REGIONAL INSTITUTE OF POPULATION STUDIES

UNIVERSITY OF GHANA

TOPIC:

FEMALE EDUCATION AND FERTILITY IN NIGERIA

GABRIEL OPOKU NYARKO

(10155476)

This Dissertation is submitted to the University of Ghana, Legon in Partial fulfillment of the requirement for the award of A MASTER OF ARTS Degree in POPULATION STUDIES.

JULY, 2015.

ACCEPTANCE

Accepted by the faculty of social studies, University of Ghana, Legon in partial fulfillment of the requirement for the Degree of M.A in Population Studies.

……..

Dr.Pearl Kyei

(Supervisor)

Date……

DECLARATION

I hereby declare that, except for references to other people's work which have been duly acknowledged, this is the result of my own research and it has neither in part nor in whole been presented for another degree.

Signed……..

Gabriel Opoku Nyarko

Date…….. …

DEDICATION

This work is dedicated to my mother and children.

ACKNOWLEDGEMENTS

I thank the Almighty God for his guidance and mercy He has offered me throughout these times.

The epistemological faculty is never achieved by the work of one person. Sir Isaac Newton once said the reason why he managed to see further was because he stood on the shoulders of giants. I cannot repay the intellectual debts I owe to Authors and those who in diverse ways supported me. The Authors on whose shoulders I stood can be discerned from the references.

I am highly grateful to the Ghana Statistical Service, for giving me the opportunity to pursue this course through the efforts by Dr. Philomena Nyarko, Mr. Sylvester Gyamfi and Mr. Abaka Ansah.

I wish to express my profound gratitude to all the Lecturers of the Regional Institute for Population Studies. I want to acknowledge specifically the contributions made by these lecturers towards my education. Professor Samuel Codjoe, Professor John Anarfi, Professor Emmanuel Tawiah, Professor Stephen Kwankye, Professor Francis Dodoo, Dr. Naa Dodoo, Dr.Faustina Ainguah and Dr. Abu Mumuni. They supported and advised me to complete this course successfully. I also want to thank Dr. Pearl Kyei who through her indefatigable efforts directed and steered the affairs of my work for better. I am highly indebted to all the PHD. students who supported and encouraged me to bring this course to completion, especially Isaac Yeboah, Ernest Afrifa, Martin Agyekum, Oluwatobi and Sandra Boatemaa.

My thanks also go to Dr. Kojovi Akpablihonu, Dr. Alhassan Suleman Anamzoya of the Department of Sociology and Dr. Majeed of the Department of Philosophy who endorsed my candidature to Regional Institute of Population Studies.

I wish to acknowledge the many colleagues and friends who created an encouraging and stimulating environment at the Institute.

May the Almighty God continue to shower His blessings upon them.

Table of Contents

LIST OF TABLES

Page

LIST OF FIGURES

LIST OF ABBREVIATIONS

ANOVA……Analysis of Variance

CEB……...Children Ever Born.

EA……..Enumeration Area.

IUD……Intra Uterine Device.

FCT……Federal Capital Territory.

GDP……..Gross Domestic Product.

NDHS……Nigerian Demographic and Health Survey.

NPC……Nigerian Population Council.

PRB……Population Reference Bureau.

SPSS……. ……Statistical Program for Social Sciences.

TFR……Total Fertility Rate.

UN…….United Nations.

ABSTRACT

Developing regions around the world now adopt policies and measures aiming at fertility decline. Results have shown rapid decline in Asia and Latin America and some parts of Africa. However, it has been slow in sub-Saharan Africa, especially Nigeria which has the largest population in Africa. Since fertility is the foundation for high population growth, it becomes imperative to look for factors that account for high fertility. Education of the female has been identified as the best contraceptive for fertility decline. This study examined effects of education and some intermediate variables on the level of fertility in Nigeria. The study used data from the 2013 Nigerian Demographic and Health Survey (NDHS). Data on 38,948 women extracted and analyzed using descriptive statistics for the univariate, ANOVA for the bivariate and multi-regression. Two models were used in the regression analyses. In model one, all the control variables with the main independent variable were used against children ever born. The reason was to find the effect of those variables on fertility when intermediate variables were absent. Then in model two, the intermediate variables were combined with the control variables against children ever born. This was done to test the strength of association between the variables and children ever born with the presence of intermediary variables. The results of both models showed significant correlation between the variables and children ever born.

The intermediate variables only looked at contraceptive use and age at first birth. The study confirmed that these variables can influence fertility in Nigeria. Contraceptive use is not widespread among the women. It was also evident that women with high status of wealth have lower number of children than the poorest. Religion, region of residence as well as ethnicity have an impact on fertility. The study concluded that those with lower levels of education have higher number of children than those with higher education.

CHAPTER ONE

INTRODUCTION:

1.1 BACKGROUND

Fertility decline has been a topical issue in the developing world since 1950s. The developing regions around the world have witnessed fertility declines. Rapid declines have taken place in Latin America and Asia but very slow in Africa especially in sub-Saharan Africa (Bongaarts & Casterline, 2012). Issues about fertility decline were high on the agenda of International Conference on Population and Development (ICPD) in 1994. Since then, sub-Saharan African countries have adopted policies to combat high fertility. Education of the female has been noted as the best contraceptive for high fertility (Jiang, 2014).Nigeria is a sub-Saharan African country that still has high Total Fertility Rate (TFR) since the pace of decline has been slow. Total fertility rate has declined from 6.3 in 1991 to 5.5 in 2013 (NPC, 2013).However, educational attainment has gone up with more female involvement in recent years (Osili & Long, 2007).

Research has shown that there is an inverse relationship between female education and fertility. Level of education was found to be significantly associated with level of fertility. Women with lower levels of education have been reported to have higher numbers of children than those with higher levels of education. Studies by Cochrane (1979), Jejeedboy (1995), UN Population Division (1995), Osili & Long(2007), Akpotu (2008), Basu (1996, 2002) Onoja (2012) Jiang (2014), Alene and Worku, (2008), Bankole (1995) among others have shown inverse relationship between female education and fertility.

Nigeria's fertility rate decline has been very slow in spite of the advances made towards female education, (Osili& Long, 2007, Basu, 2002.).Although education cannot be said to have the sole causal relationship with fertility decline, other factors also contribute to fertility decline. Factors such as age of the woman, place of residence, and region of residence, occupation, wealth status, religion, ethnicity, contraception and age at first birth of a woman contribute to high or low fertility.

Age of the woman influences fertility. Older women have ultimately passed through the reproductive period and therefore, have more children than those with lower ages. Place of residence also influence fertility of a woman. Rural women have been noted to have higher fertility than urban women (Onoja, 2012).Rural women normally are deprived of getting higher education due to some adapted cultural practices (Adibempe, 2011). For that they marry early and start having children. Before they attain the peak of reproduction, they might have higher number of children.

