

**FACTORS AFFECTING CONTRACEPTIVE USE IN WESTERN
AND CENTRAL PROVINCE**

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DECLARATION

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

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ABSTRACT:

The objectives of this project are to establish the factors that affect contraceptive use in Western and Central Province. The specific objectives of the project are to identify the socio-economic, demographic and cultural factors that affect contraceptive use in the regions. A literature review is carried out to identify a theoretical and conceptual framework. United Nations has proposed a micro level model: an outgrowth of the microeconomic and demographic theories of Easterlin 1975. Contraceptive behavior at the individual level is viewed via a micro-level model of contraceptive decision making adapted from the socioeconomic theory of fertility

The study utilizes data from the 1998 Kenya Demographic and health survey carried out by the National Council for Population and Development (NCPD) in collaboration with the Central Bureau of statistics (CBS). Our subject population is all women who report to be in union at the time the survey was conducted. Descriptive statistical methods involve use of frequency distribution tables and percentages tabulated separately for Central and Western province. Cross tabulation method for bivariate analysis with chi-square test statistic and the logistic regression model are applied. In logistic regression the estimated coefficients for the independent variables present the shape or the rate of change of a function of the dependent variable, current contraceptive use

Key results of the study are presented in form of frequency tables and graphs. Our sample identifies 450 currently married women in Central province compared to 520 currently married women in Western province. In Central Province (63.6%) of women are current contraceptive users compared to (30.8%) in Western Province

As expected, Demographic factors age group, parity, and age at marriage are significantly associated with contraceptive use in Western province. Socioeconomic factors, place of residence and type of union significantly affect contraceptive use in Western province. Highest education level is significant in both Central and Western province. In Central province, knowledge of methods and perception of husband approval are significantly associated with contraceptive use. In Western Province exposure to radio and perception of husband approval are significant.

Number of living children is more strongly associated with contraceptive use in Western province compared to central province. Secondly, recently married women have a lower likelihood of using contraceptives. Third polygamy is highly associated with contraceptive use in Western province. Fourth women who have attained secondary education are more likely to practice contraception. Fifth women who have heard family planning on radio are more likely to use contraceptives. Sixth, husband spouse approval significantly explains contraceptive use differences in Central and Western province.

In Western province women are less likely to use contraceptives since they marry early, desire more children and are more at risk of a child death during their reproductive period. Socioeconomic factors like place of residence and educational attainment significantly increase the probability of a woman in central province using contraceptives. Contraceptive use differences in Western and Central province are significant. Choice of a family planning policy requires focus on fertility intentions of women and on family size desires. The existing national family planning program has been more effective in Central province.

The results of this study recommend three broad policy options. Governments need to reduce the demand for large families, actually for families of more than three children. It is important to focus on specific policy issues to reduce unwanted pregnancy by addressing unmet need for contraception. The government should improve infant and child survival through attention to primary health care. Third the government should slow down the rate of population growth by increasing the average age at childbearing. Contraceptive use differentials in Central and Western province are attributed to differences in association between demographic conditions and intervening factors, which have a significantly stronger positive effect in Central province.

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ABBREVIATIONS

APHRC:	African Population and Health Research Center.
C.P.R:	Contraceptive Prevalence Rate.
CBS:	Central Bureau of Statistics.
DFID:	Department for Overseas Development Assistance.
GOK:	Government of Kenya.
IEA:	Institute of Economic Affairs
IMR:	Infant Mortality Rate.
NCPD:	National Council for Population and Development.
UN:	United Nations.
UNESCO:	United Nations Educational Scientific and Cultural Organization.
USAID:	United States Agency for International Development.
KDHS Dhs:	Demographic and Health Survey.
MOH:	Ministry of Health.
NRC:	National Research Council.
TFR:	Total Fertility Rate.

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CHAPTER 1

GENERAL INTRODUCTION

The issues relating to family planning programs, concern is to increase contraceptive prevalence. Family planning workers emphasize motivating couples to practice contraception as well as trying to remove the barriers to do so. Unfortunately, their approaches do not seem to be equally effective, evenly served or acknowledged in some areas. Whether they also vary significantly within the level is not known. Thus in this study our objective lies in how the combination of the selected factors influence the current contraceptive practice of women in Kenya, and the amount of variation in the mean effects of the predictors over current contraceptive use in two regions.

Contraceptive prevalence rates in Kenya have increased consistently from about 17% in 1982 to 39% in 2003. Increased contraceptive prevalence is one of the factors that has contributed to reduced fertility levels in Kenya. Statistics from the Population Reference Bureau indicate that between 1960s and 1998 fertility rates in developing countries have declined from 6.1 to 3.3 children per woman. The world's population is still growing by about 80 million people almost equivalent to the population of Germany Bulatao .A.R. (1998). Consequently, Family Planning programs need to seek more innovative ways towards promoting contraceptive use and imparting the small family norm into communities. These should provide a motivational basis for lower fertility, and consequently increased contraceptive use. UNESCO (1996), calls for strategies that take into account deeply held cultural values, especially those rooted in social and psychological needs that work against fertility control.

The main features of the Kenyan fertility are that it has been high and shows considerable variation by region, tribal group, and socio-economic status. However Ocholla -Ayayo (1987) notes that socio-cultural factors hold fertility rates below what might be biologically possible, and that some Kenyan women may be making conscious decisions about how many children they will have and consequently voluntary fertility regulation.

Kenya was the first African country to adopt a national population policy in 1967 The government has maintained a positive national family planning program within the ministry of health. The government's stand on population issues is provided in sessional paper No 4 of 1984 Population Policy guidelines and sessional paper No.1 of 2000 National Population Policy for Sustainable Development. A number of non-governmental organizations and private bodies play a significant role in the provision of these services in Kenya.

The National coordinating agency for population and development (NCAPD) coordinates various efforts of public and private agencies in family planning promotion Diverse programme activities by the government, family planning organizations and societies has led to a steady rise in contraceptive use in Kenya. Consequently Kenya has undergone a transition from a country with among the highest fertility levels in the 1970s to a country that has experienced the most exceptional fertility transitions in human history (APHRC, 2001). Kenya's contraceptive prevalence rate of 39% is ranked third in Sub-Sahara Africa after Botswana and Zimbabwe

CBS (1999) indicate that age at first marriage has gone up from 18 to 19 years in the previous two years. The proportion of women married by age 20 has dropped from two-thirds for those aged 35-49 to less than a half for those under 30 years of age. Only 16% of women aged 15-49 years had never experienced sexual intercourse. While 40% of currently married women indicated that they wanted another child, only 14% want a child in the next 2 years. One out of four women would like to space their children.

In 1998 the mean ideal family size for women 15-19 years was 3.5 children, while for women aged 45-49 was 4.9 children. Between 1978 and 1989, the mean ideal family size declined from 6.4 children to 4.2 children and further to 3.7 according to 1993 estimates. Estimates from the central bureau of statistics, 1998 Kenya Demographic and Health Survey, suggest that Kenya experienced a fertility decline from 7.7 births per woman in 1984 to 6.7 births per woman in 1989 and from 5.4 births to 4.7 births per woman between 1993 and 1998. The use of modern contraceptives increased from 33 percent to 39 percent between 1993 and 1998.

Seventy percent of the Kenyan population live in rural areas and use of modern family planning methods still remain low in rural communities. Estimates from Kenya demographic and health survey estimates that only 40% of the total demand for family planning services was provided for by facilities available in 1998. According to the Central Bureau of Statistics the decline in demand for children and increased contraceptive use is linked to the decline in fertility experienced between 1989 and 1998.

The combined efforts of public and private agencies has resulted in a steady increase in contraceptive use in the country over the past two decades. This has facilitated the country's transition from having the highest fertility levels in the world in the late 1970s to one that has experienced the most exceptional fertility transitions in human history.

1.2 BACKGROUND ON THE STUDY REGIONS

Western province covers 8 districts. These administrative districts include, Bungoma, Busia, Butere-Mumias, Kakamega, Lugari, Mt. Elgon, Teso and Vihiga. The population as recorded during the 1999 census included 1,748,363 females and 1,610,413 males. The total population of 3,358,776 people is distributed within a total area of 8,264 square kilometers and 701,323 households. By any standards the region has an extremely high population and growing population densities. The 1999 population and housing census reveal a population density of 406 persons per square kilometer. In 1989 18.4% of the population in Western province were migrants while 4.81 % of the population was classified as Urban.

Life expectancy in the province averages 49 for men and 51 for female. Between 1989 and 1999 infant mortality declined from 73.7 deaths to 63.9 deaths per 1000 live births. More than half of the population being under the age of 15 years while the elderly constitute less than 2%. Consequently the dependency ratio stands at 119 dependants for every adult. Total fertility rate in Western has declined from 8.2 in 1984 to 7.1 in 1993 and further to 7.0 children per woman in 1999 (CBS, 2000). Modern contraceptive prevalence averages 22.0%, which is one of the lowest in Kenya.

Western province has a low proportion of literate women as compared to Central province. School enrolment in the region is rising even more rapidly than the rate of population growth. As at 2000, 794,380 pupils were enrolled in primary schools, with the majority enrolled being in Vihiga and Bungoma districts. However it's true that many aspects of primary school fees have been abolished but even at that level education is far from free. Parents are constantly called upon to pay for extracurricular activities books and stationery.

The age structure is relatively young with 49% of the population being under 18 years. Total fertility rates for the period 1984 to 1989 average 6.1. The results from 1993 and 1998 Kenya demographic and health survey indicate that fertility rates declined from 5.3 to 4.6 children per woman and further to a lower level of 3.67 births per woman in 2001. (IEA 2002). Central province exhibits the country's highest life expectancy at 63.7 years compared to the National average of 54.7. Modern contraceptive prevalence in the region stands at 55% of currently married women, the highest rate in the country.

