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Contraceptive use and fertility in Western Region, Uganda

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Declaration

I, Angela Ngyende, hereby declare that the work on which this thesis is based, is original (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, or is being, or shall be submitted for another degree at this or any other university, institution for tertiary education or Examination.

Candidates name . ……

Signature ……....

Date ……

Supervisor's name ……. ……

Signature ……....

Date ……

Dedication

- *In loving memory of my father Narsensio Kabatereine, Sister Pauline K Nampa, and my Son Reagan Ngyende.*
- *To my husband and friend Benon Ngyende, my daughter Rachael Ngyende, and little Ryan Ngyende.*

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Abstract

The study aimed at examining the relationship between contraceptive use and fertility in Western region, Uganda, using a sample of 1993 women from the Uganda Demographic Health Survey of 2000-2001. Uganda Demographic Health Survey (UDHS) 2000-2001 is the third survey conducted by the Ugandan Ministry of Health. Chi-square, Logistic regression and multiple regression were used to test and determine factors contributing to the high fertility levels and low contraceptive usage in the region.

Results show that the region has a total fertility rate of 6.4, and childbearing is not evenly distributed among age groups. Fertility peaks at ages 20-29, and reduces sharply with women in their late reproduction span. Contraception and fertility are inversely correlated. Though knowledge on contraception is universal, contraceptive prevalence remains low (95% and 16% respectively) among women of reproductive age. Family planning approval is inversely related with contraceptive use. Findings reveal that contraceptive prevalence plays minor role in explaining fertility levels as compared to some socioeconomic factors. Education is significantly and inversely related with fertility, but positively correlated with contraceptive use.

The government should revisit the population policy to actively promote family planning activities by promoting and facilitating debates about family size, and the means to achieve. Women education needs to be emphasized in order to promote innovative reproductive behavior. More research to explore whether women are using contraception for spacing rather than limiting is required.

Acronyms and Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
CEB	Children ever born
CPR	Contraceptive prevalence rate
DISH	Delivery of improved services for health
EA	Enumeration area
HIV	Human Immunodeficiency Virus
IUD	Intra uterine device
PSU	Primary sampling units
SPSS	Statistical package for social sciences
TFR	Total fertility rate
UDHS	Uganda demographic health survey
UN	United Nations
UNFPA	United Nations Population fund
USAID	United States Agency for International Development

Chapter One
Introduction

1.1 Background

Uganda is one of the African countries where fertility levels have remained high with a total fertility rate (TFR) of 6.9. Population Reference Bureau (2003) indicated that given the current total fertility rate, Uganda's population is expected to double to 47.3 millions by 2025. Such exponential population growth can only be curtailed by extensive fertility regulation using contraception. Research so far conducted on fertility regulation shows that although knowledge on contraception is almost universal among Ugandan women, contraceptive use remains very low. Low usage of contraceptives results in short birth intervals and a generally high total fertility level, a situation that may lead to increased dependency ratio, child and maternal fatalities (UDHS 1995, 2000-2001). Fertility control using modern methods such as the Pill, Intra uterus device (IUD), Implants, Inject able, sponge and cervical cap, diaphragm, Condom (male and female) and voluntary sterilization plays a major role in reducing unplanned and unwanted pregnancies. Proper usage of traditional methods, which range from total abstinence, periodic abstinence, withdrawal and breastfeeding, can as well contribute greatly in regulating fertility.

Research on contraceptive use indicates that most countries that have achieved fertility transition have embarked on use of modern forms of contraceptives as a measure of fertility regulation. Differentials in current fertility levels by place of residence indicate a decline in fertility in urban areas than in rural areas (Urban 5.0 and rural 7.2 respectively)

and this decline is attributable to high contraceptive prevalence rate among urban dwellers.

Contraceptive use is one of the proximate determinants of fertility. After postpartum amenorrhea, the risk of falling pregnant increases should the woman become sexually active and not use any form of contraception. In Uganda, PRB (2003) indicated that only 18 % of Uganda's married women aged between 15-49 use modern contraceptives and only 22 % use any method of contraceptives. Researchers have come up with many factors that determine choice of contraceptive method and these include education, number of methods known, source of contraceptives, religion, place of residence, marital status, availability and supply of family planning services in a community, attitudes towards family planning, and perceived problems associated with modern contraceptives. (UDHS 1995, 2000-2001). Knowledge of family planning methods both traditional and modern and sources to obtain them seem to be crucial elements in deciding whether to adopt a contraceptive method or not (UDHS, 1995:43).

The 1995 and 2000-2001 UDHS indicate that the ideal family size is 5.6 and 4.8 respectively among the married women. It is assumed that individuals and couples would act in such a way that they achieve their necessary preferred family sizes if the necessary family planning services are available, accessible and affordable. Bongaarts (1986) calculated that 75 percent of married women in a society need to be contraceptive users in order to produce a level of fertility that just replaces each generation.

1.2 Problem Statement

An overall low use of contraceptives results in short birth intervals and a generally high total fertility level. Uganda's total fertility rate (TFR) of 6.9) remains one of the highest in Sub-Saharan region .In rural areas, TFR is as high as 7.3, notwithstanding family planning programmes in the country for more than three decades. Although Knowledge of family Planning is almost universal among men and women of reproductive age, its use is still low. Low contraceptive prevalence rate (CPR) has contributed to the prevailing high rates of fertility, in an environment of poor access to quality maternal and neonatal care, a compounding factor that exposes Ugandan mothers and infants to a high risk of death from pregnancy related causes.

The maternal mortality stands at 505 deaths per 100,000 women (UDHS 2000-2001). The rapid population growth makes it difficult to reduce existing deficits in maternal and child health care services. High parity directly affects childhood morbidity and mortality. The UDHS 2001-2002 indicated that 40% of children below 5 years of age are stunted, 64% are anemic, and out of every 1000 live births 89 children do not complete their first year of life while another 64 do not complete 5 years. An inability to limit number of births can lead to over-production of children, with consequences of inadequate material or nurturing resources and hence compromising children's well being.

Henceforth, high fertility levels and their associated health problems to both mothers and children imply low contraceptive usage. Despite reported increase in CPR (UDHS 1995,

2000-2001) and decades of family planning programmes, it is important to examine the relationship between contraceptive utilization and fertility levels on regional level.

1.3 Research Questions

The basic research questions were;

1) What is the fertility level in this region?
2) What is the contraceptive prevalence rate of the region?
3) What attitudes do women have towards use of contraception?
4) What is the association of contraceptive use with fertility in the area?

1.4 Specific Objectives

From the above research questions, the study intended to address the following specific objectives;

I. To determine the levels of fertility and contraceptive use in the area
II. To examine knowledge, attitudes and practice of contraception in the region
III. To assess the relationship between use of modern contraception and fertility levels.

The overall objective of the study is to establish the role of contraception on fertility levels and differentials in Western Region of Uganda.

1.5 Hypotheses

The study was based on three central hypotheses, which were tested. The first hypothesis held that fertility levels in the area is significantly high, hence the null hypothesis;

- H_O: There is no high fertility in Western Region

- H_a: There is high fertility in Western Region

The second hypothesis was that contraceptive use varied by socio-economic characteristics. Thus the hypothesis*;*

- H_O: There is no relationship between contraception use and socio-economic characteristics
- Ha: There is a relationship between contraception use and socio-economic characteristics

The third hypothesis is that contraceptive use and fertility levels in the area under study are significantly associated. Thus the hypothesis*;*

- H_O: There is no association between contraceptive use and total children ever born
- Ha: There is association between contraceptive use and total children ever born

1.6 Significance of the Study

The 2000-2001 UDHS's main objectives included analyzing the direct and indirect factors, which determine fertility levels and trends, as well as measuring the level of contraceptive knowledge and practice by method, region and residence. This research is aimed at establishing a clearer understanding of the relationship between contraception and fertility with specific reference to Western region, by using the same data set. Studies on contraception and fertility in Uganda are mostly done on national level. The study therefore aims at understanding the two concepts of contraception and fertility at a lower level- region.

High fertility is detrimental to women's health because each time a woman falls pregnant, she is at risk of developing complications ranging from obstructed labor, obstetric fistulas, hemorrhage to death. For the many children born to one woman, there are high chances of reduced investments in terms of their needs and development, higher health costs, social welfare costs and reduced prospects of eradicating poverty. Surely, this calls for attention. It is therefore imperative for a study on contraception and fertility to examine this relationship in order to come up with vital information that may enlighten women of Western region in particular, and Uganda as a whole on the repercussions of engaging in high fertility behavior

Modern contraceptives such as condoms form an integral dimension of women's health and hence the essence of this project in the era of HIV/AIDS. The findings of the study will contribute towards health education by creating awareness on the role of contraception in promoting reproductive health. The study also aims at contributing to the existing body of knowledge on the extent of usage of modern contraceptives. The findings will also inform policy makers and family planning program facilitators the possible ways to improve the status quo, and provide a basis for future research.

1.7 Area under Study

Uganda is geographically divided into four regions: Western region, Eastern region, Northern region and Central region. The Western region is made up of 15 districts- Bundibugyo, Hoima, Kabarole, Kamwenge, Kasese, Kibaale, Kyenjojo, Masindi, Bushenyi, Kabale, Kanungu, Kisoro, Mbarara, Ntungamo, and Rukungiri. The first seven districts are referred to as Western districts and the rest are referred to as South Western district (See appendix 3).

The region has a population of about 6,417,451 people of which 94 percent (6,019,613) are rural dwellers (Uganda Districts Information Handbook, 2005). The main inhabitants of the region are Banyankole, Bakiga, Banyarwanda, Bafumbira, Banyaruguru, Batwa (Pigmies), Banyoro, Batoro, Bamba, and Batagwenda tribes. These tribes practice subsistence farming and fishing as major economic activities.

Definition of Terms

- **Fertility:** The number of children born by a woman in her reproductive lifespan**.**
- **Contraception:** Limiting or controlling fertility by using either traditional or modern methods of family planning.
- **Contraceptive prevalence rate (CPR):** The percentage of women who are currently using a method of family planning.
- **Birth Interval:** The period between one live birth and another
- **Postpartum Amenorrhea**: Period after birth prior to the return of menstruation.

Chapter Two
Literature Review

2.1 Introduction

This chapter reviews the literature on determinants of fertility, contraceptive use in particular. Areas covered include; Determinants of fertility, factors affecting contraceptive use as a proximate determinant of fertility, theories of fertility, and the conceptual framework used to study the relationship between fertility and contraception in the region.

2.2 Determinants of Fertility

In pre-modern societies, the number of children born per family was largely determined by fate, and children were accepted as God's gift. This has changed and today, many couples whether in marriage or not plan when and how many children they want to have. Fertility is hence determined by cultural, social, economic and health factors. These range from age, education, income, employment status, marital Status, residence, religious affiliation, partner's education, postpartum amenorrhea, length of lactation, and ethnicity among others. Bongaarts and Kirmeyer (1980) indicated that most of these factors affect fertility indirectly. That is, they operate through other factors by shaping and changing the norms, values, and attitudes concerning fertility. These factors are referred to as proximate determinants and they include; the percentage of women using contraception, the proportion of women in sexual unions, the proportion of women who are not currently fecund, and the level of induced abortion. Kane and Haupt (2004) add that knowledge about these four factors provides clues to potential changes in fertility.