Region of residence cannot be left out in fertility regulations. If the region loses its potential to develop education and enhance female education, it in turn affects the females in that region. When this happens, the result is higher fertility. When women are engaged in professional careers, their level of fertility is affected. These women spend much time on work and also since they are educated, they take considerable care of their children. Hence the belief that when more are begotten and some die others will remain is discarded. (Bankole, 2008). The cost of childbearing and child rearing becomes high since they recognize the benefits of educating their children. With high education, the educated women also contribute to nation building and Gross Domestic Product (GDP) of the country (Onoja, 2012, Osili & Long, 2007).

The wealth status of a woman greatly influences her fertility level. Women with high status of wealth participate in the decision making process of the home. Such women have lower fertility as they become autonomous and less dependent on men (Basu, 2002, Jejeedbhoy, 1995). They can negotiate for sex and also take active part in childrearing. They receive recognition and respect from men. In African societies, men have dominion over women and control the home. However, with high status of wealth and education, the woman gains autonomy and also contributes to decision making in the home and fertility issues. (Basu, 2002).

Religious affiliations coupled with beliefs and practices affect fertility. In sub-Saharan Africa, the belief is that children are a gift from God and that we should not stop them from coming to this world (Onoja, 2012). Such beliefs impede the use of contraceptives and abortion thereby increasing the level of fertility. Further education can reverse this trend with intense modernization (Basu, 2002).This means that most of the things they believe in especially traditional religion, would fade away in order to embrace current developments (Akpotu,2008).

Ethnic sentiments are common in sub-Saharan Africa. With multiplicity of ethnic groups, each ethnic group protects the continuous existence and also fights for prestige among the others (Ostien, 2009).Most of the ethnic groups are looking for numerical strength in order to be powerful which results in high fertility rates (Bankole, 2008).

Contraceptive use is yet another factor in fertility regulations. Education of the female enhances contraceptive use as women with higher education understand the use of contraception (Akpotu, 2008). Education on contraception needs to be intensified. Female education will increase contraceptive use.

Age at first birth is important in fertility regulations. It is a common feature in some communities where children are born to teenagers which increase fertility levels (Céline Ferré, 2009). When women have their first birth earlier, they are exposed to more reproductive years before menopause. This brings high fertility. Those who spend more years in school have shorter duration to reproduce than those who drop out of school and start having children (Akpotu, 2008).Some adolescents drop out of school and have children which increase fertility rates in a country (Céline Ferré,.2009).

This dissertation studies the relationship between female education and fertility with age at first birth as intervening variable and its influence of fertility in Nigeria. With the established relationship between education and fertility, it is imperative to further investigate whether that inverse relationship is still relevant, since education delays marriage and subsequently age at first birth.

1.2 STATEMENT OF THE PROBLEM

Rapid population growth is considered as an obstacle to a meaningful socio-economic development (Caldwell, 2002). Fertility is one of the most important determinants of population growth. Like most African countries, Nigeria has for a long time been experiencing high fertility rates. Evidence from recent sources such as NPC, (2013) and studies done by Basu (2002), Bankole (2008) and Onoja (2012) point to substantial high fertility rates in the past decades. Currently, Nigerian women's TFR is 5.5 children .However, variations have been observed from the regions depending on cultural, religious and educational background of the people. Studies which have been carried out in the field of demography and other related fields have systematically identified fertility as a major component of rapid growth. Studies done by

Bankole(2008), Basu (1999, 2002), Falola (2001) and Akpotu (2008) show low status of women and low education which have resulted in low level of contraceptive use, lack of economic power and personal decision among women in family matters. These have contributed to fertility levels. In some instance, the problem has been attributed to lack of governmental efforts in raising the level of education of women (Bankole.2008).

Delay in marriage and birth is normally caused by education of the female, but the fact remains that not all births operate through marriage. There are a lot of women who give birth outside marriage and also teenage births (Bankole, 2008). This study looks at how education through age at first birth affects children ever born and also to see whether the inverse relationship between education and fertility is prevalent in Nigeria.

1.3 RATIONALE

High population puts pressure on social amenities like hospitals, schools and power generation of a country, among other things, result in unemployment, famine and a drain in the resources of a state (Onoja, 2012). Nigeria is experiencing rapid growth of population which needs attention to curb this high growth. Population has grown from 88 million in 1990 to 173 million in 2010 (NPC,2013). Government's annual budget cannot support all the sectors of the economy. According to Adedoyin, Nigeria's economy has remained the same since 1980 but fertility levels decline slowly with a rise in population (Adedoyin et al, 2010). Since education has been identified as the tool to removing crude cultural practices and enlightening people on current issues, the best voluntarily check on fertility levels would be to educate females in Nigeria.

Female education reduces risk of childbearing, helps female autonomy and decision making and the understanding of contraceptive use (Basu, 2002). In effect, policy direction must cut across to solve the problem of rapid population growth. This study shall recommend policy to intensify efforts at boosting female education that will help increase age at first birth since early birth promotes high fertility. It will also add knowledge to the existing studies done on education-fertility relationship in Nigeria.

1.4 OBJECTIVES

The general objective of this study is to investigate how female education has affected fertility in Nigeria.

Specific objectives are;

1. To investigate how education affects fertility through age at first birth.
2. To examine the disparities in levels of education and fertility in the various regions.

1.5 RESEARCH QUESTIONS

1. Is the relationship between female education and fertility still inverse?
2. How does age at first birth influence fertility?

1.6 ORGANIZATION OF THE STUDY

This study is organized into six chapters. Chapter one presents a background to education and fertility, statement of the problem and the research question. The chapter also includes the rationale as well as the objectives of the study. Chapter two contains the literature review and the conceptual framework with the hypotheses of the study.

Chapter three considers the methodology and describes data sources, measurement and explanation of variables to be examined in the study as well as limitation of the data. Chapter four describes the study area and background characteristics of the respondents. Chapter five looks at bivariate and multivariate analysis. The last chapter, six provides the summary of findings, conclusion and recommendation for policy action.

CHAPTER TWO

LITERATURE REVIEW

2.1 BACKGROUND

High population growth is considered to be one of the most basic causes of underdevelopment in developing countries. This is a serious problem in third world countries of Latin America, Asia and in particular Sub-Saharan Africa (Bongaarts 2008). As such, world conferences have targeted on fertility decline since the 1950's. Policies on fertility issues have been formulated to combat high population growth in developing regions. Education of the female has been high on the agenda of fertility decline. Policies on education of girls and young women were considered as highly effective means of lowering fertility and accomplishing the goal. (UN 1995).Overall, the total fertility rate (TFR) of the developing world dropped from 6.0 births per woman in the late 1960s to 2.9 births in 2000-2005 (United Nations, 2007). Rapid decline has taken place in North Africa, Latin America and Asia but rather slow in Sub- Saharan Africa (Bongaarts & Casterline, 2012).