Central province recorded the lowest incidence of poverty in the country at 31.4% in 1997. "Exotic animal husbandry" backed by co-operative societies is very advanced, as opposed to Western province where traditional livestock are reared most. The main cash crops are coffee tea and pyrethrum. The population is overwhelmingly rural and predominantly dependent on agriculture leading to encroachment of marginal Aberdare and Mt Kenya regions.

Seventy percent of the area is devoted to agriculture while 20% is forestland. The land problem in the region has resulted to high level of squatter migration from the region (Ayiemba E.H.O.

1999) According to the 1999 census 240,184 persons indicated they were on wage employment with majority of these being in Kiambu. However 85% of its urban population depends on processing of agriculture products and service industry.

1.3 PROBLEM STATEMENT

One of the most glaring gaps in our Knowledge of the demographic transition in developing countries is the lack of evidence to explain the causes of the recent and incipient declines in fertility in developing countries. A number of theories have been developed: Economic development, education, reduction of child mortality, and the promotion of organized family planning programs. All these theories are plausible. However, the evidence is not conclusive, and consequently much of the decline of fertility remains unexplained. (Bankole and Westoff, 1996; Macro international, 1997).

Family planning programs and modern contraceptives have enabled millions of couples and individuals throughout the world to plan the number and spacing of their children or to avoid pregnancy. Today almost 60% of couples use some form of contraception and over 50% use modern methods. "This is well below the 70% use that demographers call a fully contracepting society" In addition, awareness of contraception has increased significantly yet acceptance and practice have disappointingly lagged behind. However little basis exists for making causal inference about the conditions leading to society wide changes in fertility control, perhaps because the available data are not suitable and most of empirical research conducted recently fails to seek such causes

National contraceptive prevalence rates tend to mask the substantial regional diversity that exists within countries. In fact, countries with the greatest interregional variations are those with higher than average national levels of prevalence, which result from high levels of use in selected regions. For example Harare and Chitungwiza, Zimbabwe with 48.0% Modern use and Central province, Kenya with 30.8% modern use from 1986-90 Kenya demographic and health survey and 39% after the 1998 Kenya demographic and health survey are in the countries with the highest prevalence.

During the 1980s, Kenya experienced an increased acceptance of family planning. Substantial regional differences in contraceptive use however exist. Between 1986 and 1990, Modern contraceptives prevalence rates in Central was 12.9 while Western province was 7.7. (National Academy Press 1993). The 1998 Kenya demographic and health survey reveals that Central province recorded the highest contraceptive prevalence rate of 55% while Western recorded the lowest with 21.9%.

Central province is 28 points higher than the national average while Western is 5 (points lower than the national average the range between these two provinces as at 1998 is 33.1 points. The 1998 Demographic and health survey suggest that the decline in demand for children and increased contraceptive prevalence is linked to the decline in fertility experienced in the country. However it does not pin down the relative importance of the demand and supply changes. It does not also provide information on the underlying socio psychological and Economic factors that have led to the changes in fertility values and attitudes, nor does it give insights into the efficiency of the service delivery system and how it has changed over time.

In most Kenyan societies, the husbands regulate the wife's behavior. From childhood to marriage, the woman is conditioned to accept this situation, and regard it as a normal part of her role. Consequently, she is unlikely to initiate any discussion on family planning and therefore may not adopt any method without her husband's knowledge. In this setting the husband makes major family decisions after discussion with relatives and friends and seldom considers the opinion of the wife. Consequently the person who is most aware of the needs, most sensitive to the program and who must assume major responsibility if contraceptive use is practiced is relatively powerless.

1.4 RESEARCH QUESTIONS

Different factors have been documented by previous studies as responsible for regional differences in contraceptive prevalence rates. This study aims at answering the following general questions

1. What are the factors that determine contraceptive use in Central and Western provinces?
2. What is the relative importance of demographic, social-economic and cultural factors in explaining contraceptive use differentials in Central and Western Kenya?

1.5 GENERAL OBJECTIVES

To examine the social-economic, and demographic factors that affect contraceptive use in Central and Western province.

1.6 SPECIFIC OBJECTIVES

1. To identify the effects of demographic factors on contraceptive use in Western and Central province.
2. To establish the effect of social-economic factors on contraceptive use in Central and Western province.
3. To compare the effects of social economic demographic and cultural factors on contraceptive use levels in Central and Western province.

1.7 JUSTIFICATION

Contraceptive use is one of the four key factors that determine fertility and it has the strongest effect on fertility in most developing countries (Bongaarts and Potter 1983, Donaldson and Tsui, 1990). According to Khasakhala and Jensen (1993:15) a two phased fertility transition involves first a decline in the use of traditional methods and secondly an increase in the use of modern contraceptives. In the past, post-partum nonsusceptibility has been the key determinant of fertility levels.

However with increase in the use of contraception, priorities are shifting. It is possible to argue that contraceptive use differentials, levels and trends, are due either to demand for children and its inverse the demand for contraception to avoid children or differences in service delivery. Consequently for those interested in current and future fertility rates, contraceptive prevalence is an essential study area. "We need to understand which factors cause women to desire large families and which motivate them to take conscious efforts to limit fertility"

If factors that affect contraceptive use are reduced to residential, economic or demographic explanations, then an important part of the fertility transition may be explained and an important policy instrument critical to increase in contraceptive use levels and fertility decline may have been isolated. Macro international, 1997. The results are crucial for estimating the needs of family planning programs and for evaluating the impact of such programs, as well as projecting fertility levels and population change.

An analysis of contraceptive use in Kenya is justified within the context of knowledge of both the potential supply of contraceptives and the prerequisites for motivation, which are related to the phase of demographic transition, prevailing fertility levels as well as overall social and economic development. Therefore a study of the interregional differences in contraceptive use patterns should rank the regions in terms of socioeconomic and demographic levels as well as the strength of family planning. The success of such programs is related to the widely differing social and economic contexts in which they operate.

1.8 SCOPE AND LIMITATIONS:

Attention to this study has been devoted entirely to contraceptive use, and no consideration has been given to abortion, mortality and migration or other factors affecting fertility. This is done in spite of the fact that abortion, postpartum abstinence or breast-feeding may present a widely utilized alternative to contraceptive use. However recent literature suggests that contraceptive use is the most important determinant of fertility, explaining between 62% and 69% of fertility levels in Kenya (National Research Council, 1993).

An alternative viewpoint is that joint decision-making forms the basis of utilization of family planning methods. "Programs aimed exclusively either at men or at women may fail in their purpose because most sexual family planning and childbearing decisions are made by both partners of a couple" In spite of this limitation, a number of studies have shown no significant importance of male involvement in contraceptive use promotion, consequently this study will only focus on currently married women of reproductive age in Central and Western province.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

This section summarizes theory and previous research on determinants of contraceptive use and the factors that explain regional differentials in contraceptive prevalence and fertility. The section contains theoretical and empirical literature from studies that have been previously conducted and published both in Kenya, Sub-Saharan Africa and other regions. The scope ranges from fertility determinants to contraceptive use theories. A conceptual and analytical framework is deduced to serve as guidelines for analysis and explanation of results.

Levels and patterns of contraceptive use are critical variables in fertility change and causal inference about fertility conditions and changes must be supported, *inter alia*, by some empirical knowledge of what cause people to voluntarily regulate conception through contraceptive use. However, no theory exists as to when individuals will voluntarily control births through the use of contraception United Nations (1981).

Analysis of 1977 Kenya fertility survey data by Fenny and Page (1984) concluded that lactation amenorrhoea was the main factor inhibiting fertility, followed by marriage patterns. Contraception was ranked third. Kizito et al. (1991) in an attempt to explain fertility decline in Kenya between 1978 and 1989 established that contraceptive use was the most important determinant of fertility decline explaining 62% of the aggregate fertility decline.

2.1 FACTORS AFFECTING CONTRACEPTIVE USE

Many studies have been conducted both in Kenya and other developing countries in attempt to explain the major determinants of fertility and contraceptive use. Much of the demographic literature as exemplified by the writings of Caldwell (1991); Caldwell and Caldwell (1989, 1990); Goody (1990); Frank (1987, 1988); Frank and McNeil (1987), Lesthéghe (1989b) and Page (1989) has emphasized the probable continuity of pronatalist forms of social organizations

Results from contraceptive use surveys have strengthened the opinion that women and men who belong to certain socioeconomic classes, ethnic cultural and religious groups and who possessed certain demographic characteristics were more likely than their counterparts to be current contraceptive users and consequently regulate the actual number of children ever born.

Valente et al. (1999) from a further analysis of the 1993 KDHS established that use of a contraceptive method in Kenya was associated with several individual level characteristics including age, education, parity, socioeconomic status, and exposure to the radio. Mahmoud and Ringheim (1996) in analysis of the 1991 Pakistan DIIS conclude that the primary determinants of contraceptive use not conditional on desire to avoid pregnancy are the knowledge of a supply source, husband wife communication and religious attitudes. A number of these reasons are examined below.

Mauldin and Segal (1986), observe that users who desire no more children are often classified as limiters while those who want more children eventually but not for at least two years are

classified as spacers. Research conducted by the National Research Council indicates that in at least half of the DHS countries, modern contraceptives are used for limiting rather than spacing. However where limiting emerges as primary motive, modern contraceptive use is low.

Westoff (1991) maintains that DHS data in Africa on reproductive intentions and desired timing of births reflects a double desire. By contrast Kenya represents an "intriguing case where more than half the users openly state that they want no more children". Now its more widely recognized that, in a number of cultures, apart from the desires to limit births, the wish to lengthen birth intervals can also be an important determinant of the decision to use contraception.

Lutalo et al (2000), from a study in Rukai, Uganda, established that the prevalence of female controlled modern methods was 16% among women desiring 0-2 children, compared with 4% among women desiring more than 6 children. The use of female controlled modern methods was higher among women who wished to delay their next child by more than one year and among those who wished to have no more children.