2.3 Contraception and its determinants

Contraception is one of the major proximate determinants of fertility. Declines in fertility directly depend on the increased use of modern contraceptives, Caldwell et al (2002), Rudolf Andorka quoted in Mackensen, and Hohn (1980: 22). Contraceptive use is measured by contraceptive prevalence rate (CPR), which is the percentage of "at risk" women of reproductive age (15-49) who are using a method of contraception. CPR of any region has a direct impact on fertility levels and pattern. High CPR leads to low fertility and the reverse is true. It is very difficult to achieve low levels of fertility without a substantial fraction of reproductive-age couples using some form of modern fertility control (Weeks, 2000). Many studies have documented that there is a strong negative association between the proportion of women using contraception and the fertility rate of the population. Research on factors affecting contraceptive use has also yielded findings generally compatible with results of studies on factors affecting fertility change, Johnson-Acsadi and Weinberger, quoted by Hermalin (1980).

It is estimated that over 12 million women of child bearing age worldwide do not have adequate information and affordable family planning services due to lack of proper health centres and personnel to dispense contraceptives, lack of means to transport persons to existing centers, and lack of government commitment and funding, the problems that are particularly acute in rural areas of many countries where health services are scarce (UN, 1998). Differences in levels of use of contraceptives exist within developing regions,

with prevalence averaging nearly 60% in Asia and Latin America and the Caribbean, but only 19% in Africa (UNIPA, 2003). Levels of contraceptive use are substantially lower in Sub-Saharan but higher in Northern and Southern regions of Africa (42% and 51% respectively). Kane and Haupt (2004) indicated that in many European countries, Australia, Brazil, and a few countries in east and South East Asia, contraception use is over 75 percent.

In most African countries, contraceptive usage has remained low, a factor that partly explains high fertility levels in the region, (Goldberg et al, 1989 and Makiwane, 1998). A study in Zimbabwe showed steady decline in fertility as contraception prevalence increased from 38 percent to 43 percent in a period of four years, (Mbizvo and Adamchak, 1990). Bankole and Westoff (2001) however argue that this is not always the case in Sub-Saharan Africa because African women use contraception more for spacing than for limiting births.

Any transformation in contraception practice reflects the growing desire of couples and individuals to have smaller families and to choose when to have children. The 1995 and 2000-2001 Uganda Demographic Health Survey indicate that the desired family size is 5.6 and 4.8 respectively among the married women. Uganda is one of the countries marked by very low levels of modern contraceptive use especially in rural areas (Katende et al., 2003). Contraceptive prevalence rate (CPR) for modern methods of all women in Uganda is still low- 16.5% and 18.2% for married women compared to 2.5% and 7.8% for 1988 and 1995 respectively (UDHS, 2000-2001)

Barriers of use of modern contraceptives range from ways in which contraceptives are dispensed, often not meeting the requirements of the user- by not giving her a choice among a variety of methods, to socio-cultural factors, (Katende, Gupta and Bessinger (2003), Nuwagaba, 1997). Such Factors affecting contraceptive use are outlined below.

2.3.1 Marital status

Contraceptive use depends on whether the users are in marital unions. Marriage is universal in almost all high fertility countries, most of which are in Sub-Saharan Africa (UN, 2001). Moreover, early marriages are the norm of some of these countries, a factor that increases women's exposure to the risk of pregnancy should the couple not exercise fertility regulation. Men and women do not necessarily have similar fertility attitudes and goals, and this affects the latter's contraceptive behaviour. Most women describe their husbands as having strong and definite views on fertility and contraception. Married women have lower usage than never married because many of them lack autonomy in decision- making (Katende et al., 2003, UN, 1998, Gita and Srilatha, 2000). Men's fertility intentions affect their spouse's contraceptive behaviour. Married men generally play a vital role in decision making as to when a wife can start using contraceptives or what method of contraception she may adopt. In some social settings, the male partner has a greater influence on contraception and its timing than his spouse. Some studies indicated that African men generally tend to have poor attitude towards family planning because they believe that contraception makes it easy for their wives to engage in

extramarital sexual relationships (Bankole and Susheela, 1998, Nuwagaba, 1997). Even when women are educated and motivated to practice contraception, some may not do so because their spouses are opposed. In some studies, women indicated that their non-usage of contraception was due to their spouse's disapproval.

2.3.2 Communication among couples

A factor associated with decision-making on contraception is communication between spouses. Rational process of fertility decision-making involves the couple discussing issues about family size and contraception. Lasee and Becker (1997) indicated that little spousal communication result in low contraceptive use. Agreement between partners regarding approval of family planning and fertility preferences and each spouse's perceptions of the attitude of the other is very crucial. It's believed there is minimal communication between couples of Sub Saharan Africa regarding family planning, Bawah (2002)

2.3.3 Infant and Child mortality

Kirk and Pillet (1998), Taylor et al (1976) noted that Infant and Child mortality affect fertility through behavioral and physiological components. Behavioral channels are assumed to involve insurance and replacement effects against the loss of children. Psychologically, expectation of infant or child death may hinder significant movement towards fertility regulation. It is highly probable that in regions that are still characterized

by substantial child deaths, producing more children seems a logical resort. Contraceptive use therefore increases with number of living children.

2.3.4 Sex of the child

Nuwagaba (1997) posits that sex composition of children born in a family plays a crucial role in the timing of contraceptive practice. Preference of sons to daughters in some cultures may contribute to late employment of contraception because it may not be easy to persuade couples to practice birth control if they do not already have a living son. Culturally, boys are regarded as security. As parents grow older, sons are expected to provide care both socially and economically. Socially, as boys reach adulthood, they are expected to marry and produce children of whom some must stay with the grandparents so as to give them company and provide all necessary care. Secondly, boys are expected to pass on the family's name, an obligation that many couples must adhere to, or else the family's name ceases to exist if there are no male children born to a particular family. A married man will strive hard to make sure that at least he gets three or four sons who will carry on the family's name. Failure to get a son often makes families desperate, and this makes it even hard for a woman in such a relationship to engage in contraceptive behavior. In some cultures, failure of the wife to produce a son gives the man a right to marry a second wife. In the event of man taking another wife, the first wife becomes desperate to have more pregnancies in the hope of blessing her husband with a son. It is common to hear of families that have broken allegedly due to failure of the wife to produce a baby boy. Women whose first three or four births are females are therefore

likely to be less innovative in terms of contraceptive behaviour. This implies that women will only start contraception after they have fulfilled cultural obligations. According to Nuwagaba (1997), Nortman (1980), women tend to employ modern contraception at high birth order. On average, couples begin contracepting after fourth birth, and this could be attributed to sex composition of children born to couples in marital unions.

2.3.5 Education and empowerment

The role of education in fostering changes in reproductive behavior has been documented extensively. It has been noted by many researchers that education of women not only provides them with knowledge and skills for gainful employment, but also increases female participation in family decision-making, exposure to information and media, and raises the opportunity costs of women's time. Caldwell (1980) posits that educated wives attempt to prolong the interval between births, with a consequent impact on fertility. Women with formal education (Secondary) use more of modern contraceptive methods than those without because education enables them to be reproductive innovators in terms of limiting or controlling child bearing, (Kwagala 1998, Katende 2002, UDHS 2000-2001, Nortman D.L 1980). Worldwide, empirical evidence indicates that women's empowerment generally has a positive correlation with contracepting using modern methods, at least when their education and access to gainful employment are put under consideration (Gita and Batliwala, 2000 Cleland and Wilson 1987).

Women's greater autonomy provided through education improves their capacity in decision-making, control over resources, access to adequate services, all of which improve women's power in sexual and reproductive behaviour. In Mali, the demographic and health survey indicated that the use of contraception was only 3% for those women without any formal education, but rose to 13% and 53% for those who had attained primary and secondary education respectively (Population Reference Bureau 1988). In another survey in Sudan, it was found out that women with secondary or higher education contracepted eight times higher than women with no formal education. Weeks (2000) contend that education offers people both women and men a view of the world that expands their horizon beyond the boundaries of traditional society, and causes them to reassess the value of children, and to reevaluate the role of women in society. Education also increases the opportunity for social mobility, which in turn, sharpens the likelihood that people will be in the path of innovative behavior, such as fertility limitation.

2.3.6 Economy

Today, the majority of people in Sub-Saharan Africa are still peasant farmers with very little change in agricultural technology. Most people still depend on the hand hoe as farming equipment, and are still involved in manual bush-clearing, planting, weeding and harvesting. Rural people children in particular, have to travel long distances to collect water and firewood since most rural areas lack piped water and electricity. In the absence of mechanization in farming, children are still seen as a vital source of labour. It is further argued that in the virtual absence of social security or private investments, children are

the only hope for support in old age. In addition, many children are still seen as a way of increasing the probability of at least one child succeeding and liberating the rest of the family from poverty in societies that are still under developed.

Uganda's economy relies heavily on agriculture, a sector that is labour intensive. In such economy, the mode of production bears a strong influence on the importance of having sizeable number of children. Many children are preferred to provide a hand on the farm, Nuwagaba (1997). This is the case with families that reside in rural areas where farming activities are performed by the women and children. In order to obtain high output in terms of the produce, a family has to have a number of people to provide labor, and this can best be achieved by having many children. Contraceptive behavior becomes limited in regions that are largely rural, where families depend on farming for their livelihood. Western region largely is dependent on subsistence farming as a major economic activity.

2.3.7 Women's Age

Contraceptive use is associated with age. Age is expected to reduce demand for contraceptives as women progress into late stage of reproductive life span. Kwagala (1998), Nortman (1980) argued that birth limitation is a more powerful motive for practicing contraception than birth spacing and hence contraceptive prevalence will be greater among older than younger couples.

It is evident that in some Sub-Saharan countries, most minimal familiarity with modern methods is lacking for many women (UN, 1998). In Uganda, UDHS Survey discovered that 84% of all non-users of modern contraceptives indicated they had never been visited by a family planning worker in 12 months preceding the survey, and indication of potential users of modern methods, if sensitization existed in rural areas (UDHS 1995).

2.3.8 Availability of family planning services

A good percentage of women with an evidently unmet need for modern contraceptives remains substantial in less developed regions, where majority of women cannot afford family planning services (UN I998). In Uganda, majority of service providers of modern contraceptives remain private and this means that most women in villages are left with no option of using modern contraceptives. Fifty five (55) percent of women using pills obtain them from private medical sources (UDHS, 1995). Private sources of contraceptives are negatively associated with use of modern contraceptives due to the costs involved; excluding majority of rural women who hardly have any income. Public sources of contraceptives are expected to attract a number of modern contraceptive users. However, this depends on their accessibility (Kwagala, 1998).

2.4 Theoretical and Conceptual Framework

2.4.1 Theories of Fertility Change

Motivations for limiting fertility advocates for contraception among couples and incorporates a number of theories on fertility transition. These theories are based on either social or economic explanations. Demand theories of fertility transition specify the forces responsible for fertility decline to include the changing balance between costs and benefits of child bearing, resulting in reduced parental demand for children. Due to economic changes that lead to women's independence from household obligations and new economic roles, child rearing becomes a cost that most women would want to minimize. One of the supporters of this theory is Coale, who contends that there are three main preconditions for marital fertility decline. These are,

a) *Fertility must be within the calculus of conscious choice.*

This means that couples' reproductive decisions are rational, based on the prevailing economic circumstances. In this case, costs of children are tied to parents' choices, the choices that are predetermined by their socio-economic status.

b) *Effective techniques of fertility reduction must be known and available.*

Family planning users should have the knowledge and masterly of effective methods of fertility control both traditional and modern and at the same time, they should have access to all the methods. The means available also is an important issue in determining the births, once the motivation to limit fertility exists.

c) *Reduced fertility must be perceived to be advantageous*.