Fertility, a component of demographic change remains one of the most proximate causes of population growth and for that it has received the greatest attention of demographers, economists and anthropologists. High fertility rate results in high population growth while low fertility rate also results in low population growth. Several empirical studies show a negative association between female education and fertility (Schultz, 1997), (Basu, 1999), (Bankole, 2008), (Onoja, 2012) among others. The inverse relationship between female education and fertility has been described as "one of the clear-cut correlations" in the social science literature (Cochrane, 1979). Female education has been described as investment which brings about private social returns and improvement in child health. It also brings about high nutritional status

that reduces child and infant mortality and enhances fertility regulations (Schultz, 2002; Thomas 1991).

It is not only education that brings fertility decline but other factors come into play, therefore researchers need to exercise caution when interpreting the observed relationship between female education and fertility as causal (Bledsoe *et. al*., 1999). There can be a negative association due to some variables that would be omitted in the process. Variables such as place of residence, ethnicity, wealth status and occupation come together to make education viable in its relationship with fertility (Duflo, 2001). In some instances, the relationship is positive in some areas. The relationship between education and fertility, usually with both illiterate and highly educated women having lower fertility than those with some primary education has been reported from Indonesia, Thailand and West Malaysia (Basu, 2002). However, education has been noted to be the best contraceptive and voluntary check on fertility (Jiang, 2014).

Fertility rates are still high in sub-Saharan Africa (Bongaarts & Casterline, 2012). The current, TFR for Sub-Saharan Africa is 5.1 (PRB, 2013). Nigeria is the most populous nation in Sub-Saharan Africa with current TFR of 5.5 (NPC 2013).The country's population stands at 174 million and it is estimated to reach 240 million in 2025 and 440 million in 2050 (UN Population Division, 2013).The trends show a TFR of 6.3 in 1981, 5.9 in 1991 and 5.7 in 2004. (NPC, 2011). Annual population growth rate in Nigeria remains at 3.2 %,(NPC, 2011) an indication of impending population explosion if measures are not considered (Wusu, 2012).

The attitudes of Nigerians towards childbearing have not significantly changed. Children are seen as a source of income, pride and insurance against old age, therefore, the larger the number of children a woman is able to procreate, the higher her social status within the society, also ensuring the continuity of the clan. (Davis and Blake 1956, Onoja 2012, Wusu 2012)

.Economists hold the view that high population growth impedes development as long as it does not ultimately match the provision of amenities and that less developed countries like Nigeria could only grow if population growth is held in check (Caldwell, 1992). Among developing countries where unemployment rates are high, the problem is closely related to high fertility (Onoja 2012).Many people still hold the view that the number of children to be borne by couples should be left to God. Traditional attitudes and practices encourage childbearing according to the capacity of a woman to reproduce (Olusanya 1989). Cost of childrearing and childbearing increases among educated women as long as it remains the pride to also educate their children (Becker, 1981; Schultz 1981).

The risk of dying among children under five years was rampant in Africa. The belief was held that when more children are born to a woman and some die, others would remain. This brought high fertility rates (Basu 2002).However, mortality among children has been decreasing as a result of quality of life and modern medicine. Mortality rate for children under five stands at 128 deaths per 1000 live births in Nigeria. (NPC, 2013).Education may lower fertility through improvements in child health and reduce rates of child mortality as women need to have fewer births to yield the same desired family size (Lam and Duryea, 1999; Schultz, 1994).

2.2 Fertility differentials by socio-demographic factors

2.2.1 Age at first birth

Fertility differentials among population sub-groups and changes in fertility over time can be traced to one or more of the proximate determinants of fertility. These are the variables that influence the exposure to the risk of conception and childbearing. These factors together determine the pace or frequency of reproduction, which in turn, according to Bongaarts affects the level of fertility (Bongaarts, 2003). The impact of education on fertility is not always

unidirectional or negative. There are other mechanisms which have traditionally kept natural fertility relatively low in many regions of the developing world. The most obvious of these are prolonged breastfeeding and postpartum abstinence and their effects on extending the period of postpartum non-susceptibility. Davis and Blake in 1956 brought out eleven proximate determinants of fertility. Bongaarts in 1978 collapsed the eleven proximate determinants to only four. These are proportion married, postpartum infecundabilty, induced abortion and contraceptives use. The main challenge on these determinants is that it mostly targeted on marriage. However, not all births are attributed to marriage. Many births even occur at adolescent age and others without unions. All these contribute and are associated with higher Total Fertility Rate (.Céline, 2009).

However, the average age at first birth is one of the main factors that typically lead to high completed fertility in a population (Céline, 2009). In a situation where a woman adds more years of education reduces the risk and probability of giving birth to more children. Children born to women less than 19 years have higher health risk and are prone to maternal mortality (', Céline, 2009) .Those who start early are exposed to the risk of pregnancy for a longer period for which some are unintended births. Age at first birth creates educational deficits for a woman, as most of them are left out in education (Céline, 2009).

2.2.2 Marriage

Marriage is an important multifaceted institution in-so-far as human reproduction is concerned. It has been observed by McDonald (1984) that a woman's nuptial behavior determines the period of reproductive life. He further stressed that marriage exposure to sexual union is not a sufficient inhibiting factor but may only be a necessary contributing factor to fertility promotion. According to Bankole, many births still occur within marriage in Nigeria that

promotes fertility (Bankole, 2008). Polygynous marriage is common in Nigeria which normally causes high fertility among women as they engage in competition over number of children to be born for the man (Onoja and Osayomore, 2012). Education tends to increase the age at first marriage, thereby decreasing the number of years that can be devoted to child bearing. According to Jejeebhoy, (1995), age at marriage is affected by education through decision-making autonomy, interaction with wider world, emotional autonomy and self- reliance (Jejeebhoy,1995:12).The most important factor linking education and fertility is the effect of delay in marriage (Dixon,1973).

Besides delaying marriage, female education has been observed to be associated with a number of women not marrying at all. Studies in Thailand showed 14.6 percent of women with high education not married (UN 1995:46). According to Basu (2002) most educated women tend to marry men who are also highly educated thereby understand the consequences of modernity. A study conducted by Osili and Long on educational policy in Nigeria and its impact on fertility showed that an additional year of schooling reduces the number of children born before age 25 by 0.26 and 0.36 before age 30 (Osili and Long,2007: 22-23).”Although the culture in certain parts of the country abhors teenage marriages, unfortunately however, there has been no statutory age at marriage in Nigeria” (Onoja, 2012:172). Those women who had their first marriage after 14 years were likely to have high fertility than those in their 30s (Onoja, 2012).

2.2.3 Place of residence

Place of residence becomes a key factor in fertility regulations. According to Wusu (2012) urban living has increased the cost of rearing children .In his study in Nigeria on the determinants of fertility, he found that fertility was 1.02 times higher among women living in the

rural areas compared to those living in the urban areas. Akpotu (2008) in his study in southern Nigeria also found diverse differences between fertility levels in urban and rural dwellers.

