The results of the regression analyses are in conformity with both the descriptive analysis and the findings of previous studies.

Among the demographic variables included in the models, number of living children is found to be positively associated with ideal family size and negatively associated with

desire for more children while child loss experience is found to be positively associated with the former but not with the latter. Number of living sons, age of wife and duration of marriage are found to bear no statistically significant association with ideal family size. However, they are important determinants of desire for more children. The association of these variables with desire for more children is negative implying that the higher the number of sons a woman has, the older she is, and the longer her duration of marriage, the less likely she is to desire to have some more children, or alternatively, the more likely she is to stop childbearing.

Among the socio economic variables, work status of wife was found to bear no statistically significant association with either ideal family size or with desire for more children confirming results of previous studies in the country that there is no major conflict between a woman's ability to work and at the same time raise a family. Occupation of husband was also found to have no significant effect on a woman's desire for more children. Education level of wife and education level of husband were found to be negatively associated with both ideal family size and desire for more children. The other socio-economic variable which was significant in explaining both ideal family size and desire for more children is current place of residence. According to the results, urban women are more likely to have lower ideal family size and desire to stop cildbearing sooner than the rural counterparts.

As for the socio-cultural variables, both ethnic and religious affiliation were found to be significantly associated with both ideal family size and desire for more children. Women who follow traditional religious practices have higher ideal family size preferences and are more likely to desire to have more children, or alternatively, less likely to stop childbearing soon as compared with christians and muslims. As for ethinic affiliation it was found out that

women belonging to the Mijikenda/Taita Taveta ethnic group in the Coast province have the highest ideal family size and are more likely to desire to have more children while women belonging to the Kikuyu/Meru/Embu ethnic group in Central province have the lowest ideal family size and are more likely to stop childbearing sooner than women in the other ethnic groups considered.

The major conclusion that was derived from the results of the study was that demographic, socio-economic and socio-cultural factors are important determinants of fertility preference of Kenyan women and hence changing fertility preference norms and then actual fertility performance is not likely to prevail without more specific attention being given to the factors affecting these norms.

The main policy implication of the findings of this study include the empowerment of women through education and acess to employment; increasing access of women to information on reproductive health; promotion of measures such as the provision of purified water, immunization campaigns and diarrhoea control programmes and others that are likely to reduce infant and child mortality . These policy measures are believed, in one way or another, to affect fertility preferences and perceptions and then lower fertility levels of Kenyan women.

TABLE OF CONTENTS

LIST OF TABLES

LIST FIGURES

CHAPTER ONE

GENERAL INTRODUCTION

1.1 Introduction

Fertility preferences in Kenya have changed dramatically during the last two decades as has been evidenced by the various surveys conducted in the country in the recent past. The Kenya Fertility Survey (KFS), the Kenya Contraceptive Prevalence Survey (KCPS), and the Kenya Demographic and Health Survey (KDHS) collected data on ideal family size and preferences for bearing another child. These data serve as indicators of fertility norms and intentions.

Ideal family size has declined from 6.2 children in the 1977 KFS (CBS, 1979) to 5.8 children in the 1984 KCPS (CBS, 1984) then to 4.4 children as reported in the 1989 KDHS (NCPD, 1989) and then to the current level of 3.7 children in 1993 (NCPD, 1993).

The same surveys document that the proportion of currently married women who desire no more children increased from 17 percent in 1977 to 32 percent in 1984. It further increased to 49 percent in 1989 and then to the current level of 52 percent in 1993. Such changes in fertility preference have not been documented elsewhere in sub-Saharan Africa (Brass and Jolly, 1993).

Actual fertility performance of Kenyan women during the same period has changed favourably along with changes in fertility intentions aforementioned. The total fertility rate (TFR) which was recorded at 7.9 children in 1977 declined to 7.7 children in 1984, 6.7 children in 1989 and then to the current level of 5.6 children in 1993.

There are, however, differentials in fertility preferences as well as actual fertility performances both at macro and micro levels as fertility decision making involves a complex

series of decisions over the life cycle. It is influenced by a different set of demographic, socio-economic and socio-cultural characteristics of couples making reproductive decisions during their reproductive career.

This study investigates the demographic, socio-economic and socio-cultural correlates of fertility preference of Kenyan women.

1.2   Statement of the problem

Demographic literature is replete with studies on the measurements, determinants and differentials of fertility both in developed and developing countries. Kenya is no exception in this case where fertility has been considered to be a major area of research (Anker and Knowles, 1982; Brass and Jolly, 1993; Mosley and Werner, 1980; Kimani, 1992; Ongor, 1989 and many others).

This interest on studies on fertility might have partly been stimulated by the fact that Kenya has until a decade ago been a country with a very high fertility level in Sub-saharan Africa which has witnessed a dramatic decline in fertility very recently (CBS, 1979; CBS, 1984; NCPD, 1989; NCPD, 1993).

On the other side of the ledger, fertility preferences which can be regarded as precursors of actual fertility performance (Freedman et al., 1975; Westoff and Ryder, 1977; Nair and Chow, 1980; Pullum, 1980; Ware, 1980) which are implemented in the course of subsequent childbearing career have not received a due attention from researchers inspite of the usefulness and availability of fertility preference data from the fertility surveys as well as the demographic and health surveys conducted world wide.

Hence there is a wide gap of knowledge on the correlates of fertility preference in developing countries in general and in Kenya in particular as the scarce studies that have so

2

far been undertaken worldwide have mainly been concentrated in the developed countries with a different fertility regime and a different demographic, socio-economic and socio-cultural mileu .

Information and knowledge on reproductive preferences and motivation in developing countries like Kenya may be useful to population policy makers with possible significant practical implications for measures to ensure fertility decline further. This study, therefore, attempts to fill the gap of knowledge on fertility preference by investigating the demographic, socio-economic and socio-cultural correlates of fertility preference of Kenyan women using the Kenyan Demographic and Health Survey conducted in 1993.

1.3   Objectives of the study

The overall objective of the study is to examine the correlates of fertility preferences in Kenya with a view to isolating significant factors which can be of policy relevance to population policy makers in Kenya other developing countries in addressing the problem of high fertility.

The specific objectives of the study are embedded in the following two questions.

1. Is there a significant association between demographic, socio-cultural and socio-economic factors in a Kenyan household and desire for additional children on one hand and ideal family size on the other?

2. Are the results of the study of any relevance and importance to policy makers in Kenya? If so what recommendations can be made based on these results?

1.4   Justification of the study

The importance of studying fertility preferences derives from the fact that these preferences when implemented or adhered to are potentially very important in shaping future fertility of a given society. From a strictly policy point of view, information on reproductive motivation may be useful to population policy makers with possible significant practical implications for action programmes such as assessing the relative need of sub-populations for family planning services. The assumption is that most family planning programmes seek to enable individuals to freely implement their preferences and avoid unwanted births (Pullum, 1980).

In a developing country like Kenya where the reduction of fertility rate is a great concern and resources are very scarce a study that could set priorities to allocate the scarce resources towards the important variables that could greatly reduce fertility is needed.

A large number of KAP and other surveys such as the WFS and DHS ask respondents whether or not they want more children. If this question is as meaningful as what several studies have demonstrated it then becomes useful to analyse the factors affecting reproductive intention. If, on the other hand, as critics claim, the question lacks validity, there would have been no reason to examine its correlates.

Kenya seems to be an appropriate setting where this kind of study related to fertility behaviour can be conducted.

Moreover,Kenya is one of the few sub-Saharan African countries with a long history of family planning activities. It is also one of these countries where a spectacular decline in fertility has been witnessed recently. Moreover, the desire to limit child bearing appears to be considerably greater in Kenya than in other sub-Saharan countries where DHS surveys have been conducted (NCPD,1989).

There has also been a decline in ideal family size and an increase in the proportion of currently married women who desire to stop child bearing in Kenya over the past decade. A look at these figures by provinces in Kenya shows striking differences between the different provinces in the country as far as fertility preferences are concerned stimulating interest to discern this phenomenon.

Moreover, there has not been a study of this sort in Kenya on a national level using a large scale data which is a representative of the whole country as is used in this study. Some of the studies that have so far been done on fertility preference (Durell, 1990; Nkanata, 1990) have focused on a smaller sample size and were somewhat limited in the treatment of both the dependent and explanatory variables.

1.5   Scope and Limitation of the Study

This study is based on data from 7540 Kenyan women of childbearing age of 15 to 49 which is derived from Kenya Demographic and Health Survey 1993. This was a national survey designed to be nationally representative. The study has the limitations discussed below.

Firstly, this study focuses on the correlates of fertility preferences of Kenyan women but does not examine whether fertility preferences of women have actually got a predictive validity of their subsequent fertility performances. For example, questions like "would women who have desired no more children in their responses to the interviews in the survey stick to their intentions and avoid pregnancy in the rest of their reproductive career?" or " Do women comply with their ideal family size preferences?", do not get answers from this study.

5

Secondly, fertility decision making is a process that is implemented through communication between the couple. However, this study only examines fertility preferences of women only as obtained from the survey.

In addition, the definition of fertility preference is limited to ideal family size and desire for additional children. Other events in the fertility decision making process such as how many additional children to have, how soon to have the next child, etc., are not considered.

Finally, contraceptive use is one of the most important proximate determinants of fertility. However, while fertility preferences have an influence on decisions on use or non use of contraceptives to limit or space births, the effect of the latter on the former is not clear and hence contraceptive use as a predictor variable is not included in the analysis of this study.

1.6   Organisation of the study

This thesis is composed of six chapters. Chapter one is the introductory part of the thesis which includes the statement of the problem, objectives of the study, its justification and scope and limitations. Chapter two consists of literature review, the theoretical framework of the study, definition of analytical and operational concepts and the hypotheses to be tested. Source of data and methodology of data analysis is discussed in chapter three. Chapter four examines the association between socio-economic, socio-cultural and demographic factors and fertility preference using cross tabulations and chi-square tests. In chapter five, the multiple linear regression and logistic regression techniques are applied on the data and the results discussed. The last chapter is on the conclusion and recommendation of the thesis.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1   Literature Review

This section attempts to review literature that has so far accumulated on fertility preference and a multitude of its socio-economic, socio-cultural and demographic correlates. Before this is done in the second part of this section, the first section will briefly overview literature on the predictive validity of reproductive intetions on subsequent actual fertility performance.

1 2Predictive Validity of Reproductive Intentions on Subsequent   Actual Fertility Performance

Fertility preferences when implemented by respondents are potentially important in shaping the future fertility. Inspite of criticisms challenging reliability and usefulness of information on fertility preference such as ideal family size, wanted status of past birth and desire for additional children (Mauldin, 1965; Hauser, 1967), a number of studies have shown that data on fertility preference are useful, reliable and predictive of future actual fertility behaviour (Freedman et al., 1975; Westoff and Ryder, 1977; Nair and Chow, 1980; De Silva, 1991).

Freedman et al (1975) examined the predictive accuracy of respondents' statement about their future fertility using interview data from a longitudinal study conducted in Taiwan relating attitudes expressed in 1967 involving all married women 18-39 years old to behaviours in subsequent period from reinterviews in 1970 involving the same women interviewed in 1967. In this study the authors found that Taiwanese women are able to

7

predict their subsequent fertility as well as U.S women do. The preference measures are also predictive of rates of contraceptive use. While demographic and social characteristics are correlated with fertility in expected directions, statements about wanting more children prove to be highly predictive of subsequent fertility for both modern and less advanced segments of the population.

Freedman and his associates (1979) went further to examine the same basic question in Taiwan for the period 1967-74 by covering a seven-year rather than a three-year prospective period . The authors used multivariate analysis to assess the relative predictive value of desire for more children and use of contraception as compared with a set of ten demographic and socio-economic variables. In addition to the set of data on which the previous study was based fertility experience for the same sample of women for the four additional years (1970-74) was based on data from Taiwan's population register. The authors found that whether a woman had a birth in subsequent years was strongly related to whether or not she wanted more children and she was practising contraception. Together these two variables predicted whether a child was born better than any combination of the other demographic variables either for the whole period 1967-74, for 1967-70 or for the period 1970 - 74. The multivariate analysis that included four demographic variables-marriage duration, parity, number of sons and education along with desire for more children and contraceptive use, revealed that marriage duration was the single most important determinant of whether an additional birth occurred with desire for more children showing a some what lower effect. Contraceptive use and parity were found to be of equal importance, while number of sons did not have a significant effect.

Westoff (1990) using national data from 134 surveys in 84 countries conducted over the past 15-20 years demonstrated that there is a strong inverse association between the total

fertility rate and the percentage of women who want no more children both in general and among developing nations leading the author to conclude that the proportion of women reporting that they want no more children has high predictive validity and is therefore a useful tool for short-term fertility forecasting. This finding is actually in line with earlier findings by Freedman, Hermalin and Chang (1975) who, using longitudinal data showed that whether a woman wants more children or not is more important as a predictor of future fertility than any other demographic or socio-economic variables used in the study.

De Silva (1991) examined the reliability of respondents preference for additional children in Sri Lanka using data collected in the 1982 Sri Lanka Contraceptive Prevalence Survey and the 1985 Sri Lanka Contraceptive Survey, a follow-up study where the same respondents were interviewed in the two surveys. Although the 1985 study covered 2,310 respondents, later matching of these women with women interviewed in the 1982 surveys yielded only 2,219 matched respondents of which only 1,554 non-sterilized exposed women were finally selected for the analysis after separating out sterilized women (and women whose husbands were sterilized) at the 1982 survey. A Logistic regression model was applied with a dichotomous dependent variable that takes a value of 1 if the respondent had at least one live birth between 1982 and 1985 and zero if she did not.

The author found out that the reproductive preferences of Sri Lankan women are at least moderately predictive of their future fertility. Of the women who wanted to cease child bearing in 1982, 65 percent excluding sterilized women were successful in avoiding an unwanted birth in the follow up period, among those who said they wanted another child about 64 percent reported a birth during that period. At the aggregate level, 53 percent of women wanted no more children and 51 percent had none, while 47 percent intended to have

another child and 49 percent reported at least one birth, a slight excess of actual over wanted fertility.

Nair and Chow (1980) studied the fertility intentions and behaviour of a group of couples selected from six townships in Taiwan to assess the degree of conformity between intention and actual reproductive performance. Future fertility intentions were as stated in 1974 and the behaviour of women studied pertained to the period 1975-77. They have found the number of living children to be the most important predictor of desire for additional fertility closely followed by number of living sons. Desire for additional was the important predictor of fertility followed by wife's age. The number of living sons was found to be more powerful than number of living children in determining desire for more children. Socio-economic status was inversely related to desire for more children.

Demographic, Socio-economic and Socio-cultural Correlates of Fertility Preference.
Demographic Correlates

Number of living children

The actual number of living children in a household has been documented to be directly related to ideal family size in several studies (Pullum, 1980; Lighbourne and Mcdonald, 1982; Deeb, 1988). This positive association between actual and ideal numbers has two explanations. It can arise because women with high initial preferences have proceeded to have many children and those with low initial preferences have successfully controlled their fertility (Knodel and Prachuabmoh, 1973). These two explanations are usually referred to as the "rationalization" effect and the "implementation" effect respectively. Deeb (1988) investigated the relationship between child loss and fertility

10

behaviour and attitudes of women aged between 15 and 49 years in Egypt, Sudan, Kenya and Lesotho and found that when the number of living children increases by one child, ideal family size increases by 0.24 child on the average. For Kenya, he found that number of living children is one of the most important factors affecting desired family size. Every additional child in the number of living children in Kenya raises the desired family size by about 0.4 children on average.

The association between desire for additional children and actual family size is inverse (Khan and Sirageldin, 1977; Lee and Khan, 1978; Kim and Choi, 1981; Poedjastoeti and Hatmadji, 1991) Khan and Sirageldin (1977) examined the extent to which the desire to have additional children can be explained by a variety of socio-economic and demographic variables based on 2,910 Pakistani currently married women. The authors found out that the greater the number of living sons or living daughters in a family, the less the probability of a couple wanting additional children.

Kim and Choi (1981), using 1974 Korean National Fertility Survey, found the number of living children to be one of the four demographic variables which accounted for a predominant portion (91 percent) to the total explained variance in desire for future births.

Poedjastoeti and Hatmadji (1991) analysed women's fertility preferences and the course of future fertility using 1987 Indonesian DHS data and found an inverse relationship between the desire to have more children and the number of living children in the household.

Bulatao and Fawcett (1983) investigated the influence of various determinants of childbearing intentions throughout the fertility career using a set of parallel surveys conducted in the Philippines, Turkey, Indonesia, Republic of Korea, Taiwan, Singapore and the United States. Fertility intentions or preferences were represented by two measures - desire for another child and ideal family size. The authors found that important differences between

11

the desire for additional child and ideal family size are prevalent though the two are strongly interdependent. At higher parities, many of those who want to continue childbearing would do so despite having attained their ideals; ideals appear to be somewhat more restricted in range or more clustered perhaps reflecting social norms than personal predilections. The association of these two measures with number of living children was also different. Desire for another child falls as parity rises while ideal family size rises with parity may be because couples rationalize having had additional children.

Number of Living Sons

The importance of son preference as a determinant of fertility has also been a centre of attraction for demographers and economists alike. When couples have a preference for the sex composition of their offspring, the sex distribution of the children they already have can influence their decision on whether or not to have another child (Stinner and Mader, 1975; Park, 1983; Radheshyam and Langsten, 1986; Gulati, 1988; Khan and Sirageldin, 1977; Kim and Choi, 1981; Freedman and Coombs, 1974; Bulatao and Fawcett, 1983; Choe et al., 1992).

Stinner and Mader (1975) conducted an analysis of actual family size composition and desire for no additional children among national sample of ever married Filipino women. For currently married women aged between 20 and 39 years with two living children, the authors found out a drop from 49 to 41 percent in the percentage wanting no additional children as the number of sons increased. The authors also found that son preference is higher in rural areas while in the urban and highly developed counterparts the preference was strongly in the direction of a balanced sex composition.

Park (1983) investigated the effects of son preference on sex ratio and fertility at the family level using World Fertility Survey data on Korean ever-married women of childbearing ages and found out that the sex of the last child was found to strongly influence couples decision making regarding additional births in all stages of family building process except for a second child. It emerged from the investigation that increasing their family size to a moderate size, parents appear to take into consideration the sex distribution of previous births.

Radheshyam and Langsten (1986) investigated the level and pattern of sex preference for children and its impact on fertility intention and fertility regulating behaviour using data on married women of childbearing age from a rural area of Bangladesh. Using the regular Coombs Scales to measure type and strength of sex preference (See Coombs, 1974), the authors found out that 85 percent of the respondents expressed a preference for boys among them 40 percent expressed a very strong preference. It was also found out that women with a higher proportion of sons are less likely to want more children and are more likely to practise contraception and to be sterilized.

Kim and Choi (1981) in their investigation of preference for number and sex of children and contraceptive use in Korea using the 1974 Korean National Fertility Survey on currently married, fecund and non-pregnant women at the time of the survey found the number of living sons to be the most important determinant in a woman's decision where or not to have another child.

Choe and his associates (1992) examined different demographic, socio-economic and socio-cultural covariates of a woman's parity progression towards the second and third births among ever married women of reproductive age from six Chinese provinces obtained from the 1987 Indepth Fertility Survey. The authors found out son preference to be the factor that

varied most in its effect on the progression to second and third births. Having no son had a much greater influence on having a third birth than on a second one giving an indication that some women had a stronger desire for a son and proceed to have a third child if the first two children were daughters.

Khan and Sirageldin (1977) in their study on the correlates of desire for more children of Pakistan currently married women found out a strong son preference both for the husband and for the wife in Pakistan. They also found that the negative inducement of the number of living sons on wanting additional children is about three times that due to the number of living daughters and the greater the deficit number of living sons or daughters from the corresponding ideal number, the greater the probability of a couple wanting additional children.

Child loss Experience

Infant and child mortality is another demographic variable which has significant effects on fertility preference and actual fertility performance. Child mortality experience in a family has a strong positive influence on number of births and then on family size. This direct relationship between infant and child mortality experience and fertility has been established in several studies (Snyder, 1974; Hamed, 1988; Pebley et al, 1979; Deeb, 1988; Moustaffa, 1988; Chanaka, 1988; Choe et al., 1992; Ebanks,1985 and others).

Snyder (1974) found out that Sierra Leonean parents tend to replace or overreplace a lost child especially when they are in the early stages of family formation. Child deaths in later years are slightly underreplaced presumably because some parents are physiologically or psychologically unable to produce children for replacement.

14

Hamed (1988) in examining the impact of childloss experience on fertility preference and regulation in Egypt using Egyptian Fertility Survey (EFS) carried out in 1980 found out that there is a positive association between mean additional children wanted and the number of dead children even after controlling for the number of living children and duration of marriage.

Pebley et al (1979) examined fertility desires and child mortality experience among Guatamalan women aged 15 and over on attitude towards and expectations related to children. The authors found out that at the third and fourth parities the influence of the death of a woman's own siblings and at the fifth parity the influence of siblings death was greater. From this finding the authors concluded that the child mortality experience affecting a woman's fertility decisions are not only those of her own childbearing years but also those of her mother's childbearing years. From these observations, the authors suggested that mortality declines must occur over two generations to make a significant impact on a woman's desire for additional children.