Also cited, as factors affecting contraceptive use are health related factors whereby, many couples are afraid that the use of Pills, IUD, or injections for prolonged periods of time will cause severe damage to their health. In many areas millions of couples want to limit their fertility but are afraid that their use of the methods offered will involve the risk of early death. The only solution to this problem is the truth, diffused widely in a sustained manner and emanating from the reliable medical sources.

One prerequisite for the adoption of contraception is that the husband wife discusses how many children they wish to have, family planning method they wish to use, when they should begin practicing family planning, and where they should go for the services. Bogue, D.J (1975).

Similarly, a study conducted by the Economic Commission for Middle and Far East reveals that couples tend to have discussions following exposure to messages about family planning. Until there is adequate spousal communication, there will be no prolonged truthful use of contraception.

Valente et al. (1999) from a study in Kenya established that while only 12% of women who reported having discussed family planning with their spouses had ever used a contraceptive, 47% of women who recorded that they had discussed family planning with their husband reported using a contraceptive method.

Nzioka (1998) established that out of 32.7% currently married women who used a method of contraception; one in five used a male dependent method. Similarly, the United Nations (1995) notes that in developing countries, husbands often report greater use of modern family planning methods. Consequently it is increasingly important to involve the men in understanding contraceptive use dynamics. However the duration extent intensity or result of these discussions cannot be established.

Caldwell (1982), in separate publications with Njogu (1991) observe that, "The higher the woman's educational attainment, the higher is her potential wage. This wage measures one of the principle opportunity cost to childrearing". Higher levels of education for women has been identified as a primary factor contributing to the rise in contraceptive use in Kenya between 1978 and 1989 and to the onset of fertility decline in parts of Sub- Saharan Africa.

United Nations (1979) indicates that although wife's education is an important determinant of the practice of contraception in most developing countries, the cross cultural differences in the level of use associated with varying degrees of education suggest that other factors can modify the effect of education. Other comparative studies indicate that differences in overall education levels can explain only part of the cross-cultural variation.

Shapiro (1991) from a study in Kinshasa established that women with no schooling generally have lower fertility than women with primary schooling and higher fertility than women with more than primary schooling.

Many couples do not adopt family planning because they believe that the persons whose opinion is very valuable to them will disapprove their actions. Child bearing decisions are mainly a group decision or consensus than a decision by individual couples. Often the pressures to conform to the anti family planning opinions of the groups or peers are very strong. Quite often the information provided may be rumors, which may have their origin in factual events, but in the process of transmission the facts loose their originality. Where rumors are deeply entrenched, the refutation should be made by more than one trusted source.

The linkages between fertility, contraceptive use and child mortality consists partly of a physiological effect whereby a death of a child truncates breast-feeding leaving the woman exposed to the risk of conception. Consequently among the strongest factors associated with high fertility was the experience of losing a child.

The potential effect of the acquired immune deficiency syndrome (AIDS) must be considered in any examination contraceptive use and fertility in African populations. Aids may affect contraceptive use in two ways. Couples may decide to have a higher number of children in order to increase the likelihood of a certain number of surviving children. This increase would lower the likelihood of couples adopting a contraceptive method to control their fertility.

Preliminary findings from African from several African settings suggest increased use of condoms for Aids Prevention. (Plummer et al., (1988) Mony-Lobe et al., (1989) Musagara et al (1991). This trend may also affect birth rates. However the rise in condom use has been small or limited to very special populations such as commercial sex workers and their clients.

Other studies reveal that the total number of facilities offering family planning located within 30 km have much weaker statistical association with contraceptive behavior than did variables pertaining to the nearest facilities. The assumption is that high quality family planning services will help maintain contraceptive use among initial family planning adopters and will generate new users Jain, (1989) Bruce, (1993) Veneyel, (1993).

Consequently, researchers propose the need to assess quality of services based on client's perspectives rather than the provider's perspectives. The few impact studies that have included client's perspectives of family planning program quality have established that quality of services is associated with contraceptive use.

Koenig et.al. (1997) used prospective data from rural Bangladesh to measure quality of care based on women's responses to five questions on interpersonal interaction with female outreach workers. The authors established that women who perceived their interactions the workers to be of high quality were more likely to continue using contraceptives than those who perceived the interaction as poor.

Mass media communication have been found to be an effective way to diffuse information about family planning and to effect changes in attitudes towards practice of contraception in a variety of populations (Rogers and Kincaid., (1981) ;Bertrand et al (1987) .Piotrow et al (1990);Westoff et al.. (1994a) and (1994b).. The common view in these studies is that messages about family planning have to be presented in a variety of ways in order to overcome the strong values norms and beliefs that prevent individuals from adopting contraception.

2.2 THEORETICAL EXPLANATIONS

Wilder (1969b) warns that the behavior change that Family Planning demands can be very radical and even difficult. "We are attempting to change intensely held attitudes that are central to an individual's personality structure." One theory states that "The principal change responsible for controlled fertility has been a change in attitude or motivation" This view deals

with the matter from the perspective of the individual and allows hypotheses about variations within cohorts of individuals in regard to contraceptive behavior. The basic tenet is that people adopt contraception in order to achieve certain goals or to accommodate tastes and preferences. An element promoting contraception here is the desire of a smaller family size or the disutility with pregnancy.

In line with the demographic transition theory, there is a view that the control of births occurs rapidly once society has undergone sufficient modernization. Individuals however do not control births in response to their personal circumstances, but that the practice becomes widespread when aggregate mortality declines and socio-economic conditions are favorable to adopt the small family Norm.

More recent explanations of fertility change have emphasized the importance of ideational change. Ideational change refers to the shift in thinking and the diffusion of that new idea through a community. The ideational model of fertility transition attributes fertility decline to the diffusion of new ideas and practices and emphasizes the role of communication in fertility behavior change. Bankole and Westoff (1996), propose that communication has a significant impact on contraceptive behavior

Coale, (1974), States that this interrelatedness between societal norms and individual choice is acknowledged in the stipulated conditions for the control of conception. This implies that people will control conception when there is acceptance of the choice within marriage; Individuals

perceive advantages from reduced fertility, the individual's posse's knowledge of effective techniques of control.

United Nations (1983), it is no longer thought profitable to argue that the relative merits of development and family planning programs as policy measures for reducing fertility for its now evident that the two conditions provide a more favorable climate for contraceptive use than either one singly.

A number of Scholars have argued that for contraception to take place, Knowledge, information motivation personal skills and a positive self-concept must be present. Gage (1998), Jorgensen (1993); Omwanda (1996). Moore and Rosenthal (1993) have identified 5 major steps towards contraceptive adoption. The individual must recognize that pregnancy and disease are likely outcomes of unprotected sex. They must be motivated to take action and choose a right solution. These steps occur in a socio-cultural and psychological environment of the individual. This needs expertise and efforts that can initially pinpoint social psychological factors rooted deeply in the local culture and identity which of them work against family planning.

2.3 SUMMARY OF LITERATURE REVIEW

Socioeconomic, cultural and demographic factors are associated with current contraceptive use. The main findings show that first, contraceptive use higher in urban than in rural areas. The difference ranges from a 15+ percentage points in those countries where modern use is low to about 18 percentage points where contraceptive prevalence is high. Secondly, female education is an important determinant of demographic behavior in general and family planning behavior in

particular Studies in Africa and Kenya indicate a positive relationship between female education and modern contraceptive use. However, this generalization is also extended to traditional methods in certain regions.

Thirdly, the use of contraception among married women is lowest among women aged 15-19, gradually increases and then decreases towards the end of the reproductive years. In Kenya the peak tends to be highest among women aged 25-40 years. Studies in Kenya have also documented the significant importance of parity, socioeconomic status and exposure to the radio. Other analyses have focused on the National Family Planning program and invariably criticize it harshly for poor management and the low quality of services offered to majority of its clients. Finally, the author's note that the direction of effect of many covariates differs among ethnic groups thus confirming the importance of cultural differentiation in matters related to reproduction.

2.4 THEORETICAL FRAMEWORK

King (1974) in a comparative study involving 19 developing countries showed that contraceptive use is a function of the socioeconomic setting and the Family Planning program efforts. The United Nations (1979a) has proposed a Micro level model, an outgrowth of the micro economic demographic theories of Easterlin (1975). The model postulates that various socio-economic, demographic and cultural factors influence contraceptive use, and that women within marriage choose contraception on the basis of their desire for more children and availability of family planning facilities. Contraceptive behavior at the individual level is viewed via a micro-level

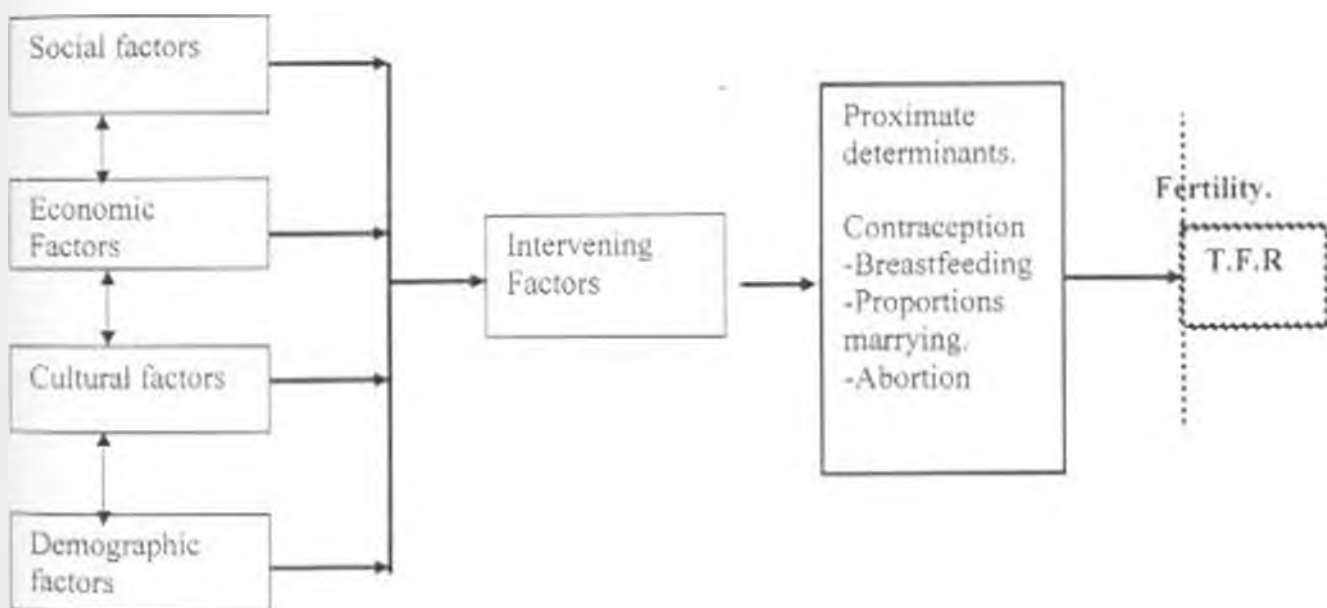
model of contraceptive decision-making adapted from the socio-economic theory of fertility (SETF).