In other words, people will be motivated to limit births if economic and social opportunities make it advantageous for them to do so.

Theories of low fertility emphasize the role of wealth and economic development in lowering levels of fertility. The argument here is that when people believe having no children or only a few is in their interest, they tend to behave in that way. However, for the average person, a high level of desire and access to the means of fertility control are required to keep families small (Weeks 2000). In other words, the means of fertility regulation mediate the relationship between motivation and actual fertility behavior. Motivation to limit the number of children needs to be linked to means to do so. One of these theories is Modernization.

The theories of modernization explain declines in fertility with changes in economic activity and education in society, (Hawthon, 1980 in Mackensen & Hohn (1980). The theory predicts that development in terms of improved standards of living, education, health status, per capita income, urbanization, nutrition status and economic growth, will trigger fertility change. Modernization of a society changes the economics of child bearing in such a way that a large number of children become disadvantageous to parents. Apparently, almost all first world countries attained their current fertility levels- below replacement level after their economies achieved development, (Weeks 2000 and Makiwane, 1998). Modernization impacts on women's socio-economic status, and this in turn influences their fertility behavior. Related with modernization is women empowerment in terms of decision making, financial autonomy, as well as weakening of

cultural beliefs. Bawah (2002) posits that women with more resources at their disposal relative to spousal income are expected to be more empowered to implement their demand for fertility regulation than women who command a lower share of familial resources or income. Women's financial contribution to household is identified as a critical link between decision making capacity and reproductive outcomes.

The Neo-classical household economists in support of this theory stipulate that the social status and economic independence of women that provide opportunities may raise the opportunity costs of children, Cleland & Wilson (1987), Bawah (2002)]

Among some regions of the world, Africa in particular, large families are seen as a blessing because they provide useful manpower and insurance against uncertainties of life and risks associated with old age (Louise 1997, Cleland and Wilson 1987, Weeks 2000, Caldwell 1980). In traditional societies, children provide a positive net flow of resources, services and status-honour to parents, and these acts as incentives to high fertility. On the contrary, in modern societies, there is a reversal of benefits and role of children. Parents more often contribute time, money, services, and support to children and this may have a great influence on reproductive behaviour so that parents offer maximum attention to children. This necessitates parents to limit or exercise control over fertility.

The propounders of the theory of Demographic Change and Response indicate that the most powerful motive for family limitation is not fear of poverty or avoidance of pain as

Malthus argued, but rather it is the prospect of rising prosperity that will most often motivate people to find the means to limit the number of children (Weeks 2000). The new Home- economics approach stipulates that wealth and prestige are scarce economic and social commodities that require one to make sacrifices of one kind or another .One of such sacrifices is the large family (Weeks 2000). Acquiring wealth may thus require that a family be kept small. This can only be achieved through contraception.

However, changes in fertility are also strongly affected by personal attitudes, preferences, and motivations of women and their partners as shaped by the socio-economic contexts such as employment alternatives for women, place of residence, social security, and better health services to reduce mortality, in which they live (Siegel & Swanson, 2004, Jain, 1998). Tabah (1980) quoted in Weeks noted that motivations for childbearing cannot in themselves explain reproductive behaviour without reference to the socio-economic environment.

The study is based on the theory of modernization, and it therefore examines the role of socioeconomic factors in determining reproductive behavior both in terms of contraception and fertility. This is illustrated by the conceptual framework below;

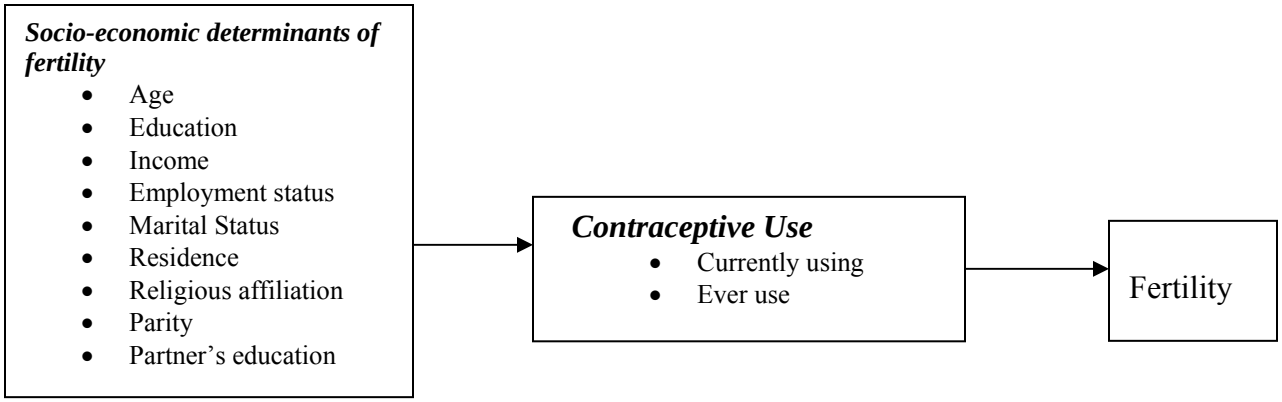


Fig 1: A Conceptual Framework examining the relationship between Contraceptive Use and Fertility in Western Region, Uganda.

2.4.2 Socio-economic determinants of fertility

It is widely acknowledged that socio-economic development is one of the major driving forces of fertility transition, and this is mainly because primarily, economic forces drive social change. In terms of fertility change, Nuwagaba (1997) and Caldwell, Caldwell (2002) noted that economic development is the best contraception.

2.4.2.1 Women's Age

Age is expected to reduce demand for children as women progress into late stage of reproductive life span. This is because older women are more likely to have accumulated the number of children they desire and have competing time demands such as employment or social obligations. Age has a positive relationship with women's parity, Kwagala (1998), Nortman (1980) and Blake et al, (1980). As demand for children diminishes with increase in age, women's desire to limit fertility increases, and this in turn increases contraceptive prevalence rate.

2.4.2.2 Education

Empirically, education has had an impressive score as a predictor of reproductive behavior. Educational levels inversely influence fertility preferences. Caldwell (1980) posits that educated wives attempt to prolong the interval between births, with a consequent impact on fertility. Women's autonomy provided through education improves their capacity in decision-making and this in turn improves their power in sexual and reproductive behaviour. In addition, highly educated people will know about and have cultivated a wide range of utilities alternative to children, and higher education is associated with a perception of children as involving high costs particularly parental attention and educational investments. On the contrary, low education is associated with a perceived limitation of alternative utilities, and a definition of reproductive costs that are either low or that underestimates the resources necessary for high quality offspring, (Mackensen & Hohn, 1980, Blake & Pinal, 1980).

2.4.2.3 Parity

In terms of parity, contraception is expected to increase with number of births a woman has had, holding other factors constant. According to Nuwagaba (1998), Nortman (1980), Blake and Pinal (1980), Bongaarts and Elof (2002), women tend to employ modern contraception at high birth order. Women in contemporary pre-transitional societies often want large families, and as a consequence, demand for contraception is low at a lower birth order, and is focused on methods used for spacing births rather than limiting births.

2.4.2.4 Marital Status

Marital status influences both contraceptive and fertility behaviour. Contraceptive use therefore depends on whether the users are in marital unions. This is because men and women do not necessarily have similar fertility attitudes and goals and this affects the latter's contraceptive behaviour. Most women describe their husbands as having strong and definite views on fertility and contraception. Married women have lower usage than never married because many of them lack autonomy in decision-making (Katende et al., (2003), UN, (1998), Gita and Srilatha, (2000). Bongaarts (1986) calculated that 75 percent of married women in a society need to be contraceptive users in order to produce a level of fertility that just replaces each generation.

2.4.2.5 Place of residence

Urban- rural fertility differences indicate that rural residence favors higher fertility while urban residence favors lower fertility. Such differences are considered to be the result of lags in the diffusion of contraception and of modern attitudes (Mackensen & Hohn, 1980). On the other hand, the differences may be interpreted as a consequence of the different financial and psychological costs of rearing children.

2.4.2.6 Income

Women's financial contributions impacts on their reproductive behaviour (Kritz, Makinwa-Adebusoye and Gurak, 2000). A relationship exists between contraceptive use and women's income. Kwagala (1998) posits that high-income women have a higher

contraceptive prevalence than those women that have less or no income at all. Bawah (2002) posits that a woman who earns a higher income relative to her husband's is willing to risk spousal conflict on contraception should the latter object. This is because she can afford any contraceptive method and in the eventuality of separation or divorce, she can as well manage to cater for the children financially. In other words, women with more resources at their disposal are expected to be more empowered to implement their demand for fertility regulation than women who command a lower share of familial resources.

2.4.2.7 Employment

The negative influence of growing participation rate of women in outside home cores on fertility is a universally known issue in fertility studies. As the birth of a child and the care for small children entails the temporary giving up of employment by the mother, there are high chances that the mother in question will consider fertility regulation, and thus relying on modern contraception if she is to realize her goal of working outside her home. Generally, women working in modern sector are considered to be reproductive innovators.

2.4.2.8 Religious Affiliation

Religion has had a very strong influence on shifts in fertility rates in the past. Catholics were more likely to have larger families than any other religion because of greater observance of religious teachings such as "no contraception use" or "divorce." That is, a more religious culture tends to go with higher fertility rates because people expect to stay

in a more stable relationship, and are more likely to have more children due to the fact that they are not allowed to regulate fertility using modern contraception. Norville et al (un published) noted that there is generally no prohibition of family planning under Islamic law, hence women in this particular denomination free to exercise fertility regulation using modern family planning.

2.5 Contraceptive Use

Contraceptive use remains one of the proximate determinants of fertility. It is measured by means of examining contraceptive behaviour in terms of women currently using and those that have ever used any form of contraceptives for reasons of spacing or limiting birth. Fertility control using modern methods such as the Pill, Intra uterus device (IUD), Implants, Inject able, sponge and cervical cap, diaphragm, Condom (male and female) and voluntary sterilization plays a major role in reducing unplanned and unwanted pregnancies. Proper usage of traditional methods which range from total abstinence, periodic abstinence, withdrawal and breastfeeding can as well contribute greatly in regulating fertility. Use of contraceptives depends on a number of factors on both individual and aggregate levels. These include;

2.5.1 Sources of contraceptives.

Contraceptive use is strongly correlated with availability of services. In many developing countries, potential contraceptive users have a severely limited choice of methods. Bongaarts, Elof (2002). One main reason for this constrained choice is that family

planning program managers often emphasize just one or two methods largely to reduce costs. Reliance on private sector for provision of contraceptives eliminates most rural women from obtaining contraceptives because they cannot afford Nuwagaba (1998), Kwagala (1998). Service provider to a certain extent influences contraceptive usage. Substantial number of women that are sexually active may be sensitive about being seen at clinics- widows, separated or divorced. Even among the married, some women may seek greater privacy more especially those that fear to be discovered by their husbands. This impacts on contraceptive prevalence and fertility. Convenient and economical sources of contraception promote greater usage.