Characteristics associated with urban living styles initiate and promote the desire for smaller families and reduction in fertility as compared to rural areas. Iroli (1977) in his studies of some villages in Ife and Ikeja, Nigeria, concluded that fertility in the urban areas is lower than the rural areas. He further reported that average number of live births was consistently higher for women born outside city. City dwellers are better educated, are involved in economic activities, marry at late ages, have better provision of social services and are less religious than those in rural areas. The demand for children is consistent in rural areas as children are used to help in farming labor. There is also sex preference, that more males are preferred in rural areas (Adebimpe, 2011). Akpotu in his studies in southern Nigeria found that total fertility rate for urban woman stood at 4.3 while her rural counterpart stood at 4.8 (Alpotu 2008). Onoja and Osayomore (2012) also found wider disparities among rural and urban fertility rates. The same point was emphasized by Wusu (2012). In Africa, most white collar jobs are in urban areas thus educated and working population could largely be located in these centers. A highly educated person would live in the urban area and this would affect fertility (Akpotu, 2008).

2.2.4 Region of residence

Region of residence is a variable that affects education and fertility in Nigeria since the country has diverse ethnic and religious groups scattered geopolitically (Falola, 2001). In 1991, TFR of 8.05, 7.02, 6.54, and 5.96 were reported in Northwest, Northeast, Southeast and Southwest respectively (NPC 1991). According to Ogunlewe (1994), the pattern of childbearing in the north is different from the south. She observed that childbearing begins in the age 20s while it occurs in the 30s for the south (Ogunlewe, 1994). Dastu (1994) also found out that the

peak of childbearing in the North was within age group 20-24 and 25-29. Bankole (2008) also found wider disparity between the North and the South in fertility levels. He was of the view that fertility decline has actually set the pace in the southern regions.

2.2.5 Ethnicity

In all societies, one of the greatest determinants of fertility has been considered to be ethnicity.Tumashabe (1995) in his study stated that " the reasons for differentials in fertility performance of people of different ethnic group origin springs from the significance of differences in cultural beliefs, attitudes and norms of behavior .Societal beliefs with regard to the family, celibacy, divorce, remarriage and widowhood, family size, the origin of children and their destination as well as the locus of authority determines its fertility." In Nigeria, there are various ethnic groups but the largest groups include the Hausa, Igbo and Yoruba. Since Hausa's are the most dominant group in Muslim religion, their fertility rates are normally higher (Falola, 2001).

The heterogeneity of ethnic groups in Nigeria offers diverse cultural practices. The culture of Africa promotes high fertility. The opinion is that there are large tracts of land in Africa so rapid population growth should not be a problem at all that could impede development (Bongaarts, 2003). African man wishes to have large numbers of children to show his manhood as most ethnic groups practice patrilineal system of inheritance (Falola, 2001). Most often, the men dominate the control of fertility. Abortion is not accepted in Africa (Davis and Blake, 1956.) Polygynous marriage is common in Nigeria and the culture promotes high fertility as children are seen as pride in the clan (Onoja, 2012). In Igbo community, a man is hailed in his community when he has a greater number of children (Toyin Falola, 2001). Education is the only tool that can enlighten people to change some of these practices and bring fertility decline.

2.2.6 Occupation

Abadian (1996) in her study of 54 developing countries found that female autonomy has a negative impact on fertility as females could bargain on sex. Jejeebhoy (1995) also views education of the female as operating through autonomy. Education brings in prestige for a woman; her social status becomes higher whiles her economic status is also raised. She attains self-reliance in spite of not having many children. (Jejeebhoy 1995: P 12-13). Jeffery & Basu, (1999), emphasize that education gives female control over resources and their own lives. They could also decide for themselves in any matters relating to life and health. According to Wusu (2012), women who are working away from home have lower fertility in Nigeria. The World Bank report on labor participation in 2011 revealed that female participation contributed to 36 percent in 1990 and 39 percent in 2009; an improvement as educational levels of women improve in Nigeria.

When women take part in labor force, it increases the income of the household and in effect raises the GDP of the nation (Wusu, 2012). Knowles *et* a*l. (2002*) estimate that a one-percent increases in female education would increase GDP levels by 0.37 percent. Averagely, a professional woman has 1.7 children by age 37-45 whereas her service occupation counterpart has 2.35 children and non working woman has 2.54 children (Bing, 2008). Becker (1960) argues that fertility could be analyzed within an economic framework through a straight-forward application of the standard neoclassical model of consumer demand, in which parents choose both the number of children and the quality per child along with the consumption of regular market goods to maximize the household's utility. This analysis proves that rich people may have fewer children of high quality, while poor people will have many children of lower quality.

As Hotz et al (1997) argued, “Following Becker’s (1965) development of the household production, the relationship between fertility and female labor supply has become a standard feature of models of household behavior.” Based on economics literature on negative relationship between fertility and women’s employment, a rational forward-looking woman with high ability is more likely to expect less fertility size due to their higher potential wage and tighter time constraint if they choose to pursue higher level of education and work in a high-status occupation since children are highly intensive to mother’s time (Bing, 2008).

2.2.7 Wealth status

In his theory of wealth flow, Caldwell (1975) maintains that the essential link between education and declining fertility is through the reversal of wealth flow within the family. Where children do not receive formal education, the life time balance of the movement of wealth is from children to parents. Parents, thus benefit from having large numbers of children. Formal education reverses the direction of the movement so that parents expend more income on their children than they receive in turn. In a study conducted by Onoja and Osayomore (2012), household wealth was an influencing factor on the level of fertility. They found that poorer women were more likely to be at risk of high fertility than their counterparts who were rich.

2.2.8 Contraceptive use

Akpotu (2008) in his study in southern Nigeria found less than one percent of women aged 15-49 using modern methods of contraception in Nigeria. This was mainly due to pronatalist tendencies of Nigerian heterogeneous society .Female schooling may affect fertility through knowledge and more effective use of contraceptive methods (Rosenweig and Schultz, 1985; 1989) or by increasing female autonomy and bargaining power in fertility decisions

(Mason, 1986).Cleland and Jejeebhoy (1996: 100) argue that "the role of schooling becomes more apparent in terms of detailed knowledge: the number of methods, especially non-terminal methods, known; the correct use of a particular method; and from where a particular method can be acquired ." A study conducted in India showed that 95 percent of women with secondary education knew about the IUD whereas only 39 percent of the uneducated women had knowledge of this method of birth control (Basu, 2002).

Contraceptive prevalence is higher among women with higher levels of education while it is lower among those with low levels of education. In many developing countries, it has been observed that even women who are highly educated do not have adequate understanding of reproductive physiology- upon which the success rate of traditional and modern contraceptive methods depended. This means there is still a gap between knowledge and actual practice of contraception (UN, 1995). However, as the number of living children increases, the level of current use of efficient methods also increase. Aryee (1989) in his studies into contraceptive use in Ghana, Cote d'Ivoire, Nigeria, Kenya and Lesotho found that about sixty to ninety percent of use was rather on child spacing other than to limit fertility. In Nigeria, son preference is a common feature. A study conducted by Oyeka (1989) on the relationship between the number of living sons and contraceptive use among married female teachers in primary and secondary schools in Anambra state, Nigeria, found that within each category of living children, women with no living sons were least likely to have ever used modern contraception. Ross (1979) saw that women who have achieved their desired family size are more likely to be acceptors of family planning than women who have not achieved their desired family size. Onoja and Osayomore

(2012) reported that most of the women (98.4%) were married but only (13.4%) use contraceptives. This shows the level of acceptance in family planning methods in Nigeria.