2.5 CONCEPTUAL FRAMEWORK

Included in the model are Socio cultural, antitudinal and modernizing influences that affect fertility intentions, behaviour and the use of contraceptive methods. Although fertility, as measured by children ever born is included in the model, the analysis will only seek to explain the effect of background factors, fertility desires and program measures on contraceptive use among women in union.

Figure 2.1 Conceptual framework.

Background factors



Source: United Nations (1979)

2.6 CONCEPTUAL HYPOTHESIS

Several demographic and socioeconomic factors influence women to translate their intention to stop or space child bearing through contraceptive use. Social, economic demographic and cultural factors act through intervening factors to influence contraceptive use.

2.7 DEFINITION OF CONCEPTS

Socio-economic factors

These are limited to factors, which affect the social and economic status of a woman. These include education, type, place of residence, income and employment status.

Cultural factors

These relate to the cultural environment as governed by traditions, norms and regulations set on women's way of life in union. This definition incorporates such factors as beliefs, ethnicity, Kinship ties, decision-making, and polygyny.

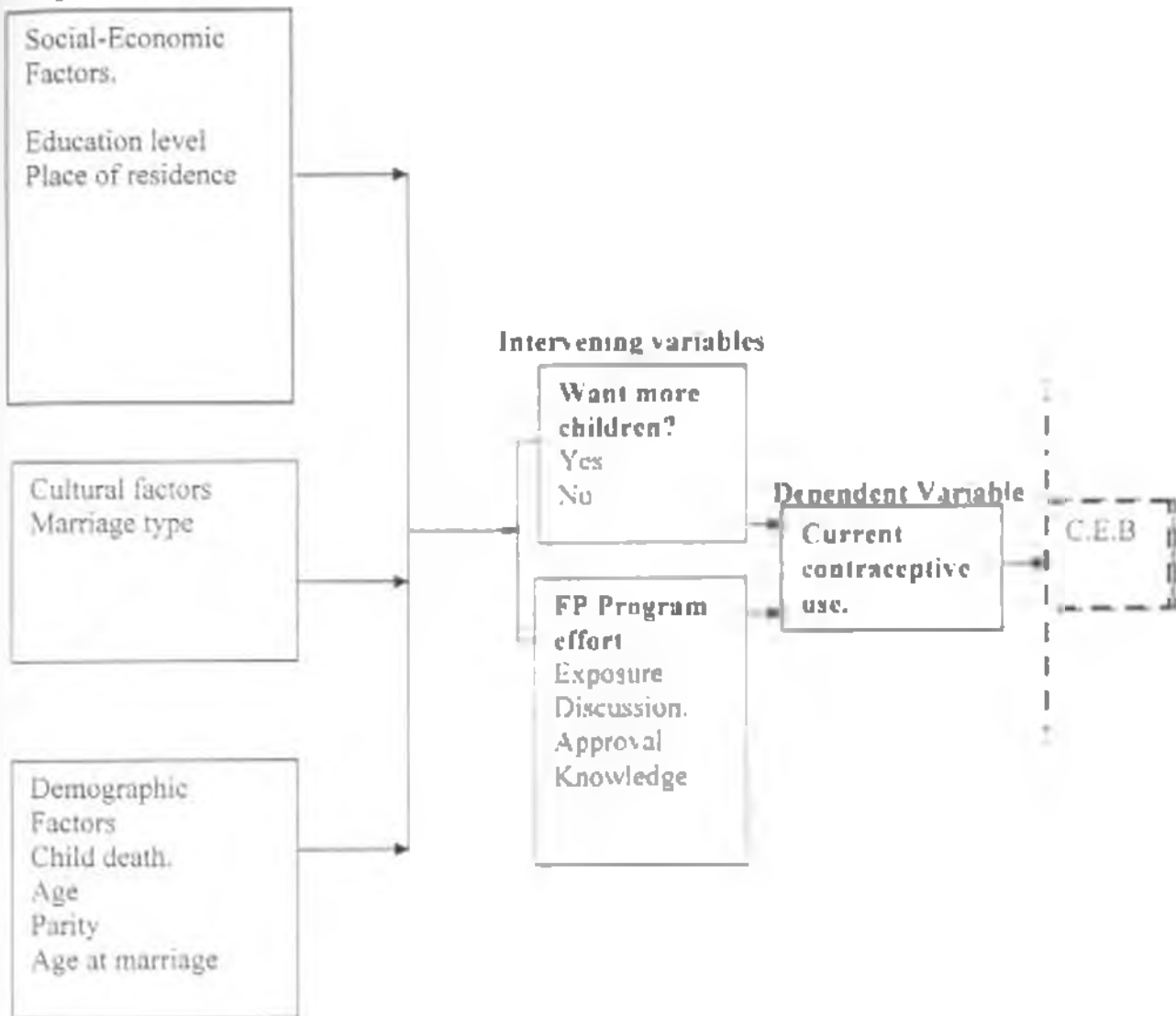
Demographic factors

These relate to the lifecycle of an individual: Included are age at marriage, child mortality, and Number of children ever borne.

2.8 OPERATIONAL FRAMEWORK

This model incorporates the variables related to family size desires and others.

Background Variables



OPERATIONAL HYPOTHESIS

1. There exists a positive relationship between socio-economic conditions (education and place of residence) and current contraceptive use in both Western and Central Kenya.
2. Child loss affects contraceptive use negatively in both Central and Western Provinces. Women who have experienced a child's death are less likely to be current contraceptive users.
3. Contraceptive use in Western is higher among women of higher parity while contraceptive use in Central is higher amongst women of a lower parity.
4. Women who want more children are less likely to use contraceptives in both Western and Central province.

OPERATIONAL DEFINITIONS

Dependent Variable	Explanatory Variable	Definition of Variables
Current Contraceptive use		Refers to women in union who during the time of a survey report that they use a contraceptive.
	Education	The level of education attained by the woman. The variable is recoded into the following categories. No education. Primary education Secondary and higher.
	Place of residence	Dichotomous variable where women are classified as either living Urban Rural
	Marriage Type	Partner has any other wives Yes No
	Number of living children (Party)	The number of children born by the woman and is living either with the woman or live elsewhere. The woman's response is taken as valid. 0-2 children. 3-4 Children. 5+ Children.
	Child Death	Have you ever given birth to a child who was born alive but later died? Yes. No.
	Respondents Age	Five-year age group 15-24 25-34 35+
	Respondents Age at Marriage	Five-year age group 15-24 25-34 35+
	Spousal Communication	How often have you talked to your partner about family planning in the past year? Yes No

	Fertility Desires	In the survey women were asked 'Do you want to have any more children?' Yes No
	Perception of approval by Husband	Respondents perception of husband's approval of family planning. Disapprove Approves
	Exposure to Family Planning on Radio	The variable measures whether women have been exposed to any family planning messages. Yes No
	Approval	Women's approval or disapproval of couples using a method to avoid getting pregnant? Approve Disapprove.

CHAPTER THREE

DATA AND METHODOLOGY

This chapter describes the source and quality of data and the methods for data analysis to be employed in order to achieve the objectives of the project. Cross tabulation method for bivariate analysis with chi-square as the test statistic and logistic regression are briefly discussed.

3.1 DATA SOURCE

The study utilizes data from the Kenya demographic and health survey carried out in 1998. The data set is derived from the Woman's questionnaire with the study group being women of reproductive age and currently in union. The 1998 survey was the third round of demographic and health surveys carried out in several other developing countries worldwide. In Kenya the first demographic and health survey took place in 1989, the second in 1993 and the third in 1998. The 1998 study collected a vast amount of demographic data which measures health socioeconomic and demographic conditions. NCPD, CBS and MJ. Kenya Demographic and Health Survey (1998)

Financial and technical assistance was provided by Macro international Inc USA through USAID. Funding was provided by USAID and the British Department for Overseas Development, DFID. Logistical assistance was provided by the United Nations Fund for Population activities UNFPA, the division of primary health care and national HIV-Aids control program.

Results from the survey were published jointly by the central bureau of statistics and the National Coordinating Agency for Population and Development (NCPD) council on population and development in the Kenya demographic and health surveys analysis. The analysis provided in this report provides further analysis of the 1998 Kenya demographic and health survey. This analysis makes use of data relating to fertility and contraceptive behaviors in two provinces in Kenya. The regions are Central province and Western province. NCPD, CBS and MI, Kenya Demographic and Health Survey (1998).