Proposals for reducing fertility frequently focus on the unmet need for contraception as an indicator of the unrealized potential of family planning programs to reach women who do not want to fall pregnant but are not contracepting (Presser and Sen 2000: 79). Jain (1998), Caldwell and Caldwell (2002) contend that availability of a range of contraceptives is of paramount importance in determining contraceptive prevalence. They further indicate that mobile clinics increased the practice of contraception among older and less educated women in Zimbabwe. A study in Bangladesh showed that delivery of non-clinical methods to women's door steps greatly increased accessibility and use of contraceptives, (Arends-Kuenning 2002).

2.5.2 Knowledge & Information on contraceptive method

Knowledge and information on different contraceptive methods is a precondition to the acquisition and utilization of contraception. Information on the method and source of contraception is of great importance to contraceptive users. Campaigns aiming at changing public attitudes and the climate of opinion towards fertility and contraception are very crucial. Bongaarts, Elof (2002) posit that cleverly designed television programs have been shown to have a significant positive impact on contraceptive behaviour in numerous developing countries. They argue that if and when fertility is an accepted social goal, a full- scale effort to create a favourable climate for it is crucial.

2.5.3 Demand

In terms of demand for contraceptives, women in contemporary pre-transitional societies often want large families, and as a consequence, demand for contraception is low and is focused on methods used for spacing births rather than limiting births. Bongaarts, Elof (2002). Certain contraceptive methods like sterilization and IUD, offer great protection for longer duration with less effort, and are therefore supposed to be in demand among the among older, higher parity couples. Methods like pill and condom are more popular among younger couples who are interested in spacing or delaying pregnancy. Lewis and Novak (1980) noted that the variations in demand for the different contraceptive methods are a function of various socioeconomic factors as well as individual perceptions. Caldwell and Caldwell (2002) posit that a greater demand for contraceptives is found

among urban women than their rural counterparts, and couples in stable, monogamous marriages are more likely than others to practice family planning. They however noted that in terms of demand for contraceptives, there is hardly any difference between the single and those in unions in Sub-Saharan Africa.

2.5.4 Attitudes and Hypothesized effects

Use of effective contraceptive methods is facilitated when couples have a positive attitude towards family planning. Widespread disapproval of contraception by either the wife or husband acts as a barrier to fertility change (UDHS, 1995). Jain (1998) contends that those who strongly desire large families will be unlikely to change that view simply because of proximity, availability, or quality of family planning services. Women who have second thoughts about the side effects of modern contraceptive methods will hardly attempt to use them and this means relying on traditional methods which are known to be unreliable in limiting fertility.

2.5.5 Population Policy

Family planning programs offer services and information on modern forms of contraception, and engage in activities to promote the benefits of small families. The main effect of these programs oriented to provide services and information on fertility reduction helps individuals to reduce unwanted childbearing (Population Council 1994, Jain, 1998). For a couple to realize its desired family size, a number of factors ranging from socioeconomic to political must prevail. As an entire social structure changes or as a

person's position within the social structure changes, the goals that individuals have in mind change and their motivations to have children change as well.

2.6 Conclusion

In this chapter, contraceptive use and fertility determinants, as well as theories and models of fertility change have been presented. The social, economic, and cultural factors, on which the orientation of contraception and fertility behavior depends on, require assessment. Societies that have maintained high fertility levels require modification of some of these factors in order to achieve a significant and sustained fertility decline, and thereafter advancing towards the final stages of fertility transition. This study intends to examine the socio-economic factors that have determined contraceptive use in Western region and the impact contraceptive prevalence has on fertility levels.

Chapter Three:
Research Methodology

3.1 Study design

The study was based on secondary data analysis of the Uganda Demographic Health Survey (UDHS) 2000-2001 database of women in reproductive age group (15-49). The 2000-2001UDHS is the third national survey following the 1988-89 and 1995 surveys conducted by statistics department of Ministry of Finance and Economic Planning in collaboration with the Population Secretariat and the Ministry of Health. The 2000-2001 survey was sponsored by the United States Agency for International Development (USAID).

Three of the surveys main objectives were;

1. Provide national level data to allow for calculation of demographic rates, fertility and childhood mortality in particular
2. Analyze the direct and indirect factors which determine the levels and trends of fertility
3. Measure the level of contraceptive knowledge and practice.

3.2 Sample Design

A sample of 303 primary sampling units (PSU) consisting of enumeration areas (EAs) was selected from a sampling frame of the 1991 population census. The following domains were utilized;

- Uganda as a whole

- Urban and rural areas separately
- The four regions- Eastern, Western, Northern and Central
- The Delivery of Improved Services for Health (DISH) districts.

The sample was selected in two stages. In the first stage, 303 EAs were selected with probability proportional to size. Within each selected EA, a complete household listing and mapping exercise was conducted forming the basis for the second- stage sampling.

From the household lists, household to be included in the survey were selected with probability inversely proportional to size based on the household listing results. All women aged 15-49 years in these household were eligible to be interviewed during the survey. In one-third of these selected household, all men aged 15-54 years were eligible for individual interview as well. The overall target sample was 6000 women and 2000men.

3.3 Study Population

One thousand nine hundred ninety three (1993) women of reproductive age (15-49) residing in Western region, were covered by the UDHS 2000-2001.This study used data on these women to examine their reproductive behavior in terms of fertility and contraception.

3.4 Variable Measurement.

The dependent, proximate, and independent variables selected for this study are measured as follows;

Variable	Definition
Independent Variables	15-19 20-24 25-29 30-34 35-39 40-44 45-49
Age	
Education	No Education Primary Secondary Higher
Marital Status	Never married Married Living together Widowed Divorced Not Living together
Residence	Urban Rural
Employment status	Not working Prof. Tech. Man. Clerical Agricultural workers- Self- employed Skilled manual Unskilled manual
Religion	Catholic Protestant Moslem Other
Partner's Education	No Education Primary Secondary Higher
Intermediate/ proximate Variables	
Contraceptive Use	Currently using Ever use
Dependent Variable	
Fertility	Total children ever born

3.5 Data Analysis

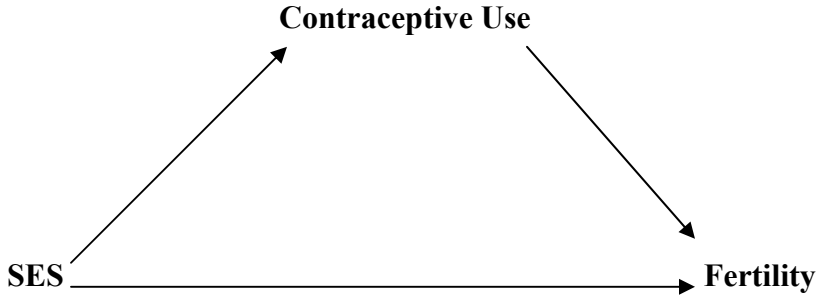
The statistical package used to analyze the data was SPSS version 10.0. Analysis was done at three levels namely; Univariate, Bivariate and Multivariate Analysis. At the Univariate level, simple descriptive statistics of the respondents were done.

In order to determine relationships, and associations between the outcome variable and independent variables, cross-tabulations were used. Simple linear Regression was used to measure the impact of each independent variable on fertility as a dependent variable. Logistic regression was used to establish the relationship between socioeconomic factors and contraception. Contraception as a dependent variable is dichotomous coded as "1" if currently using, and "0", and therefore logistic regression was considered as the most suitable analytical technique.

3.6 The models

From the conceptual framework, the relationship between contraceptive use and fertility in Western Region was analyzed using four models below;

Figure 2: Models of contraception and fertility for Western Region, Uganda



Model 1

Using the above diagram, the relationship between socioeconomic status of women and fertility was examined as shown in the regression formula below

$$\mathbf{Y = \beta_O + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7}$$

Whereby;

Y is Fertility (Predicted variable), β_O is the Intercept, β_1 is the regression coefficient (both $\beta_{O,}$ and β_1 are constants), X_1 = Age, X_2 = Education, X_3 = marital status, X_4 = Residence, X_5 = Religion, X_6 = employment status, X_7 = partner's Education

Model 2

The second model examines the effect of socioeconomic factors and contraceptive use on fertility as shown in the equation below;

$$\mathbf{Y = \beta_O + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8}$$

Whereby;

Y is Fertility (Predicted variable), X_1 = Age, X_2 =Education, X_3 = Marital status, X_4 = Residence, X_5 = Religion, X_6 = employment status, X_7 =Partner's Education

and X_8 =contraceptive use

Fertility being a continuous variable, multiple regression was chosen as the most suitable analytical technique.

Model 3

This model examines a relationship between contraceptive use and fertility.

$$\mathbf{Y = \beta_O + \beta_1 X_1,}$$

Whereby;

Y is the response variable (Fertility), β_O is the Intercept, β_1 is the regression coefficient and X_1 is the predictor variable (contraceptive use).

Model 4

The model identifies determinants of contraceptive use in Western region. Contraceptive use is the dependent variable, and being dichotomous, logistic regression was chosen as the analytical technique. The logistic regression model is given as;

$$\mathbf{In(q_i) / (1-q_i) = b_o + b_i x_{i1} + b_i x_{i2} + b_i x_{i3} + b_i x_{i4} + b_i x_{i5} + b_i x_{i6} + b_i x_{i7}}$$

Whereby;

q_i is the probability of the outcome given the array of independent variables

b_o is a constant

b_i represents a series of unknown coefficients to be estimated

x_{i1}… are the socioeconomic variables in the equation

3.6 Study Limitations

The analysis of secondary data set restricted the research in terms of getting deeper information since standardized questionnaire, as an instrument of collecting data collection did not exhaust respondent's behavioural and cultural aspects of the issues under investigation.

Chapter Four
Results and Discussion

4.1 Introduction

This chapter discusses the reproductive behavior of women in Western region. The results are presented in form of tables and graphs and discussion of major findings follows.

Respondent's Profile

Table 1: Percent distribution of respondents by Socioeconomic Characteristics, Western Region, UDHS 2000-2001

Background characteristics	Percentages	No of women
Age		
15-19	22.0	439
20-24	21.1	421
25-29	18.6	370
30-34	14.6	290
35-39	10.0	199
40-44	8.2	164
45-49	5.5	110
Total	**100**	**1993**
Education		
No Education	26.5	528
Primary	57.6	1148
Secondary	12.0	240
Higher	3.8	76
Total	**100**	**1992**
Marital status		
Never married	22.7	452
Married	41.1	819
Living together	23.2	463
Widowed	4.5	89
Divorced	.5	10
Not Living together	8.0	160
Total	**100**	**1993**
Religion		
Catholic	35.7	711
Protestant	52.7	1048
Moslem	3.4	67
Other	8.2	163
Total	**100**	**1989**
Partner's Education		
No Education	14.0	216
Primary	60.7	936
Secondary	16.7	258
Higher	6.6	101
Don't know	1.9	30
Total	**100**	**1993**
Place of Residence		
Urban	19.1	381
Rural	80.9	1612
Total	**100**	**1993**
Employment Status		
Not working	14.9	297
Prof. Tech. Man.	2.6	52
Clerical	.3	5
Agricultural workers- Self- employed	69.9	1391
Skilled manual	1.3	26
Unskilled manual	2.8	56
Total	**100**	**1991**

Missing values_ Education 1, Religion 4, employment status 2 **Source**: **Computed from UDHS 2000-2001**

Table 1 shows that almost fifty percent of respondents are between 15-24 years of age (43%), and fewer respondents are in their late reproductive span (14%).Significant education differentials exist in the region. The vast majority of women have formal education (73%), of which more than half have primary education (58%). The percentage of those without formal education is almost seven times that of women with higher education (27% and 4% respectively). Partner's education portrays a similar trend. Three-thirds of the partners have primary education (61%). This percentage is six times the percentage of those with higher education (6.6%). Partners without formal education constitute a significantly lower percentage (14%).