Deeb (1988) investigated the relationship between childloss and fertility behaviour and attitude in Egypt, Sudan, Kenya and Lesotho. The study population were women in the reproductive age (15-49) who were surveyed in these four countries. The analysis showed that child mortality has a significant effect on desired family size. The analysis quantifying the effect of the former on the latter revealed that a loss of one child out of four children everborn resulted in an increase in the desired family size of 1.0 child in Lesotho, 0.4 child in Sudan, 0.3 child in Egypt and 0.2 child in Kenya. Women who had lost all of their children everborn desired a higher number of children of 4.0 children in Lesotho, 1.7 children in Sudan, 1.4 in Egypt and 0.8 in Kenya as compared with the average number of desired family size of women who did not experience any childloss.

15

Choe et al (1992) in their study in six Chinese provinces found out that the most significant covariate for predicting a second birth was the death of the previous child this effect being greater in provinces where fertility was lower. Among women whose first child died, the probability of having a second child within five years since first birth was more than 90 percent in all the six provinces. The effect of child mortality on the likelihood of having a third child was somewhat weaker than it was on having a second child.

In their investigation of the influence of various correlates of childbearing intentions throughout the fertility career Bulatao and Fawcett (1983) found out that the effect of childloss on desire for more children was negligible while it is positively associated with ideal family size which led the authors to argue that the positive response of ideals to childloss is a gross probably a one-time adjustment process that is not modulated by later experiences in making up for the loss, as desires might be.

Age and Marital Duration

Age of the mother and duration of marriage are also important demographic factors that are significantly associated with fertility preference (Knodel and Prachuabmoh, 1973; Freedman et al., 1974; Abdalla, 1988; Snyder, 1974; Bulatao and Fawcett, 1983; Poedjastoeti and Hatmadji, 1991; Kim and Choi, 1981). Mean desired number of children increases steadily with age of respondents and their duration of marriage possibly reflecting a rationalization of achieved fertility which increases with age while desire for more children declines with age evidenly because parents will have achieved their desired family size.

Kim and Choi (1981), for example, in their study of fertility preference of Korean women found out that the respondent's age and her marital duration are two of the four

demographic variables which explained more than 90 percent of the total explained variance in desire for future births.

Poedjastoeti and Hatmadji (1991) in their study on recent fertility trends in Indonesia found that women with longer marital duration are more likely to want to terminate childbearing than those who have been married for relatively shorter duration.

Snyder (1974) in his study in Sierra Leone found that life-cycle variables are important determinants of number of births. A wife's age has a positive effect upto age 35, and wife's age at first birth has a negative effect reflecting that parents crowd births into the early years of marriage rather than spacing them evenly .

Socio-economic Correlates

Economists and non-economists alike have been interested in understanding how relevant economic theory is to human fertility behaviour and childbearing decision making. For been documented by different studies although not without different and conflicting results. Among these studies the majority have shown that better educated couples tend to prefer small family size and want to terminate childbearing sooner than do less educated ones (Cochrane, 1979; Pullum, 1980; Asikpata, 1988; Khan and Sirageldin, 1977; Mustaffa, 1988; Deeb, 1988; Choe et al, 1992).

However studies which bear results to the contrary are not nonexistent. Poedjastoeti and Hatmadji (1991) found that the percentage of women wanting to terminate childbearing decrease as education level of a woman increases. This positive relationship between education level and fertility preference might have been caused through the effect of education on income since higher income could result in couples' ability to afford more children (Schultz, 1973 cited in Ross, 1977).

The association between desired family size and work status of a woman is not quite clear and there are conflicting opinions with regard to this association. However, the negative association between number of children desired and a woman's participation in the labour force is documented by different studies (Lee and Bulatao, 1983; Mustaffa, 1988; Deeb, 1988; Abdalla, 1988). The authors argue that childbearing and rearing supposedly represents a significant opportunity cost in the form of foregone income for a working wife thus causing a negative association between the two. This incompatibility between fertility preference and behaviour and female labour force participated does not always hold true, though. For example Snyder (1974) attempted to study the determinants of family size in Sierra Leone and found out that the labour force participation of the Sierra Leonean wife has an unexpectedly positive relationship to number of births and this was attributed to the fact that mothers of large families are forced by economic necessity to re-enter the labour market or because re-entry is made easier by the presence of elder children in large families who can take care of the younger siblings.

Anker and Knowles (1982) found that female labour force participation in Kenya is insignificantly related to fertility. Thus, they conclude that in the Kenyan situation, there is no major conflict between the wife's ability to work and at the same time to raise a family.

Place of residence is also another very important socio-economic variable that covariates significantly with fertility preference. Different studies have evidenced that urban women have lower actual fertility performance and ideal family size (Choe et al., 1992; Harper et al., 1974; Poedjastoeti and Hatmadji, 1991; Moustafa, 1988; Khan and Sirageldin, 1977; Deeb, 1988).

Other studies on correlates of fertility preference have evidenced that socio-economic and demographic characteristics affect fertility preference differently.

18

For example, Namboodiri (1974) examined the question "Do couples who want to have some children at given parities differ on selected characteristics from their counterparts who do not expect to have any more children?" This study focused on white women from the 1965 United State National Fertility study data which was based on a national probability sample of currently married woman. The methodology employed is the discriminant function analysis which helps to examine whether two or more groups of individual differ markedly or only negligibly on a given set of characteristics. The social and economic background characteristics examined in the study have been found to be greater at higher parties than at lower ones, while the opposite is true of demographic characteristics. This suggests that only after the couple reaches a moderately high parity do the social and economic variables examined begin to discriminate those who expect to have additional children from those who do not supporting the notion that there is a family size threshold below which very few would want to remain and it is after this threshold has been passed that the social and economic background characteristics begin to discriminate couples who expect to have additional births from their counterparts who do not.

Lee and Khan (1978) analysed reproductive intentions of white mothers in the United States with no more than three children in 1965 and in 1970 for their stability and change with respect to such variables as parity, age of youngest child, wife's current employment status and husband's education. The statistical technique employed is a weighted least squares analysis for a dicthomous dependent variable. Parity and age of the youngest child were found to have a much more important effect on the intent to have additional children than were such socio-economic variables as wife's employment and husband's education. Socio-economic variables have relatively minor effects on the extent to have more, at least among mothers who have had no more than three children.

Socio-cultural Correlates

The value systems attached to various factors such as widow remarriage, abstinence and religious celibacy, adoption of contraception and so on in different religions can also be regarded as responsible for differentials in reproductive behaviour and has been documented in literature (Gulati, 1988; Caldwell, 1968; Jaccard and Davidson, 1976). Gulati (1988) reports an evidence that fertility among Muslims has been observed to be higher than among Hindus in India. Caldwell (1968) found out that Muslims tend to both desire and attain large number of children than other religious groups in Tropical Africa.

Jaccard and Davidson (1979) tested a model where psychological, social and economic variables come into play in influencing fertility related decisions. According to the model, a woman's intention to engage in a certain behaviour (such as to have a child during the next two years) is a function of her belief about the consequences of performing that behaviour and (or) her beliefs about what others think she should do and comply with them. Analysis of variance was performed on intention to use birth control and intention to have a child in the next two years. There was a significant religious differential on intention to have a two-child family with catholics being less likely to intend to have a two child family than Protestants. Protestant women are more often of the perception that their close friends, husbands and their religion are in favour of a two-child family than do catholic women and the latter are more likely than the former of the belief that they can afford and give adequate time to more than two children.

Religious differentials of fertility and fertility preferences in a given society are however more likely to narrow down with changes in the socio-economic, demographic and socio-cultural environment of that given society. Over the last quarter of a century, fertility differential of the three major religious groups in he United States have narrowed. By 1982,

20

the total number of births expected among white Protestant women aged 15-44 was 2.3, only 0.3 children fewer than among comparable Catholics and 0.2 greater than among Jews with even smaller differences when adjustments are made for education, marital status and age (Mosher and Bacharach, 1987). These relatively smaller differences in birth expectations contrast sharply with research findings in the 1950s showing that religious affiliation was the most important determinant of birth expectation and family planning practices (Freedman et al., 1959; Mosher et al., 1986).

Goldscheider and Mosher (1988) investigated contraceptive usage patterns among White women from 1955-82 for the major religious population in the U.S. Drawing on several surveys the data show that in 1955 differences in contracepive use between White Protestants and Catholics were very large and corresponded to higher fertility levels among Catholics. By 1982, all the major religious groups had experienced downward changes in expected family size and all used effective contraceptive methods, including sterialization, the pill and the IUD. However, despite some convergence in the pattern of contraceptive usage overtime, significant differences in contraceptive use life styles remained among the Catholics, Protestant, Jews and those of no religious affiliation explained by, among other things, different contraceptive use styles that relate to religious communities, peer pressures and social norms, differential sex roles, male-female communication patterns, and the differential use of physician based versus other sources of contraceptives.

In a study on the determinants of family size preference and desire for additional children in Ghana, Asitpata (1988) found out that ethnic origin is one of the most important predictors of desired family size in Ghana. The Ewes and Akans have been found to have lower desired family size than other ethnic groups considered in the study.

2.2 Conceptual Framework

Several researchers have argued that fertility should be modeled as a sequential process or a sequence of events, each of which concerns the transition of the couple from parity to the next (Namboodiri, 1972; Bulatao and Fawcett, 1989 Mishler and Westoff, 1955). Mishler and Westoff, 1955, in their working paper prepared in connection with Princeton Fertility study reasoned as follows:

> Each birth occurs in and is influenced by a different set of circumstances. These circumstances reflect and are composed of changes in the family as a group, in its members, and in the social situation of the family. The sequence of events is viewed as interdependent in that each birth is assumed to alter the family's situation and so affects the probability and timing of future births. An important and immediate implication of this assumption is that each of the steps in the sequence requires separate analysis of study.

Namboodiri (1972) on his part argues thus:

> While any couple may even at the time of marriage have some idea about how many children to have altogether, it is unlikely that a firm decision will be made once and for all immediately after marriage. It seems more logical to assume that decisions would be made sequentially, each step dealing with the addition of another child to the family.

The relation between fertility preference and actual transition to higher parities as effected through sequential fertiliy decision making process in the life time of a sepecefic woman may be digrammatically presented as follows:
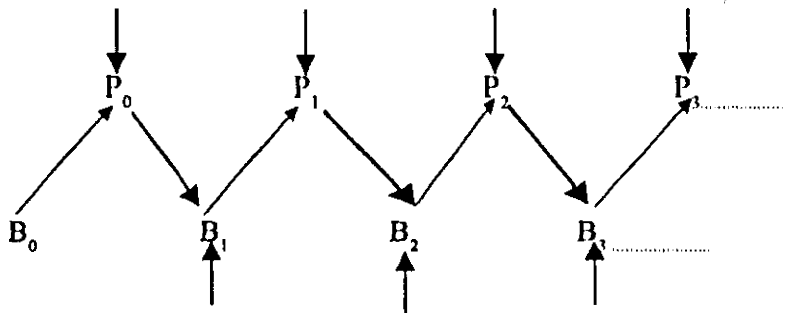
Figure 2.1: How each birth is influenced by a different set of circumstances
Source: Pullum (1980)

22

Here B_0 is the women's own date of birth or some other starting event such as date of menarche or date of marriage and B_1 is the time of her i[th] child birth. During the time interval (B_i, B_{i+1}) the woman has parity $_i$. The sequence p_0, P_1, etc., refers to the family's situation at that parity. the arrows from P_i to B_{i+1} represent the impact of a preference (stated as a total desred family size or preferfnce for another child) upon a subsequent birth event. The arrows from B_i to P_i 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 down to P_i represent the effects of other characterstics of the woman upon her stated preference, including secular trends in the norms of her reference group. These effects include 'response error' as a random component. The vertical arrows directed upward the B_i represent effects other than preferences which determine the transition to higher parities, for example, fecundability and contraceptive failure. The diagram could, however, be complex. The purpose here is simply to emphasize the parallel sequencing of births and stated preferences as the wamen grows older.

To highlight the issues involved in the sequential fertility decision making process it is useful to contrast two polar views of the fertility decision making process.

In the extreme single-decision perspective, a couple decide about their desired fertility after they wed and carry out their decision regarding desired fertility through out the marriage regardless of circumstances. In this case, the initial decision is of prime interest. To borrow terminology from micro-economic theories of fertility, demand for children is fixed at the start and only the supply of children changes thereafter.

23

In the extreme successive-decisions (or sequential) perspective, on the other hand, the couple do not make a commitment to a specific family size at the time of marriage; instead they decide upon each child one by one. Viewing it somewhat differently, their desired family size is recalculated in each successive period of the reproductive career. For such a couple, total demand for children is not a useful concept because demand is continually variable, subject to the changing conditions of the couple's circumstances.

These extreme views, of course, represent convenient assumptions for research rather than descriptions of researchers' belief about real world conditions. The intermediate perspective which includes both extremes as special cases is concurred upon by most fertility theorists(Namboodiri, 1972; Bulatao and Fawcett, 1983; Mishler and Westoff, 1955). From this perspective child bearing experience is not only viewed as an outcome of a single-decision-made goal, but as of a sequential-adjusted process as well. The intermediate case assumes that any couple makes decision about intended family size early in marriage and refine this decision in responses to changing circumstances and hence the responses to questions on ideal family size and desire for additional children change accordingly. These circumstances include demographic, socio-economic, socio-cultural and others (Bulatao, 1983). The original decision thus may provide fairly rigid guidelines for the couples' reaction to later events. The greater the weight given to the original decision, the closer one comes to the extreme single-decision perspective. The greater the weight given to subsequent reconsideration, on the other hand, the closer one comes to the extreme successive decision perspective.

Of considerable interest from the intermediate perspective are the conditions that prompt reconsideration of fertility goals or intentions in the course of the fertility career.

The intermediate perspective provides a rationale for expecting that some influences will change while others will not.

In this study the correlates of fertility preferences in Kenya are examined in the context of stated ideal number of children and stated desire for additional children by Kenyan women. These statements are obtained as responses to the questions:"if you could choose exactly the number of children to have in your whole life how many children would that be ?", and " do you want to have another child at any time in the future ?" respectively.

It should be made clear at this juncture that this study is not at all intended as a rigourous and direct testing of the theoritical framework just discussed which looks at fertility decision making as a sequential process or a sequence of events, each of which concerns the transition of the couples from one parity to the next. For that matter, the analysis in this study is not done on parity basis. The conceptual framework will rather serve as a device to shed light on the actual fertility decision process of couples.

The demographic, socio-economic, and socio-cultural variables and their theoritical relationship with the preference function of the woman just conceptualized above is briefly discussed in the remaining part of this section.

The positive association of desired and actual number of children has been documented by several studies (Pullum, 1980; Lee and Bulatao, 1983; Lightbourne and Mcdonald, 1982). This association may be explained as follows. Where preferences are successfully implemented, women who initially desire a large family eventually have one; where implementation is poor, women may tend to rationalize an actual large family size by reporting it as their preference. On the other hand, the association between desire for additional children and actual family size is inverse; as family building progresses further,

parents tend to stop child bearing (Khan and Sirageldin, 1977; Lee and Khan, 1978; Kim and Choi, 1981; Poedjastoeti and Hatmadji, 1991).

Number of living sons in a family is important in fertility preference studies in so far as it can be a proxy for sex preference of children in that given family preference with regard to sex of children are known to exist in some countries. In many developing countries a high premium is placed on bearing sons as opposed to daughters. In other words, sons are presumed to have a greater net utility in these societies than daughters for a variety of sociological and economic reasons such as economic utility, for example, assistance in agricultural activities, security in times of illness and old age; religious utility, for example, performance of certain prescribed rituals or potential recruitment as religious functionaries and utility for purposes of kinship continuity, for example, carrying on the family name and ensuring the continuation and expansion of the lineage. The question of the existence of preference about the sex of children is important because of the possible influence of such preference on the process of family formation and has been a matter of interest among scholars in demography and other related fields of study. Several studies have shown the effect of sex composition on fertility preference (Kim and Choi, 1981; Stinner and Mader, 1975; Park, 1983; Radheshyam and Langsten, 1986; Khan and Sirageldin, 1977). The concensus among these studies is that couples with a strong preference for one sex, or at least one child for each sex, may go beyond their family size in the event that they do not achieve the sex composition they want by the time their preffered number or children is reached. They also concur that desire for additional children is inversely related with the number of sons in the family (Stinner and Mader, 1975; Choe et al., 1992).

Age of mother is one of the important demographic factors that bears association with fertility preference. Mean number of desired children generally increases steadily with age

of respondents (Knodel and Prachuabmoh, 1973; Freedman et al.,1974; Abdalla, 1988; Snyder, 1974). This possibily reflects a rationalization of achieved fertility which increases with age as well as a trend towar ds smaller family size desired by young cohorts. The relationship between desire for additional children and age of respondents, almost universally, is indirect (Freedman et al.,1974; Kim and Choi, 1981; Bulatao and Fawcett, 1983). This might possibly be explained by the tendency of parents to crowd births into the early years of marriage rather than to space them evenly along their reproductive career (Snyder, 1974).

In the case of marital duration, similar association is generally expected as with age and this has been evidenced by several studies (Bulatao and Fawcett, 1983; Poedjastoeti and Hatmadji, 1991; Kim and Choi, 1981).

The relationship between child loss experience and reproductive behaviour and attitudes is a complex issue. It is difficult to clearly identify the influence of child mortality experience on fertility preference. In general, it may be assumed that the death of a child may affect desired family size because it reduces perception of survival probability. Conceptually as well as logically, couples in high mortality area or those with child loss experience may want to ensure their family survival by having more children than they would if all the offsprings survive and than those who are in low child mortality environment who did not experience any child loss. Previous studies showed that mothers who experienced child loss tended to desire large number of children than did mothers who had not experienced that event (Moustaffa, 1988; Hamed, 1988; Chanaka, 1988; Pebley et al., 1979). Child loss experience also bears influence on desire for additional children through a tendency towards replacement of lost children by parents. It is logically plausible that women with child loss experience would demand for additional children than those who have

all their children alive (Ebanks, 1985; Chanaka, 1988; Choe et al., 1992; Snyder, 1974) and more so in early stages of family formation presumably because some parents find it difficult to produce a replacement in latter years due to physiological or psychological reasons.

Parents' education level may affect fertility attitudes and behaviour in a number of different ways. First, education influences a broad spectrum of social and psychological orientations in parents including freedom from tradition, high aspiration in life and may open up the possibility of alternative life styles, including preference for ownership of consumer durables and reduce preference for more traditional life styles which include a large family size (Freedman, 1975; mentioned in Ross, 1977). Second, education increases women's income earning potential and thereby increases the opportunity cost of their withdrawing from the labour force in order to care for children. Educated parents have better understanding in fertility decision making including child bearing and rearing and perceive higher costs and lower benefits of their children which is believed to impigne upon both fertility attitudes and behaviour.

These considerations suggest that female education attainment and fertility should be negatively related. Several studies have shown that better educated parents tend to prefer small family size than do less educated ones (Cochrane, 1979; Pullum, 1980; Asikpata, 1988; Khan and Sirageldin, 1977; Mustafa, 1988). On the other hand, the higher income potential associated with education may also affect fertility attitudes and behaviour in another direction. Some believe it should tend to increase fertility, since higher income should result in couples being able to afford more children (Schultz, 1973 mentioned in Ross, 1977); others believe that increases in income should tend to lower fertility by opening up the possibility of new life styles (Freedman, 1975, mentioned in Ross, 1977). In short, the relationship between adult educational attainment and fertility is multidimentional. While

factors such as changing tastes, opportunity cost of the wife's time, and effective use of birth control methods should tend to cause a negative relationship between adult education and fertility, such factors as the effect of parents' education on income, among other things, may introduce a positive relationship.

Nonetheless, there is some basis for certain a priori expectations about the relationship between adult education and fertility. First, most previous studies of fertility differentials have found a negative relationship between adult female education and fertility. One would expect similar results in the present study. Second, the relationship between adult male education level and fertility is indeterminate a priori; since the opportunity cost of child care depends much more on the wife's educational level than on her husband's educational level while family income potential is more highly related to husband's educational level than to the wife's educational level (Anker and Knowles, 1982).

The association between desired family size and work status of a woman is not quite clear and there are conflicting openions with regard to this association. This notwithstanding, the negative association between number of living children desired and women's participation in the labour force is documented by different studies (Lee and Bulatao, 1983; Moustafa, 1988; Abdalla, 1988). Theoritically taking care of children is a time intensive activity, and so it is usually assumed that women with young children must either temporarily withdraw from the labour force or find some one else to take care of their children. In either case, the presence of young children supposedly represents a significant cost in the form of foregone income for a working wife thus causing a negative relationship between fertility and female participation in the labour force.