A total of 9,465 households were selected. All women aged 15–49 were targeted for interview in the selected households. Out of the 8,233 eligible women, 7,881 were interviewed using the woman's questionnaire yielding a response rate of 95%. The number of matched couples interviewed was 1,362. The KDHS sample points were selected from a national master sample maintained and developed by the Central Bureau of statistics. The Third National Sample Survey and Evaluation Programme (NASSEP-3) master plan follows a two-page sampling design stratified by urban/rural residence. This Analysis is concerned only with married women of reproductive age in Central and Western province.

The main purpose of the household questionnaire was to identify all the women aged 15–49 and men aged 15–54 eligible for individual interview. The woman's questionnaire included information on the woman's reproductive history, family planning, child health and maternal health. The men's questionnaire was much shorter and included questions on HIV Aids family planning and other selected topics. Information relevant to this study was gathered using the women's questionnaire.

3.2 DATA ANALYSIS METHODS

Descriptive statistics methods involve the use of frequency distribution tables and percentages to describe the relationships between various demographic variables (parity, age and experience of child death) and contraceptive use.

Cross tabulation method is used to determine the relationship between two different variables.

Bivariate analyses involving the chi-square test determine the significance of association between contraceptive use and all other key independent variables. The Chi-square statistic will be used to test if the observed series of values differs significantly from what was expected.

Conclusions are made based on the coefficients.

The following steps are followed,

Null hypothesis stated as

There is no significant association between the dependent variable (contraceptive use) and the independent variables.

Define the level of significance

Establish the degrees of freedom

The null hypothesis rejected only if the calculated value of chi-square is equal to or more than the tabulated value of chi-square at the specified level of significance using the stated degrees of freedom.

Logistic regression has been used to determine the probability of an event occurring. In this study p , defined as probability of an event (Current contraceptive use) occurring given certain existing conditions. This method is similar to the linear or simple regression model. The objective is to establish the best fitting model to describe the relationship between the outcome variable and a set of independent variables often called covariates. Logistic regression is different from linear regression model in that the outcome variable is dichotomous. The model does not require any distributional assumptions concerning explanatory variables.

One advantage of logistic regression method is that it lends itself to a biologically meaningful interpretation. The model can be used not only to identify risk factors but also to predict the probability of success. We first derive a similar bivariate logistic regression model to examine the effect of each of the variables considered on current contraceptive use. Second, we examine the effect of the variables on current contraceptive use and compare the role of control variables

3.3 SIMPLE LOGISTIC REGRESSION MODEL

The general logistic method expresses a dichotomous dependent variable as a function of several independent variables that are either discrete or continuous (Fox, 1984). Such binary outcome data is common in medical applications. As in multiple regression, we are interested in finding an appropriate combination of predictor variables to help explain the binary outcome. Consequently the log odds of current users can be expressed as a linear function of the independent variables taking the form.

$$\ln \frac{P_i}{1-P_i} = \beta x = \alpha + \sum_{j=0}^k \beta_j X_{ji} + \epsilon_i$$

Where

P = the probability that an event will occur

$1-P$ = Probability that an event will not occur.

\ln = Natural logarithm.

α = Constant or the intercept of the model.

β = The logistic coefficients.

X_s = Explanatory variables.

ϵ = Error term

Estimated coefficients for the independent variables present the shape or the rate of change of a function of the dependent variable. The parameters in the logit model may be interpreted as ordinary regression coefficients. The fundamental equation for logistic regression tells us that with all other variables held constant, there is a constant increase of b_1 in $\text{logit}(p)$ for every 1-unit increase in x_1 , and so on. Positive values indicate that the independent variables or their interactions raise the log odds of the dependent variables while negative coefficients show that they lower the log odds.

In Statistical Package for Social Scientists (SPSS) logistic regression finds a best fitting equation, the principles on which it does so are rather different. Instead of using a least squares deviations criterion for the best fit, it uses a maximum likelihood method which maximizes the probability of getting the observed results given the fitted regression coefficients in each region. Hosmer D W and S Lemeshow, (1989).

Based on the log odds we compare the probability of contraceptive use in the two regions. This leads to a convenient way of representing and comparing the results of logistic regression by a plot showing the odds change produced by unit changes in different independent variables. Press and Wilson, (1978).

CHAPTER FOUR

RESULTS OF BIVARIATE ANALYSIS

4.1 CHARACTERISTICS OF THE STUDY POPULATION

This chapter presents the findings of the study. The chapter is organized according to the analytical procedures applied. First, an attempt is made to describe individual characteristics of all variables that are to be included in the study. To serve as a benchmark for the discussion of the study results, the key features and trends of the variables in both Central and Western provinces are compared. The discussion is based on univariate, bi-variate analysis through cross-tabulation and multivariate analysis involving logistic regression. Results in the two provinces are related to the national averages and any differences observed are explained.

The subject population is all women who report to be in union at the time the survey was conducted. The variable is further defined as marital status'. The variable reveals all the women in union. Background characteristics of contraceptive users are described through univariate measures. This involves frequency distribution, and percentages. The findings are presented in the form of frequency tables and graphs. The survey results indicate that in Central province 450 currently married women are considered while in Western province 520 cases are considered.

TABLE 4.1 FREQUENCY DISTRIBUTION OF STUDY POPULATION

Characteristics	CENTRAL PROVINCE	WESTERN PROVINCE
	PERCENT	PERCENT
Contraceptive users	63.6	10.8
Demographic factors.		
Age 5-Year group		
15-24	19.8	26.3
25-34	42.2	38.1
35+	38.0	35.6
Number of living Children		
0-2 Children	41.8	31.7
3-4 Children	30.0	23.7
5+ Children	28.2	44.6
Child Mortality		
No (Ref)	88.7	64.8
Yes	11.3	35.2
Age at Marriage		
0-19	50	66.8
20-24	40.9	30.8
25+	9.1	2.5
Socioeconomic factors.		
Education Level		
No education	5.6	11.3
Primary education	63.1	56.5
secondary and higher	31.3	32.1
Place of Residence		
Urban	6.4	6.7
Rural	93.6	93.3
Type of Union		
Polygamous	3.3	17.9
Monogamous	96.7	82.1
Intervening factors.		
Desire for more children		
Yes	64.2	53.8
No	35.8	46.2
Exposure to Family Planning on Radio		
No	39.3	35.8
Yes	60.7	64.2
Knowledge of FP methods.		
<3 Methods	77.6	69.4
>3 Methods	22.4	30.6
Respondent Approval		
Disapproves	5.8	6.2
Approves	94.2	93.8
Discussed FP with partner		
No	18.0	16.9
Yes	82.0	83.1
Perception of Husband		
Disapproves	16.5	33.9
Approves	83.6	66.2
N	450	520
%	46.4	53.6

Source: NCPD, CBS and MI. Kenya Demographic and Health Survey (1998).

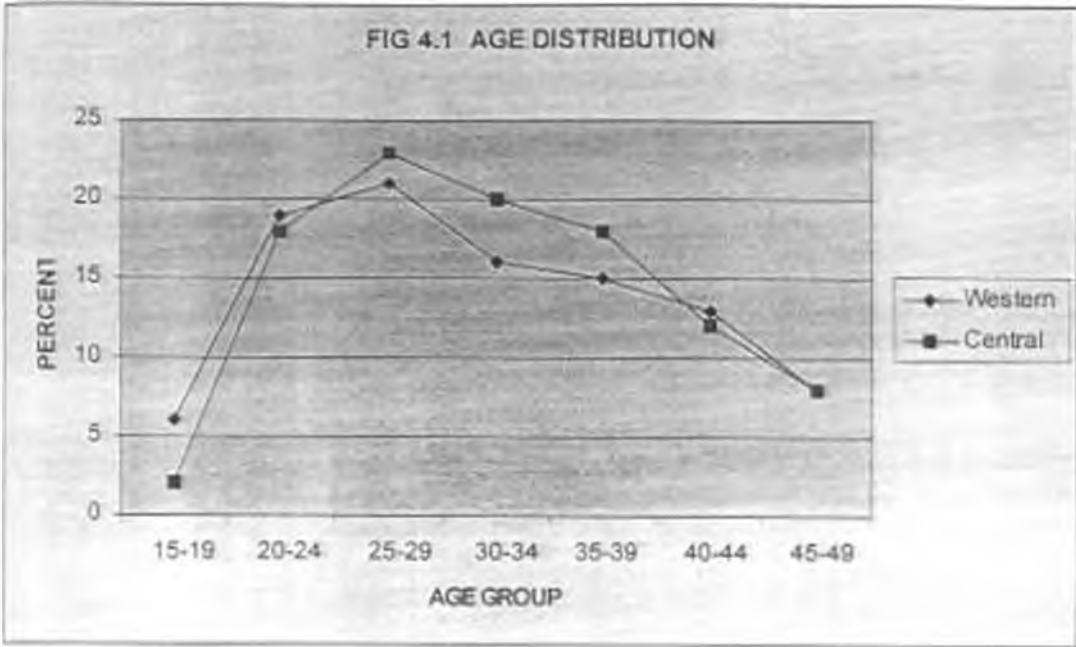
Information in Table 4.1 above provides a description of the variables used in the study in Central and Western province. The results indicate that Western province had a larger population of women in union as compared to Central province. The dependent variable is dichotomous, Contraceptive use. Individual women are categorized either as contraceptive users, or non-users based on their answers to questions on whether they use any method of contraception. These include both modern and traditional methods of contraception. In Central province, (63.6%) women are current contraceptive users compared to (30.8%) in Western province.

Women in Central province are less likely to experience child loss than women in Western province. In Central province only (11.3%) of women reported they have given birth to a child who later died while in Western province (35.2%) of women reported having a child death. Central province records the lowest levels of infant mortality in Kenya. Women who have experienced death of a child (either daughter or son) are more exposed to the risk of pregnancy. Experience of a child death is associated with current contraceptive use because it reduces current contraceptive use via the replacement and insurance effect on fertility

Women in Western province are younger than women in Central province. In Central Province (80%) of women are aged over 25 years while in Western province (72%) of women are above 25 years. The difference in age distribution implies that in Central province fewer women in the 15-24 age- groups are married. Generally, women in Central province enter into marriage and childbearing later than the women in Western province.