2.2.9 Religion

Muslims are the most dominant religious group in the Northern part of Nigeria; their religion allows polygamy and abhors the use of contraception (Falola, 2001). Different religious affiliations affect fertility because of their diverse beliefs and practices. The Northern part of Nigeria reports of higher fertility than the Southern part (Wusu, 2012). The existence of Muslim fundamentalist sect 'boko haram' currently operating in the northern zones in the country may promote high fertility since they tend to promote "Shari". Their teachings abhor western education and anything concerning the western world which may also affect the use of contraception (Abimbola, 2010).

There is universal belief in the earth goddess known as Ala (by the Ibos) Ndem-Isoh (by the Ibibios) and Ade (Abuam) of Southern Nigeria, which is credited with femininity and holds responsibility for vegetal growth. They perform rituals for the harvest of new yam among those of the yam belt of Nigeria (Falola, 2001). Rituals are again performed for women who want to become pregnant, and also used to promote communal health, harmony and social equilibrium. Thus, traditional religion is highly accepted among the Southern folk and their practices promote high fertility. Since the colonial masters stayed around the coastal regions, they brought Christianity around the coast so most of the Christians in Nigeria are scattered in the southern regions (Falola, 2001).

Given the importance of education in influencing reproductive behavior and understanding of the intervening variables, the education and fertility relationship needs further empirical examination to know the effect of age at first birth on fertility situation in Nigeria.

2.3. CONCEPTUAL FRAMEWORK

The relationship between education and fertility is more complex in the sense that education does not affect fertility directly but it has to act through many other variables, commonly known as intervening variables. This complexity calls for closer observation, both on the education, differentials in fertility and the mechanisms through which education influences fertility behavior of women.

The level of fertility in any society falls below its maximum potential level through the direct operation of various factors. It is through these factors that education can influence the fertility of a woman. Davis and Blake (1956) first outlined a group of eleven proximate determinants of fertility and named them as “intermediate fertility variables”. These were;

1. Age of entry into sexual unions.
2. Permanent celibacy: proportion of women not entering sexual unions.
3. Amount of reproductive period spent after or between unions.
4. Voluntary abstinence.
5. Involuntary abstinence.(from impotence, illness, unavoidable but temporary separations)
6. Coital frequency (excluding periods of abstinence).
7. Fecundity or infecundity, as affected by involuntary causes.
8. Use or non-use of contraception.

a. By mechanical and chemical means.

b. By other means.

9. Fecundity or infecundity, as affected by voluntary causes (sterilization, subincision, medical treatment etc.)

10. Foetal mortality from involuntary causes.

11. Foetal mortality from voluntary causes.

In 1978, Bongaarts collapsed the eleven intermediate variables into eight namely;

1. Proportion married.

2. Contraception.

3. Induced abortion

4. Lactational infecundability

5. Frequency of intercourse.

6. Sterility.

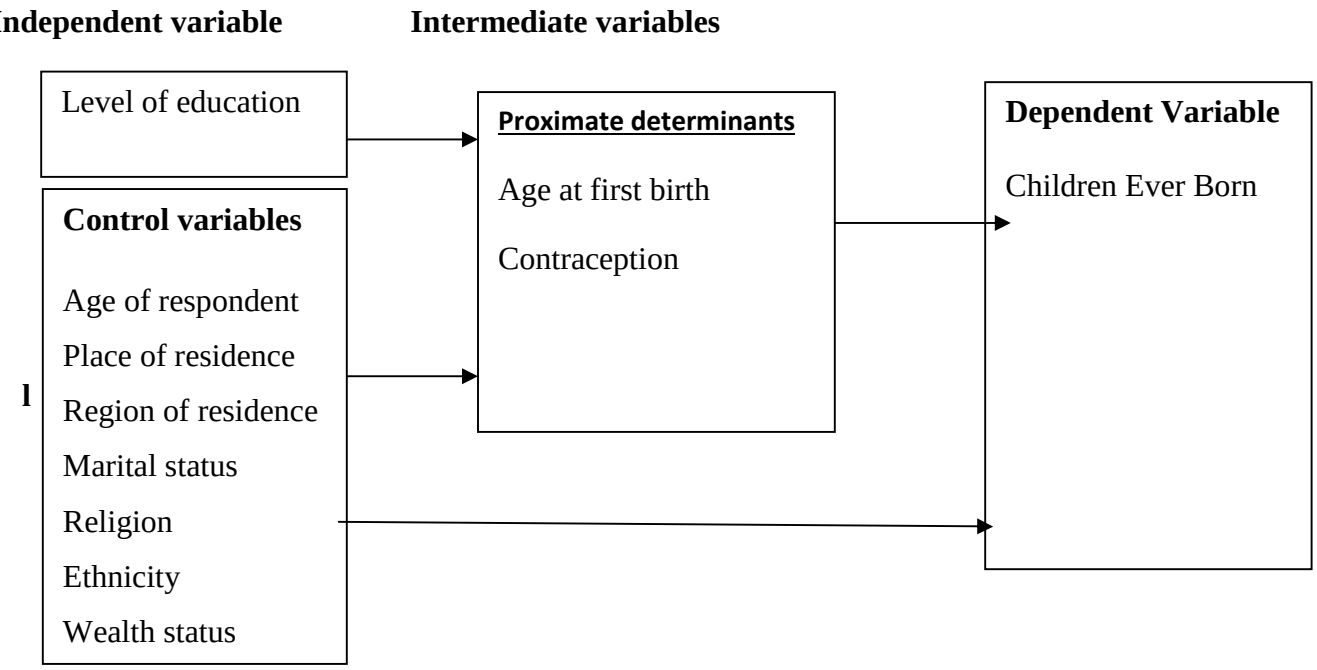
7. Spontaneous intrauterine mortality

8. Duration of the fertile period, and called them “Proximate Determinants”. According to Bongaarts, the biological and behavioral factors through which socioeconomic, cultural, and environmental variables affect fertility are called intermediate fertility variables. Later, he arranged them into three main categories: exposure factors, deliberate fertility control factors and natural marital control factors which summarized into proportion married, induced abortion, contraception and postpartum infecundability. Formal education through these factors can affect the fertility of a woman, the possibility of not marrying at all and knowledge in contraceptives use.

A modified version of Bongaarts model will be used to estimate the impact. The main independent variable to be considered in this study will be education with controlling variables

being the age of the respondent, place of residence, region of residence, marital status, religion, ethnicity, occupation and wealth quintile with fertility as the dependent variable, only contraception and age at first birth examined as the proximate determinants in this study. Age at first birth will be the variable to highlight in the study as data is inconsistent with abortion and postpartum fecundabilty.