However the evidence from studies concerning the effect of female labour force participation on fertility attitudes and behaviour is inconclusive. There are several criticizms

29

on the theoritical assumptions underlying the arguements on the inverse association between fertility and female labour force participation especially in the developing countries. Firstly, opportunity cost of child care is said to be low in these countries where many families have other household members who can help take care of children. Second, in such societies work is usually done around the home; on a farm or in a family business; thus work and child care are not necessarily incompatible. Another reason why fertility and female labour force participation may not be found to be negatively related is that women with many children may have a relatively strong "need for income" so that these women may be more likely to work than other women. Snyder (1974) has found that the labour force participation of the Sierra Leonean wife has an unexpectedly positive association to number of births apparently because mothers of large families are forced by economic necessity to re-enter the labour market. Anker and Knowles (1982) on their part found that female labor force participation in Kenya is insignificantly related to her fertility performance leading them to the conclusion that in the context of Kenyan situation there is no major conflict between the wife's ability to work and at the same time raise a family.

Different studies have evidenced that urban women have lower actual fertility performance and fertility preferences than women living in rural areas (Choe et al.,1992; Harper et al.,1974; Poedjastoeti and Hatmadji, 1991; Moustafa, 1988; Khan and Sirageldin, 1977). This urban-rural differential is due, among other things, to the characterstics of urban life itself such as the higher net cost of children, freedom from traditional pronatalistic values which favour large families and better access to employment in the modern sector and other life styles which provide alternatives to bearing and rearing of large number of children.

The relation between fertility preference and religion has been evidenced by different studies (Gulati, 1988; Calwell, 1968, Jaccard and Davidson, 1976). The concensus by these

studies is that the value systems attached to various factors such as widow remarriage, abstinence and religious celibacy, adoption of contraceptives and other beliefs differ from one religion to another bringing about differentials in reproductive behaviour. The theoritical association between ethnicity and reproductive behaviour is also engendered by such cultural differences mentioned above between different ethnic groups (Asikpata, 1988; Haishan, 1987; Pullum, 1980).

2.3 Conceptual Model

From the foregoing literature review and conceptual framework, the following conceptual model can be developed. The conceptual model shows the cause-effect relationship between fertility preference and the socio economic, demographic and socio-cultural variables considered in this study.

Figure 2.2: Conceptual Model

Source: Adopted from Pullum (1980)
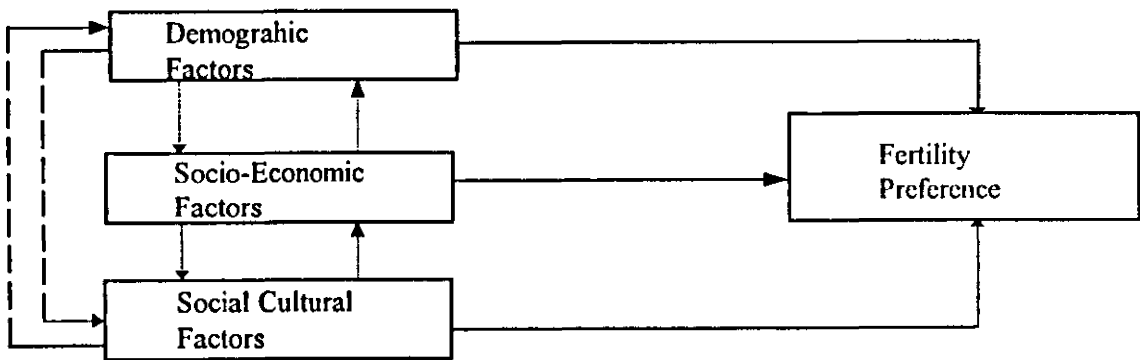
KEY :

_____ Hypothesized Relationship

- - - - - - - - - Other possible Relationsh

2.4   Definition of key analytical concepts

Fertility Preference:

Fertility preference refers to choices or preferences by parents in relation to fertility matters. These preferences include how many children to have during their life time

31

(number of children), how many sons and daughters (gender composition of children), how soon to have an additional child (spacing of births), whether or not to stop child bearing (limiting births) and so on. In this study, fertility preference is represented by two measures. From a single-decision perspective, fertility preference is represented by ideal number of children and from a successive - decision making, it is represented by desire for additional children.

Demographic factors:

These refer to factors which relate to demographic events or processes. In this study the demographic factors considered are number of living children, age of mother, years since first marriage, number of living sons, and child loss experience.

Socio-economic factors:

These factors refer to indices of socio-economic status. The socio-economic variables included in this study are level of education, type of place of residence and occupation status.

Socio-cultural factors:

These are factors which govern people's way of life in a given society. In this particular study the socio-cultural factors considered as influencing fertility preference are religion and ethnicity.

2.5 Conceptual hypotheses

1. Fertility preference of women is likely to be affected or influenced by socio-economic characteristics.

2. Socio-cultural factors are likely to influence fertility preference.

3.   Fertility preference of women in a given family is likely to be influenced by

demographic characteristics prevailing in that family.

2.6   Operational Model and Definition of Variables

The study will employ the following operational model which shows the association

between ideal family size and desire for more children on the one hand and the different

demographic, socio-economic and socio-cultural variables on the other as they are defined

and operationalised in this section.

Figure 2.3: Operational model
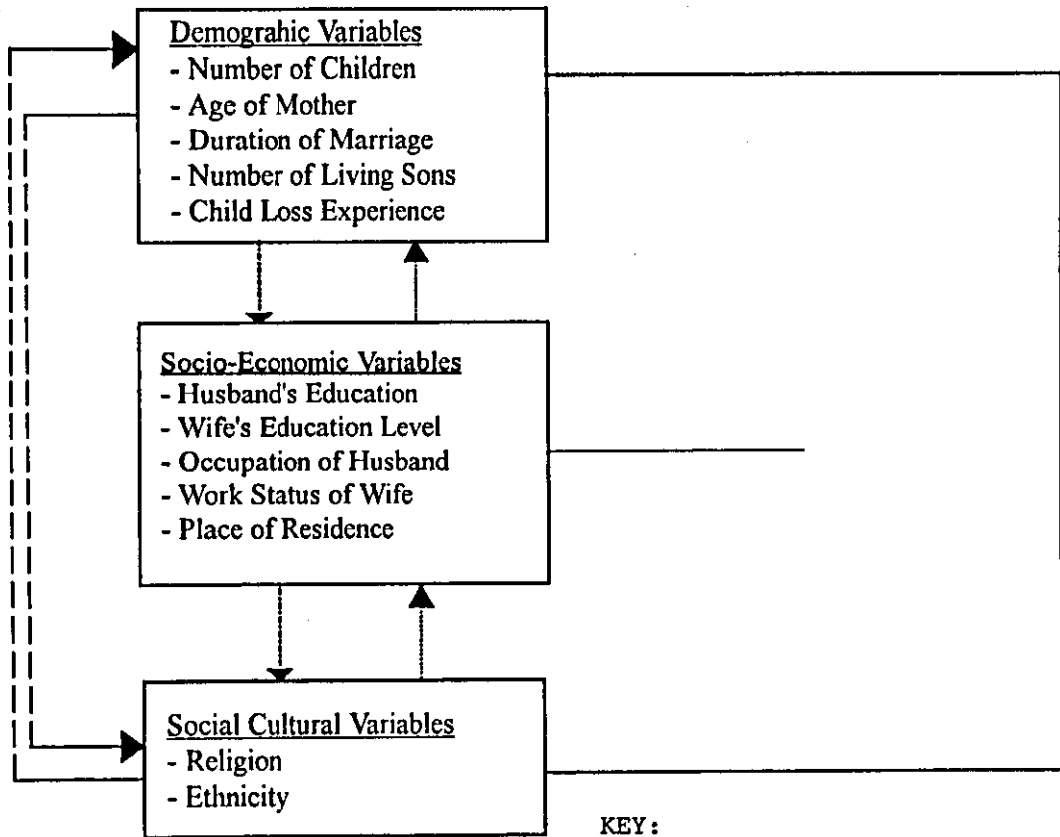
Source: Modified from Pullum (1980)

In the remaining part of this section, operational variables are presented and

discussed.

Ideal family size

This is the first measure of the dependent variable and refers to the preferred number of children in a family which is considered ideal given the prevailing socio-economic, socio-cultural and demographic characteristics in that given family. Data on ideal family size, for this study, were derived from two questions asked in the KDHS. Women who had no children were asked "if you could choose exactly the number of children to have in your whole lifetime, how many would that be?" Women who had children were asked "if you could go back to the time you did not have any children and could choose exactly the number of children to have in your life how many would that be?" The responses of these questions were recoded into three categories which indicate the number of children considered as ideal. These categories are 0-3 children, 4-6 children and 7 or more children. This categorization is applicable for the cross tabulation analysis. For the regression analysis, the responses are not recoded and thus ideal family size is considered as a continuous variable.

Desire for additional children

This is the second measure of fertility preference. Information on desire for additional children is derived from a question about whether another child is wanted in the future. The responses for this question were recorded as "desire" and "non desire". The former is composed of "have another" and "declared infecund" while the latter is composed of "no more" and "sterilized". The response "undecided" is not included in the analysis. As the number of women who gave this responses is very insignificant in magnitude, this exclusion is not likely to affect the results of the analysis. "Declared infecund" refers to those women who desired to have more children but replied that they cannot give birth to a

34

child when they were asked how soon they wanted them. Thus it is included in the "desire" category.

Number of living children

This refers to the number of living children, that is, both sons and daughters who are at home and elsewhere. In this study this variable is categorised into none, 1-3 children, and 4 or more children.

Number of living sons

This refers to the number of living sons both at home and/ or elsewhere a woman has given birth to. In this study this variable is categorised into none, 1-2 sons, and 3 or more sons.

Age of mother

This refers to the age of a mother at last birth day. Age is categorized into three age groups, namely, < 25 years, 25-34 years, and ≥ 35 years. The same categorization was used by previous studies (see Kimani, 1992 for example).

Duration of marriage

This variable refers to the number of years that the respondent has been in marital union.Duration of marriage is categorized into two categories. These are < 10 years and ≥ 10 years.The same categorization was used by previous studies   (see Kimani, 1992 for example).

35

Child loss experience

This variable refers to whether or not a given family has in the past experienced any child loss. It is categorized based on whether the respondent has experienced any child loss in the past or not. Thus, it has two categories, namely, child loss and no child loss.

Education

Education is defined as formal schooling and the educational attainment of women aged 15-49 years has been considered. Formal education is measured by the level of formal education that the respondent had attained. In this study education is categorised into three categories, namely; no education, primary education and secondary and above for both the husband and the wife.

Occupation of husband

Occupation is a classification of people or groups of people on the basis of their involvement in wage employment. Husband occupation in this study is categorised into low status, middle status, and high status occupations. Low status occupations include those who are agricultural employees, household and domestic and unskilled manual workers. Middle status occupations include clerical, sales, services, agricultural self employed and skilled manual workers. High status occupations include professional, technical and managerial occupations.

Work status of wife:

The specific aspect of work status of the wife in this study is whether or not she is currently working or not. Thus, it is categorized into two categories; namely, working and not working.

Place of residence

This refers to classification of people on the basis of where they currently reside. The particular aspect of residence which is useful for this study is an urban area or a rural area. The two categories are thus urban and rural. In NASSEP 3 (and therefore in KDHS 1993), "urban" is defined as places which are centres of population of 10,000 or more and all district head quarters regardless of size.

Ethnicity

An ethnic group is a group of people having common traditions. Such a people share a common language and cultural practices, beliefs, norms and values and they usually reside at a common place. In this study, ethnicity is categorised into four categories. These are Kikuyu/Kamba/Meru/Embu; Luo/Luhya/Kisii; Taita Taveta/Mijikenda and Kalenjin ethnic groups. This categorization is based on the similarity of the ethnic groups interms of their cultural practices.

Religion

Religion refers to people's spiritual relationships with God. In this study, religion is categorized into Catholic, Protestant, Muslim and traditional religion.

2.7 Operational Hypotheses

1. Number of living children is positively associated with ideal family size and negatively associated with desire for more children.

2. Number of living sons is negatively associated with both ideal family size and desire for more children.

3. Age of the mother and her duration of marriage is positively associated with ideal family size and negatively associated with desire for more children.

4. Child loss experience is positively associated with both ideal family size and desire for more children.

5. Education level of parents is negatively associated with both ideal family size and desire for more children.

6. Occupation of husband and work status of wife (i.e., couples'work status) is negatively associated with both ideal family size and desire for more children.

7. Place of residence is likely to affect ideal family size and desire for more children . A woman residing in an urban area is more likely to have a lower ideal family size and less likely to desire more children, or alternatively more likely to stop child bearing sooner than a woman in a rural setting.

8. Ethnic background and religious affiliation of a woman are significantly associated with both ideal family size and desire for more children.

CHAPTER THREE

SOURCE OF DATA AND METHODOLOGY OF ANALYSIS

3.1   Source of Data

The data on fertility preference used in this study is derived from the Kenyan Demographic and Health Survey II (KDHS II) carried out in 1993.

The 1993 Kenyan Demographic and Health Survey was a nationally representative survey of 7,540 women aged 15-49 and men aged 20-54. The KDHS was designed to provide information on levels and trends of fertility, infant and child mortality, family planning knowledge and use, maternal and child health and knowledge of AIDS. In addition, the male survey obtained data on men's knowledge and attitude towards family planning and AIDS awareness.

The survey was carried out by the National Council for Population and Development (NCPD) in collaboration with the Central Bureau of Statistics (CBS). Macro International Inc (MI) of Calverton, Maryland (USA) provided technical and financial assistance through its contract with the U.S agency for International Development (USAID).

Sample Design

The sample for the 1993 KDHS was national in scope, with the exclusion of all three districts in Northeastern province and four other northern districts (Samburu and Turkana in Rift Valley Province and Isiolo and Marsabit in Eastern province). Together the excluded areas account for less than four percent of Kenya's population. The KDHS sample respondents were selected from a national master sample maintained by the Central Bureau of Statistics, the third National Sample Survey and Evaluation Programme (NASSEP-3)

39

which is an improved version of NASSEP-2 used in the 1989 survey. The master sample follows a two-stage design, stratified by urban-rural residence and within the rural stratum, by individual district. In the first stage, 1989 census enumeration areas (EAs) were selected with probability proportional to size. The selected enumeration areas (EAs) were segmented into the expected number of standard sized clusters to form NASSEP clusters. The entire master sample consists of 1,048 rural and 325 urban sample points. A total of 536 clusters i.e. 92 urban and 444 rural were selected for coverage in the KDHS. Of these, 520 were successfully covered. Sixteen clusters were inaccessible for various reasons.

Selected districts were over sampled in order to produce more reliable estimates for certain variables at the district level. Fifteen districts were thus targeted in the 1993 KDHS. These were Bungoma, Kakamega, Kericho, Kilifi, Kisii, Machakos, Meru, Muranga, Nakuru, Nandi, Nyeri, Siaya, South Nyanza, Taita-Taveta and Uasin Gishu; in addition, Nairobi and Mombasa were also targeted. These areas were targeted because they are generally the larger districts in their provinces, most were districts in which NCPD has posted district population officers, and most were also targeted in the 1989 KDHS. Although six of these districts ere subdivided shortly before the sample design was finalized, the previous boundaries of these districts were used for the KDHS in order to maintain comparability with the 1989 survey. About 400 rural households were selected in each of these 15 districts, just over 1000 rural households in other districts, and about 1800 households in urban areas.

A total of 8,805 households was selected for the survey of which 8,185 households were found and 97 percent, that is, 7,950, were successfully interviewed (98% for rural and 93 % for urban). The shortfall is primarily due to dwellings being vacant or in which the inhabitants had left for an extended period at the time they were visited by interviewers.

40

Within these households, 7,952 women were identified as eligible for an individual interview and of these 7,540, or 95 percent were interviewed. Response rates were higher in rural than urban areas (95.4% and 91.7% respectively).

Questionnaires

The questionnaires used for KDHS were of four types: a household questionnaire which was used to list the members of the household, the characteristics of each person listed including higher age, sex, education and relationship to the head of the household; a woman's questionnaire which was used to collect information from women aged 15-49 on topics including background characteristics, reproductive history, and knowledge and use of family planning methods, marriage, fertility preferences, husbands background and respondents work; a man's questionnaire which was utilized to collect information from men aged 20-54 about their background characteristics, knowledge and use of family planning methods, marriage, fertility preferences and awareness of HIV/AIDS; and finally a service availability questionnaire which was used to collect information on the health and family planning services obtained within the cluster areas.

Quality of Data

KDHS was designed to provide high quality data. Results of sample surveys usually suffer from two types of errors. These errors are sampling errors and non-sampling errors.

Non sampling error arises due to mistakes made in carrying out field activities such as failure to locate and interview the correct household, errors in the way the questions are asked, misunderstanding of the questions on the part of either the interviewer and the respondent, data entery errors, etc. Although numerous efforts were made during the

41

implementation of the KDHS to minimize this type of error, non sampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling error is a measure of variability between all possible samples and can be estimated statistically from the survey results. Sampling error is usually measured interms of a standard error for a particular statistic. Sampling errors encountered in the KDHS were computed by the use of some complicated statistical methodology for selected variables considered to be of prime interest. It was noted from the results that the relative standard errors for most estimates of the country as a whole is very small (NCPD, 1993).

The quality of the data used in this study should also be looked at in relation to responses to ideal family size questions. It is important to point out that typically in an African survey, questions on preferences of family size elicit a large non-numerical response, almost entirely couched as "it is upto God" (Ware, 1974; Gay, 1971 mentioned in Ware, 1974; Morgan, 1973, mentioned in Ware, 1974) due to a widespread cultural beliefs in these societies that , among others, children are not counted because doing so would provoke the wrath of the gods.

The KDHS (1993) fared comparatively better, in that about 95 percent of the eligible women gave quantitative answers to the question on ideal family size. Only 5 percent of the responses were non-numerical (composed of "any number" (0.4%), "God knows" (3.0%), "non-numeric response (1.4%), "Dont know (0.5%) which is relatively lower indicating a fair quality of ideal family size data.

Fertility Preference data

In the KDHS, currently married women were asked "would you like to have (a/another) child or would you prefer not to have (any/more) children?" Interviewers were

42

asked to alter the wording of this question depending on whether the respondent already had children or not. If the woman was pregnant, she was asked if she wanted another child after the one she was expecting. Women who said they did not want to have another child were then asked how long they would like to wait before the birth of the next child.

In order to assess ideal fertility preference, the KDIIS, included two questions. Women who had no children were asked "if you could choose exactly the number of children to have in your whole life, how many would that be"? For women who had children, the question was rephrased as "if you could go back to the time you did not have any children and could choose exactly the number of children to have in your life, how much would that be?" These two questions on ideal family size aimed at two things. Firstly, among women who have not started child bearing, the data provide an idea of the number of children these women will have in the future to the extent that women are able to realize their fertility desires. Secondly, among elder, higher parity women, these data provide a measure of the level of unwanted fertility.

Other data used in this study relating to the different set of independent variables hypothesized to affect fertility preference include number of living children, highest education level, partner's education level, partner's occupation, work status of the respondent, religion, ethnicity, region, place of residence, age of respondent, years since first marriage, number of living sons and child loss experience.

3.2 Methods for Data Analysis

This study will employ cross-tabulation analysis to examine the hypothesized association between the dependent variable and a set of demographic, socio-economic and socio-cultural variables. Multiple regression and logistic regression techniques are used to

43

isolate and quantify the specific effects of these independent variables on the dependent variable. These techniques of data analysis are discussed in detail in this section.

3.2.1 Cross Tabulations

Cross tabulation will be used in this study to analyse the relationship between fertility preference and its hypothesised demographic, socio-economic and socio-cultural correlates by displaying the simultaneous or joint frequencies of ideal family size and desire for more children by each of the independent variables considered in a bivariate table. More often percentages are employed in cross tabulations because of the very fact that compairing just the counts in the cells of a cross classification table is quite misleading. Percentages eliminate the differences that come up when there are more respondents in one group that in another. Cross tabulations are employed in this study just because they are simple, more easily understandable, and facilitate comparison.

3.2.2. Chi-square Test

As percentages in a bivariate frequency table do not allow for quantification and testing of the relationship between variables, an index that measures the extent of association as well as statistical tests of hypothesis that there is no association is needed.

The chi-square test (commonly written as χ^2) is one of the simplest and widely used non-parametric test in statistical analysis under cross-tabulation. This is a method of analysis which tests the existence of association between variables in a contingency table. It is commonly used in the social sciences to evaluate whether or not frequencies which are empirically obtained differ significantly from the expected frequencies under certain theoretical assumptions (Blalock, 1963). The larger the differences between the observed and

the expected frequencies the larger is the chi-square value (Gupta, 1979). The χ^2 test enables the researcher to know whether a given discrepancy between theory and observation can be attributed to chance or whether it results from the inadequacy of the theory to fit the observed facts.

In this study, the SPSS/PC+ package was used for the chi-square analysis. After specifying the null hypothesis H_0 that there is no association between the variables considered, the calculated value of χ^2 is compared with the table value of χ^2 for given degrees of freedom at 1 percent and 5 percent levels of significance. If the observed level of significance is less than the chosen significance levels that is, $\alpha = 0.01$ and $\alpha = 0.05$ the null hypothesis of independence is rejected and the alternative hypothesis is accepted as the calculated chi-square value at these chosen levels falls in the rejection region.