FIGURE 4.1 AGE DISTRIBUTION.

The graph below compares the proportions of the study population by age group.



Marriage age is lower in Western province compared to Central province. The mean age at marriage in Western province is 18.3 years as compared to 23.3 years in Central province. In Central province (50%) of the women are married before they attaining 19 years of age compared to (66%) in Western Kenya. In Western province fewer women are married after they attain 25 years of age.

Mean age at marriage is associated with number of living children. In Central province (41.8%) have less than 2 children compared to (31.7%) in Western province. Women in Central province attain their desired family size when they have fewer children than women in Western province.

Central province consistently exhibits better socio-economic conditions compared to Western province. In Western province (11.3%) of women have no education, compared to (5.6%) of their counterparts in Central province who are illiterate. Generally, women in Central province

are more educated than women in Western province creating pre-conditions for higher contraceptive use in the region.

The two regions comprise mainly of a rural population. On average (93.5%) of the women reside in rural areas. Knowledge, information and services that promote contraceptive use are lower in the rural areas. Consequently fertility intentions remain high and contraceptive use low in rural areas. The type of union "Polygamy or Monogamy" is associated with contraceptive use. Polygamous marriages are more common in Western province where (14.5%) of the women are in polygamous marriages compared to only (3%) in Central province. Contraceptive use and the small family norm are more pronounced among monogamous marriages than in polygamous marriages. Women in polygamous institutions are exposed to other methods of contraception like periodic abstinence.

Intervening factors such as desire for additional children and knowledge of contraceptive method affect demand for contraceptives directly and incorporate family planning program effort and activities aimed at promoting contraceptive use. These may also be proxies for other proximate determinants of fertility and fertility intentions. Women in Central province desire fewer children than women in Western provinces. In Central province (64.2%) of women have achieved their desired number of children compared to (53.8%) in Western province. Women who have achieved their desired family size want contraceptives to limit the number of children they have. The contraceptive use intention of women in Western province is more related to timing and spacing of birth. Included are an average (12 %) of women in both regions who are either not motivated or for other reasons are undecided on their intention to practice contraception.

These fertility intentions are likely to keep fertility levels in Western province higher than in Central province until socio economic conditions and attitudes favor lower demand for additional children. Exposure to Radio and discussion of family planning with husband are associated with higher contraceptive use in Central province compared to Western province. Knowledge about family planning method remains higher in Central province. In Central province (77.6%) of women report knowledge of more than three methods of family planning. Knowledge and use of more modern methods than traditional methods is associated with high contraceptive prevalence rates in Central province. The differences in infrastructure available and in strength of family planning effort contribute to the lower fertility levels in Central province.

Small family size desires increases knowledge, approval and contraceptive prevalence rate in Central province. Demographic and socioeconomic conditions are also responsible for this difference. Generally, major differences in knowledge levels and perception of husband approval are responsible for differences in contraceptive prevalence rates. Moreover, attitudes that lead to lower demand for children and disutility with pregnancy exist among women in Central province probably because of the reproductive experiences of women or due to a more efficient family planning service delivery system. Marked differences in infrastructure and program effort associated with delivery of family planning services also contribute towards a more widely accepted small family norm in Central province.

4.2 DIFFERENTIALS IN CONTRACEPTIVE USE

This section presents differentials in contraceptive use in Central and Western province. Contraceptive use is classified by major factors like education, number of living children socio-economic and intervening factors. Results of the analysis are presented in table 4.2 separately for each region. Differences in characteristics of contraceptive users classified by their major factors like education, number of living children, place of residence and current contraceptive use among married women in the two regions. Differentials are examined both for contraceptive users and non-users. We seek answers to two questions, first, are the associations as expected in both regions. Second we highlight any departure from the expected association between the two regions and further explain causes of these differences.

Table 4. DIFFERENTIALS IN CONTRACEPTIVE USE

Characteristics	CENTRAL PROVINCE		WESTERN PROVINCE	
	% Not using	% Using	% Not using	% Using
Demographic Factors				
Age Group				
15-24	20.1	19.6	30.3	17.5
25-34	24.5	40.9	36.1	42.5
35-49	35.4	39.5	33.6	40.0
Significance	-	0.668	-	0.000***
Number of Living Children				
0-2	46.3	39.2	35.8	22.5
3-4	23.8	33.6	21.4	28.8
5+	29.9	27.3	42.8	48.8
Significance	-	0.088*	-	0.008***
Child Mortality				
No				
Yes	86.0	90.2	63.1	68.8
Significance	14.0	9.7	36.9	31.3
Age at Marriage				
0-19				
20-24	51.8	49.0	70.8	57.5
25+	39.6	42.0	28.1	38.9
Significance	8.5	9.1	1.1	5.6
Socioeconomic Factors				
Highest Education Level				
No Education	7.9	4.2	11.4	11.3
Primary Education	68.9	59.8	64.4	56.5
Secondary and Higher	23.2	36.0	24.2	32.1
Significance	-	0.009***	-	0.000***
Place of residence				
Urban	6.7	6.3	4.4	11.9
Rural	93.3	93.7	95.6	88.1
Significance	-	0.863	-	0.002***
Type of union (Polygamous?)				
Polygamous	5.5	2.1	19.7	13.8
Monogamous	94.5	97.9	80.3	86.3
Significance	-	0.054	-	0.010*
Interacting Factors				
Desire for more children				
Yes	42.1	32.2	49.4	39.4
No	57.9	67.8	50.6	60.6
Significance	-	0.035**	-	0.034**
Exposure to Family Planning on Radio				
No	48.8	33.7	39.7	26.9
Yes	51.2	66.3	60.3	73.1
Significance	-	0.002***	-	0.027**
Knowledge of Methods				
<3Methods	42.7	10.8	32.2	26.9
≥3Methods	57.3	89.2	67.8	73.1
Significance	-	0.000***	-	0.222
Respondent Approval				
Disapproves	14.0	1.0	7.8	2.5
Approves	86.0	99.0	92.2	97.5
Significance	-	0.000***	-	0.021**
Discussed with partner				
No	29.3	11.5	76.9	67.5
Yes	70.7	88.5	23.1	32.5
Significance	-	0.000***	-	0.000***
Perception of Husband				
Disapproves	34.1	6.3	41.4	16.9
Approves	65.9	93.7	58.6	83.1
Significance	-	0.000***	-	0.000***
N		450 (63.6)		520 (30.8)

*Significant at p<0.05; **Significant at p<0.01

4.2.1 DEMOGRAPHIC FACTORS AND CONTRACEPTIVE USE

Child death is significantly associated with contraceptive use in Western province. In Central province women's experience of a child death is not associated with contraceptive use. Women who have experienced a child death are less likely to use contraceptives, which is consistent with lower levels of contraceptive prevalence in the region. Lower contraceptive use levels in Western province are due to the combined "insurance effect and replacement effect" of a child's death. Of all contraceptive users, 9.7% in Central province have experienced a child death compared to 31.3% in Western province. Higher infant and child mortality levels in Western province contribute to lower levels of contraceptive adoption in the region.

Adoption of contraception is independent of the age of the woman in Central province. Questions regarding contraceptive behavior arise in Central province only among Women who are below 15 years of age. Such women are considered young', have not entered into marital relationship and have not achieved their desired family size and family composition. In Western province, women below 15 years of age are less likely to use contraceptives.

Early marriages occur more frequently in Western province than in Central province. The mean age at marriage in Central province is higher compared to Western province. Since women in Western province marry early, they are more likely to move to a higher parity group than women in Central province. Other proximate determinants of fertility together with age at marriage increase demand for contraceptives among women in Central province significantly compared to women in Western province. The association between age at marriage and contraceptive use is stronger in Western province than in Central province.

Fertility is a sequential process. Critical variables associated with the rate of conception may vary considerably from one parity level to the next, as is the case in Central province. In the province, contraceptive use is highest (39.2%) amongst women with 0-2 children while in Western province contraceptive use is highest (48.8%) among Women with 5+ children. The association between parity and contraceptive use is significantly stronger in Western province than in Central province.

4.2.2 SOCIO-ECONOMIC FACTORS AND CONTRACEPTIVE USE

A lower level of education attainment jointly with higher number of women who do not go beyond primary school in Western province contributes to the negative relationship between women's education and contraceptive use. Of all women using contraceptives, in Central province 59.8% have primary education compared to 56.5% in Western province. The strength of association between education and contraceptive use is significantly higher in Central province than in Western province.

The observation that rural/urban place of residence is not significantly associated with contraceptive use in Central province may offer sufficient evidence that the attitudes towards contraceptive use have diffused evenly in both rural and urban areas of Central province than in Western province. Women in urban areas are more likely to use contraceptives than women in rural areas. In Western province 11.9% of all women using contraceptives are in urban areas compared to 6.3% in Central province. In Western province contraceptive use differentials is associated to rural/urban differences in provision of family planning services in the region.

Existing socio-cultural institutions yield more polygamous institutions in Western province. Women in such polygamous institutions have a variety of traditional and modern methods of family planning to choose from. Women in polygamous institutions choose to halt child bearing either through abstinence, traditional methods, or modern methods. In both Western and Central province, (>90%) of contraceptives users are in monogamous institutions. Contraceptive users in polygamous institutions are slightly higher in Western province (13.8%) compared to (2.1%) in Central province. Women in polygamous relationship are less likely to adopt contraception

4.2.3 INTERVENING FACTORS AND CONTRACEPTIVE USE

The results summarized in table 4.2 indicate that fertility desires is significantly associated with contraceptive use among women of reproductive age in both Central and Western province. Women who have achieved their desired family size and family composition are expected to use contraceptives more, as confirmed in this table. The strength of association between desire for more children and contraceptive use in these two regions is about the same. Of all Contraceptive users in Central province, (32.2%) desire more children compared to (39.4%) in Western province.