Women in the region are significantly non-professionals, majority of which are employed in agricultural sector. Almost seven out of ten women are agricultural workers (69.7%), while fifteen percent of the women indicated that they are not working. Limited number of women professionals in the region has implications on fertility in particular, as well as on infant and child mortality.

Generally, the percentage of women in unions is significantly high (64%). Four in ten women are married (41%), the number that doubles that of women living with partners (23%). On the contrary, the percentage of the women that are never married is almost half of those married (22%). The region is characterized by low levels of divorce (less than 5%).

The region is overwhelmingly rural, with more than two-thirds of the women residing in rural areas. More than eight out of ten women reside in rural areas (81%) compared to a 20% of those residing in urban areas. Overall, most women are of Christian denomination, majority of whom are protestants, followed by Catholics who constitute more than a third of the total women, and other religions (53%, 36% and 8% respectively). Moslems are minority group in the region, constituting only 3.4% of the population.

4.3 Respondents' Reproductive Behavior

4.3.1 Contraception

As one of the proximate determinants of fertility, contraceptive use was measured in terms of those currently using. Results are presented in Table 2

Table 2: Percent distribution of respondent's Knowledge, Attitude and Practice of Contraception in Western Region, Uganda, UDHS 2000-2001

Knowledge of any method	Percent	No of Women N
Knows no method	5.2	103
Knows only traditional. method	.1	2
Knows modern method	94.7	1888
Total	**100**	**1993**
Current Use by Method Type		
No method	83.8	1669
Traditional method	3.0	60
Modern method	13.2	261
Total	**100**	**1990**
Current Contraceptive Method		
Pill	14.0	45
IUD	1.2	4
Injections	34.9	112
Condom	11.2	36
Female Sterilization	9.7	31
Periodic Abstinence	8.7	28
Withdrawal	6.9	22
Norplant	1.9	6
Lactation amenorrhea	8.1	26
Foam or jelly	0.3	1
Other	3.1	10
Total	**100**	**321**
Ever use of any method		
Used only traditional. method	17.2	112
Used modern method	82.8	538
Total	**100**	**650**
Intention to use		
Use later	54.2	905
Unsure about use	15.4	257
Does not intend	30.4	507
Total	**100.0**	**1669**
Respondent's FP approval		
Disapproves	7.5	150
Approves	83.9	1672
Don't know	8.6	171
Total	**100**	**1993**
Partner's FP Approval		
Disapproves	22.1	283
Approves	51.5	659
Don't know	26.4	338
Total	**100**	**1280**
Discussed FP With partner		
No	79.3	1578
Yes	20.7	412
Total	**100**	**1990**

Source: ***Computed from UDHS 2000-2001***

As can be seen from the Table, there is a universal knowledge of contraception in the region (95%). Despite the universal knowledge, and women generally approving use of contraceptives (84%), majority of them were currently not using any form of contraception (84%). In every ten women, eight are non-users. Among the few using (16%), modern methods are used more than traditional methods. The percentage of the women using modern methods is more than four times that of those using traditional (13% and 3% respectively). Among modern methods, there is substantial use of injections (35%), followed by pills, and condoms (14%, and 11%), while Foam or Jelly method is the least used (less than one percent). Results show that eight in ten (83%) women who have ever used a method of contraception used a modern one.

Among the married women, more than half of their spouse also approved use of contraceptives (52%). The approval rate of the partners was only 39%. Among the women that disapproved use of contraception, their partners also did not approve (7.5 and 22% respectively). This is an indication that men play a vital role in decision making as to when the spouse can start using contraceptives, or what method of contraception she may adopt.

Regarding discussion of matters related to family planning, married women significantly indicated that they never discuss with their husbands (79%). This percentage is four times that of women that discuss the subject of contraception with their partners among the married (20.7%). Bawah (2002) posits that there is generally minimal communication

between couples of Sub Saharan Africa regarding family planning, a factor that predicts contraceptive behavior. In support of Bawah, Lasee and Becker (1997) state that rational process of fertility decision making involves the two spouses discussing issues about family size and contraception. This would mean a couple making joint decision, a decision that is more likely to yield to effective fertility outcomes. It is highly probable that women who indicated that they do not discuss family planning with their partners will discontinue using contraceptives should their partners discover their secret. This means that for as long as the issue of contraception remains an issue that couples handle separately, the will of some to be fertility innovators will not translate into action. This further implies that in the absence of, or limited communication among the couples, women hardly express their feelings regarding family size and the means to achieve it.

4.3.1.1 Attitudes towards contraception

In an attempt to further analyze the relationship between family planning approval and the actual use of contraception, logistic regression statistical technique was used, and this was mainly because of the dependent variable being categorical.

Table 3: Logistic Regression for Family planning Approval and contraceptive use in Western region

Variable/Category	Coefficient	Standard error	Odds ratio
Husband's Approval of FP			
Disapproves	RC	-	-
Approves	.278	.843	1.320
Respondent's Approval of FP			
Disapproves	RC	-	-
Approves	-.368	.038	.692
Constant	- 1.099	.816	.333
Chi-square 1.748			
-2 Log likelihood 157.392			

Significant at 0.05 level; * Significant at 0.01 level.
RC stands for reference category

Results show that Chi-Square is statistically insignificant (P-value of .626), an indication that there is no relationship between approval of family planning and use of contraceptives. With odds less than 1, women's approval of family planning has no effect on contraception. The odds of husband's family planning approval however show that women whose husbands approve use of contraceptives are 1.32 times more likely to use contraception relative to those whose husbands disapprove. This implies that men's positive attitude towards family planning does influence their partner's contraceptive behavior. Results thus suggest that men play a vital role in determining when to use contraception. Results disagree with Bankole and Susheela (1998), and Nuwagaba (1997) who earlier indicated that some African men tend to have poor attitude towards family planning.

Women's approval of family planning not translated into practice suggests that women hardly make decisions especially those that are fertility related on their own. It is an

indicator of lack of empowerment, whereby some of their needs can not be fulfilled as long as they have not consulted their partners for approval. This is typical of rural African women whose destiny is always determined by their partners.

One can also attribute the findings to women's hypothesized side effects of modern contraceptive methods such as obesity, heavy bleeding, infertility, cervical and uterus cancer, and limited choice of methods. In support of the latter factor, Caldwell, Caldwell (2002), Katende, Gupta and Bessinger (2003), Nuwagaba (1997) argue that one of the barriers of use of modern contraceptives is the way in which they are dispensed, often not meeting the requirements of the would be users- by not giving them a wide range of contraceptives which is of paramount importance in determining contraceptive prevalence. It is therefore possible that women in the region that is largely rural have access to limited method options such as pills and injectables, living many women who do not want to use these particular methods vulnerable to unwanted pregnancies. The negative correlation between approval and use of contraceptives may also be attributed to social costs. For instance, a woman that has had the first four births that are all female may approve use of contraceptives but due to cultural pressure and obligation of giving her husband at least one son, her positive attitude will not translate to practicing contraception.

4.3.1.2 Contraceptive Prevalence Rate (CPR)

This refers to the number of women of reproductive age (15-49) who are using contraception per 100 women of reproductive age. The measure provides an indication of the number of women at "risk" of conception at a given time. The proportion of women using all methods of contraception was 16%, modern methods (12%), while traditional methods was 4% in the region. (See appendix). The results imply lack of sufficient motivation to regulate fertility, unavailability or unacceptability of various methods of contraception. Lack of detailed contraceptive knowledge may also have contributed to the low contraceptive prevalence rates. This is attributable to the fact that during the survey, women were asked if they could recognize or recall the names of methods rather than if they knew how to use a method.

The results concur with Weeks (2000) who notes that it is very difficult to achieve low levels of fertility without a substantial fraction of reproductive age couples using some modern fertility control. The findings clearly show that like any other region in Sub-Saharan Africa, the region's low CPR, is responsible for the high fertility. It is also highly probable that a good percentage of those women using contraception do it for spacing rather than for limiting births. This argument is supported by Westoff, Charles F and Bankole Akinrinola (2001) who indicated that when contraception is used for spacing, it is used only for shorter periods and perhaps with less motivation to avoid pregnancy. Correlations distinguishing use for limiting and for spacing are, however, not investigated under this study.

Among the non-users, more than half (54%) indicated that they intended to use contraception at a later stage. Probably these are women who have just entered marital unions and have not yet achieved their desired family size, or those women that are culturally compelled to continue having children until they give birth to at least one son. In line with the above argument, Nuwagaba (1998) posits that sex composition of children born in a family plays a crucial role in the timing of contraceptive practice. Preference of sons to daughters may thus be a contributing factor to the planned late use of contraception. In many African societies, boys are preferred for a number of reasons. As parents grow older, their sons are expected to provide care both socially and economically. Socially, as boys reach adulthood, they are expected to marry and produce children of whom some must stay with the grandparents so as to give them company and provide all necessary care. The second reason is that culturally, in some societies, boys are expected to inherit and pass on the family's linage.

In African context, this is an obligation that many couples must adhere to, or else the family's name ceases to exist if there are no male children born to a particular family. A married man is likely to strive hard to make sure that at least he gets three or four sons who will carry on the family's name. Failure to get a son often makes families desperate, and this makes it even hard for a woman in such a relationship to engage in contraceptive behavior. In some cultures, failure of the wife to produce a son gives the man a right to marry a second wife. In the event of man taking another wife, the first wife becomes

desperate to have more pregnancies in the hope of blessing her husband with a son. It is common to hear of families that have broken allegedly due to failure of the wife to produce a baby boy. Women whose the first three or four births are females are therefore likely to be less innovative in terms of contraceptive behaviour. This implies that women will only start contraception after they have fulfilled certain cultural obligations. Results show that a third of total women (30%) did not intend to use any form of contraception, and about fifteen percent were not sure if they will ever use. Probably those who do not intend to use contraception at all are the women that have reached menopause, knowing that the risk of becoming pregnant is improbable, or those whose partners do not approve use of contraception at all.

4.3.1.3 Pattern of contraceptive use

The findings confirm what has long been known, namely, a direct relation between socioeconomic status and the contraceptive prevalence rate. High rates exist among the more advantaged groups and low rates exist among the disadvantaged as shown in Table 3.