3.2.3 Multiple Regression

In this study multiple linear regression is used to predict the effects and measure the relative strength of a set of demographic, socio-economic and soico-cultural factors in explaining variations in ideal family size of Kenyan women based on responses of 7,540 women aged between 15 and 49 years. Since the dependent variable here is a continuous one, multiple linear regression is an appropriate method of analysis.

In a multiple regression model, the expected value of the dependent variable Y_i is assumed to bear a systematic linear relationship with the independent variables. Thus if Y_i is assumed to be related to K independent variables, then this relationship for the ith observation is expressed by:

$$\hat{Y} = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_k X_{ki}.$$

$$i = 1,2,3,\ldots,k. \tag{3.1}$$

45

The difference between the random variable Y_i and its expected value, $\hat{Y}_i$ is the departure of the Y_i from the population regression line relating Y and the X_j's . This differeence between the two magnitudes is referred to as the error term or the disturbance term, denoted by ϵ. Thus the multiple regression model can be re-written as:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_k X_{ki} + \epsilon_i .$$

$$i = 1,2,3,\ldots,k. \hspace{5cm} (3.2)$$

Where:

Y_i is the ith observed value of the dependent variable which in the case of this study is ideal number of children.

X_i is the ith observed value of the Kth independent variables. In this study they refer to a battery of demographic, socio-economic and socio-cultural factors hypothesized to influence ideal family size.

β_i's are the regression coefficients that measure the change in the dependents variable as a result of a unit change in any of the independent variables, the rest of the variable assumed to be not changing. ϵ_i's are the error terms.

Multiple linear regression analysis involves using the available data on the dependent variable and the independent variables obtained from a sample of the population and a variety of statistical techniques to obtain the most appropriate model describing the relationship between these variables and examine its appropriateness. This involves the estimation of the unknown parameters in the regression equation and testing for their statistical significance to determine the important variables describing the relationship.

The estimates of these parameters for this particular study was undertaken using the ordinary least squares (OLS) technique and the SPSS/PC+ package was employed for the computation of the results in a stepwise procedure. According to this OLS approach, and

the β_0 and β_i's are selected in such a way that the sum of squared residuals is minimized i.e. $\Sigma(Y-\hat{Y})^2$ is minimum.

The β_i's in the regression equation are referred to as the partial regression coefficients or the slopes. A partial regression coefficient, say β_i in equation (3.1) or (3.2) stands for the expected change in Y with a change of one unit in X_1 when the variables X_2 through X_k are held constant. Expressed in another way β_1 is the expected differences in Y between one unit but are the same on X_2 through X_k. Likewise, β_2 stands for the expected change in Y with a unit change in X_2 when X_1 and X_3 through X_k are held constant. In general, β_i is the average or expected change in Y for each unit increase in X_i when the value of each of K-1 independent variables is held constant.

The explanatory variables used in this study consists of scaled continuous variables (such as number of living sons), variables with some ordering between the different categories (education) and some with no ordering (religion, ethnicity and others). The categorical variables are introduced into the regression equation by a set of dichotomous dummy or indicator variables. Dummy variables are most commonly used when a researcher wishes to insert a nominal-scale variable into a regression equation.

Since the numbers assigned to categories of a nominal scale are not assumed to have an order or unit of measurement, they cannot be treated as "scores" as they would be in conventional regression analysis (Kim and Kohout, 1975). A set of dummy variables is created by treating each category of a nominal variable as a separate variable and assigning arbitrary scores (usually 0 and 1) for all cases depending upon their presence or absence in each of the categories. The newly created dichotomous variables are referred to as dummy variables due to the fact that their scores have no meaning other than representing or standing for a particular category in the original variable.

47

For a K-category variable, therefore, one category is selected and called the reference category. The exclusion of one of the dummy variables does not actually result in a loss of information. The excluded category which is represented by a combination of zeros becomes sort of a reference point by which the effects of the other dummies are judged and interpreted. For this reason, the excluded category is referred to as the reference category.

Therefore, the intercept (β_0) of the model is the fitted mean value for the reference category of a given variable the other variables remaining constant and the regression coefficient (β_i) is just the difference in the fitted mean value between the corresponding category and the reference category. A positive regression co-efficient of a dummy variable indicates that the fitted mean value of this dummy variable is higher than its reference category while a negative regression co-efficient of a dummy variable indicates that the fitted mean value of this variable is lower than that of the reference category by the magnitude of the regression coefficient.

The goodness of fit of the estimated regression model and the test of significance for the specefic regression coefficients in this study were performed using the F-test and the t-test respectivelly at 1 percent level of significance.

Details of multiple linear regression i.e, Ordinary Least Squares estimation, creation dummy variables, stepwise regression, test of significance and others can be found in Blalock (1963); Koutsoyiannis (1973); Kim and Kohout (1975); Little (1980); Chalmer (1987) and Hanushek and Jackson (1977).

3.2.4 Logistic Regression

Since desire for more children which is the second measure of fertility preference in this study is a dichotomous variable with an outcome of either 0 or 1 depending on non

48

desire and desire for more children respectively, logistic regression is the appropriate method of analysis utilized in this study to predict desire for another child. In the case of a dichotomous dependent variable where the outcome is either 0 or 1 , multiple linear regression technique is inadequate since for extreme values of the independent variables the model can predict values outside the 0 and 1 boundaries, that is negative probabilities or probabilities greater than one. Therefore, in order to introduce the 0,1 bounds into the model logistic regression is the best model to be used and the interest in this case is not in estimating the value or numerical size of the dependent variable but rather in analysing probability of a given event, or more specifically, how a series of exogenous variables influence the underlying probabilities of a particular event (Hanushek and Jackson, 1977).

The logistic model is usually presented in terms of the log of odds or logits which transforms the general logistic distribution into the formular form of the multiple linear regression model which may be expressed as follows:

$$L = Log \frac{P}{1 - P} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n \qquad \dots \dots \dots \qquad (3.3)$$

Where: p is the probability that an event will occur,

$1-p$ is the probability that the event will not occur,

β_0 is the intercept of the model,

β_1 to β_n are the logistic regression coefficients ,

X_1 to X_n are the independent variables considered,

This transformation which is usually referred to as the logit transformation is central to the study of logistic regression. L is called the logit or the log of the odds, where an odds is defined as the ratio of the probability that an event will occur p to the probability that it

will not occur, $1-p$ and analysis based upon the logistic distribution is often called logit analysis.

A coefficient of a logistic regression is interpreted as the change in the log of odds of occurrence of an event associated with a one unit change in the independent variable under consideration. This means that a unit change in a particular variable X_j from X_{j+1} changes the log of odds in favour of the occurrence of a particular event by the amount of β_j or equivalently the odds of occurrence of the event is multiplied by the magnitude $\exp^{(\beta j)}$. A unit change occurring jointly in two variables, X_j and X_k from X_j to X_{j+1} and X_k to X_{k+1} is similarly seen to change the log of odds (logits) in favour of the occurrence of an event by the amount $\beta_j + \beta_k$ or equivalently the odds in favour of occurrence will change by the factor $\exp^{(\beta j + \beta k)} = \exp^{(\beta j)} \exp^{(\beta k)}$ (Schlesselman, 1982).

The parameters in the logit model may, therefore, be interpreted as ordinary regression coefficient where positive values indicate that the independent variables or their interactions raise the log of odds of the independent variable, while negative betas show lower log odds (Pindyck and Rubinfeld, 1976).

In the case of discrete variables such as occupation, religion, sex and so on with no ordinal scale of measurement, indicator (dummy) variables taking the values 1 or 0 to designate the presence or absence of an attribute must be used to correctly represent the effects of such variables in a logistic regression model. For a discrete variable with k categories, k-1 indicator variables are used and interpretation is made in terms of the reference category. Thus, the coefficients associated with one of the k-1 indicator variables represents the change in the logits for this category relative to the reference category (Schlesselman, 1982). A negative logistic regression coefficient (β) will reduce the odds of occurrence of an event which, in this case, is desire for more children, as the corresponding

value of EXP(β) which is the factor by which the odds ratio is multiplied is less than one. A dummy variable which has a negative regression co-efficient has therefore lower odds compared to its reference category. On the other hand, a positive logistic regression co-efficient (β) will raise the odds ratio as the corresponding value of EXP(β) is greater than one. In this case, a dummy variable has higher odds compared to its reference category. In both of the above cases, the deviation of EXP(β) from the value one represents the proportion by which the odds is reduced or raised depending on whether the regression co-efficient is negative or positive respectively.

The maximum likelihood provides the foundation for the approach to the estimation of the logistic regression model. The method of maximum likelihood yields by several iterations the best values for the unknown parameters which maximize the probability of obtaining the observed set of data. The maximum likelihood criterion is frequently used in statistics because it is known usually to be the asymptotically efficient estimator, but it is also an intuitively appealing criterion (Hanushek and Jackson, 1977).

The difference between OLS and MLE is that the former is concerned with picking parameters that yield the smallest sum of squared errors in the fit between the estimated model and and the data while the latter is concernd with picking parameter estimates that imply the highest probability or likelihood of having obtained the observed sample.

The goodness of fit of the estimated logistic regression model is assessed using the Pearson Chi-square value which is computed by SPSS/PC+ computer package used in the estimation of the logistic model while the significance of the logistic regression coefficients is undertaken using the Wald statistic which is obtained by dividing the maximum likelihood estimate of the slope parameter, β_i by the estimate of its standard error. The resulting ratio,

51

under the hypothesis that β_1, will follow a standard normal distribution. Both the above tests will be conducted at 5 percent level of significance.

Details of multiple logistic regression can be found in Hanushek and Jackson (1977); Schlesseelman (1982); Hosmer and Lemeshow (1989) and Pindyck and Rubinfeld (1976).

CHAPTER FOUR

RESULTS OF THE DESCRIPTIVE ANALYSIS ON THE CORRELATES OF FERTILITY PREFERENCE

4.1. Introduction

In any situation where a multivariate problem is encountered, the method of analysis should proceed from simple to complex in an orderly manner. In view of this, we start data analysis in this chapter with simple cross tabulation analysis which is based on the underlying of simplifying pattern or structure relating fertility preference to the selected independent variables. Such a descriptive analysis is indispensable for illuminating the principal features of the data and give good insight into the interrelationships among variables which can, at a later stage, be tested by a more rigorous statistical techniques. However, the limits of cross classification are well known. The continuous variables have to be grouped into levels or categories and the choice of grouping is some what arbitrary.

In this chapter, the results of the descriptive analysis based on data on fertility preference of Kenyan women is presented. First, the characteristics of the respondents based on demographic socio-economic and socio-cultural variables selected for this study are described briefly. Then, the general features of fertility preference are discussed using some basic data on desire for more children and ideal number of children stated by respondents. Finally, the relationships between fertility preference and the demographic, socio-economic and socio-cultural factors are discussed using cross tabulations. Complementary tables by number of living children are also utilised to control for differences in fertility preference that might arise due to

differences in the number of living children women have already got. Moreover, the chi-square test is employed to test the association between fertility preference and the different explanatoryvariables considered.

4.2. Characteristics of the Study Population

Table 4.1 shows the percentage distribution of the study population by different demographic, socio-economic and socio-cultural characteristics. The first column of the table is based on a set of all of the 7540 women covered in the Kenyan Demographic and Health Survey while the second column represents the percentage distribution of a set of 4569 currently married women which is a subset of the whole female population covered in the survey. Women who belong to the first set and not to the second one represent those women who are not currently in marital union (i.e. those women who are single, widowed or divorced). The respondents in both these data sets have responded to questions on ideal family size while it is only women in the second set who have responded to questions on desire for additional children. Therefore, subsequent analysis on ideal family size is based on the first set of women which actually includes the second set while analysis on desire for additional children will centre on the second set which is just a subset of the first one. This is the rationale for presenting the distribution of all women along with that of the currently married women. The percentages presented are valid percentages that is, they do not include missing cases.

Table 4.1: Percentage Distribution of the Study Population, Kenya 1993

VARIABLES	PERCENTAGES	
	ALL WOMEN	CURRENTLY MARRIED WOMEN
DEPENDENT VARIABLES **Desire for additional** **Children**		
Yes		
No	44.6	44.6
	55.4	55.4
Ideal number of **Children**		
0-3 children	43.1	36.0
4-6 children	52.5	58.3
7+	4.4	5.7
INDEPENDENT VARIABLES **Number of living** **Children**		
None	27.5	5.2
1-3	35.8	41.6
4+	36.7	53.2
Number of living **sons**		
None	41.0	20.2
1-2	37.2	47.9
3+	21.8	31.9
Current age of **wife**	45.0	25.7
	30.6	41.7
	24.4	32.6
< 25 years		
25-34 years		
≥ 35 years		
Duration of **Marriage**		
< 10 years	41.9	43.1
≥ 10 years	58.1	56.9
Childless experience		
Yes	78.2	70.4
No	21.8	29.6

55

Education level of wife		
No education	17.2	22.2
Primary	59.0	57.4
Secondary +	23.8	20.4
Education level of husband		
No education	12.8	12.1
Primary	52.6	52.8
Secondary +	34.6	35.1
Occupation of husband		
High status	9.7	9.7
Middle status	69.3	69.3
Low status	21.0	21.0
Work status of wife		
Working	49.8	43.1
Not working	50.2	56.9
Place of residence		
Urban	15.4	13.2
rural	84.6	86.8
Ethnicity		
Kikuyu/Kamba/Meru/Embu	37.4	35.5
Luo/Luhya/Kisii	36.4	38.1
Taita Taveta/Mijikenda	11.1	11.1
Kalenjin	15.1	15.3
Religion		
Catholic	31.0	30.1
Protestant/Oth.Chr.	60.5	60.5
Muslim	4.9	4.8
Traditional	3.6	4.6
TOTAL	(7540)	(4569)

Source: Computed from the 1993 KDHS Data Set

56

Out of the 4569 currently married women considered for this study, the proportion who do not want any more children constitute about 55 percent while the rest which is 45 percent are those who desire to have some more children. These percentages, however, are crude in the sense that they do not take parity (i.e. the number of children in a family) into consideration. As is generally expected, at lower parities the proportion of those who need some more children is by far higher than those who do not (especially at parities zero, one and two). Conversely, at higher parities, the proportion of women who want additional children is by far less than those who do not want any more children.

A large majority of the respondents have reported an ideal family size of 4-6 children which is 53 percent and 58 percent for all women and currently married women respectively followed by those who desired 0-3 children as ideal which is 43 percent and 36 percent. Only 4 percent of all women and 6 percent of currently married women reported an ideal family size of seven or more children. It can be inferred from this distribution that a relatively higher proportion of currently married women desire 4-6 children as their ideal than the proportion of all women who desired the same number of children as their ideal. Conversely, the proportion of currently married women who considered 0-3 children as their ideal is relatively lower than the proportion of all women who preferred their ideal in the 0-3 children category. In short, there is a tendency for currently married women to report relatively higher ideals than all the women considered as a whole. This may partly be explained by the fact that currently married women are relatively older than those in the all women category (which has a larger proportion of women who are young and single) and hence have already had children. Therefore they tend to rationalize their family size by reporting their actual number of children, which might be

57

already high, as their preferred ideal number. Moreover, generally younger women are more receptive to modern life styles which provide alternatives to bearing and rearing a large number of children which is reflected by relatively lower ideal family size desires.

About 37 percent of all the respondents have four or more living children, 36 percent have 1-3 children and the rest 28 percent have no children at all. From the percentage distribution of the currently married women, it can clearly be seen that 53 percent of them have four or more children, 42 percent 1-3 children and only 5 percent have no children at all. It follows that almost 73 percent of all the respondents have at least one child and 37 percent of them have at least four children. The corresponding proportions for currently married women are higher-95 percent and 53 percent respectively. The higher percentage of currently married women having children and their lower proportion with no children compared to all women taken as a whole is expected and self-explanatory.

The same pattern is also observed for the distribution of respondents by the number of living sons they have. Forty-one percent of all the women have no sons, 37 percent have 1-2 sons and 22 percent three or more sons. The proportion of currently married women with no sons, 1-2 sons and three or more sons is 20 percent, 48 percent and 32 percent respectively. It, therefore, follows that almost 60 percent of all women have at least one child while the corresponding figure for currently married women is 80 percent.

Distribution of respondents by their ages shows that 45 percent of all the respondents are less than 25 years, 31 percent between 25 and 34 years while the rest - 24 percent - are older than 35 years. The corresponding proportion of currently married women falling in the above three age groups is 26 percent, 42 percent and 33 percent respectively. It clearly emerges

from the distribution that the first set of women is marked by a higher proportion of younger women and the second set of women that is the currently married women is marked by a higher proportion of older women which is generally expected.

Examining the percentage distribution of respondents by duration of marriage it was found that 42 percent of all the respondents have been in marital union for less than 10 years while the rest - 58 percent - have been in marital union for 10 or more years. The corresponding proportion of currently married women falling in the above categories of marriage duration are 43 percent and 57 percent. The similarity in these percentage distributions emanates from the fact that the question on duration of marriage was asked for women who have ever been married (i.e. single women were not included) while the slight difference in the percentages might, most probably, be because of the fact that the first set of women include women who have ever been married but not currently married like those who are widowed and divorced.

A large majority of the respondents have had some education; only 17 per cent of women aged 15-49 have no formal education. Fifty-nine percent have completed primary school, while 24 percent have completed their secondary education. This shows a considerable improvement since the 1989 Kenyan Demographic and Health survey. In 1989, 25 percent women had never been to school, 47 percent have completed primary school and only 20 percent had continued to secondary education (NCPD, 1989). The pattern of distribution by education observed above which assumes lower proportion of respondents with no education, somewhat medium proportion of those with secondary education and a higher proportion with primary education is as well observed in the distribution of respondents by education level of their husbands. Only 13

59

percent have no formal education. Fifty-three percent have completed their primary school while 35 percent have completed their secondary education.

Percentage distribution of respondents by occupation of their husbands shows that 10 percent have husbands with high status occupations, 69 percent with middle status occupations and 21 percent with low status occupations. As discussed in chapter three, in this study high status occupations include professional/ technical/ managerial occupations (10 percent); middle status occupations are composed of clerical (5 percent), sales (9 percent), services (8 percent), agricultural self-employed (29 percent), and skilled manual (18 percent); while the low status occupations include those who never worked (2 percent), agricultural employees (7 percent), household and domestic (1 percent) and unskilled manual workers (11 percent). The lower proportion of respondents with husbands in high status occupations and the higher proportion of respondents with husbands in middle status occupations is expected from the way the classification of occupation of status is made. On one hand, one would expect fewer professional and managerial occupations in such a survey where almost 85 percent of the respondents are from rural areas. On the other hand, agricultural self-employment which is common in a rural set up and constitutes the highest share in this case (30 percent) is in the middle occupation status category responsible for higher proportion of respondents with husbands in middle status occupations.

Examining the distribution of respondents by their work status it was found that about one in two women i.e. 50 per cent are currently working. The proportion of currently married respondents who are currently working and not working is 43 percent and 57 percent respectively.

60

Kenya still remains predominantly rural. Only 15 percent of all the respondents live in urban areas. Distribution of women by province (region) shows that 23 percent and 17 percent of the respondents are from Rift Valley and Nyanza Provinces respectively. Approximately 14 percent are from each of Central, Coast and Eastern provinces while 13 percent are from Western and 5 percent from Nairobi.

Almost all the women interviewed reported themselves as christians (92 percent) either as protestant and other christians (61 percent) or catholic (31 percent). Muslims account for 5 percent while about 4 percent reported as being in traditional religions.

The percentage distribution of respondents by their ethnic background is as follows. The majority are Kikuyus who represent 20 percent of the respondents. Approximately 15 percent are from each of the Luhya and Kalenjin ethnic groups. Respondents from the Luo and Kamba ethnic community constitute 12 percent and 10 percent respectively. Approximately 7 percent of the respondents are from each of the Kisii and MijiKenda/Swahili ethnic groups. The others are Meru/Embu and Taita/Taveta which represent 6 percent and 4 percent respectively. The remaining 4 percent is accounted by respondents from other ethnic groups. In this study the ethnic groups are reduced into four groups. These are Kikuyu/ Kamba/ Meru/Embu (37 percent); Luo/Luhya/Kisii (36 percent); Taita-Taveta/Mijikenda-Swahili (11 percent) and Kalenjin (15 percent).

4.3. Fertility Preference

4.3.1. Desire for More Children

Desire for more children is one of the two variables designating the dependent variable - fertility preference. Table 4.2 shows the percentage distribution of currently married women by desire for another child, according to the number of living children they already have. It is evident from the table that almost half (46 percent) of currently married women do not want any more children. An additional 9 percent of these women have either been sterilised (6 percent) or responded that they cannot get pregnant and bear children (3 percent). Among 39 percent of the currently married women who desire to have additional children, 26 percent of them wanted to delay next birth for 2 years or more. Therefore, about three-quarters of currently married women in Kenya can be regarded as potential contraceptive user either for limiting their family size or spacing their births.