Figure 2.1. Conceptual framework



Source: Adapted from Bongaarts, J. and Potter, R. G (1983)

2.4 HYPOTHESES

The assumption is a woman's level of education may directly or indirectly affect her fertility. This study will test the following hypotheses:

1. The higher a woman's level of education, the lower her fertility.

2. Age at first birth is inversely related to the number of children ever born to a woman.

CHAPTER THREE

METHODOLOGY

3.1. SOURCE OF DATA

This study uses the 2013 Demographic and Heath Survey data of Nigeria (NDHS). It is the fifth in the series of Demographic and Health Surveys conducted so far in Nigeria. The first was conducted in 1990, followed by 1999, then 2003 and 2008.The 2013 NDHS collected data representing the 36 states and the Federal Capital Territory (FCT).The primary objective of the 2013 NDHS was to provide up-to- date information on fertility levels, marriage, fertility preference, awareness and use of family planning methods, child feeding practices, nutritional status of women and children, adult and childhood mortality, awareness and attitudes regarding HIV/ AIDS and domestic violence. The information on these is intended to assist policymakers and programme managers in evaluating and designing programmes and strategies for improving health and family planning services in the country.

The sample for the 2013 NDHS was nationally representative and covered the entire population. The survey used a sampling frame from the list of enumeration areas (EAs) prepared by the Nigerian Population Council (NPC) for the 2006 Population Census of the Federal Republic of Nigeria. The sample design allowed for specific indicators to be calculated for each of the six zones, 36 states and the Federal Capital Territory, Abuja. The 2013 NDHS sample was selected using a stratified three-stage cluster design consisting of 904 clusters, 372 in urban areas and 532 in rural areas. A representative sample of 40,680 households was selected for the survey. Women aged 15-49 were interviewed at the household level using questionnaires. However, this study will focus on individual women rather than households.

A total of 38, 948 women between the ages 15-49 were interviewed with children ever born being 119,386. Fieldwork was conducted from February 2013 to June 2013.Data processing were entered using the CSPro Computer package, and entered twice to allow 100 percent verification and completed in August 2013.

3.2 METHOD OF ANALYSIS

The study used descriptive statistics and multiple linear regressions in the analysis of data, employing computer-based software package, the Statistical Package for Social Sciences (SPSS) version 20. The study ran frequency distributions and percentages by their demographic and socio-economic background characteristics for the univariate analysis. At the bivariate level, ANOVA was used to determine the associations between background characteristics and CEB. Finally, multiple linear regression models were fitted to determine the relationships between education and fertility (CEB) while controlling for other variables like ethnicity, religion, occupation and wealth quintile. Linear regression used two models. Model 1 contains the control variables with the independent variable. Model 2 contains two intervening variables with the control variables and the independent variable. This is to test the strength of association of the intervening variables. A test statistic of 95 percent confident level is applied in this study. The unit of analysis for the study is individual women of reproductive ages 15-49 years with a sample size of 38,948.

3.3 MEASUREMENT OF VARIABLES AND DEFINITION OF CONCEPTS

3.3.1 Level of education

Education: - This refers to the highest level of academic qualification attained by a respondent. Education was measured by responses to the question “What is the highest level of

education"? The level of education was classified into 'no education', primary, JHS/Middle and higher (secondary and above combined).

3.3.2 Children ever born

Fertility refers to the number of children ever born to a woman in her reproductive life (15-49 years). In this study children ever born- number of children born to respondents as counted variable.

3.3.3 Contraceptive use and age at first birth

Contraceptive use: The study looks at ever use and never use of contraception. Age at first birth is defined as birth recorded first in the life of a woman with or without a husband. Age at first birth was categorized into not had birth, less than 20 years, 20-29, 30-39 and 40-49.

3.3.4 Control variables

Age is measured categorically in this study. Women in their reproductive ages have been grouped into 15-19, 20-24……45-49. Place of residence was categorized into urban and rural. Region of residence was classified based on the Nigerian Geographical demarcations- North Central, North East, North West, South East, South South and South West.

Marital status- Marriage is defined as any union between a man and a woman irrespective of whether customary or legal ceremonies have been performed. Responses on currently married, living with a partner, single, separated or divorced and widowed are used to measure. Marital status was classified into. Never in union, Married, Living together, Divorced, Separated, and Widowed.

Religion: - the kind of religious affiliation or belief by a respondent. This has been recoded joining Catholics to other Christians. The religion of the participants was classified as Christian, Islam, Tradition and other (including Hinduism, no religion).

Ethnicity- Hausa, Igbo, Fulani, Yoruba and Other (including foreigners).

Wealth quintile was classified into Poorest, Poorer, Middle, Rich, and Richer. Occupation refers to the main form of work the respondent engages in prior to the period of the survey. The question “what kind of work do you mainly do”? The occupation of respondents was classified into - Not working, Professional/ Clerical, Sales/Service, Agriculture, Manual.

3.4 LIMITATIONS OF THE DATA

Limitations in this data include age heaping and questionnaires not administered correctly. Questions asked on the age of a woman may not be known by her especially the uneducated and sometimes are answered by proxy. They may have shifted their ages upwards while others shifted downwards hence they are likely to be inaccurate.

In most cases women in old age may possibly forget to include all the children they have given birth to. Children dead are consciously not mentioned due to the sad memory of the event and these can affect the rates calculated. Induced abortion is illegal unless it is done on medical grounds. Therefore it becomes difficult for people to tell whether they have experienced as such and that data on it is sometimes not dependable, as such, abortion is not included in this study with the postpartum. With education, secondary and higher are lumped together because there are negligible differences between them.

CHAPTER FOUR

STUDY AREA AND RESPONDENTS CHARACTERISTICS

4.1. PROFILE OF THE STUDY AREA

Nigeria is a Sub- Saharan and West African country sharing borders with Niger and Chad in the north, the Republic of Cameroun in the east and the Republic of Benin in the west. The country lies on the west coast of Africa and occupies approximately 923,768 square kilometers of land stretching from the Gulf of Guinea on the Atlantic coast in the south to the fringes of Sahara Desert in the north. It is the most populous country in Africa and the 14th largest in landmass (NPC 2011). There are many social groups with distinct cultural traits in Nigeria; about 374 identifiable ethnic groups with the Hausa, Yoruba and Igbo as the major groups.

The country is presently made up of 36 states and a Federal capital territory, grouped into six geopolitical zones. These are North Central, North East, North West, South West, South South and South West. The Federal capital is Abuja. Agriculture, Industry, Services and Oil are the main contributors to gross domestic product; contributing 39 percent, 19 percent, 20 percent and 15 percent respectively (Central Bank of Nigeria 2013).

The whole of the north is predominantly Hausa whereas the Yoruba and the Igbo's occupy the South Western and South Eastern parts of the country respectively. Apart from the three major ethnic groups, the other linguistic groups are in their own rights of significant socio-cultural importance in the evolution of modern Nigeria.