Table 4: Types of Contraceptive Use by Socioeconomic Characteristics, Western Region UDHS 2000-2001

Background Characteristics		Percentage using Traditional method % N	Percentage using Modern method % N	Total % N
Age- groups	15-19	22 (4)	78 (14)	100 (18)
	20-24	15 (9)	85 (53)	100 (62)
	25-29	13 (10)	87 (66)	100 (76)
	30-34	20 (14)	80 (55)	100 (69)
	35-39	14 (6)	86 (37)	100 (43)
	40-44	26 (10)	74 (29)	100 (39)
	45-49	50 (7)	50 (7)	100 (14)
	Totals	**19 (60)**	**81(261)**	**100 (321)**
Education	No education	26 (09)	74 (25)	100 (34)
	Primary	10 (5)	90 (46)	100 (51)
	Secondary	5 (6)	95 (105)	100 (111)
	Higher	2 (2)	98 (122)	100 (264)
	Total	**7 (22)**	**93 (298)**	**100 (320)**
Religion	Catholic	19 (22)	81 (93)	100 (115)
	Protestant	17 (30)	83 (145)	100 (175)
	Muslim	17 (2)	83 (10)	100 (12)
	Other	28 (5)	72 (13)	100 (18)
	Total	**18 (59)**	**82 (261)**	**100 (320)**
Parity	1.00	16 (30)	84 (163)	100 (193)
	2.00	26 (27)	74 (78)	100 (105)
	Total	**19 (57)**	**81 (241)**	**100 (298)**
Partner's Education	No education	24 (4)	76 (13)	100 (17)
	Primary	22 (35)	78 (126)	100 (161)
	Secondary	16 (11)	84 (59)	100 (70)
	Higher	13 (5)	87 (34)	100 (39)
	Total	**19 (55)**	**81 (235)**	**100 (290)**
Place of Residence	Urban	8 (10)	92 (110)	100 (120)
	Rural	25 (50)	75 (151)	100 (201)
	Totals	**19 (60)**	**81 (261)**	**100 (321)**
Marital Status	Never Married	16 (5)	84 (26)	100 (31)
	Married	23 (41)	77 (140)	100 (181)
	Living together	13 (11)	87 (73)	100 (84)
	Widowed	-	100 (4)	100 (4)
	Divorced	-	100 (1)	100 (1)
	Not Living together	15 (3)	85 (17)	100(20)
	Totals	**19 (60)**	**81 (261)**	**100 (321)**

Source: Calculated from UDHS 2000-2001

Table 4 presents findings of the women that use contraception in the region. Contraception is associated with birth spacing or limiting, and this depends entirely on the age of the woman. It can be argued that birth limitation is a more powerful reason for practicing contraception than spacing, and therefore contraceptive prevalence is expected to be greater among older than young women . The findings concur with this argument.

There is a sharp rise in the level of use with age, a peak in the middle of the reproductive years- Age groups 25-29 and 35-39 as the most innovators (86 percent), and a decline at older ages.

The proportion of women using contraception increased with increase in education (74%, 90%, 95% and 98% respectively). Seven in every ten users (71%) have higher education (secondary and tertiary).The number of users with secondary or tertiary education doubled that of users with primary, and tripled users with no education. The results concur with Kwagala (1998), Katende (2002) and Nortman (1980) who contend that women with higher education use more contraceptives than those without, or limited education and this is because education enables reproductive innovation in terms of limiting or controlling child bearing. In support of this argument is Caldwell (1980), who posits that educated wives attempt to prolong birth interval with a consequent of fertility regulation. Education is a tool that equips women with skills for gainful employment which brings in extra economic roles that are less compatible with child bearing and rearing.

According to the theories of modernization, one of the preconditions of marital fertility decline proposed by Coale is that fertility must be within the calculus of conscious choice. This implies that rational reproductive decisions are associated with formal education which empowers couples with critical skills that enables them to know the actual benefits of having fewer children and these range from health of both the children

and the mothers to reduced costs. Educated couples realize that its not about quantity, but quality of children, and that child bearing is not about fulfilling God's command – "multiply and fill the earth" but rather a planned process that involves both couples taking the initiative in having small family size, and aiming at achieving this by using the most effective methods of fertility regulation. Coale's second precondition that fertility reduction can be achieved when effective techniques of fertility are known and available also correlates with women's education levels. Educated women are exposed to information and media and they become well versed with all the necessary information that is contraceptive related, after all they are keen to regulate fertility as they operate outside home cores. They do not only seek to know about contraception, but also can easily access variety of family planning services because they have resources at their disposal. That is they can afford any type of modern contraceptives. On contrary, the uneducated rely on services provided by the state, the services that are in most cases insufficient since only a few methods are availed, hence limiting their choice of method.

Bongaarts and Elof (2002) noted that in many developing countries, potential contraceptive users have a severely limited choice of methods. Majority of such potential users are those that lack financial autonomy and therefore can not access easily all methods of modern contraception. This is especially when service providers are private. The Uganda Demographic Health Survey (1995) indicated that private service providers play a big role in the provision of modern contraceptives and I presume they still do up to the present day. Women without or limited income may not therefore easily access family

planning services unless they are financially supported by their partners in this regard. It is highly probable that some partners may not approve spending money on family planning services, hence their wives at risk getting unwanted pregnancies.

Related with women education and empowerment is also communication. There are higher chances that women with limited or no education are not confident enough to engage their partners in discussions concerning ideal family size and the means to attain it. It has been documented that little spousal communication results in low contraceptive use. Educated women on the other hand are likely to bring up issues of family size and the means to realize it and it is through combined efforts that the couple can achieve their fertility desires such as small family size. After all without communication, either of the couples would not know what the other partner's ideal family size is or his attitudes towards family planning. Bawah (2002) posits that there is minimal communication between couples on issues related to family planning in many African societies, and this limited communication has implications on women's fertility and contraceptive behaviour. However, this depends on women's levels of education. For the uneducated women, family size will entirely depend on their partners because they rarely communicate to their partners about their fertility and contraceptive needs.

Insignificant differences in contraceptive use exist among the three main religious sects in the region (81%, 83% respectively), an implication that religion has less impact if any,

on contraceptive use. Irrespective of religious affiliation, the most commonly used form is modern contraception

Results indicated that more women in the region start using contraception at a higher parity (four children and above). Ten percent of women indicated that they started using contraception after having had their 4th child, compared to four percent of women who started using after having three children. In support of this, Nuwagaba (1998), Nortman (1980), Blake and Pinal (1980), Acsadi, Johnson and Weinberger, (1980) posit that the level of current use tends to increase sharply from low levels among women with no children to much higher levels among women with two to four children. Women in pre-transitional societies are known to be large family embracers and as a consequence, their demand for contraception increases after having four or more children. Jain (1998) argues that those women who strongly desire large families are unlikely to change their stand simply because of proximity, availability, or quality of family planning services.

Generally, women whose partners have formal education use contraceptives more than their counterparts whose partners have no formal education. Women with partners who attained secondary or higher education are better users as compared to those whose partners have no education (86% and 76% respectively). Men's influence on their partner's contraception behavior seems to depend on their level of education.

As expected, differentials by residence show that Women residing in urban areas better reproductive innovators (92%) than their rural counterparts (75%). Among the users, a

significant number of married women 77% (140) and those living with their partners (86%) use modern methods of contraception. Generally, contraceptive use remains lower among women out of unions: the never married, widowed, divorced and separated.

4.4 Fertility levels and Differentials

4.4.1 Fertility Levels:

Results on fertility levels in the region are presented in table 5, which shows direct method of fertility estimation and table 5 showing Indirect estimation (Brass P / F Ratio Method).

Table 5: Fertility Levels in Western Region, UDHS 2000-2001

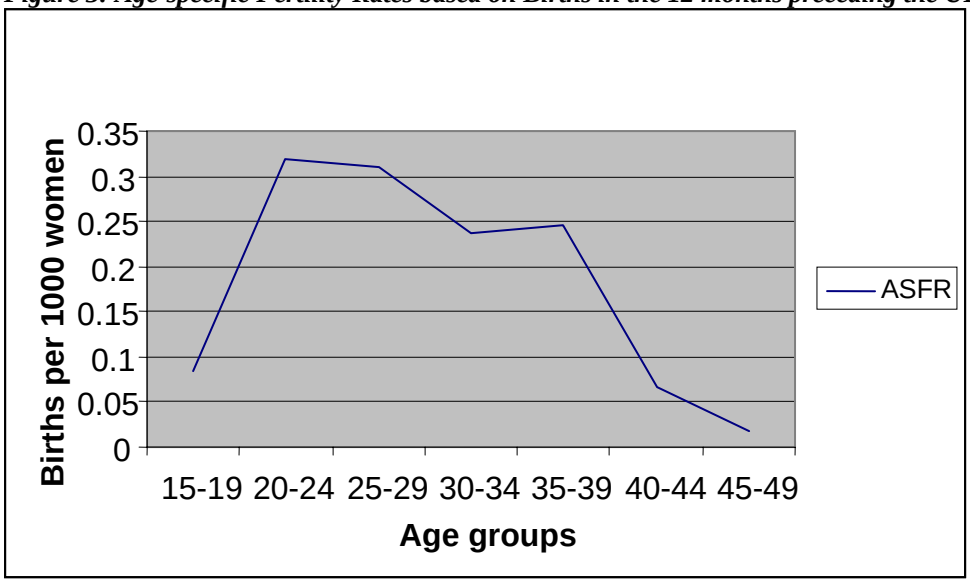
Age group	Total Women	Total Children Ever Born-CEB	Mean No of CEB	Births in Past Year	Age Specific Fertility Rate
15-19	439	88	0.2	37	0.084
20-24	421	668	1.6	134	0.318
25-29	370	1180	3.2	115	0.311
30-34	290	1322	4.6	69	0.238
35-39	199	1266	6.4	49	0.246
40-44	164	1127	6.9	11	0.067
45-49	110	749	6.8	2	0.018
Totals	**1993**			**417**	**1.282**
TFR					**6.4**

Source: ***Computed from UDHS 2000-2001***

Table 5 shows that the region has a total fertility rate of 6.4 given the prevailing age specific fertility rates. Results show that childbearing is not evenly distributed among age groups. Fertility peaks at ages 20-29, with 318 and 311 live births per 1000 women in age groups 20-24 and 25-29, and reduces sharply with women in their late reproduction span - age groups 40-44 and 45-49 (67 and 18 live births per 1000 women respectively).

Fertility rates for age groups 30-34 and 35-39 are nearly equal although the latter had more births than the former. This is further illustrated below

Figure 3: Age-specific Fertility Rates based on Births in the 12 months preceding the UDHS 2000-2001 survey.



Source*: **Generated from UDHS, 2000-2001***

Fertility in the region peaks at 20-24between twenty and thirty years of age, and it is lower at ages 15-19 and 40-49. The lower fertility at age 15-19 can be attributed to the fact that they have just started having children. For the age group 40-49, the lower fertility could be because they are reaching the end of their reproductive age span.