Knowledge of contraceptive method increases probability of contraceptive use. Women who report knowledge of more than three methods of family planning are significantly associated with higher levels of contraceptive use. In Central province, women who know more than three methods are (85.2%) of contraceptive users compared to (73.1%) in Western province. The

association between knowledge of contraceptive methods and contraceptive use is stronger in Central province than in Western province.

Attitude and approval of family planning in addition to reports of spousal communication are significantly associated with contraceptive use in both Central and Western provinces. The associations are stronger in Central province than in Western province. Women who approve family planning are more likely to use contraceptives in both Central and Western province.

Women in Central province discuss their contraceptive use intentions with husbands more frequently than women in Western province. The higher frequency of discussion in Central province increases probability of contraceptive use in the region. Women who discuss on contraceptive use with their husband are significantly more likely to use contraceptives. Association between discussion and contraceptive use is higher in Central province. In Central Province (88.5%) of contraceptive users discussed with their partner compared to (32.5%) in Western province.

A woman's contraceptive behavior is greatly influenced by her own desires than by those of her husband. While couples who discuss family planning in Central province are more likely to adopt contraceptive use as a result of their discussion, in Western province discussion of family planning with husband is not significantly associated with adoption of family planning. This difference may be attributed to other differences in husband perception or on women's perception of husband approval. Women's perception of their husband's attitude is associated

with (93.7%) of contraceptive use in Central province and (83.1%) of contraceptive use in Western province.

Dissemination of information on radio is of direct economic significance. While this approach is uniform in service delivery, in that respondents in Western and Central province receive the same information from radio, its effect remains stronger in Central province. The demographic consequences are more defined in Central province since more women (33.7%) turn knowledge and information acquired from radio into actual contraceptive practice compared to (26.9%) in Western province. The association between information dissemination on radio and contraceptive use is significantly stronger in Central province.

4.3 SUMMARY

Contraceptive use differences exist between women in Central and Western province due to demographic, socioeconomic characteristics of women in the region and strength of family planning program as described in table 4.2 above. Women in Western province have attitudes that encourage large family size, desire more children and fewer women are associated with contraceptive use compared to Central province. Differences in contraceptive use in central and Western province exist because women in Western province marry earlier than in central province. Knowledge of contraceptive methods is also higher in Central province compared to Western province. Percentage of women using contraceptives in Western province could be increased by program activities targeting the content of family planning program, Women's education and women's desire for more children. Family planning program activities that

specifically target women's desire for more children, knowledge and approval of family planning are required more in Western province.

CHAPTER FIVE

DETERMINANTS OF CONTRACEPTIVE USE IN CENTRAL AND WESTERN PROVINCE

Multivariate analysis involving logistic regression is used to compare the effects of social economic cultural and demographic factors on contraceptive use levels in Central and Western provinces. The analyses examine the influence of constructs in the socioeconomic theory of fertility and behavior change framework on contraceptive use. First, we employ a similar logistic regression model in both Central and Western province. The analysis involves comparison of the odds ratio of contraceptive use in Central and Western provinces. The aim is to answer the question, what variations in contraceptive use may be attributed to region of residence of married women? Table 5.1 below summarizes results from each province separately.

Results in Table 5.1 show that the factors associated with contraceptive use in both Central and Western provinces are different. The number of living children is more strongly associated with contraceptive use in Western province compared to Central province. Those who have (2-3) children or more than five children are (2.4) times more likely to use contraceptives. Women who have (0-2) children are more strongly associated with contraceptive use in Western compared to Central province. In both Central and Western provinces, the probability of using contraceptives reduces as a woman moves from one parity group to a higher one.

Table 5.1: ODDS RATIOS FROM LOGISTIC REGRESSION MODEL

Characteristics	CENTRAL PROVINCE	WESTERN PROVINCE
	Odds (Exp B)	(Odds (Exp B))
Demographic Factors		
Age group		
15-24 (Ref)	-	-
25-34	(0.729)	(1.105)
35-	(1.4333)	(1.514)
Child Mortality		
Yes (Ref)	-	-
No	(1.123)	(1.162)
Number of living Children		
0-2 Children (Ref)	-	-
3-4 Children	(1.859)**	(2.184)***
5-	(1.254)	(2.313)***
Age at Marriage		
0-19 (Ref)	-	-
20-24	(1.178)	(1.153)
25-	(1.263)	(6.490)***
Socioeconomic Factors		
Highest Education Level		
No education (Ref)	-	-
Primary education	(1.201)**	(0.612)***
Secondary and higher	(2.249)	(1.462)
Place of residence		
Rural	(1.197)	(0.333)***
Type of union		
Polygamous	(0.168)	(0.521)
Intervening Factors		
Fertility Desires		
(Ref)	-	-
Yes	(1.000)	(0.985)
Exposure on Radio		
No (Ref)	-	-
Yes	(1.150)	(1.303)*
Knowledge of Methods		
<3Methods (Ref)	-	-
>3Methods	(4.191)***	(1.346)
Respondent Approval		
Disapproves	-	-
Approves	(2.541)	(2.568)
Discussed with partner		
No (Ref)	-	-
Yes	(1.269)	(1.562)
Perception of Husband		
Disapproves (Ref)	-	-
Approves	(6.286)***	(2.038)**
Chi-square	108.390	103.312
Degrees of freedom	18	18
Significance	0.000	0.000

**Significant at P<0.05

***Significant at P<0.01

Odds Ratios in brackets

Probability of using contraceptives increases with duration of marriage. Recently married women have a low likelihood of using contraceptives. From table 5.1 women in Western province married after age 25 are 6.5 times more likely to use contraceptives compared to 1.3 times in Central province. Demographic factors are generally more associated with contraceptive use in Western province compared to Central province. These findings highlight the need to focus policy on certain age groups where contraceptive use is concentrated. Amongst the demographic factors, higher child mortality in Western province does not offer sufficient explanation for low contraceptive prevalence in the region.

Socio-economic factors are associated with contraceptive use in Western province. Women in polygamous institutions of marriage in Western province are less likely to practice contraception than those in monogamous institutions. Polygamy is highly associated with contraceptive use in Western province since women in polygamous institutions have other methods of child spacing including periodic abstinence. Similarly, place of residence is associated with contraceptive use in Western province. Socioeconomic and cultural factors contribute strongly to contraceptive use differences in Central province and Western province.

Women who have attained secondary education are more likely to practice contraception than women who have no education. Education increases the probability of women using contraception only at secondary and higher level. For women who have only attained primary education the probability of using contraceptive reduces especially in Western province.

Fertility desires are not associated with contraceptive use in Central province. Women make decisions on whether to use contraceptives independent of the number of children they want or the number of children they have. In both regions the odds values average 1.0 indicating only a minimal effect of fertility desires on contraceptive use in Western province.

Women who have heard Family planning information on radio are more likely to use contraceptives. However the effect is stronger among women in Central province (1.150) compared to (1.503) times in Western province. Women who report Knowledge of more than three method of family planning (>3 category) are more likely to use contraceptives than those who know less than three method (<3 Category). Knowledge of contraceptive method is strongly associated with contraceptive use in Central province. The activities of family planning programs involving contraceptive use campaigns have a stronger effect in Western province compared to Central province.

Husbands/Spouses approval of family planning significantly explains contraceptive use differences in Central and Western province. The effect of discussion of contraceptive use is stronger in Western province than in Central province. Though the odds of using contraceptives associated with discussion are higher in Western (odds 1.563) compared to Central province (1.269), this association is not significant. Women who perceive husbands approve family planning are (6.286) times more likely to use contraceptives in central province compared to (2.038) times in Western province. Intervening variables are more strongly associated with contraceptive use in Central province with the exception of fertility desires and discussion with partner

5.2 COMPARATIVE ANALYSIS OF THE EFFECTS

To compare the effect of demographic factors on contraceptive use, three models are included in our analysis. The logistic regression results are used to compare the effect of demographic socioeconomic and intervening factors on contraceptive use. The logistic regression aims to answer the question: what differences in contraceptive use in the two regions can be attributed to factors in the model? In this model region of residence is included as an explanatory variable while other factors affecting contraceptive use are included as control factors. The results presented Table 5.2 are from a logistic regression model, where the objectives are to compare the effect of socioeconomic, intervening and demographic factors on contraceptive use while the effect of other factors that affect contraceptive use are controlled.

DIFFERENCES IN FACTORS INFLUENCING CONTRACEPTIVE USE
Table 5.2 COEFFICIENTS FROM LOGISTIC REGRESSION MODEL.

Characteristic	Model 1 Coefficients		Model 2 Coefficients		Model 3 Coefficients	
	Central	Western	Central	Western	Central	Western
Demographic Factors						
Child Mortality (Ref)						
No	0.451	0.457**	0.356	-0.335	0.116	0.150
Number of Living Children						
0-2 Children (Ref)	-	-	-	-	-	-
3-4 Children	0.557**	0.759**	0.712**	0.823***	0.620**	0.910**
5+ Children	0.050	0.798**	0.303**	0.958**	0.226	0.839*
Age Group						
15-24(Ref)	-	-	-	-	-	-
25-34	-0.213	0.206	-0.412	0.155	-0.315	0.100
35+	0.059	0.218	-0.038	0.250	0.360	0.414
Age at Marriage						
0-19(Ref)	-	-	-	-	-	-
20-24	0.164	0.455**	0.191	0.084	0.164	0.142
25+	0.152	1.906**	0.120	1.587**	0.233	1.870***
Socioeconomic Factors						
Highest Education Level						
No education (Ref)	-	-	-	-	-	-
Primary education	-	-	0.655***	-0.291	0.183**	-0.490***
Secondary and higher	-	-	1.371**	0.757**	0.810	0.380
Place of residence						
(Ref)	-	-	-	-	-	-
Rural	-	-	-0.061	-0.948**	0.180	-1.099***
Type of union (Polygamous ¹)						
No (Ref)	-	-	-	-	-	-
Yes	-	-	-0.812	-0.682**	0.759	-0.650**
Intervening Factors						
Fertility Desires						
(Ref)	-	-	-	-	-	-
Yes	-	-	-	-	0.000	0.943
Exposure on Radio						
No (Ref)	-	-	-	-	-	-
Yes	-	-	-	-	0.140	0.446*
Knowledge of Methods						
<3Methods(Ref)	-	-	-	-	-	-
>3Methods	-	-	-	-	1.433***	0.712
Respondent Approval						
Disapproves	-	-	-	-	-	-
Approves	-	-	-	-	0.932	-1.251
Discussed with partner						
No (Ref)	-	-	-	-	-	-
Yes	-	-	-	-	0.259	-0.014
Perception of Husband						
Disapproves (Ref)	-	-	-	-	-	-
Approves	-	-	-	-	1.189***	0.408**
Constant	-0.0272	-2.034***	-0.692	-1.040*	-3.633***	-2.809***

*Significant at P<0.1; **Significant at P<0.05; ***Significant at P<0.01. Constant included for all Models.