Table 4.2: **Percentage Distribution of currently married women by desire for more children according to number of living children, Kenya 1993**

Desire	Number of living children[a]							Total
	0	1	2	3	4	5	6+	
Have soon[b]	72.9	24.0	11.5	8.3	4.2	3.4	1.6	11.0
Have later[c]	8.5	60.6	53.0	34.8	20.3	12.6	4.5	26.3
Wants, unsure when	3.4	1.7	1.0	1.4	1.3	0.9	0.2	1.1
Undecided	2.5	3.7	6.4	10.0	9.3	9.2	5.1	6.8
Wants no more	0.4	6.8	24.5	42.6	58.2	64.1	71.0	45.9

Sterilised	0.0	0.4	0.6	2.0	5.6	7.9	13.0	5.7
Declared infecund	12.3	2.8	3.0	0.9	1.1	1.8	4.6	3.2
Total	100	100	100	100	100	100	100	100
Number of women	236	541	702	660	622	554	1254	4569

[a] includes current pregnancy
[b] wants next birth within 2 years
[c] wants next birth after 2 or more years

Source: Computed from the 1993 KDHS Data Set

As one can expect generally, the desire for more children declines noticeably as the number of living children increases. For instance, almost 73 percent of currently married women with no children want to have a child soon (that is within two years) while only 2 percent of women with six or more children want to have another child soon. The corresponding percentage of women who desire to have a child (irrespective of how soon they wish it to be) with no children and with six or more children is 85 percent and 6 percent respectively. Conversely, the proportion of women who want no more children rises from 7 percent for currently married women with only one child to 71 percent for those women with six or more children. This clearly indicates the fact that a substantial proportion of married women are interested in limiting their births. Moreover, a desire among women to space their births is clearly evident from the data. For instance, 61 percent and 53 percent of currently married women with one and two children respectively want their next birth after two years.

Table 4.3 summarizes the percentage distribution of currently married women who want no more children by number of living children and by province. It is evident from the information that women in Nairobi, Central and Eastern provinces are the least pronatalist as compared to the remaining provinces.

About half of married women in Nairobi (53.5 percent) and 41 percent and 30 percent of married women in Central and Eastern provinces respectively want to stop bearing children after having two children. Among women with three children, and over half of married women

Table 4.3: **Percentage of Currently Married Women who want no more Children by Number of Living Children and by Province, Kenya, 1993**

Province	Number of living children							Total
	0	1	2	3	4	5	6+	
Nairobi	0.0	10.9	53.5	65.5	90.5	69.2	92.8	48.4
Central	0.0	4.5	40.9	58.8	84.0	90.1	90.2	66.8
Coast	0.0	9.2	17.2	31.0	40.9	55.3	66.4	38.8
Eastern	0.0	9.1	29.8	55.8	77.9	78.7	88.0	66.0
Nyanza	1.9	8.7	14.7	36.2	58.5	70.5	84.4	51.8
Rift Valley	0.0	3.6	21.7	42.1	52.8	67.2	83.3	55.1
Western	0.0	6.3	20.0	38.2	68.2	72.2	87.4	56.8
Total	0.4	7.2	25.1	44.6	63.8	72.0	84.0	55.4

Source: Computed from 1993 KDHS Data Set

in Central and Eastern provinces (58.8 percent and 55.8 percent respectively) want to stop, compared to less than one-third of those in Coast province (31 percent). Women in Coast province are the least likely to prefer to stop childbhearing; only 66.4 percent of those with six or more children want to stop child bearing while the corresponding proportions for Nairobi, Central and Eastern provinces are 92.8 percent, 90.2 percent and 88.0 percent respectively. Overall, only 38.8 percent of married women in Coast province want to stop while all the rest provinces have proportions very close to the national average that is 55.4 percent.

4.3.2. Ideal Number of Children

Ideal number of children is the second variable representing fertility preference of a woman. Table 4.4 summarises the percentage distribution of all women by ideal number of children and mean ideal number of children for all women by number of living children.

It is evident from the information contained in the table that a substantial number of women were able to reply a numeric answer to the question on ideal family size. Only 6 percent of women aged 15-49 years gave an answer which is non-numeric such as "any number", "It is upto God" and others. Such responses are higher for women with higher number of living children such as those with six or more children (10 percent) than those with lower number of children say one child (3 percent). Those who gave numeric answers generally want to have smaller families. Only 10 percent of respondents said they would choose to have six or more children as ideal while one-third and one-quarter favoured four children and two children respectively as their ideal number of children.

Table 4.4: Percentage Distribution of all Women by Ideal Number of Children and by Number of Living Children, Kenya 1993

Ideal Number	Number of living children							Total
	0	1	2	3	4	5	6+	
0	0.6	0.1	0.3	0.4	0.1	0.1	0.4	0.4
1	2.2	4.2	1.4	2.9	1.9	1.7	0.8	2.1
2	29.3	28.0	29.2	16.2	20.4	17.2	11.0	22.5
3	20.1	25.2	17.9	24.7	10.0	16.6	10.9	18.0
4	29.8	28.8	33.6	34.5	41.6	29.6	40.6	33.7
5	6.0	5.3	6.5	7.5	8.7	14.5	7.5	7.4
6+	6.9	5.4	7.0	8.8	11.7	14.1	19.2	10.3
Non-numeric	5.0	3.1	4.5	4.9	5.6	6.2	9.7	5.7
Total	100	100	100	100	100	100	100	100
No. of women	2053	1006	937	789	723	617	1415	7540
Mean Ideal No.	3.4	3.3	3.5	3.6	3.9	4.0	4.5	3.7
No. of women	1950	975	897	750	682	579	1278	7111

Source: Computed from the 1993 KDHS Data Set

66

It emerges, therefore, that the modal value of ideal number of children is four. Among all women who have responded numeric responses, the mean ideal family size is 3.7 children which is the national average.

As is expected generally, the ideal number of children increases positively with the number of living children parents have. Women with more living children are more likely to take four as their ideal number of children while women with fewer children are likely to state two or three children as ideal. The mean ideal number of children increases from 3.4 children among women who have no children at all to 4.5 children among women with six or more children. A possible explanation for this direct relationship between ideal and actual number of children is that women who have larger families may tend to rationalise their family size by reporting their actual number of children as their ideal numbers. Moreover to the extent that they are able to implement their preferences, women who want larger families will tend to actually have them.

The data presented also reveals the fact that even though there exists a tendency of rationalisation of large families, it is not uncommon for women to report ideal family size lower than their actual number of children. For instance, one-third of the women with four children stated that they would ideally like to have fewer children than four children, two-thirds of women with five children stated that they would ideally like to have fewer than five and 71 percent of those with six or more children would have fewer children if they could start again.

There has been a large decline in ideal family size preferences in Kenya over the past decade. A comparison between different national surveys so far conducted in the country shows that in the 1984 Kenyan Contraceptive Prevalence Survey women reported a mean ideal family

size of 5.8 children (CBS, 1984, p.61). It then declined to 4.4 children as reported in the 1989 Kenyan Demographic and Health Survey (NCPD, 1989, p.52), and then to the current figure of 3.7 children in 1993 (NCPD, 1993). However, this average ideal family size figures hide important differentials in fertility preferences among women in the different provinces in the country.

Table 4.5: **Mean Ideal Number of Children for all women by Number of Living Children and by Province, Kenya, 1993**

Province	Number of living children							Total
	0	1	2	3	4	5	6+	
Nairobi	2.48	2.46	2.57	3.03	3.07	3.00	3.47	2.66
Central	2.78	2.84	2.96	3.24	3.37	3.49	3.91	3.16
Coast	3.69	2.97	4.07	4.48	4.59	4.53	5.35	4.22
Eastern	3.45	3.21	3.22	3.24	3.64	3.69	4.03	3.54
Nyanza	3.36	3.55	3.79	4.04	4.07	4.19	4.48	3.86
Rift Valley	3.63	3.55	3.67	3.73	4.10	4.34	4.89	4.00
Western	3.71	3.57	3.57	3.98	3.87	3.96	4.16	3.84
Total	3.4	3.3	3.5	3.6	3.9	4.0	4.5	3.7

Source: Computed from the 1993 KDHS Data Set

Table 4.5 shows the mean ideal number of children for all women by number of children and by province.

Women in Nairobi have the smallest ideal family size on average (2.7 children) regardless of number of children followed by those in Central and Eastern provinces with 3.2 and 3.5 children respectively. The rest have ideal family size above the national average. Women in Coast province have the highest ideal family size (4.2 children); women in Rift Valley province have the second highest (4.0 children) while women in Nyanza and Western provinces have the third highest with 3.8 children each.

One can clearly see at this juncture the consistency between the two measures of fertility preference viz., desire for additional children and ideal number of children. In general, provinces with higher proportion of women who desire to stop child bearing (Nairobi, Central and Eastern provinces) are the ones with lower mean ideal family size. Conversely, provinces with lower proportion of women who desire to stop child bearing (Coast, Rift Valley, Nyanza and Western provinces) are characterised by higher mean ideal number of children. It is expected that this consistency between these two variants of fertility preference will prevail in the remaining part of analysis.

In the following two sections cross tabulations are used to illuminate clearly the association between fertility preference and the explanatory variables considered in this study. These variables are cross-tabulated both by desire for more children and ideal family size and the emerging percentages are used to describe the relationships. Then the Chi-square test used to test the significance of association between the dependent and the independent variables both at the 5 percent and 1 percent levels of significance.

69

4.4. Correlates of Desire for More Children

In this section, the correlates of desire for more children is discussed. Table 4.6 summarises the percentage distribution of currently married women by desire for more children and demographic, socio-economic and socio-cultural variables together with the emerging Chi-square test results while table 4.7 shows percentage distribution of these women who want no more children by number of living children. The analysis conducted here in is based on information contained in the above tables.

Number of Living Children

It is evident from table 4.6 that desire for more children is inversely related to number of living children. Almost all currently married women who have no children (99.6 percent) want to continue child bearing while only 18 percent of those women with four or more children desire to have additional children. It, therefore, follows that at lower parities the proportion of women who want more children dominates while at higher parities the proportion of women who do not want any more children dominates.

Table 4.6: Percentage Distribution of currently married women by desire for additional children and demographic socio-economic and socio-cultural variables, Kenya 1993.

VARIABLE	Desire for additional children	
	Yes	No
Number of living **Children** $(\chi^2=1434.1, df=2, p<0.01)$		
None	99.6	0.4
1-3	71.3	28.7
4+	18.1	81.9
Number of living **Sons** $(\chi^2=1012.9, df=2, p<0.01)$		
None	83.8	16.2
1-2	47.6	52.4
3+	15.6	84.4
Current age of **wife** $(\chi^2=991.9, df=2, p<0.01)$		
< 25 years	81.3	18.7
25-34 years	42.7	57.3
≥ 35 years	18.4	81.6
Duration of **marriage** $(\chi^2=900.5, df=1, p<0.01)$		
<10 years	70.8	29.2
≥10 years	24.6	75.4
Child loss experience $(\chi^2=69.9, df=1, p<0.01)$		
Yes	48.7	51.3
No	34.7	65.3
Education level of **Wife** $(\chi^2=22.3, df=2, p<0.01)$		
No education	37.9	62.1
Primary education	46.0	54.0
Secondary + education	47.7	52.3

VARIABLE	Desire for additional children	
	Yes	No
Education level of		
Husband $(\chi^2=21.4, df=2, \rho<0.01)$		
No education	46.3	53.7
Primary education	41.1	58.9
Secondary + education	48.7	51.3
Occupation of		
Husband $(\chi^2=14.3, df=2, \rho<0.01)$		
Low status	47.7	52.3
Middle status	44.8	55.2
High status	36.5	63.5
Work status of		
Wife $(\chi^2=19.5, df=1, \rho<0.01)$		
Working	41.7	58.3
Not working	48.5	51.5
Place of		
Residence $(\chi^2=10.2, df=1, \rho<0.01)$		
Urban	51.0	49.0
Rural	43.7	56.3
Ethnicity $(\chi^2=120.3, df=3, \rho<0.01)$		
Kikuyu/Kamba/Meru/Embu	35.6	64.4
Luo/Luhya/Kisii	47.0	53.0
Taita Taveta/Mijikenda	64.3	35.7
Kalenjin	44.5	55.5
Religion $(\chi^2=47.5, df=3, \rho<0.01)$		
Catholic	43.0	57.0
Protestant	43.0	57.0
Muslim	56.7	43.3
Traditional	65.1	34.9
Total	44.6	55.4

Source: Computed from the 1993 KDHS Data Set

72

Table 4.7: Percentage of currently married women who want no more children by number of living children, Kenya 1993.

VARIABLE	Number of living children							
	0	1	2	3	4	5	6+	Total
Current age of Wife								
< 25 years	0.6	4.9	21.4	35.0	56.7	69.2	*	18.7
25-34	0.0	12.4	25.8	45.2	63.0	67.4	79.0	57.3
≥ 35 years	0.0	16.7	44.5	60.9	69.3	80.2	85.6	81.6
Duration of Marriage								
< 10 years	0.5	5.9	23.6	41.5	64.5	67.7	83.3	29.2
≥ 10 years	0.0	18.6	31.8	49.2	63.5	72.5	84.0	75.4
Child loss experience								
Yes	0.0	15.7	18.8	38.0	56.0	72.5	83.6	51.3
No	0.5	5.7	26.4	46.6	67.7	71.8	84.3	65.3
Educational level Wife								
No education	0.0	6.8	19.8	34.0	45.5	64.3	77.8	62.1
Primary education	0.7	6.1	20.6	42.5	66.0	72.0	87.8	54.0
Secondary +	0.0	9.5	36.1	53.9	72.7	83.2	90.3	52.3
Educational level Husband								
No education	0.0	11.4	15.9	34.0	46.1	56.9	73.4	53.7
Primary education	0.9	5.8	21.9	40.8	64.5	70.5	85.4	58.9
Secondary +	0.0	8.3	30.4	50.9	68.4	80.4	91.1	51.3
Occupation of Husband								
Low status	1.7	8.8	24.9	43.5	61.6	64.9	81.3	52.3
Middle status	0.0	6.6	24.3	42.7	64.4	72.0	84.0	55.3
High status	0.0	8.8	31.8	56.6	65.8	85.2	91.5	63.5

VARIABLE	Number of living children							
	0	1	2	3	4	5	6+	Total
Work status of Wife								
Working	0.9	8.4	28.3	47.5	64.1	75.7	84.3	58.3
Not working	0.0	5.9	21.6	40.6	63.3	66.5	83.5	51.5
Place of residence								
Urban	0.0	14.5	38.6	61.7	66.1	73.1	86.4	49.0
Rural	0.5	5.0	21.5	41.2	63.6	71.9	83.8	56.3
Ethnicity								
Kikuyu/Kamba/ Meru/Embu	0.0	6.7	36.0	58.7	81.2	84.5	89.2	64.4
Luo/Luhya/Kisii	0.9	7.7	19.4	38.9	62.8	70.9	86.1	53.0
Taita Taveta/Mijikenda	0.0	7.7	12.8	23.6	32.7	50.9	64.0	35.7
Kalenjin	0.0	3.0	14.1	32.5	51.6	64.2	82.5	55.5
Religion								
Catholic	0.0	5.1	27.9	45.5	65.9	73.9	83.6	57.0
Protestant	0.8	7.5	22.8	44.9	66.1	74.4	87.4	57.0
muslim	0.0	13.8	29.4	47.1	36.4	59.3	74.3	43.3
Traditional	0.0	9.1	26.3	33.3	37.0	42.9	45.5	34.9
Total	0.4	7.2	25.1	44.6	63.8	72.0	84.0	51.6

* No one with 6+ children for this category

Source: Computed from the 1993 KDIIS Data Set

The results of the chi-square analysis indicate that the association between desire for more children and number of living children in a family is significant both at 5 percent and 1 percent significant levels. This finding is in conformity with results of previous related studies (Pullum, 1980; Lightbourne and Mcdonald, 1982).

Number of Living Sons

The association between desire for more children and number of living sons couples have is generally inverse. Nearly eighty four percent of currently married women who have no sons want to continue child bearing while the corresponding proportions among women are 48 with 1-2 sons and three or more sons are 48 percent and 16 percent respectively. From the cross tabulation of desire for more children by this variable, the chi-square value falls in the rejection region leading to the rejection of the null hypothesis of independence in favour of the alternative hypothesis. It is thus concluded that there is a significant association between desire for more children and number of living sons. This result is in conformity with the findings by Park (1983), Radheshyam and Langsten (1986), Khan and Sirageldin (1977) and others.

Current Age of Wife

From table 4.6, it can clearly be seen that younger women are more likely to desire more children than the older ones. Among currently married women below 25 years old, 81 percent of them want to continue child bearing while only 18 percent want to have some more children among women who are 35 years of age or older. This observed pattern is also evident at different parity levels (see table 4.7). The results of the chi-square analysis indicate that at the

75

chosen 5 percent and 1 percent levels of significance, the chi-square value falls in the rejection region leading to the rejection of the null hypothesis of independence in favour of the alternative hypothesis. Hence, it is concluded that there is a significant association between desire for more children and current age of wife. This result is in conformity with findings of previous related studies (Knodel and Prachuabmoh, 1973; Freedman et al., 1974; Snyder, 1974).

Duration of Marriage

Generally, similar results are expected as what has been found in the case of current age of wife. Women with lower duration of marriage are more likely to continue child bearing, than women with higher duration of marriage. The proportion of currently married women who want to have more children among those with shorter duration of marriage (less than 10 years) is 71 percent while the corresponding figure for those women with longer duration of marriage (more than 10 years) is only 25 percent. Conversely, 75 percent of women with longer duration of marriage want no more children while only 29 percent of those with shorter duration of marriage want to stop child bearing. When the number of living children is introduced to control for differences in desire for more children due to number of children parents have already got, the same results emerge i.e., at all levels, the proportion of women who want no more children is higher for women with longer marriage duration than the other category of women. The results of the chi-square analysis indicate that the association between desire for more children and duration of marriage is significant both at 5 percent and 1 percent significant levels. Similar results were found by previous related works (Poedjastoeti and Hatmadji, 1991; Kim and Choi, 1981).

76

Child Loss Experience

It is generally expected that women who have experienced child loss in their reproductive career are more likely to desire to continue child bearing than their counterparts who have had no experience of child loss at all due to the fact that the former tend to ensure their family survival by having as many children as possible. This is true for Kenyan women, as well, as is evidenced by the results in table 4.6. The proportion of women who want to have more children is higher among women who have had child loss experience (49 percent) than among women who have never experienced child loss (35 percent). This is also evident after controlling for the number of living children. The results of the chi-square indicate that the association between desire for more children and child loss experience is significant. This is in conformity with findings of previous related studies (Ewbanks, 1985; Chanaka. 1988; Snyder, 1974).

Education Level of Wife

The association between education level of wife and desire for more children is inverse. Generally, women with no educational achievement are more likely to desire more children than women with secondary education. However, the results in table 4.6 suggest the contrary. Overall, a higher proportion of women with no education want to stop child bearing (62 percent) than women with some secondary education (52 percent). However, when the number of living of children is introduced, it is found that at all parity levels, the proportion of women who desire to stop child bearing is higher among women with at least some secondary education than among

77

those with no education. For example, among women with three children, 34 percent of those with no education want to stop child bearing, compared to 54 percent of those with at least some secondary education. Likewise, among women with four children, 46 percent of those with no education want to stop child bearing, compared to 73 percent of those with at least some secondary education. The proportions for women with primary education is always intermediate between the two. This means that the overall figures may have resulted due to the fact that on average women with no education have more children than those with secondary education level, since the proportion wanting no more children rises with the number of living children. The results of the chi-square analysis indicate that the association between desire for more children and education levels of wife is significant both at 5 percent and 1 percent levels of significance. This finding is in conformity with previous studies (Cochrane, 1979; Pullum, 1980; Moustafa, 1988).

Education Level of Husband

Women married to husbands with primary level of education are the least natalist compared to the other categories followed by those married to husbands with no education. Women married to husbands with at least secondary level of education are the least likely to desire no more children. Almost 60 percent of women in the first category above desire to stop child bearing while the corresponding proportions are 54 percent and 51 percent among women in the second and third categories. This result is not in conformity with what is generally expected. However, when the number of living children is taken into account as a controlling factor, it emerges that the results thus obtained are drastically different from the overall figures

explained above. Almost at all parity levels the proportion of women who desire to stop child bearing is higher among women married to husbands with at least secondary level of education followed by those married to husbands with primary levels of education. Women married to husbands with no education are the least likely to desire to stop child bearing. For example, among women with five living children 80 percent of those married to husbands with secondary level of education want to stop child bearing compared to 70 percent of those married to husbands with primary level of education and 57 percent of those married to husbands with no education. From the cross tabulations, the results of the chi-square analysis indicate that at the chosen levels of significance, the chi-square value falls in the rejection region leading to the rejection of the null hypothesis of independence in favour of the alternative hypothesis. It is, therefore, concluded that there is a significant association between a woman's desire for more children and education level of her husband.

Occupation of Husband

The results in table 4.6 show that the association between desire for more children and occupation of husband is inverse. Women married to husbands with higher occupation status are more likely to desire to stop child bearing than those married to husbands with lower or middle status occupations. This is also true when the number of living children is introduced as a control (see table 4.7). Overall 64 percent of women married to husbands with high status occupation want to stop child bearing compared to 55 percent of those married to husbands with middle status occupations and 52 percent of those married to husbands with low status occupations. The difference in terms of desire to stop child bearing is minimal between women

married to husbands with lower status and middle status occupations as evidenced both by the overall figures and the results when the number of living children is taken into account. The results of the chi-square analysis also indicate that desire for more children and occupation of husband are significantly associated both at 1 percent and 5 percent levels of significance.