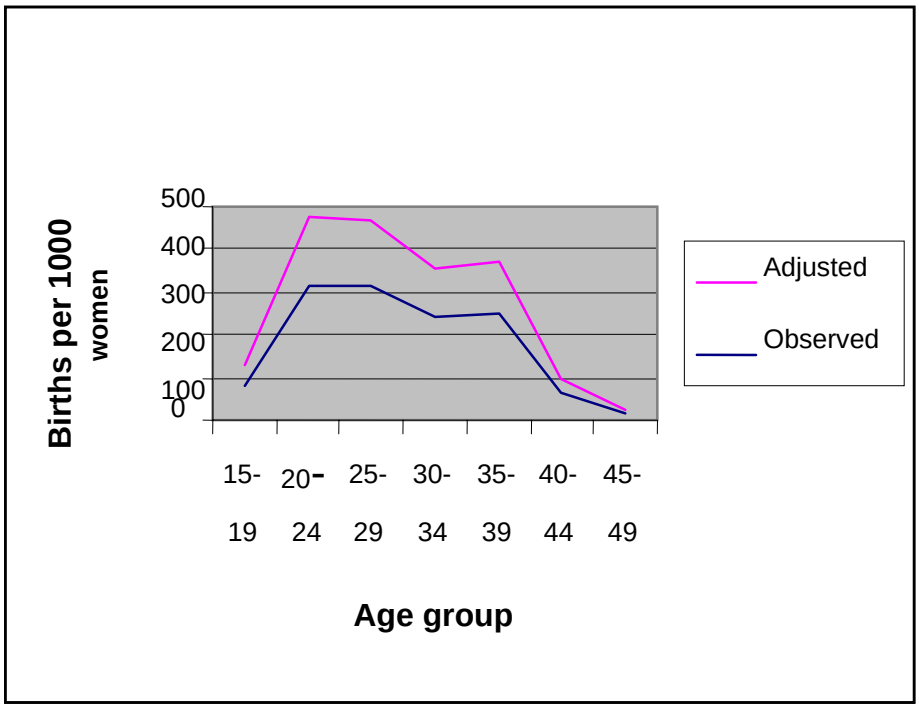
Table 6: Brass P / F Ratio Method of fertility estimation

Age group	Parity Pi	ASFR fi	Cumulated fertility cfi	Ø=5cfi	Multiplier Ki	Ki *fi	Fi= Ø+Kifi	Pi / Fi	Adjusted ASFR
15-19	0.2	0.084	0.084	-	1.762	0.148	1.762	0.114	0.041
20-24	1.6	0.318	0.402	0.42	2.806	0.892	3.226	0.492	0.156
25-29	3.2	0.311	0.713	2.01	2.996	0.932	2.942	1.084	0.153
30-34	4.6	0.238	0.951	3.565	3.113	0.741	4.306	1.059	0.117
35-39	6.4	0.246	1.197	4.755	3.236	0.796	5.551	1.146	0.121
40-44	6.9	0.067	1.264	5.985	3.487	0.234	6.219	1.105	0.033
45-49	6.8	0.018	1.282	6.32	4.322	0.078	6.398	1.064	0.001
Total		**1.282**							
TFR				**6.32**					

Source: ***Computed from UDHS 2000-2001***

Results in Table 6 show that using Brass method of fertility estimation, every woman in the region will have 6 (six) children in her reproductive span above and this confirms the computed total fertility rate. The P / F ratio follow the pattern of increasing births in the early years of reproductive ages, peaking twice (in age groups 20-29 and 35-39), and thereafter falling in the old age groups. Adjusted fertility showed a similar pattern. Both observed and estimated fertility showed similar pattern among different age groups and this pattern is illustrated in figure 4 below;

Figure 4: A graph showing both observed and adjusted ASFR of Western Region, Uganda 2000-2001



Source: ***Generated from UDHS, 2000-2001***

Figure 4 above shows observed and estimated fertility levels in the region. The pattern of both line graphs indicates that fertility in the region peaks two times at ages 20-24 and 35-39. This pattern is quite unusual, and therefore could be due to some errors in the data. Otherwise such pattern could also mean that the second peak indicates fertility level of those women that postpone or delay marriage in order to finish schooling. However, results have shown low levels of women with higher education in the region. Although the age pattern of fertility is "unusual", studies conducted elsewhere on the continent have observed the same pattern.

Figure 5: Mean Number of Children ever born per woman by Age group

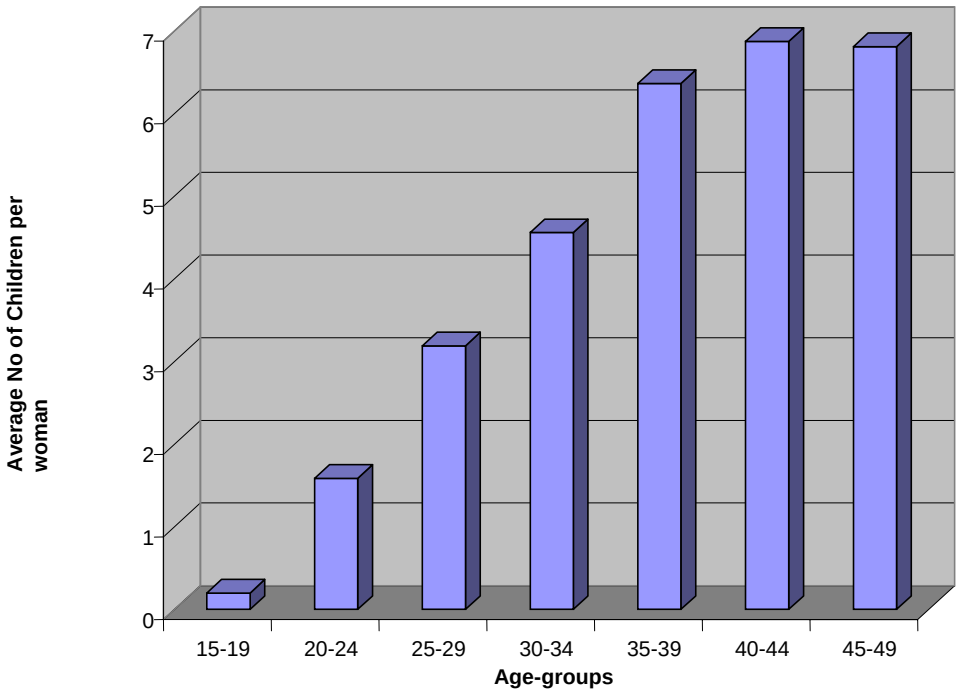


Figure 5 above shows the mean number of children ever born in each age group. The mean number of Children Ever Born (CEB) increases as women progress in their reproduction span. On average, a woman has seven children by the end of her reproductive span given the prevailing birth rates in the region. The mean number of CEB for late reproduction (35-49) is 6.7.

Generally, results revealed that fertility levels are high as predicted and hence rejection of null hypothesis

4.4.2 Fertility Differentials

Fertility varies with a number of factors such as age, education, residence, marital status, religion, employment status, partner's education, and contraceptive use. Table 5 provides findings on women's fertility differentials using Mean number of children ever born (CEB), Total Fertility Rate (TFR) as well as Mean number of children surviving (MNCS).

Table 7: Fertility Differentials, UDHS 2000-2001

Background Characteristics		Mean no of Children Ever Born	Mean No of Children Surviving	Total fertility rate
Age-group	15-19	0.2	0.17	
	20-24	1.59	1.36	
	25-29	3.19	2.69	
	30-34	4.56	4.13	
	35-39	6.36	5.23	
	40-44	6.87	5.54	
	45-49	6.81	5.53	
Education	No Education	4.29	3.53	7.7
	Primary	3.00	3.88	6.7
	Secondary	1.57	2.58	2.9
	Higher	1.75	2.66	3.3
Residence	Urban	2.90	3.11	4.0
	Rural	3.29	3.58	7.0
Marital Status	Never Married	0.21	0.65	1.0
	Married	5.17	4.01	9.6
	Living together	4.46	3.75	9.4
	Widowed	3.37	3.78	1.0
	Divorced	3.70	2.30	-
	Not Living Together	3.24	3.01	4.8
Religion	Catholic	2.93	3.53	6.6
	Protestant	3.21	3.49	6.5
	Muslim	2.93	3.41	1.8
	Other	3.45	3.77	7.0
Employment Status	Not working	1.80	3.37	5.6
	working	3.59	3.81	6.6
Partner's Education	No Education	4.96	3.47	6.7
	Primary	4.31	3.84	6.6
	Secondary	3.3	3.41	6.4
	Higher	3.3	3.40	6.4
	DK	4.00	3.22	6.8
Contraceptive Use	N0		3.34	6.8
	Yes	4.1	3.60	4.6

Source: ***Computed from UDHS 2000-2001***

The results in Table 7 indicate that the total number of children per woman decrease with increase in educational level. Total fertility rate among the uneducated women is twice as high as the total fertility rate among women with secondary or higher education (7.7, 2.9

and 3.3 respectively). Women with limited or without education contribute tremendously to the high fertility levels in the region. This is in line with Mackensen and Hohn (1980), Blake and Pinal (1980), Caldwell (1980), Weeks (2000), Kirk and Pillet (1998) all who argue that educational attainment has a depressing effect on fertility through the adoption of small family norms, knowledge and use of contraceptives, and later ages at first unions and birth. The low levels of education in the region as shown in table 1 may have contributed greatly to the high fertility levels in the region. In support of this argument are Kwagala (1998), Katende (2002), and Nortman (1980) who contend that women with formal education use modern contraceptive methods more than those with low or without because education enables them to be reproductive innovators both in terms of limiting and spacing. This innovative behavior varies with women's level of education. For instance limited formal education on primary level has been found not to have effect on fertility regulation behavior.

Mean number of children surviving shows that on average, children of educated women are expected to survive more than children born to uneducated women. Results shows that out of eight children born to an uneducated woman only four are expected to survive while all three children born to a woman with secondary or higher education are likely to survive. Findings show clear differences between urban and rural in terms of child survival. Three out of four children born to a woman residing in an urban area are expected to survive while her counterpart in a rural area that gives birth to seven children, only four are expected to survive. High infant and child mortality could thus be partly

responsible for the persistent high fertility in the region especially in rural areas. This is in line with Taylor Carl E, et al (1976) who noted that as long as the proportion of children who die in childhood remains substantial, there is a major psychological obstacle to be overcome in promoting family limitation, and the implication for this is that many couples will replace children who die although replacement of all children lost is not likely. Kirk and Pillet (1998:11) add that uncertain survival of children in Africa remains one of the strong motivations for higher fertility through insurance and replacement effects. Improvement in child survival in the region may in future strengthen the motivation for fertility regulation.

Results show that urbanization is significantly correlated with fertility in the region. The lowest number of births per woman is found among women residing in urban areas and vice versa (4 and 7 births respectively). Such significant differences could be partly due to compositional differences in education, occupation, income, or due to differences in family planning service provision. Mackensen and Hohn (1980) argue that rural-urban differences are a result of lags in the diffusion of contraception and modern attitudes. Fertility regulation in form of contraception is initiated in urban areas, and as result urban dwellers advance faster in terms of reproductive behavior. The fact that the region is largely rural explains why high fertility persists.

In terms of religious denomination, the results revealed that religion hardly has any influence on fertility behavior in the region with exception of Muslim women. The average number of births per woman is seven for Christian- related religions. The

findings are not in support of previous researches which indicated that Roman Catholics have higher fertility than that of Protestants in societies that have different religions. Reason given for high fertility among Catholic couples was the values of Roman Catholic Church which prohibit contraception, hence favoring large family (Andorka and Rudolf, 1980).

Results show that marital fertility in the region is overwhelmingly high. This is in line with Sibanda and Zuberi (1999) who noted that the level of fertility is influenced by the proportion of women that are married and by marital stability. Given the low percentage of divorce as indicated in Table 1, most couples engage in long term marital relationships resulting in birth of many children. After all, most African marriages are presumably concluded on the basis of desire to have children. Moreover married women are known to have lower contraceptive usage than their counterparts. The findings clearly show that the highest number of birth per woman is found among Women in unions. Given the low levels of women education in the region, it is presumed that girls enter into marital relations at an early age, and with the existing low contraceptive prevalence, they are at risk of unwanted or mistimed pregnancy. Results show insignificant fertility differences between working and non working women. Fertility is, however, higher among working women (7 births per woman).

Table 7 shows that fertility is higher among women that do not use contraception. A significant difference of two live births exists between users and non users (7 and 5 births per woman).