5.2.1 DIFFERENCES IN EFFECT OF DEMOGRAPHIC FACTORS ON CONTRACEPTIVE USE

In model 1 of table 5.2 above, Demographic characteristics significantly affect the decision of a woman to use contraceptives in Western province. Women in Western province are less likely to use contraceptives since they marry early, desire more children and are more at risk of child death. These demographic indicators reduce the coefficients of contraceptive use in both Western and Central province. Number of living children and age at marriage significantly account for lower contraceptive use in Western province. The odds of using contraceptives increases significantly for women with 3-4 children compared to women who have between 0-2 children. The coefficient of contraceptive use reduces with inclusion of other factors.

Selection of a policy framework conducive for lower contraceptive prevalence requires to concentrate on fertility intentions of women and on family size desires. Contraceptive prevalence is likely to increase more in Central province if family size intentions of women are reduced. This model underscores importance of number of children women want relative to the number of children they have. Policy should re-direct resources to reduce unwanted pregnancy by strengthening family planning programs and addressing unmet need for family planning. These findings highlight the need for attention on families that have three or more children, because they are more likely than those with fewer children to have another child. Efforts should also aim to improve infant and child survival through expansion of primary health care and relevant policy goals.

5.2.2 DIFFERENCES IN THE EFFECTS OF DEMOGRAPHIC AND SOCIOECONOMIC FACTORS ON CONTRACEPTIVE USE

In model II of table 5.2, the odds of contraceptive use amongst women who have attained secondary education increases significantly, compared to those who have no education or have attained primary education when demographic conditions are considered. Similarly the odds of contraceptive use amongst women living in rural areas decrease significantly compared to urban areas when socioeconomic factors are considered together with demographic factors. Women's decision to use contraceptives in Western province is significantly affected by the place of residence and education attainment.

The coefficient of contraceptive use in Western province is significantly affected by the Education attainment, rural/urban place of residence and women in polygamous institutions. The significance of socioeconomic factors is not observed among women in Central province and is one of the explanations for the higher contraceptive prevalence in the region. Socioeconomic factors like place of residence and educational attainment significantly increase the probability of a woman in Central province using contraceptives. Women who have attained above secondary education are more likely to use contraceptives in Central province compared to women in Western province. Similarly the odds of contraceptive use amongst women living in rural areas are significantly lower compared to urban areas when other factors are considered.

This model underscores the importance of education and training. It also places importance on availability of family planning services to areas where most rural women live. The importance of migration on spousal communication and husband perception is also evident since women are

mostly left to tender for children in Rural areas by men who seek employment in urban areas. The family planning program, which today is National in scope, needs to direct policy action to rural areas in these two regions.

The existing National Family planning program has been more successful in Central province. Attitudes favorable to contraceptive use are more widespread among residents of the region in terms of their socioeconomic characteristics. The different patterns of fertility intentions and contraceptive behavior reported by such socioeconomic subgroups as urban residents, education attainment suggest that different program strategies should be designed for specific target groups. More investment is needed to reduce the demand for large families, improve women development and women status through such areas as empowerment, adult education training and infrastructure development. The model also places importance on the availability of family planning services and personnel to areas where most women reside. More program emphasis is required in Western province where polygamy, place of residence and education attainment significantly contributes to lower contraceptive use among the women in the region.

5.2.3 DIFFERENCES IN EFFECT OF DEMOGRAPHIC, SOCIOECONOMIC AND INTERVENING FACTORS ON CONTRACEPTIVE USE

In model III of Table 5.2 above, Fertility desires directly intervenes on contraceptive use in both central and Western province. The effect of fertility desires on contraceptive use is stronger in Central province compared to Western province. Women in both Western and Central province use contraceptives based on their satisfaction with the number of children they already have. The probability that women have less children than they want is higher in Western province.

Therefore women in Central province report higher contraceptive prevalence than in Western province leading to low contraceptive prevalence in the region.

Discussion of contraception with partner, respondent approval and exposure on radio significantly increase the odds of contraceptive use among women. The odds of contraceptive use significantly increases with women who report knowledge of more than three methods and positive perception of husband approval. Increasing demand for contraceptives in the two regions would be achieved by policy goals aimed directly at increasing Knowledge about contraception and changing attitudes.

These are factors that indirectly affect the number of children borne by women. They relate to women's knowledge attitude and practice. The factors affecting contraceptive use are established to vary across the two administrative regions and among contraceptive users within the administrative regions. The Government of Kenya has the challenge to slow down the momentum of population growth by programs aimed to increase the average age at child bearing as well as lowering family size. Policy action should directly affect the policy environment, knowledge and attitude of women. The effect of radio would yield higher contraceptive prevalence and lower fertility if the programs aired were specific to the other intervening conditions prevailing in the region. Concerted efforts should be made therefore to improve information education and motivational programs to promote family planning for family welfare.

Contraceptive prevalence rates in Central province are higher than in Western province. This difference is attributed to changes generated through age transitions, past fertility experience and values acquired through education and awareness campaigns. Kenya Unlike demographic

factors that are not easily manipulable to enhance contraceptive use, the government can promote contraceptive use through appropriate policy measures on education, women's employment earnings and empowerment. Administrative region show significant contraceptive use differentials among women in union signals to program planners and policy formulators that strategies should be put in place to promote contraceptive adoption at regional level rather than at national level.

5.2.4 SUMMARY

Objectives of the logistic regression models are to compare the effect of demographic, socioeconomic and, intervening factors on contraceptive use. The results suggest that, women who reside in Central province are more likely to use contraceptives to achieve their desired fertility intentions compared to women who live in Western province. Demographic characteristics in Central province significantly increase chances of using contraceptives compared to Western province. In Western province, women are less likely to use contraceptives since they marry early, desire more children and are more at risk of child death. Demographic factors reduce the coefficients of contraceptive use in Western province.

Number of living children and age at marriage significantly account for lower contraceptive use in Western province. The odds of using contraceptives increases significantly for women with 3-4 children compared to women who have between 0-2 children. The coefficient of contraceptive use reduces with inclusion of other factors. In Models I, II and III logistic regression results establish that number of living children, highest education level and knowledge of contraceptive methods as important factors to contraceptive use differences in Western and Central province.

CHAPTER SIX

SUMMARY CONCLUSIONS AND RECOMMENDATIONS

The aim of this study is to describe the combination of selected factors that influence current contraceptive use of women in Kenya and the amount of variation in the mean effects of the predictors over current contraceptive use in two administrative regions. This study suggests a research agenda and analytical framework that would help clarify ways on increasing contraceptive use in regions where low prevalence is reported. The general objectives are to establish the social economic and demographic factors that affect contraceptive use in central and western province.

Contraceptive use levels in Central and Western province are determined by different factors. Our account shows that education, reduction of child mortality and promotion of an organized family planning program are all plausible reasons in the debate on contraceptive use differentials. On one side are the proponents of contraceptive supply side who argue that low contraceptive prevalence would be overcome by heavier investment in family planning to reduce unwanted pregnancy. On the other hand are proponents of the demand side who argue that socioeconomic development and specific policy initiatives would postpone marriage, reduce unwanted fertility and counteract the coercive pronatalism of everyday life.

A selected set of indicators are significant determinants of contraceptive behavior in Central and Western province. Approval and discussion of family planning joint effect with positive husband perception are strongly associated with contraceptive use in both Central and Western province. There are no absolute requirements for success in the family planning program.

The National family planning policy is responsible for the lagged effects in Western province because needs specific to the socioeconomic and cultural demands of this region are not separated from the basic problems involving theory and policy formulation. More time is required to achieve higher contraceptive prevalence in Western province. Policy makers need to focus on specific policy instruments for specific regions. Efforts need to be directed towards the more practical aspects of how to design more responsive policies and programs and examine ethical aspects of service provision. It is necessary that the institutional locus of policy making moves from its current location in the ministry of health, to ministries of education labor and youth affairs.

Our analysis supports the issues outlined in the national population policy for sustainable development; sessional paper No. 1 of 2000, the overall aim of the policy is to attain a balance between Kenya's population growth rate on one hand and a sustained rate of economic growth. High degree of commitment to population policy implementation is called for on the part of the government in Kenya along with linkage in fertility regulation activities with those concerning mortality and morbidity, population distribution, quality of population plus the future of the family. This ability depends on availability of basic demographic and socioeconomic data and access to analytical tools and planning methodologies that can be adapted to suit local conditions.

The principles derived from this comparison recommends the importance of linking progress in population control and family planning to support from the World Bank and the international monetary fund, sending Kenyans abroad for training in demography or establishment of national demographic centers, supporting participation in Conferences overseas as well as within country seminars and workshops sponsoring new bureaucracies to integrate population into plans for economic development and committees to develop new policies.

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