The spatial distribution of the population within the country is uneven. Extensive areas in the Chad Basin, the middle Niger valley, the grass plains and the Niger Delta, among others are sparsely populated. In contrast, there are large areas of densely populated rural districts which support more than 400 persons per square kilometer in parts of Akwa Ibom. Imo, Anambra and

Enugu States as well as around Kano, Katsina and Sokoto States (NPC, 2011). However, the average population density of the country in 2013 was 189 persons per square kilometer. The most densely populated states are Lagos, Anambra, Imo and Akwa Ibom. Except for Lagos, all states with high population densities are located in the South East of Nigeria. Kano State is the most densely populated State in the North.

The population of Nigeria is predominantly rural (Akpotu, 2008), approximately one-third of the population live in urban areas. The States within the largest proportion of urban population are Lagos, Oyo and Anambra. The least urbanized States with an urban population under15 percent include Sokoto, Kebbi, Akwa Ibom, Taraba and Jigawa (NPC, 2011).The rural nature of the country influences agriculture as the main occupation for most of the citizens. This also calls for the desire for larger families. Today, the economic strength of the country is derived largely from oil and gas reserves. The gross domestic product (GDP) stands at $262.6 billion in 2013 (World Bank, 2013).

Figure 4.1. A MAP SHOWING THE GEOPOLITICAL ZONES

Source: Nigerian Demographic and Health Survey, 2013.

4.2 BACKGROUND CHARACTERISTICS OF RESPONDENTS

4.2.1 Educational levels of respondents

Education is the main independent variable of this study and it is very important in determining the levels of fertility. The education –fertility relationship is a major determinant in fertility regulation in any given population.

The 2013 NDHS obtained the educational background of respondents. Respondents were asked whether they had some level of education, and if responses were positive, the highest level of education obtained. Respondents were categorized into No education, primary, JHS/Middle and higher levels. Those completed Secondary Education were added to the Tertiary level and categorized it as higher. The data in table 4.2 indicates that 35.3 percent of respondents had no education. This constitutes the majority amongst the categories which is an indication that one out of three women has no education in Nigeria. However, 27.9 percent of the women have attained higher education. There is minimal difference between those attained primary education, 18.2 percent and those attained JHS/Middle with 18.6 percent. In effect, 36.8 percent of respondents have achieved primary and JHS levels of education. We may conclude that 64.7 percent of respondents interviewed had attained some levels of education.

Table 4.1. Educational levels of respondents

LEVEL OF EDUCATION	FREQUENCY	PERCENTAGE
NO EDUCATION	13740	35.3
PRIMARY	7104	18.2
JHS /MIDDLE	7228	18.6
HIGHER	10876	27.9
TOTAL	38948	100.0

Source: Computed from NDHS, 2013 dataset.

4.2.2. Age of respondents

Age was computed in completed years. ie age as at last birth day. Age is one of the most fundamental demographic characteristics .Information on age of the respondent was obtained by asking both the age in completed years and date of birth. This was later grouped into five year age groups; 15-19, 20-24, 25-29, ---------- 45-49. Table 4.2 shows the distribution of respondents by five year age groups. The distribution shows that majority of the respondents, 55.6 percent were below 30 years; 20.3 percent of these were between 15-19 and 18.5 percent were found in 40-49 year groups. This age structure of women shows that the population is made up of youthful females. This has demographic implications on fertility.

Table 4.2 Percentage distribution of respondents by age group

AGE	PERCENTAGE	FREQUENCY
15-19	7905	20.3
20-24	6714	17.2
25-29	7037	18.1
30-34	5373	13.8
35-39	4701	12.1
40-44	3663	9.4
45-49	3555	9.1
TOTAL	38948	100.0

Source: Computed from NDHS, 2013 dataset

4.2.3 Place of Residence

Residential patterns can result in changes in fertility. Urban-rural residence reveals individual fertility variations. These changes often start in the urban areas. Table 4.3 indicates the dwelling patterns of urban and rural areas. The percentage of respondents in rural areas is higher than those in the urban areas, 39.9 in urban as against 60.1 in rural.

Table 4.3 Respondents place of residence

PLACE OF RESIDENCE	FREQUENCY	PERCENTAGE
URBAN	15545	39.9
RURAL	23403	60.1
TOTAL	38948	100.0

Source: Computed from NDHS, 2013 dataset.

4.2.4. Region of Residence

Fertility has been observed to vary from region to region depending on the socio-cultural, economic and geographical merits, amenities, agriculture, minerals, oil etc. Facilities such as Schools which consequently may lead to high levels of education and better health contribute in fashioning the fertility levels in a particular region.

In Nigeria, regions are therefore categorized into zones. Table 4.4 displays the zonal frequencies and their respective percentages of respondents interviewed in the 2013 NDHS. The distribution shows that North West had the higher representation of 24.8 percent followed by North east, 17.0 percent with South East having the least representation of 11.5 percent.

Table 4.4 Region of Residence of Respondents

REGION OF RESIDENCE	FREQUENCY	PERCENTAGE
NORTH CENTRAL	6251	16.0
NORTH EAST	6630	17.0
NORTH WEST	9673	24.8
SOUTH EAST	4462	11.5
SOUTH SOUTH	6058	15.6
SOUTH WEST	5874	15.1
TOTAL	38948	100.0

Source: Computed from NDHS, 2013 dataset.

4.2.5 Marital status of respondents

Marriage is very important in fertility analysis. Marriage is the recognized institution for the establishment and maintenance of family life. When women marry they are exposed to frequent sexual intercourse which results in a number of child births. This means that the possibility of raising fertility level is high. Respondents were classified into six groups; Never- in union, Married, Living together, Widowed, Divorced and Separated. Table 4.5 shows that 67.8 percent of respondents were married whiles 25.2 percent of the respondents were not married. As low as 1.1 percent of respondents were divorced and separated respectively. This concludes that marriage is effectively embraced in the country. With this high rate of marriage, fertility levels could also be high.

Table 4.5 Current Marital Status of Respondents

MARITAL STATUS	FREQUENCY	PERCENTAGE
NEVER MARRIED	9820	25.2
MARRIED	26403	67.8
LIVING TOGETHER	871	2.2
WIDOWED	993	2.5
DIVORCED	432	1.1
SEPARATED	429	1.1
TOTAL	38948	100.0

Source: Computed from NDHS, 2013 dataset.

4.2.6 Religious background of Respondents

Religion affects fertility as a result of different beliefs and practices. It is one of the institutions that determine the level of fertility in most parts of the World and Africa in particular. In Nigeria, there are two main religious groups which are Muslim and Christian. Traditional religion is prominent but the percentage of respondents practicing is quite negligible. Table 4.6 shows the type of religion affiliated to respondents. Muslims and Christians dominate with 47.7 percent and 51 percent respectively. Only 0.9 percent represented traditional religion with a negligible percentage of 0.4 practicing other.