4.4.3 Multivariate analysis of the determinants of contraception and fertility in the Region

Contraception and Fertility in the region was further analyzed using socioeconomic variables already considered in the bivariate analyses in order to establish relationship between socioeconomic status, contraception and fertility. Multivariate techniques based on linear and logistic regressions were applied on four models. The 4 models were;

1. Women's' socioeconomic status and Contraception

SES ⟶ **C**

2. Women's' socioeconomic status and Fertility

SES ⟶ **F**

3. Women's' socioeconomic status, contraceptive use and Fertility

SES + C ⟶ **F**

4. Contraceptive Use and Fertility

C ⟶ **F**

NB: Arrows from one variable to another indicate a causal effect of one on another.

4.4.3.1 Women's' socioeconomic status and Modern Contraceptive Use

Socioeconomic variables that were considered in bivariate analyses were used to further examine the relationship between contraceptive use and predictor variables. Logistic regression was considered as the most suitable technique in examining the relationship because the dependent variable (contraceptive use) is binary while some predictor variables are categorical and others continuous. After running logistic regression, the following outputs were obtained and analyzed.

Table 8: Logistic Regression Model for contraceptive use among women of Western Region, Uganda UDHS 2000-2001

Variable	Coefficient	Standard error	Odds ratio
Age-group			
15-19	RC		
20 -24	-0.54	0.642	0.583
25-29	-0.208	0.508	0.812
30-34	0.506	0.487	1.658
35-39	0.863	0.488	2.37
40-44	0.955	0.508	2.598**
45-49	1.149	0.52	3.155
Residence			
Urban	RC		
Rural	1.357	0.214	3.885
Education			
No education	RC		
Primary	-1.405	0.495	0.245***
Secondary	-0.276	0.427	0.759
Higher	0.191	0.431	1.211
Religion			
Catholic	RC		
Protestant	0.881	0.504	2.412
Muslim	1.103	0.496	3.012**
Other	0.901	0.622	2.462
Marital Status			
Never Married	RC		
Married	-0.598	0.28	0.55**
Living Together	-0.283	0.3	0.753
Widowed	-0.787	0.47	0.455
Divorced	0.772	0.827	2.165
Partner's Education			
No education	RC		
Primary	-1.498	1.077	0.224
Secondary	0.617	0.811	1.853
Higher	0.989	0.823	2.687
Don't know	0.874	0.862	2.397
Employment Status			
No	RC		
Yes	-0.201	0.282	0.818
Constant	-2.031		
2 Log likelihood	849.952		
Model Chi-square	189.491***		
Number of cases	1448		
Missing Values	545		

Significant at 0.05 level; * Significant at 0.01 level.
RC stands for reference category

Source: ***Computed from UDHS 2000-2001***

Most indicators in the model show the expected relationships. Contraceptive use is positively related to age. Results show that women aged 44 and above are about 3 times

more likely to use contraception relative to the reference group. Women aged 35-39 are 2 times more likely to use contraception than those aged 15-19. Results reveal that education has the expected direct relationship with contraceptive use. Women with higher education are 1.2 more likely to use contraceptives than those without any formal education. Education especially at a secondary or higher level is positively associated to contraceptive behavior. Partner's education shows a similar trend. This confirms the role of education on fertility change through contraception. In terms of religion, results show that Muslim women are better reproductive innovators than Catholic women. This could be attributed to relaxed religious laws of Moslems as compared to Catholics whose religion prohibits use of any form of contraceptive. Protestants and other religions are 2 times more likely co use contraception than the reference category.

Results shows that Marital Status indicator is not giving anticipated results. In some ways, one would expect those cohabiting to be more using than the never married. It is surprising to see that those divorced are 2 times more likely to use contraception than the never married. Results indicate that those married are less likely to use contraception than the never married. In terms of residence, results contradict the known pattern where urban dwellers are known to be better users of contraception. It has been indicated that women residing in rural areas are almost 4 times likely to use contraception than the reference group. Such results imply errors in the data. Research on this predictor variable has always been consistent that urban women use contraceptives more than rural women

as a result of differences in facilities and opportunities for women that provide them with employment outside their homes.

All in all results have provided enough evidence that socioeconomic variables play a significant role in determining contraceptive use.

Table 9*: *Estimated Coefficients for socioeconomic variables, contraceptive use and fertility

Variables	*Model 1* SES & Fertility	*Model 2* SES +C & Fertility	*Model 3* C & Fertility
Age	.690***	.705***	-
Education	-.107***	-.242***	-
Residence	.074***	.136**	-
Marital status	-.088***	-.033	-
Employment status	-.001	.011	-
Religion	.003	.015	-
Partner's Education	-.018	-.043	-
Method currently used	-	-.051	-.072

Significant at 0.05 level; * Significant at 0.01 level.
All Models were estimated using SPSS version 10.0
Source: ***Computed from UDHS 2000-2001***

The table 9 above gives the coefficients of all predictor variables in the models. The coefficients indicate the magnitude and direction of change in fertility. Positive coefficients indicate that the predictor variables in question are likely to enhance fertility and the reverse is true for variables that have negative coefficients. Overall, socioeconomic factors and contraceptive use as independent variables accounted for a small fraction of variance in fertility with exception of education and age variables. The

findings indicate the need for data on other factors affecting fertility in addition to those considered here. The results confirm the relationship between a woman's socioeconomic characteristics and her reproductive behavior.

Model 1's predictor variables show that the highest correlation of 0.690 occurs between age and total children ever born, an indication that age of women significantly determines their fertility outcome. Education is significantly and inversely related to fertility, meaning that the higher the woman's level of education, the few the children she is likely to have and the reverse is true. Place of residence is positively related to fertility. Both employment status of women and their partner's education are negatively related to fertility. However, they play insignificant role in influencing fertility outcomes.

In model 2, results show that contraceptive use is inversely correlated with fertility. This means that low contraceptive use leads to increased fertility. Table 7 indicates that the correlation between contraceptive use and fertility is however weak as compared to education, residence, and age. The correlation between employment status and fertility is the lowest, and appears to be more of a function of education than of occupation.

Though Uganda is generally a religious country, Western region in particular, results show that religion has insignificant influence on fertility outcomes.

Model 3 re-examines the association between contraceptive use and fertility holding other factors that may affect fertility constant. Results show that contraceptive use and

fertility are inversely correlated, and generally, the strength of the relationship improves (from -.051 to -.072) after controlling for other factors. Although the strength of the contraception- fertility relationship improved after controlling other factors, contraceptive use still remains insignificant in explaining fertility levels in the region. Both model 1 and 2 clearly show a low association between the level of contraceptive practice and fertility. Results give enough evidence that there is a relationship between contraceptive use and fertility though weak, leading to rejection of null hypothesis.

Western region being largely rural (Uganda Districts Information Handbook, 2005) suggests that women's socioeconomic status and society at large explain partly the high fertility levels in the region. In terms of education, results showed that the region is characterized by low levels of education, and this has both direct and indirect implications on women's reproductive behavior. The theories of modernization explain declines in fertility with changes in economic activity and education in society. In their study, Aassve and Altankhuyag (2002) found out that economic activity is inversely related to fertility. Changing income status, employment status, transport system, and other forms of infrastructure all have an impact on individual and aggregate levels. On individual basis, there are higher chances that fertility and contraceptive behavior is likely to be affected. The rural- urban fertility and contraceptive differences in this study confirm the relevance of socioeconomic opportunities that urban women have over their counterparts in rural areas. It can therefore be argued that women in a region that is characterized by subsistence farming as a major economic activity, impoverished

infrastructure, long distances to health facilities, lack of financial autonomy and above all limited formal education, have limited power to influence fertility decline.

Using modernization theory, one can examine quite clearly the associations in three models analyzed above. Cleland & Wilson (1987), Bawah (2002) contend that modernization of a society changes the economic structure and also influences social settings and perceptions, including those of child bearing. In the event of modernization, society provides Women with opportunities to work outside their homes and this in turn raises opportunity costs for children and hence resulting in adoption of small family norms. It has been noted that most Countries that have achieved fertility transition first undergone some levels of development (Weeks 2000 and Makiwane, 1998). Modernization impacts greatly not only on economic aspects but also on socio-cultural settings and beliefs. Findings reveal that though socioeconomic variables may not be significant in the first 2 models analyzed above, they always have a significant influence on fertility outcomes. Improvement in economic conditions of a society through modernization is crucial in changing not only peoples' economic status, but also health conditions, as well as driving social change. Nuwagaba (1997) and Caldwell, Caldwell (2002) noted that economic development is the best contraception. In support of this perspective is Ayad and Roudi (2004) who posit that socioeconomic improvements play a vital role in spurring both rising age at first marriage and desire for smaller families.

Western region's current CPR is thus likely to remain low, hardly contributing towards fertility reduction as results have revealed, for as long as development levels remain minimal and the region remains extensively rural.

Chapter Five:
Conclusions and Recommendations

This chapter presents the conclusions and recommendations based on the findings (results) of the study.

Conclusions

Findings suggest that the region is in early stages of fertility transition- when fertility is high and contraceptive prevalence is low. With greater use of modern methods and a shift to greater use for limiting, fertility is likely to reduce.

Positive attitudes towards contraception do not necessarily translate into usage unless such attitudes are accompanied by improved or better socioeconomic conditions, and children are no longer valued as economic and social assets. Intensifying information and education activities is of paramount importance. Changes in the role and status of women, especially their education and employment opportunities outside a home will have profound influence on fertility and family planning practice.

Women are less innovative in terms of reproductive behavior because they are not empowered enough to make independent decisions as far as when to use contraception, they lack financial autonomy and hence most of them unable to access a wide variety of modern methods, and above all, a good number of potential contraceptive users are those women who are barred by cultural demands. Improving status of women both socially

and economically in the region is therefore very crucial if innovative behavior is to be promoted.

Achieving low fertility will require substantially higher levels of contraceptive prevalence among the married, and this requires massive communication programs, which can only be facilitated when there is political will. Minimum involvement of policy makers retards implementation of population policy.

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Use of modern contraceptives is growing and is expected to have a greater impact on fertility levels in the near future. This trend can only be sustained if the government and other family planning service providers operate in an environment that is economically viable, hence empowering those that have the desire to adopt small family norms to do so.

5.2 Recommendations

- The government should revisit the population policy to actively promote family planning activities by promoting and facilitating debates about family size, and the means to achieve it.
- Integrated health infrastructure should be developed whereby infant and child care, and nutritional care are combined with family planning services in order to maximize mother-child care, which in turn increase child survival, thereby reducing the need for replacement fertility.

- Women education needs to be emphasized in order to promote innovative reproductive behavior. Awareness campaigns on importance of having fewer children should be promoted to target women residing in rural areas and those without or limited education.
- The government should have specific demographic targets aiming at reducing fertility rather than boasting of having achieved rapid population growth since its inception in 1986.
- Use of community-based delivery methods of distributing contraceptives should be promoted.
- There is a need for more research in order to understand why fertility is still high in the region. Cultural aspects need to be explored more so as to establish the extent to which they influence fertility and contraceptive behaviour.

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Appendix 1

Total fertility Rate

TFR = 5∑ASFR

= 5×1.282

= 6.41

Appendix 2

CPR for all Methods

CPR = Number of women Using contraceptives aged 15-49 ÷ Number of women in the Survey aged 15-49 per 100.

= [323/1993] * 100

= 16.2%

CPR for traditional methods

= [76/1993] * 100

= 3.8%

CPR for Modern Methods

= [235/1993] * 100

= 11.8%

Regions and Districts of the Republic of Uganda.