Work Status of Wife

Theoretically, work status of a woman is inversely associated with her desire for more children. Other things being equal, a working mother is more likely to stop child bearing (less likely to desire more children) than a mother not working due to a higher opportunity cost incurred by the former in the child bearing and child rearing process. This is true for Kenyan women as the results in table 4.6 evidence. Overall 58 percent of Kenyan working women want to stop child bearing compared to only 52 percent of those not working. This is also evident at different parity levels. At all the parity levels considered, the proportion of women who desire to stop child bearing is higher among working women than women not working (see table 4.7). The results of the chi-square analysis also indicate that desire for more children and work status of wife are significantly associated both at 1 percent and 5 percent levels of significance.

Place of Residence

Table 4.6 reveals that, overall, a larger proportion of rural than urban women want to stop child bearing. Fifty six percent of women living in rural areas want no more children compared to only 49 percent of those living in urban areas. However, when the number of living children is taken into consideration the reverse is true. It is clear from the table 4.7 that

80

at all parity levels, the proportion of women who desire to stop child bearing is higher among women living in urban areas than those living in rural areas. For example, among women with two children, almost 40 percent of urban women want no more children compared to only 20 percent of rural women. Likewise, among women with three children, about 60 percent of urban women want to stop child bearing compared to only 40 percent of rural women. This means that the overall figures resulted from the fact that, on average, rural women have more children than urban women, since the proportion wanting no more children rises with the number of living children. The results of the chi-square analysis indicate that the association between desire for more children and place of residence is significant both at 5 percent and 1 percent levels of significance.

Ethnicity

It is evident from table 4.6 that women in the Kikuyu/Kamba/Meru/Embu ethnic group are the least pronatalist while women in the Taita Taveta/Mijikenda ethnic group are the least likely to want to stop child bearing. The Kalenjin and Luo/Luhya/Kisii are in intermediate position. Overall, 64 percent of Kikuyu/Kamba/Meru/Embu women want to stop child bearing while only 36 percent of women in Taita Taveta/Mijikenda ethnic category want no more children. This differential in fertility preference is even more pronounced when it is looked at different parity levels. For example, among women with three children, almost 60 percent of women in the Kikuyu/Kamba/Meru/Embu ethnic category wanted to stop child bearing compared to 24 percent of women in the Taita Taveta/ Mijikenda ethnic category. Likewise, at parity four, 80 percent in the former wanted no more children compared to only 33 percent in the

81

alenjin women are the second least pronatalist next to the Kikuyu followed by women

o/ Luhya/ Kisii ethnic category. The proportion of women who want to stop child

n these two ethnic groups is 56 percent and 53 percent respectively. However, the

of these two is revered when number of living children is introduced as a controlling

The results of the chi-square analysis indicate that the association between desire for

ldren and ethnicity is significant both at 5 percent and 1 percent levels of significance.

cross tabulation of women's desire for more children by their religious status reveals

lim women are more pronatalists than christian women (Catholic or Protestant) while

with traditional religions affiliation are the least likely to desire to stop child bearing.

57 percent of Catholic women and Protestant women alike desire to stop child bearing

d to 43 percent of Muslim women. The corresponding proportion of women with no

is 35 percent. It emerges from the figures provided in table 4.6 that there is no

ce between Catholic and Protestant women in their fertility preference as indicated by

or additional children. Figures obtained at different parity levels also tend to reinforce

ervation. The results of the chi-square analysis also indicate that the association between

or more children and religious affiliation of the mother is significant both at 1 percent

ercent levels of significance.

82

4.5. Correlates of Ideal Family Size

In this sub-section, the correlates of ideal family size are discussed. Table 4.9 summarises the percentage distribution of all women by ideal number of children and demographic, socio-economic and socio-cultural variables together with the emerging Chi-square test results while table 4.10 provides mean ideal number of children for all women aged 14-49 by number of living children. The analysis conducted in this sub-section is based on information contained in these tables.

Number of Living children

Generally, women with higher number of children are more likely to have a higher ideal family size than women with lower number of living children. The relationship between actual number of children and ideal number of children is, therefore, direct. This holds true in the case of Kenyan women as evidenced in table 4.9. A higher proportion of women with four or more children have stated higher ideal family size of 4-6 children and a lower proportion of this category of women have stated a lower ideal family size of 0-3 children as ideal compared to women with no children. Overall, 63 percent of women with four or more children stated 4-6 children as their ideal compared to only 45 percent of women with no children who stated this ideal. The proportion of women who prefer seven or more children as their ideal is 8 percent among women with four or more children compared to only 2 percent among those with no children. The results of the chi-square analysis indicate that the association between actual and ideal number of children is significant both at 5 percent and 1 percent lvels of significance.

The same results were found for the association between ideal family size and number

83

iving sons.

rent Age of Wife

It is evident from the cross tabulation of ideal family size by current age of wife that
ler women are more likely to have a higher ideal number of children than younger women.
ty-two percent of older women (aged 35 or over) stated 4-6 children as their ideal number
children compared to only 46 percent of younger women (aged less than 25 years) who stated
 same number as their ideal. Conversely, younger women are more likely to state lower ideal
mily size than older women. Fifty-One percent of the former stated 0-3 children as ideal while
ly 30 percent of the latter stated the same number of children as ideal. The mean ideal family
 e figures provided in table 4.10 reinforce the observation made above. The mean ideal family
 e for older women is 4.2 children compared to only 3.4 children for younger women.
loreover, the results of the chi-square analysis indicate that the association between ideal
 umber of children and current age of wife is significant both at 5 percent and 1 percent levels
 f significance.

Similar results are found for duration of marriage. Women married for longer duration
≥ 10 years) state a higher ideal number of children (4.2 children) than those married for
horter duration (< 10 year) who stated 3.6 children as their ideal. The results of the chi-square
analysis also indicate that ideal family size and duration of marriage are significantly associated
both at 5 percent and 1 percent levels of significance.

Table 4.8: Percentage Distribution of all women by Ideal number of Children and demographic socio-economic and socio-cultural variables, Kenya 1993.

VARIABLE	Ideal number of children		
	0-3	4-6	7+
Number of living Children $(\chi^2=370.3, df=4, \rho<0.01)$			
None	53.1	44.6	2.3
1-3	49.4	47.8	2.8
4+	29.1	63.4	7.5
Number of living Sons $(\chi^2=238.2, df=4, \rho<0.01)$			
None	51.4	45.9	2.7
1-2	41.8	54.1	4.1
3+	29.3	62.6	8.1
Current age of wife $(\chi^2=244.6, df=4, \rho<0.01)$			
< 25 years	51.3	46.2	2.5
< 25-34 years	40.9	54.5	4.6
≥ 35 years	30.0	62.3	7 7
Duration of marriage $(\chi^2=113.0, df=2, \rho<0.01)$			
<10 years	44.0	52.9	3.1
≥ 10 years	30.8	61.7	7.4
Child loss experience $(\chi^2=199.8, df=2, \rho<0.01)$			
Yes	47.2	49.3	3.5
No	27.8	64.6	7.6
Education level of Wife $(\chi^2=655.2, df=4, \rho<0.01)$			
No education	21.8	64.9	13.3
Primary education	40.9	55.6	3.5
Secondary+	62.2	37.1	0.7

Education level of Husband $(x^2=286.9, df=4, p<0.01)$			
No education	21.4	63.2	15.4
Primary education	31.6	62.5	5.8
Secondary+	48.5	49.6	1.9
Occupation of Husband $(x^2=12.2, df=4, p<0.05)$			
Low status	36.0	58.2	5.8
Middle status	36.0	58.5	5.8
High status	41.6	55.9	2.6
Work status of Wife $(x^2=3.9, df=2, p>0.05)$			
Working	42.1	53.7	4.2
Not working	44.1	51.4	4.5
Place of Residence $(x^2=224.9, df=2, p<0.01)$			
Urban	63.6	34.9	1.5
Rural	39.4	55.7	4.9
Ethnicity $(x^2=410.1, df=6, p<0.01)$			
Kikuyu/Kamba/Meru/Embu	56.7	41.6	1.7
Luo/Luhya/Kisii	37.8	58.3	3.9
Taita Taveta/Mijikenda	27.6	63.0	9.4
Kalenjin	32.0	60.5	7.5
Religion $(x^2=186.3, df=6, p<0.01)$			
Catholic	43.6	52.1	4.4
Protestant	44.0	52.8	3.3
Muslim	38.2	54.4	7.3
Traditional	27.8	49.8	22.4
Total	43.1	52.5	4.4

Source: computed from the 1993 KDHS Data Set

Table 4.9: Mean Ideal number of children for all women by number of living children, Kenya 1993

VARIABLE	Number of living children							
	0	1	2	3	4	5	6+	Total
Current age of Wife								
< 25 years	3.37	3.36	3.56	3.85	4.21	3.54		3.44
25-34	3.36	3.29	3.39	3.67	3.85	4.14	4.41	3.79
≥ 35 years	4.33	3.48	3.62	3.73	3.89	3.87	4.49	4.21
Duration of Marriage								
< 10 years	3.87	3.44	3.52	3.67	3.89	4.18	4.23	3.63
≥ 10 years	4.04	4.05	3.79	3.89	3.93	4.01	4.48	4.19
Child loss experience								
Yes								
No	4.03	3.87	3.83	4.14	4.05	4.25	4.55	4.24
	3.37	3.29	3.44	3.59	3.82	3.89	4.41	3.59
Educational level Wife								
No education	4.43	4.80	4.57	4.62	4.61	4.62	4.88	4.73
Primary education	3.58	3.45	3.55	3.75	3.82	3.89	4.31	3.74
Secondary +	2.86	2.89	3.01	3.24	3.54	3.57	3.49	3.07
Educational level Husband								
No education	4.32	4.70	5.04	4.93	4.69	4.78	4.96	4.85
Primary education	4.04	3.82	3.67	3.84	3.97	4.14	4.44	4.07
Secondary +	3.62	3.11	3.24	3.44	3.58	3.56	4.08	3.47

VARIABLE	Number of living children							
	0	1	2	3	4	5	6+	Total
Occupation of Husband								
Low status	4.35	3.71	3.68	3.84	4.06	4.05	4.26	3.99
Middle status	3.76	3.54	3.59	3.78	3.84	4.06	4.58	3.97
High status	3.59	3.15	3.12	3.47	3.92	3.76	4.14	3.66
Work Status of Wife								
Working	3.35	3.27	3.44	3.64	3.81	3.94	4.40	3.73
Not Working	3.41	3.44	3.58	3.87	4.04	4.15	4.57	3.74
Place of residence								
Urban	2.91	2.73	2.98	5.33	3.70	3.60	3.74	3.07
Rural	3.51	3.53	3.63	3.81	3.92	4.06	4.51	3.85
Ethnicity								
Kikuyu/Kamba/ Meru/Embu	3.01	2.88	3.08	3.20	3.41	3.55	3.99	3.27
Luo/Luhya/Kisii	3.47	3.46	3.66	3.95	4.02	4.08	4.34	3.81
Taita Taveta/ Mijikenda	3.75	4.44	4.29	4.89	4.72	4.89	5.44	4.44
Kalenjin	3.79	3.85	3.57	3.95	4.22	4.45	5.07	4.18
Religion								
Catholic	3.35	3.26	3.38	3.76	3.85	4.05	4.62	3.73
Protestant	3.36	3.31	3.47	3.63	3.83	3.88	4.28	3.65
muslim	3.69	3.47	3.79	4.39	4.71	4.44	4.89	4.04
Traditional	4.46	5.46	4.38	4.46	4.83	5.55	6.38	5.07
Total	3.4	3.3	3.5	3.6	3.9	4.0	4.5	3.7

Source: Computed from the 1993 KDIIS Data Set

Child Loss Experience

From the information presented in table 4.9 it appears that women with no experience of child loss are more likely to have higher ideal number of children than those with such experience. This is indicated by the lower proportion among the former who stated a lower ideal family size (0-3 chilren) and their higher proportion who stated a higher ideal family size (4-6 children) as compared to women in the latter group. One explanation for this tendency of women with no child loss to report higher ideal family size as shown by the overall figures may be that on average these women have more children than their counterparts and hence tend to rationalize their family size by reporting their actual number of children as their ideal number. A glance at the mean ideal family size figures, however, reveals a higher ideal family size preference by women with child loss experience (4.2 children) than those who have no such experience (3.6 children). This is true along all the parity levels considered. The results of the chi-square analysis indicate that the association between ideal family size and child loss experience is significant both at 5 percent and 1 percent levels of significance.

Education Level of Wife

Women with no education are more likely to have a higher family size than women with secondary level of education. This is indicated by the lower proportion of women with no education who stated 0-3 children as ideal and the higher proportion of these women who stated 4-6 children an seven or more children as ideal compared to women with secondary level of education. Women with primary level of education represent intermediate cases between the two extremes. Twenty-two percent of women with no education stated 0-3 children as ideal

compared to 62 percent of women with secondary education who stated this as ideal. On the other hand, 65 percent of the former stated 4-6 children as ideal comapred to 37 percent of the latter who stated this number as ideal. Moreover, about one in eight women among those with no educatin stated an ideal family size of 7 children or more while almost none of those with secondary education stated this high number as ideal family size. The same pattern is also suggested by the mean ideal family size figures presented in table 4.10. Overall, the mean ideal number of children among women with no education is 4.7 children compared to 3.1 children among those with secondary level of education. Women with elementary education represent an intermediate postition with a mean ideal family size of 3.7 children. The results of the chi-square indicate that the association between ideal family size and education level of wife is, significant both at 5 percent and 1 percent levels of significance.

Similar results are found for education level of husband. The percentage figure from the cross tabulations show that women married to husbands with no education are more likely to state a higher ideal family size than women married to husbands, with at least secondary level of education. From the mean ideal family size figures it was found that, overall, the former recorded a mean ideal family size of 4.9 children while the latter recorded 3.5 children. Women married to husbands with primary level of education are intermediate with a mean ideal family size figure of 4.1 children. Results of the chi-square anlysis indicated that ideal family size and education level of husband are significantly associated both at 5 percent and 1 percent levels of significance.

From the cross tabulations of ideal family size and occupation status of husband, the following observations were evident. Firstly, women married to husbands with low status occupation are slightly more likely to state higher ideal family size than women married to husbands with high status occupations. This is indicated by lower proportions of the former who stated lower ideals (0-3 children) and higher proportions who stated higher ideals (4-6 children) compared to the latter group. Secondly, among women married to husbands with high status occupation, a higher proportion of them cited a higher family size ideals (4-6 children). Thirdly, there is no difference in fertility preference between women married to husbands with low status occupations on one hand and middle status occupations on the other as evident from the similarity of the relevant figures. The above observation made are also evident from the mean ideal family size figures (see table 4.10). The mean ideals for women married to husbands with low, middle and high status occupation are 4.0 children, 4.0 children and 3.7 children respectively. It emerges from the observation thus far that there is no clear and distinct differential in ideal family size statements by mothers according to the occupation of their husbands. The results of chi-square analysis inicate that the association between ideal family size and husband occupation is significant at 5 percent significance level while it failed to be significant at 1 percent level of significance. Therefore, the null hypotheses of independence between the two is rejected at 5 percent while it is accepted at 1 percent level of significance.

In the case of work status of wife, both the percentage figures from the cross tabulations and the mean ideal family size figures reveal that there is no marked differential in ideal family size statements of mothers by their work status. For instance, table 4.10 shows that the mean

ideal number of children preferred by working women as well as women not working is exactly the same which in 3.7 children in both cases. The results of the chi-square analysis indicate that the calculated chi-square value falls in the acceptance region leading to the acceptance of the null hypothesis. It is thus concluded that there is no significant association between ideal family size and work status of wife.

Place of Residence

Urban women have lower ideal family size preferences than rural women. This is evident from the higher proportion of urban women who stated lower ideal family size (0-3 children) and the lower proportion among these women who stated higher ideals (4-6 children) compared to the rural women. For example, overall 64 percent of urban women stated 0-3 children as their ideal family size compared to only 39 percent of rural women who stated this figure as their ideal. The mean ideal family size figures in table 4.10 are in conformity with this observation. Overall, urban women stated a lower mean ideal family size of about 3 children compared to rural women who stated about 4 children as ideal. This ideal family size differential between urban and rural women is clearly marked along all the parity levels considered. The results of the chi-square analysis confirm the results of the cross tabulation. The association between ideal family size and place of residence is significant both at 1 percent and 5 percent levels of significance.

92

Ethnicity

It emerges from the cross tabulation of ideal family size by ethnicity that women in the Kikuyu/Kamba/Meru/Embu ethnic category are the most likely to state lower ideal family size. Taita Taveta/Mijikenda women are the least likely to state lower ideal family size preference followed by Kalenjin women. For example, overall, 57 percent of women in the Kikuyu/Kamba/Meru/Embu ethnic category stated 0-3 children as their ideal family size compared to only 28 percent of women in the Taita Taveta/Mijikenda ethnic category who stated the same figure as their ideal. The rest are in intermediate positions. The same pattern of differential in ideal family size is observed from the mean ideal number of children figures. The Taita Taveta/Mijikenda women recorded the highest mean ideal family size (4.4 children) followed by Kalenjin women (4.1 children) as ideal family size while Kikuyu/ Kamba/ Meru/ Embu women recorded the lowest mean ideal family size (3.2 children) followed by the Luhya/ Luo/ Kisii women (3.8 children). Results of the chi-square analysis indicate that the association between ideal family size and ethnic affiliation is significant both at 5 percent and 1 percent levels of significance.

Religion

Both the percentage figures from the cross tabulations and mean ideal family size figures reveal that Christian women (both Catholic and Protestant) are more likely to prefer lower ideal family size than the other categories. Women with traditional religious affiliation are the least likely to state lower ideal family size preferences. For example, table 4.10 reveals that women with no religious status stated the highest mean ideal family size (5 children) followed by muslim

women (4 children) while christian women stated the lowest mean idea family size (3.7 children). Results of the chi-square analysis indicated that ideal family size and religious affiliation are significantly associated both at 5 percent and 1 percent levels of significance.

Summary

In this chapter, the correlates of fertility preference were discussed using the results of the descriptive analysis emerging from the cross tabulation. This was done separately for the two variants of fertility preference, viz., desire for additional children and ideal number of children. From the analysis, it was observed that there is, to a greater extent, a consistency between these two variables representing fertility preference of women. Categories of variables with lower proportion of women who desire to stop child hearing are found to be those where women have stated higher ideal family size figures. Conversely those categories with higher proportion of women who desire to stop child bearing happened to be those where women have stated lower family size ideals. This is true for almost all the variables considered.

Results of the chi-square test indicated that desire for more children is significantly associated with all the explanatory variables considered both at the 5 percent and 1 percent significance levels. This has also been found to be true in the case of ideal family size with the exception of two explanatory variables namely occupation of husband which failed to be significantly associated with ideal family size at 1 percent level of significance and work status of wife which failed the test both at 5 percent and 1 percent levels of significance.

CHAPTER FIVE

RESULTS OF THE REGRESSION ANALYSIS ON THE CORRELATES

OF FERTILITY PREFERENCE

5.1. Introduction

This chapter is organised as follows. First, the variables used in the analysis are described briefly. Then the results of the ordinary least squares regression analysis are discussed followed by the discussion of the logistic regression results. Finally the correlates of ideal family size and the correlates of desire for more children are compared based on the results obtained in the proceeding stages.

5.2. Description of Variables used in the Regression Analysis

In this section, both the dependent and independent variables are briefly described as they are used in the regression analysis.

Dependent Variable

The dependent variable in this study is fertility preference which is represented and measured in two ways. These are:

1.   Ideal family size (IFS). This is a continuous variable taking values 0,1,2,3,... which represent the number of children the respondent cited as her ideal number of children.

2.   Desire for more children (DMC). This variable is a dichotomous outcome taking the values 1 or 0 depending on occurrence or non-occurrence of the phenomenon under

investigation which in this case is depending on a respondent's desire or non-desire for more children respectively.

Independent Variables

Demographic Variables

1.   *Number of living children (NLCHILD)*

This variable is represented in the regression equation by two indicator variables NLCHILD2 (1-3 children) and NLCHILD3 (4 or more children) which take the value one for women with 1-3 children and 4 or more children and zero otherwise. The reference category consists of women with no children at all (NLCHILD1).

2.   *Number of living sons (NLSONS)*

This variable is represented in the regression equation by two dummy variables namely, NLSONS2 (1-2 sons) and NLSONS3 (3 or more sons) which take the value one for respondents with 1-3 sons and 3 or more sons and zero otherwise. The reference category is NLSONS1 which consist of women who do not have a son.

3.   *Current age of wife (AGE)*

This variable has three categories and it is represented in the regression equation by two dummy variables. These are AGE2 (25-34 years) and AGE3 (35 or more years) which take the value one for women whose ages are 25-34 years and 35 or more years and zero otherwise. The reference category is AGE1 which consists of women who are less than 25 years of age.

96

4. Duration of Marriage (MDUR)

This variable has two categories represented by a single dummy variable, MDUR2 (10 years or more) which takes value one for respondents with marriage durations of 10 years or more and zero otherwise. The reference category is MDUR1 which consists of women whose duration of marriage is less than 10 years.

5. Child Loss Experience (CHLOSS)

This variable has two categories represented in the regression equation by a single dummy variable CHLOSS2 (child loss) which takes the value one if the respondent has experienced a child loss in her reproductive career and zero otherwise. The reference category is CHLOSS1 which consists of respondents who have had no child loss experience upto the time of the survey.

Socio-economic Variables

6. Education Level of Wife (WEDUC)

This variable has three categories which are represented in the regression equation by two dummy variables viz., WEDUC2 (primary education) and WEDUC3 (secondary education) which take value one for respondents with primary and secondary level of education and zero otherwise. The reference category is WEDUC1 which consists of respondents with no education.

7. *Education Level of Husband (HEDUC)*

This variable has three categories represented in the model by two dummy variables. These are HEDUC2 (primary education) and HEDUC3 (secondary education) which take the value one for respondents whose husbands have primary and secondary education level of education and zero, otherwise. The reference category is HEDUC1 which consists of respondents whose husbands have no education.

8. *Occupation of Husband (HOCCUP)*

This variable has three categories and is represented in the regression equation by two dummy variables. These are HOCCUP2 (middle status occupations) and HOCCUP3 (high status occupations) which take the value one for respondents whose husbands are in middle status and high status occupations and zero otherwise. The reference category is HOCCUP1 which consists of respondents whose husbands are in low status occupations.

9. *Work Status of Wife (WWORK)*

This variable has two categories represented in the regression equation by a single indicator variable WWORK2 (wife working) which takes the value one if the respondent is working and zero, otherwise that is if the respondent is not working. The reference category is WWORK1 which consists of respondents who are not working.

5.3 Correlates of Ideal Family Size

The multiple linear regression technique was used to regress ideal family size on the demographic, socio-economic and socio-cultural variables based on a total of 7540 cases for which information on all the specific variables are available. The results of analysis are presented in table 5.1.

Table 5.1: Multiple Regression Coefficients of the Correlates of Ideal Family size. Kenya: 1993.

Variable	B	S.E.B	Beta	T	SIG T	R²
WEDUC3	-1.01149	0.06899	-0.25637	-14.661	.0000	0.050
WEDUC2	-0.58294	0.05666	-0.16826	-10.289	.0000	0.092
ETHNC2	-0.69242	0.05281	-0.19633	-13.110	.0000	0.122
NLCHILD3	0.37023	0.04371	0.10447	8.470	.0000	0.138
RESID2	-0.54769	0.05334	-0.11594	-10.268	.0000	0.149
RELGN4	0.70081	0.11635	0.06895	6.023	.0000	0.157
ETHNC3	-0.22602	0.05351	-0.06346	-4.224	.0000	0.161
HOCCUP3	0.20876	0.04037	0.06124	5.171	.0000	0.164
ETHNC4	0.27277	0.07430	0.04729	3.671	.0002	0.166
CHLOSS2	0.15317	0.04949	0.03658	3.095	.0020	0.167
RELGN2	-0.08964	0.03904	-0.02572	-2.296	.0217	0.168
HEDUC3	-0.10620	0.04700	-0.02663	-2.259	.0239	0.169
Constant	4.51687	0.07419		60.884	.0000	

Notes: $R^2 = 0.169$ $F = 120.44$ *Significance F = 0.0000*

Source: Computed from the 1993 KDHS Data Set

The significance of the above regression model was tested using the F-test at 5 percent level of significance. This test showed that the overall regression model is significant as the observed level of significance of F is less than the 0.05 level of significance used for the test. Hence, the null hypothesis that the overall regression model is not significant is rejected in favour of the alternative hypothesis. It is therefore concluded that the regression model was significant in explaining the phenomenon under investigation which is ideal family size. Having tested the significance of the overall model, an attempt was made to determine which of the selected variables were significant and useful in explaining the dependent variable. In this case, the t-test was applied.

Out of the twelve basic variables introduced into the regression equation via their respective dummy variables, four variables failed at the 5 percent level of significance and hence failed to account for any variation in ideal family size. These variables are number of living sons, age of wife, duration of marriage and work status of wife. All the dummy variables that represented these four variables in the regression model are not significantly different from their respective reference categories that is all categories of women in these variables have the same ideal family size and hence ideal family size does not significantly covariate with the number of living sons a woman has got, her age, her duration of marriage and her work status. The remaining eight explanatory variables were found to be significant in explaining ideal family size and they together explained 17 percent (i.e R^2 = 0.16769) of the total variation in ideal family size (Note that this R^2 value is a cumulative value of variation explained by all the significant variables as they were included in a step wise fashion). These variables are education level of

102

wife, ethnicity, number of living children, place of residence, religion, husband occupation, child loss experience and education level of husband. For these variables, at least one of the dummies is significantly different from the respective reference categories implying that ideal family sise significantly covariates with thes variables. All the dummies that are not significant are not presented in Table 5.1. These are *NLCHILD2, NLSONS2, NLSONS3, AGE2, AGE3, MDUR2, HEDUC2, HOCCUP2, WWORK2, RELGN3*.

The first independent variable included in the regression equation for its higher level of R^2 is education level of wife. When ideal family size is regressed on this variable, we obtain $R^2 = 0.09182$. That is 9 percent of the variation in ideal family size is accounted by education level of wife. The remaining variables as shown in table 5.1 together explain 8 percent (i.e. $R^2 = 0.07586$) of the variation in ideal family size.

These increase in R^2 due to the inclusion of the respective variables in the regression model are all significant at 1 percent level of significance. Besides the contribution of education level of wife, however, no single variable accounted for more than 4 percent of the variation. The total amount of variation explained by all the variables which is 17 percent can be considered as very low. However it is quite common in the analysis of attitudinal responses due to the fact that these attitudinal responses are often shaped by a multitude of factors of which demographic, socio-economic and socio-cultural factors are only a few subsets (Asikpata, 1988).

In the remaining part of this section, the correlates of ideal family size are discussed briefly using the regression co-efficients obtained. Note that the intercept (B_0) of the model is the fitted mean ideal family size for the reference category and the regression co-efficient (slope) is just the difference in the fitted mean ideal family size between a certain category of interest

103

and the reference category. Hence, a positive regression co-efficient of a dummy variable indicates that the mean ideal family size of this dummy variable is higher than its reference category while a negative regression co-efficient of a dummy variable indicates that the mean ideal family size of this variable is lower than that of the reference category by the magnitude of the regression co-efficient.

Women with secondary level of education (WEDUC3) and primary level of education (WEDUC2) have lower ideal family size than women with no education (reference category) by 1.01 and 0.58 of children respectively. This negative association between education of a woman and her ideal family size is as expected and in conformity with the results of the descriptive analysis in chapter 4 as well as findings in previous related studies (Cochrane, 1979; Asikpata, 1988; Deeb, 1988; Khan and Sirageldin, 1977).

For ethnic affiliation all the three dummy variables were significant at 5 percent level of significance. Women in the Kikuyu/Kamba/Meru/Embu ethnic group (ETHNC2) on one hand and those in the Luo/Luhya/Kisii ethnic group (ETHNC3) on the other have lower ideal family size preference than the reference category (Kalenjin women) by 0.69 and 0.23 children respectively while women in the Mijikenda/Taita Taveta ethnic group (ETHNC4) have higher ideal family size preferences than the Kalenjin women (reference category) by 0.27 children. This result is, of course, in conformity with the results of the descriptive analysis which showed that women in the Kikuyu/Kamba/Meru/Embu ethnic group have the lowest ideal family size followed by women in the Luo/Luhya/Kisii ethnic category while women in the Mijikenda/Taita Taveta ethnic group have the highest ideal family size followed by Kalenjin women.

The positive association of actual number of living children and ideal number of children found in the descriptive analysis is also reflected in the regression analysis results. Women with four or more children (NLCHILD3) have higher ideal family size than women with no children at all (reference category) by 0.37 children. This positive association is as expected and it is in conformity with results of previous studies (Lee and Bulatao, 1983; Lighthbourne and Mcdonald, 1982; Deeb, 1988).

Women living in urban areas (RESID2) have lower ideal family size than women residing in rural areas (reference category) by 0.55 children. This result is as expected and it in conformity with results of the descriptive analysis as well as findings of previous related studies.

For religion, two of the three dummy variables werw found to be significant and the results of the regression analysis are in conformity with the results found in the descriptive analysis in chapter 4. Women with traditional religious affiliations (RELGN4) have higher ideal family size than catholic women (reference category) by 0.70 children while the ideal family size of protestant women (RELGN2) is not very different from that of the catholic women though it is lower by 0.09 children as indicated by the negative regression co-efficient of this dummy variable.

The results of husbands occupation are not in conformity with the results of the descriptive analysis. Women married to husbands with higher status occupation (HOCCUP3) have been found to prefer higher ideal family size preferences, though slightly, than women married to husbands with low status occupations (reference category) by 0.21 children. Such results are not, however, uncommon in previous studies (see for example, Deeb, 1988). Such results might have been engendered by the fact that couples with high status occupation can

105

afford taking care of many children due to higher incomes associated with their high status occupations.

With respect to child loss experience, the contrast is between women with child loss experience (CHLOSS2) and women with no child loss experience (reference category). The ideal family size preference of women with child loss experience is higher than that of women without this kind of experience by 0.15 children. This result is in conformity with the results of the descriptive analysis as well as findings of previous related studies. The results show that Kenyan women who have had a childloss experience tend to desire higher ideal family size than mothers without this experience due to the former's reduced perception of survival probabilities for their children until adulthood (Moustaffa, 1988; Hamed, 1988; Chanaka, 1988; Pebley, 1979).

With respect to education level of husband, women married to husbands with at least secondary level of education (HEDUC3) have lower ideal family size preference than women married to husbands with no education (reference category) by 0.11 children. This result is in conformity with the result of the descriptive analysis as well as findings of previous related studies.

To sum up, it emerges from the discussion that number of living children and child loss experience are positively associated while couples' education level is negatively associated with ideal family size. Ideal family size was also found to significantly vary with place of residence and religious and ethnic affiliation of a woman. Thus the hypothesized association of ideal family size with these variables in this study was confirmed. On the other hand, number of living sons, age of wife, duration of marriage and work status of wife do not significantly covariate with

106

ideal family size and hence the hypothesized relationship between ideal family size and these variables is disconfirmed.

5.4. Correlates of Desire for More Children

Table 5.2 presents the results of the logistic regression analysis for the significant variables affecting desire for more children.

Table 5.2: **Logistic Regression Coefficients of the Correlates of desire for more children. Kenya: 1993.**

Variable	B	S.E.B	EXP (B)	Wald	SIG.
NLCHILD2	-3.8655	1.0013	0.0210	14.9049	0.0001
NLCHILD3	-5.5353	1.0051	0.0039	30.3283	0.0000
NLSONS2	-0.7618	0.1210	0.4668	39.6295	0.0000
NLSONS3	-1.1894	0.1537	0.3044	59.9115	0.0000
AGE2	-0.5137	0.1215	0.5983	17.8758	0.0000
AGE3	-1.3186	0.1635	0.2675	65.0657	0.0000
MDUR2	-0.3331	0.1209	0.7167	7.5854	0.0059
WEDUC2	-0.3448	0.1193	0.7083	8.3509	0.0039
WEDUC3	-0.5674	0.1566	0.5670	13.1372	0.0003
HEDUC2	-0.4699	0.1315	0.6251	12.7634	0.0004
HEDUC3	-0.5782	0.1510	0.5609	14.6648	0.0001
RESID2	-0.4415	0.1221	0.6430	13.0739	0.0003
ETHNC2	-0.5898	0.0899	0.5544	43.0333	0.0000
ETHNC4	0.6496	0.1447	1.9147	20.1605	0.0000
RELGN4	0.4223	0.2071	1.5255	4.1576	0.0414
Constant	6.9127	1.0076		47.0655	0.0000

		Chi-square	df	Sig.
Notes:	-2LL	3837.67	4243	0.0000
	Goodness of fit	4488.73	4243	0.0000

Source: Computed from the 1993 KDHS Data Set

107

Out of the twelve basic variables introduced into the regression equation via their respective dummy variables, three variables failed to be significantly associated with desire for additional children at 5 percent level of significance. These variables are child loss experience, husband occupation and work status of wife. All the dummies that represented these three variables are not significantly different from their respective reference categories that is all categories of women in these variables have the same likelihood of desire to have more children and hence desire for more children does not significantly covariate with childloss experience, husband occupation and work status of wife. The remaining nine variables were found to be significantly associated with a woman's desire for additional children. These variables, according to the order in which they were selected in a step wise fashion, are number of living children, number of living sons, current age of wife, duration of marriage, education level of wife, education level of husband, current place of residence, ethnicity and religion. For these variables at least one of its dummy variables is found to be significantly different from the corresponding reference category implying that likelihood of desire for another child significantly covariates with these variables. All the dummies that are not significant are not presented in Table 5.2. These are *CHLOSS2, HOCCUP2, HOCCUP3, WWORK2, ETHNC3, RELGN2, RELGN3.*

Actual number of living children in a family is significantly associated with a woman's desire for more children. The results of the logistic regression evidence that women with 1-3 children and 4 or more children are more likely to desire to stop child bearing (that is less likely to desire to have more children) as compared with the reference category which consists of

women with no children at all. The probability that a woman with 1-3 children (NCHILD2) and one with 4 or more children (NCHILD3) selected at random would desire to have more children is 0.0210 and 0.0039 times that of a woman with no children at all. These figures represent a decrease in the odds of desire for more children by 98 percent and almost 100 percent for a woman with 1-3 children and 4 or more children respectively. The results obtained here are in line with the results of the descriptive analysis and findings of previous related studies (Khan and Sirageldin, 1977; Poedjastoeti and Hatmadji, 1991; Kim and Choi, 1981).

A woman's desire for additional children is significantly associated with the number of living sons she has already got. Like actual number of children, all the dummy variables designating number of sons are significant at 5 percent level of significance. A woman who has 1-2 sons (NLSONS2) and one with 3 or more sons (NLSONS3) are about 0.47 and 0.30 times as likely to desire more children as a woman with no living sons at all (reference category). In other words, the odds of desire for more children for women with 1-2 sons and 3 or more sons is reduced by 53 percent and 70 percent respectively. These results reflect African values of son preference and are in conformity with the results of the descriptive analysis and findings of previous related studies (Arnold, 1989; Khan and Sirageldin, 1977; Kim and Choi, 1981).

Current age of wife (AGE) is another important variable that bears a significant association with her desire for more children. The two dummy variables AGE2 and AGE3 are found to be significant at 5 percent level of significance. The probability that a woman aged 25-34 years and 35 years or over selected at random would desire to have more children is about 0.60 and 0.27 times that of a woman aged less than 25 years. In other words, the odds of desire for more children is reduced by 40 and 73 percent for women aged 25-34 years and 35 years

or over respectively. the results obtained here are in conformity with the results of the descriptive analysis and findings of previous related studies (Kim and Choi, 1981; Bulatao and Fawcett, 1983).

A woman's desire for more children is significantly associated with her duration of marriage. The results of the logistic regression analysis evidence that a woman married for 10 years or more (MDUR2) is about 0.72 times as likely to desire more children as one married for less than 10 years (reference category). In other words, the odds of desire for more children is reduced by 28 percent for a woman married for a longer duration. These results are in line with findings of a number of previous related studies (Kim and Choi, 1981; Bulatao and Fawcett, 1983; Poedjastoeti and Hatmadji, 1991).

It can be noted here that number of living sons, current age of wife and her duration of marriage were found to bear no association with ideal family size as discussed in the previous section while they are important determinants of desire for more children. On the other hand childloss experience is found to be associated with the former but not with the latter. Such results have also been evidenced in previous studies. Bulatao and Fawcett (1983) in a study on the influence of various determinants of child bearing intentions in different countries found out that the age and experience variables have mostly the expected effects, though primarily on desire for another child rather than ideal family size. Similarly, Kim and Choi (1981) in a fertility preference study in Korea found out that age of the mother, marital duration, number of living children and number of living sons contributed a predominant portion to the total expected variation in desire for future births.

The fifth variable which bears association with a woman's desire for more children is her level of education. The results of the logistic regression evidence an inverse relationship between education level of a mother and her desire for more children. A woman with primary level of education (WEDUC2) and secondary level of education (WEDUC3) are about 0.71 and 0.57 times as likely to desire more children as one with no education (reference category). These figures represent a decrease in the odds of desire for more children by 29 and 43 percent for women with primary and secondary level of education respectively.

A woman's desire for more children is also a function of her husband's educational level. This variable was found to be significant at 5 percent level of significance. Moreover, it was found that a woman married to a husband, with primary level of education (HEDUC2) and one married to a husband with at least secondary level of education (HEDUC3) are about 0.63 and 0.56 times as likely to desire more children as one married to a husband with no education (reference category). In other words, the odds of desire for more children are reduced by 37 and 44 percent for a woman married to a husband with primary and secondary level of education respectively.

A woman's current place of residence significantly influences her desire for more children. The results of the logistic regression show that a woman residing in an urban area is less likely to desire more children than one residing in a rural area. The likelihood that urban woman would desire more children is about 0.64 times that of a rural woman. This represents a decrease in the odds of desire for more children by 36 percent. The results are as expected and they are in conformity with the results of the descriptive analysis and findings of previous related studies (Poedjastoeti and Hatmadji, 1991; Khan and Sirageldin, 1977).

111

A woman's desire for additional children is significantly associated with her ethnic affiliation. The results of the logistic regression show that a woman in the Kikuyu/Kamba/Meru/Embu ethnic category (ETHNC2) is less likely (i.e. 0.55 times as likely) while one in the Taita Taveta/Mijikenda ethnic category (ETHNC4) is more likely (i.e. 1.91 times as likely) to desire more children than a Kalenjin women (reference category). This means that the odds of desire for more children are reduced by 45 percent for Kikuyu/Kamba/Meru/Embu women while they are increased by 91 percent for Taita Taveta/Mijikenda women.

The last variable in the model which is significantly associated with a woman's desire for more children is her religious affiliation. The results of the logistic regression evidence that a woman with no religious affiliation (RELGN4) is about 1.53 times as likely to desire more children as one who is a catholic christian (reference category). In other words, the odds of desire for more children is raised by 53 percent for a woman with no religion.

To sum up, it emerges from the discussion that actual number of children, number of living sons, current age of wife, her duration of marriage, her level of education and her husband's level of education are all negatively associated with desire for more children. Desire for more children was also found to significantly vary with place of residence and religious and ethnic affiliation of a woman. Thus, the hypothesized association of desire for more children with these variables in this study is confirmed. On the other hand, child loss experience, husband occupation and work status of wife do not significantly covariate with desire for more children and hence, the hypothesozed association of desire for more children with variables is disconfirmed in the Kenyan case.

112

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1. Introduction

In this chapter, an attempt is made to summarise the findings of the study and come up with some recommendations based on these findings that are believed to be necessary and relevant for policy and future research.

6.2. Summary

The overall objective of this study was to examine the demographic, socio-economic and socio-cultural correlates of fertility preference of Kenyan women. The study population consisted of 7540 Kenyan women of child bearing ages of 15-49 covered in the Kenyan Demographic and Health Survey conducted in the country in 1993. The dependent variable which is fertility preference was represented by two variables which are ideal family size and desire for more children. In total twelve independent variables that were hypothesised to bear association with ideal family size and desire for more children were included in the study. Among these variables, five of them were demographic (number of living children, number of living sons, current age of wife, duration of marriage and child loss experience), another five were socio-economic (education level of wife, education level of husband, occupation of husband, work status of wife and current place of residence) and the rest two were socio-cultural (ethnicity and religion).

The techniques of data analysis that were employed include cross tabulation and chi-square analysis, multiple linear regression analysis and multiple logistic regression analysis.

From the cross-tabulation analysis, it was observed that there is a consistency between these two variables representing fertility preference of women. For example, categories of variables with lower proportions of women who desire to stop childbearing are found to be those where women have stated higher ideal family size. Conversely those categories with higher proportions of women who desire to stop child bearing happened to be those where women have stated lower family size ideals. this is true for almost all the variables considered.

Results of the chi-square test indicated that desire for more children is significantly associated with all the explanatory variables considered both at the 5 percent and 1 percent level of significance. This has also been found to be true in the case of ideal family size with the exception of two explanatory variables namely, occupation of husband which failed to be significantly associated with ideal family size at 1 percent level of significance and work status of wife failed the test both at 5 percent and 1 percent level of significance.

Multiple regression technique was used to regress ideal family size on the demographic, socio-economic and socio-cultural variables based on 7540 cases for which information on all the specific variables are available. Out of the twelve basic variables introduced into the regression equation via their respective dummy variables, four variables failed to be statistically significant at the chosen 5 percent level of significance. These are number of living sons, age of wife, duration of marriage and work status of wife. Education level of wife, ethnicity, number of living children, place of residence, religion, husband occupation, child loss experience and education level of husband were each found to be significantly associated with ideal family size.

The total amount of variation explained by all the significant variables which is 17 percent can be considered as very low. However, this is not uncommon in the analysis of

attitudinal responses which are often shaped by a multitude of factors of which demographic, socio-economic and socio-cultural variables are only a few subsets.

Results obtained from the logistic regression analysis indicated that child loss experience, husband occupation and work status of wife were not significantly associated with desire for more children. Number of living children, number of living sons, current age of wife, duration of marriage, education level of wife, education level of husband, current place of residence, ethnicity and religion were found to be significantly associated with desire for more children.

Number of living children is found to be positively associated with ideal family size and negatively associated with desire for more children while child loss experience is found to be positively associated with the former but not with the latter. Number of living sons, age of wife and duration of marriage are found to bear no association with ideal family size while they are very important determinants of desire for more children. The association of these variables with desire for more children is negative implying that the higher the number of sons a woman has got, the older she is, and the longer her duration of marriage, the less likely she is to desire to have some more children, or alternatively, the more likely she is to stop childbearing.

Among the socio economic variables, work status of wife was found to bear no association with neither ideal family size nor with desire for more children confirming results of previous studies in the country that there is no major conflict between a woman's ability to work and at the same time raise a family. Occupation of husband was also found to have no effect on a woman's desire for more children while, though positively associated with ideal family size was not in conformity with the results of the descriptive analysis. Education level

115

of wife and education level of husband were found to be negatively associated with both ideal family size and desire for more children. The other socio-economic variable which was significant in explaining both ideal family size and desire for more children is current place of residence. According to the results, urban women are more likely to have lower ideal family size and desire to stop cildbearing sooner than the rural counterparts.

As for the socio-cultural variables, both ethnic and religious affiliation were found to be significantly associated with both ideal family size and desire for more children. Women who follow traditional religious practices have higher ideal family size preferences and are more likely to desire to have more children, or alternatively, less likely to stop childbearing soon as compared with christians and muslims. As for ethinic affiliation it was found out that women belonging to the Mijikenda/Taitataveta ethnic group in the Coast province have the highest ideal family size and are more likely to desire to have more children while women belonging to the Kikuyu/Meru/Embu ethnic group in Central province have the lowest ideal family size and are more likely to stop childbearing sooner than women in the other ethnic groups considered. Actually these results are just reflections of the fertility situation in Kenya as evidenced by recent surveys conducted in the country.

It follows therefore that the hypothesized associations between ideal family size and desire for more children with the demographic, socio-economic and socio-cultural variables considered in this study have been confirmed or disconfirmed in the Kenyan case depending on the results just explained above and thus the study has fulfilled the objectives of identifying the demographic, socio-economic and socio-cultural correlates of fertility preference of Kenyan women.

116

6.3. Conclusion

During the last two or three decades a substantial change in reproductive attitude has been witnessed in Kenya which has been translated into actual reproductive performances. This is evident in a rapid decline in fertility rates that have emerged in recent demographic surveys conducted in the country. This phenomenon, beyond doubt, has been engendered by a constellation of socio-economic development programmes that have been effected in the country in the post-independence era. Substantial resources were devoted to building the nation's physical infrastructure through the expansion of roads, transport and communication and to investing in human capital through improvements in education and health systems. The family planning programme has also evolved into one of the most effective programmes in sub-saharan Africa in the 1980s. Such government policies and programmes had their important effect on fertility by changing the attitudes and aspirations of the Kenyan populace. Kenyans have become literate, geographically mobile, consumer goods oriented, health seeking economic beings. In short they have experienced a profound change in basic orientations, attitudes and aspirations.

The socio-economic and political climate in Kenya is still conducive for further changes. For instance, the restoration of cost-sharing at higher rates in educational and health institutions, mass unemployment of both skilled and unskilled manpower, an astronomical increase in the cost of living and particularly cost of children that cuts across all social classes is believed to enable the government to institute appropriate measures without much opposition from the populace.

In line with this background, policy makers must create and strengthen conditions that encourage couples to desire smaller family size. However, changing family size norms is not likely to prevail without more specific attention being given to the factors affecting these norms.

117

Thus emphasis should be placed on relevant policy measures that aim at changing the traditional social structure by enhancing female education, creating increasing employment opportunities for women which compete with child bearing activities, providing basic health care to reduce infant and child mortality rates, spreading family planning knowledge and improving contraceptive accessibility.

This study has fulfilled the objectives of identifying the demographic, socio-economic, and socio-cultural correlates of fertility preference and of isolating the relative quantitative effects of each of these variables on ideal family size and desire for additional children. In the following section recommendations are made on the basis of the findings of the study.

6.4.   Recommendation for Policy and Further Research

Recommendation for Policy

The second specefic objective of this study was to make recommendations to policy makers and other relevant organs in Kenya based on the results of this study.

From this perspective, this study, is of relevance to policy formulation in the following areas.

This study has found that education level of wife is significantly associated with her ideal family size preferences and her desire for another child. Educated women are by far less likely to desire higher family size ideals and more children in the future. This calls for an increasing emphasis in the investment on women in this country. More than any other investment, the education of girls and women is key to enhancing their status and critical to the development process of a nation. The empowerment of women through education, access to employment and

health care and changes in legal system favourable to women is among the goals set forth in the Programme of Action adopted at the International Conference on Population and Development (ICPD) in Cairo. A healthy and educated woman is better able to participate in the development of her community and more likely to make or influence decisions about child bearing and other related activities. Enhancing enrolment of the female child at early stages of the education cycle serves as a wider base for higher number of female candidates at advanced levels of the education cycle. More over such formal education programmes should be promoted hand in hand with non formal education and training programmes that provide specialised skills and training to illiterate and poorly educated women of child bearing age. Such measures of enhancing education and skills of women should in turn be accompanied by more chances for women to be engaged in gainful employment both in the government and private sectors of the economy.

Investing in women, however, means more than just providing them with education and employment. It means removing the barriers that prevent women from realising their full potential and recognizing their roles as vital and valuable members of society.

Another relevance of this research for policy relates to the promotion of information, education and communication programmes in the country. These programmes are essential in imparting knowledge to the public about population matters in general. Access to such information plays an increasingly influential role in building awareness of population and other development issues and enables individuals to better understand and participate more effectively in the decision making process of their communities.

The role of this research in this regard has been to identifying sub-groups whose preferences depart from policy objectives. These include rural women, women belonging to Mijikenda/Taita Taveta ethnic groups and traditional religionists. These groups have been found to have higher fertility preferences both in terms of higher family size ideals and less likelihood to desire to stop child bearing. In this respect, it is very essential to introduce and enhance information, education and communication programmes to these particular groups which are aimed at demonstrating the association between favourable reproductive patterns and general well-being of individual families and the community as a whole. Effective information, education and communication programmes should utilise a range of communication channels which comprise of the use of mass media, traditional folk arts and public fora such as seminar and town meetings, art exhibitions etc. In schools and other educational institutions, population issues can be incorporated into curricula for subjects as Geography, Biology and Social studies. Moreover news papers, radio and television are important carriers of population information. Other channels include more traditional media such as puppet shows, plays and music or dance performances.

It is also believed that such population education programmes could be accompanied by dissemination of knowledge about fertility regulation, promotion of more conducive and favourable attitudes to the use of contraceptive techniques and improving accessibility to a wide range of fertility regulation means for better results in affecting fertility behaviour.

This research has also found out that women with child loss experiences are characterised by lower motivation to limit family size. They desired higher family size ideals and they are more likely to desire future births as compared to those women who have not experiences any

120

child death during their reproductive career. This should be regarded as a higher priority having negative influences both on fertility attitudes and behaviour and use of fertility regulatory measures. Therefore measures that are likely to reduce infant and child mortality such as provision of purified water, immunization campaign and diarrhoea disease control programmes should be encouraged. Moreover, mothers should be informed through basic health education programmes about, among others, the importance of nutrition during pregnancy, the importance of breast feeding as well as supplementary foods for the infant, appropriate weaning foods, basic elements of child care such as cleanliness, use of boiled water, different options of accessing health services and others.

Recommendations for Further Research

The following are recommended for further research.

1. Due to limitations such as time and funds, among others, this study of the correlates of fertility preference was restricted at the national level. There is a need for such kind of study to be conducted at sub-national level such as at provincial or district levels. Such a study can be useful in singling out the relevant demographic, socio-economic and socio-cultural characteristics that affect fertility preference at the micro-level and can lend itself for relevant policy formulation to influence fertility attitudes and behaviour at the grass root levels.

2. Inspite of the fact that various explanatory variables were taken into account in investigating the correlates of fertility preference in this study, they only explained a small proportion of the variation, in fertility preference. For example, in the case of

ideal family size, the twelve variables included in the model explained only 17 percent of the variation. This is due to the fact that such attitudinal responses are often shaped by a multitude of factors of which socio-economic and demographic factors are only few of thew correlates. It is therefore recommended that future research on fertility attitudes and behaviour incorporate the norms and value systems which bear an effect on the decision making process of reproducing couples including cultural pressures, peer group norms and the like and adopt research/sampling strategies which incorporate these considerations.

3. It is also recommended that a study of this sort be undertaken on parity basis to get a clear picture of how childbearing intentions change throughout the fertility career in response to the various background variables.

4. This study investigated fertility preference using women's responses to questions on ideal family size and desire for more children. A similar study can also be conducted based on responses of husbands especially in developing countries like Kenya where fertility decision making is dominated by husbands rather than their wives.

5. The data used in this study have been cross-sectional. The study has not followed individuals throughout their fertility career to see how preferences are actually implemented into actual fertility performance. Longitudinal analysis is therefore essential as it would provide important additional evidence on the degree of such changes and the factors involved in them.

BIBLIOGRAPHY

Abdalla, A.A. 1988
"Work Experience of Married Women and Desired Fertility in Egypt and Ghana." Cairo Demographic Centre *Research Monograph Series* No. 17: 293-315. Cairo.

Anker R. and J.C Knowels. 1982
"Fertility Determinants in developing Countries: A Case Study of Kenya." Ordina Editions. Belgium.

Arnold, F. 1985
"Measuring the Effect of Sex Preference on Fertility: The Case of Korea." *Demography* 22(2):280-288.

Arnold, F. 1981
"Sex preference for Children and its Demographic and Health Implications." In *Demographic and Health Survey World Conference Proceedings.* August 5-7 1991, Washington D.C. Colombia, Maryland, USA, Vol. 1.

Asikpata O.F. 1988
"Determinants of Family Size Preference in Ghana." Cairo *Demographic Centre Research Monograph series.,* No. 17:481-512, Cairo.

Blalock, H.M. 1979
"Social Statistics." Revised Second Edition. McGraw International BookCompany, Auckland.

Brass, W. and L. C. Jolly. 1993
"Population Dynamics of Kenya." National Academy Press. Washington D.C.

Bulatoao R.A. and J.T. Fawcett. 1983
"Influence on Child Bearing Intentions Across the Fertility Career: Demographic and Socio-economic Factors and the value of children." East-west Centre. Honolulu, Hawaii.

Caldwell, J.C. 1968
"The Control of Family size in Tropical Africa." *Demography* 5:598 - 619.

Central Bureau of Statistics (CBS). 1980
"Kenyan Fertility Survey 1977/78." First Report. Ministry of Economic Planning and Development. Nairobi, Kenya.

Central Bureau of Statistics. 1984

"Kenyan Contraceptive Prevalence Survey 1984." First Report. Ministry of Planning and National Development. Nairobi, Kenya.

Chalmer, B.J. 1987
"Understanding Statistics." Marcel Dekker Inc., New York, U.S.A.

Chanaka, T.T. 1988
"The Effect of Child Loss Experience on Fertility Preference and Regulation: A Comparative Study Based on WFS Data for Egypt, Ghana and Lesotho." Cairo Demographic Centre *Research Monograph Series,* No. 17: 451-479. Cairo.

Choe, M.K., G. Fei, W. Jianming and Z. Ryyue. 1992.
"Progression to Second and Third Births in China: Patterens and Covariates in Six Provinces." East - West Centre Reprints. Population Series No. 288. Volume 18, No. 4.

Cochrane S. H. 1979
"Fertility and Education: What Do We Really Know?" Washington D.C. John Hopkins University Press (World Bank Staff Occassional Papers No. 26).

Coombs, L.C. 1974
"The Measurement of Family size Preference and Subsequent Fertility." *Demography.* 11(4): 587 - 611.

De Silva W. J. 1991
"Consistency Between Reproductive Preferences and Bahviour: The Sri Lankan Experience." *Studies in Family Planning* 22(3): 188-197.

Deeb, B.E. 1988
"Quantitative Analysis of the Relationship between Child Mortality and Fertility in Egypt, Sudan, Kenya and Lesotho." In African Population Conference, IUSSP. Dakar. Vol. 2.

Durell, D.A. 1990
"Determinants of Family size in an Urban Population: A Case Study of Mathare Valley - 4B in Nairobi." MSc. Thesis, Population Studies and Research Institute. University of Nairobi.

Ebanks, G.E. 1985
"Infant and Child Mortality and Fertility in Trindad and Tobago, Guyana and Jamaica." *WFS Scientific Reports* No. 75. Voorburg, Netherlands.

Foreit, K.G., and M.H. Suh. 1980

"The Effect of Reproductive Intentions on Subsequent Fertility Among Low Parity Korean Women." 1971-76, *Studies in Family Planning* 11(3): 91-104.

Freedman, R. and L.C. Coombs. 1974
"Cross Cultural Comparisons: Data on Two Factors in Fertility Behaviour." New York. Population Council.

Freedman, R., A.I. Harmilin and M.C. Chang. 1975
"Do Statements About Desired Family Size Predict Fertility? The case of Taiwan 1967-1970." *Demography*, 12(3): 407-416.

Gulati, S.C. 1988
"Fertility in India: An Econometric Analysis of a Metropolis." Studies in Economic Development and Planning No. 46. New Delhi.

Haishan, F. 1987
"Some Differences in Fertility Related Attitudes and Behaviour by Ethnicity in Peninsula Malaysia." Cairo Demographic Centre *Research Monograph Series* No. 16. Cairo.

Hanushek, E.A. and J.E. Jackson. 1977
"Statistical Methods for Social Scientists." Academic Press, Inc. Orlando, U.S.A.

Hamed, M.E. 1989
"Impact of Child Loss Experience on Fertility Preference and Regulation in Egypt." Cairo Demographic Centre *Research Monograph series*, No. 18:229-262. Cairo.

Hauser, P. 1967
"Family Planning and Population Programmes." *Demography* 4:397-414.

Hermalin, A.I., R. Freedman, T.H. Sun and M.C. Chang. 1979
"Do Intentions Predict Fertility? The Experience in Taiwan, 1967-74." *Studies in Family Planning*, 10(3):75-95.

Hosmer, D.W. and S. Lemershow. 1989.
"Applied Logistic Regression." John Wiley and Sons. New York, U.S.A.

Jaccard, J,J, and A.R. Davidson. 1976

"The Relation of Psychological, Social and Economic Variables to Fertility Related Decisions." *Demography* 13(3): 329-338.

Janowitz B.S. 1976
"An Analysis of the Impact of Education on Family Size." *Demography* 13(2) : 189-198.

Khan, A.M. and I. Sirageldin. 1977
"Son Preference and the Demand for Additional Children in Pakistan." *Demography*, 14 (4): 481-495.

Kim, M.I., R.V. Rider, P.A Harper and J.M. Yang. 1974
"Age at Marriage, Family Planning Practices and Other Variables as Correlates of Fertility in Korea." *Demography,* 11(4):641-656.

Kim, J.O. and F.J. Kohout. 1975
"Multiple Linear Regression Analysis: Sub-Programme Regression." In Statistical Package for the Social Sciences, 2nd edition; McGraw Hill Book Company.

Kim, N.I. and B.M. Choi. 1981
"Preferences for Number and Sex of Children and Contraceptive Use in Korea." *Scientific Repports*, No 22.

Kimani, M. 1992
"Effect of Infant and Child Mortality on Fertility in Kenya." Ph.D. Thesis in Population Studies and Research Institute. Nairobi.

Koutsoyiannis, A. 1973
"Theory of Econometrics." Macmillan Education Limited. Hong Kong.

Lee C.F. and M.M. Khan. 1978
"Factors Related to the Intention to Have Additional Children in the United States: A Re-analysis of Data from the 1965 and 1970 National Fertility Studies." *Demography* 15(3) : 337-344.

Lightbourne, R.E. and A.L. McDonald. 1982
"Family Size Preferences." Comparative Studies, Number 14.

Little, J.A. 1980
"Linear Models for World Fertility Survey Data." *WFS Technical Bulletins*. No. 9. International Statistical Institute. Netherlands.

Mauldin P. 1965

"Fertility Studies Knowledge, Attitude and Practice." *Studies in Family Planning* 7:1-10.

Mishler, E. and C.F. Westoff. 1955
"A Proposal for Research on Social Psychological Factors Affecting Fertility: Concepts and Hypotheses." In Milbank Memorial Fund, Current Research in Human Fertility, New York.

Mosley, W.H. and L. Werner. 1980.
"Some Determinants of Marital Fertility in Kenya: A Birth Interval Analysis From the 1978 Kenyan Fertility Survey." Population Studies and Research Institute. University of Nairobi.

Moustafa, E.M. 1988
"Factor Related to Supply and Demand for Children, Upper Egypt Region." Cairo Demographic Centre *Research Monograph Series* No. 17: 111-146. Cairo.

Nair, N.K., and L.P. Chow. 1980
"Fertility Intentions and Behaviour: Some Findings from Taiwan." *Studies in Family Planning*, 11(7/8):255-263.

Namboodiri, N.K. 1974
"Which Couples at Given parities Expect to have Additional Births? An Exercise in Discriminant Analysis." *Demography* 11(1) : 45-56.

Namboodiri, N.K. 1972
"Some Observations on the Economic Framework for Fertility Analysis." *Population Studies,* 26(19): 185-206.

National Council for Population and Development (NCPD), Central Bureau of Statistics (CBS), and Macro International Inc. (M.I). 1994.
"Kenya Demographic and Health Survey, 1993." Calverton, Maryland U.S.A.

National Council for Population and Development and Institute for Resource Development (macro system) Inc. (IRD). 1989.
"Kenya Demographic and Health Survey, 1989." Colombia, Maryland, U.S.A.

Nkanate, F.M. 1990
"Fertility Preference Among the Currently Married Women: A Case Study of Abogeta Location in Meru District." MSc. Thesis. Population Studies and Research Institute, University of Nairobi.

Ongor, A.O. 1989.

"Socio-economic and Some Demographic Factors Affecting Fertility in Kenya With Special Reference to Infant and Child Mortality." Population Studies and Research Institute. University of Nairobi.

Park, C.B. 1983
"Preference for Sons, Family size and Sex Ratio : an Empirical study in Korea." *Demography* 20(3):333-352.

Pebley A.R., H. Delgado and E. Brinemann. 1979
"Fertility Desires and Mortality Experience Among Guatemalan Women." *Studies in Family Planning,* 10(4):129-136.

Pindyck, R.S. and Rubinfeld. 1976
"Econometric Models and Economic Forecasts." McGraw-Hill Book Company, New York.

Poedjastoeti, S., and S.H. Hatmadji. 1991
"Fertility Decline in Indonesia: An analysis of Fertility Intentions." In *Demographic and Health Survey World Conference Proceedings,* August 5-7, 1991, Washington D.C). Colombia, Maryland, U.S.A.

Prachuabmoh, V., J. Knodel and J. O. Alers. 1974
"Preference for Sons, Desire for Additional Children and Family Planning in Thailand." *Journal of Marriage and the Family,* 36(3):601 - 614.

Pullum, T.W. 1980
"Illustrative analysis: Fertility Preferences in Sri Lanka." *Scientific Reports,* Number 9.

Radhesyam B. and R. L. Langsten. 1986.
"Sex Preference for Children in Rural Bangladesh." *Studies in Family Planning* 17(6) : 302-307.

Renolds, H.T. 1977
"The Analysis of Cross Classification." The Free Press, New York, U.S.A.

Ross, J.A. 1977
"International Encyclopedia of Population." Vol. 1. The Free Press.

Schlesselman, J.J. 1982
"Monographs in Epidemology and Biostatistics: Case Control Studies Design, Control Analysis."

Sly D.F., and B. Le Noir. n.d

"Stability and Change in Family Size Preferences Among Rural Youth in Kenya." Centre for the study of Population. Florida State University.

Stinner, W. F., and P. D. Mader. 1975
"Sons, Daughters or Both? An Analysis of Family Sex Composition Preference in the Phillipines." *Demography,* 12(1):67-79.

Synder, D. W. 1974
"Economic Determinants of Family Size in West Africa." *Demography,* 11(4):613-627.

Ware, H. 1974
"Ideal Family Size." *World Fertility Survey Occasional Papers* No. 13. London: World Fertility Survey.

Westoff, C.F., and N. Ryder. 1977.
"The Predictive Validity of Reproductive Intentions." *Demography,* 14(4) : 431-453.

Westoff C. F. 1990
"Reproductive Intentions and Fertility Rates." *International Family Planning Perspectives* 16(3) : 84-96.