Table 4.6 Religious background of Respondents

TYPE OF RELIGION	FREQUENCY	PERCENTAGE
CHRISTIAN	19838	51.0
MOSLEM	18578	47.7
TRADITIONAL	352	0.9
OTHER	180	0.4
TOTAL	38948	100.0

Source: Computed from NDHS, 2013 dataset.

4.2.7 Ethnic background of Respondents

Fertility regulation of people originates from their ethnic backgrounds. There are many ethnic groups in Nigeria which are uniquely divergent in their cultural performances. However, this study has categorized them into four main groups with the fifth as 'Other'. Table 4.7 shows that Hausa, Yoruba, Igbo and Fulani are the main groups. Hausa is the largest ethnic group in Nigeria constituting 24.1 percent of the sampled population. The second largest group is the Yoruba which is followed closely by the Igbo constitutes 14.4 and 14.0 percent respectively. The Fulani's are among the minor ethnic groups but are larger in numbers when minorities are considered with 6.2 percent representing in this study. The other ethnic groups numbering about 394 constitute 41.3 percent when put together in the survey. This variety of ethnic groups influences fertility differentials in Nigeria.

Table 4.7 Ethnic background of Respondents

ETHNICITY	FREQUENCY	PERCENTAGE
HAUSA	9386	24.1
YORUBA	5606	14.4
IGBO	5448	14.0
FULANI	2425	6.2
OTHER	16083	41.3
TOTAL	38948	100

Source: Computed from NDHS, 2013 dataset.

4.2.8 Wealth Status of Respondents

The wealth of an individual normally influences the level of her fertility. This indicates inequalities between parents and income and expenditure outcomes in child rearing. It is noted that those in the lower income groups have more children than those in higher income groups. Table 4.8 shows the groups that have been categorized into five in the survey. The poorest constitute 17.0 percent while the middle group constitutes 20.5 percent. The richest among the categories constitute 21.5 percent. However, those categorized as 'rich' have the higher percentage of 21.7 among the groups.

Table 4.8 Wealth Status of Respondents

WEALTH STATUS	FREQUENCY	PERCENTAGE
POOREST	6602	17.0
POORER	7515	19.3
MIDDLE	8001	20.5
RICHER	8450	21.7
RICHEST	8350	21.5
TOTAL	38948	100.0

Source: Computed from NDHS, 2013 dataset.

4.2.9 Occupational status of respondents

The status of occupation influences fertility levels. Working away from home and time constraints reduces fertility of a woman. The 2013 NDHS gathered information on occupational status of respondents. Responses were categorized into ten different groups which have been recoded into five. These are not working, Professional/ Clerical/Managerial, Sales /Services, Agriculture and Manual.

As illustrated in table 4.9, 37.0 percent of the respondents were not working at the time of the interviews. Likewise, 36.9 percent of the respondents were engaging in sales and services. Respondents in Professional/Clerical/Managerial sector were minimal, only 5.6 percent with 9.5 percent and 11.0 percent in manual and agricultural areas respectively.

Table 4.9 Occupational Status of Respondents

OCCUPATIONAL STATUS	FREQUENCY	PERCENTAGE
NOT WORKING	**14424**	**37.0**
PROF/CLERICAL/MANAG.	**2162**	**5.6**
SALES/SERVICES	**14389**	**36.9**
AGRICULTURE	**4279**	**11.0**
MANUAL	**3694**	**9.5**
TOTAL	**38948**	**100.0**

Source: Computed from NDHS, 2013 dataset.

4.2.10 Contraceptive use by respondents

The table shows that 75.8 percent of the respondents have never used any method of contraception at the period of the survey. Only 24.2 percent of the respondents used contraception. This shows the level of acceptance of contraceptive use among women in Nigeria.

Table 4.10. Contraceptive use by respondents

USER TYPE	FREQUENCY	PERCENTAGE
NEVER USED	29528	75.8
EVER USED	9420	24.2
TOTAL	38948	100.0

Source: Computed from NDHS, 2013 dataset.

4.2.11 Distribution of age at first birth of respondents

The table shows that respondents less than 20 years recorded the highest percentage of 41.5 as compared to 26.8 percent for age group 20-29.The lowest was recorded in the age group 40-49 with a negligible percentage of 0.1.Those in 20-29 also recorded 26.8 percent. The distribution shows the level of fertility connected to first birth.

Table 4.11. Age at first birth of respondents

AGE	FREQUENCY	PERCENTAGE
LESS THAN 20	16417	41.6
20-29	10456	26.8
30-39	762	2.0
40-49	16	0.1
NO BIRTH	11497	29.5
TOTAL	38948	100.0

Source: computed from NDHS, 2013 dataset

CHAPTER FIVE

5.1. Introduction

This chapter presents the results of bivariate analysis using analysis of variance (ANOVA) and multiple linear regression analysis that describe the relationships between the main dependent variable and the background demographic and socio- economic characteristics. The significance level is depicted by a 0.05 level in the regression analysis whiles the F-values show the intensity of levels of association between variables in the ANOVA.

5.2. Mean number of children ever born by socio-demographic characteristics

This aspect of the analysis sought to determine the level of associations between the dependent variable; children ever born and the independent and control variables. There is a statistically significant association between the background socio-economic and demographic characteristics of women aged 15-49 and children ever born.

5.2.1. Education and children ever born

Education is highly significant predictor of children ever born according to the data. The result shows that the lower the educational level, the higher the number of children. Those with no education had 4.42 as the mean with primary level recording 3.93. JHS/ Middle recorded 1.53 whilst higher education recorded 1.80.The significant difference may be attributed to the merger of Secondary education and Higher education. However, for comparism purposes, it is clear that those with no education as well as primary education had higher number of children than those with JHS/ Middle education.

Table 5.2.1. Mean number of Children Ever Born by education

Demographic characteristics	Mean	F-Value	Significance
Education:		2873.814	0.000
No education	4.42		
Primary	3.93		
JHS /Middle	1.53		
Higher	1.80		

Source: Computed from NDHS, 2013 dataset. P<0.05

5.2.2. Age and children ever born

Age is an important factor in fertility issues. It is significant predictor of children ever born. As age rises, the number of children ever born increases. Table 6.1 shows that mean number of children ever born increased from 0.20 at age group 15-19 to 1.18 at age group 20-24. This subsequently, increased to 6.70 by age group 45-49.

Table 5.2.2. Mean number of Children Ever Born by age of respondent

Demographic characteristics	Mean	F-Value	Significance
Age:		7800.155	0.000
15-19	0.20		
20-24	1.18		
25-29	2.58		
30-34	3.98		
35-39	5.25		
40-44	5.96		
45-49	6.70		

Source: Computed from NDHS, 2013 dataset. P<0.05

5.2.3 Place of residence and children ever born

Place of residence is also significant predictor of children ever born. Mean number of children ever born was 2.50 for urban whiles rural residence recorded 3.44 as mean number of children ever born. Respondents in rural areas thus have higher number of children than those in the urban areas.

Table 5.2.3. Mean number of Children Ever Born by place of residence

Place of Residence:		420.868	0.000
Urban	2.50		
Rural	3.44		

Source: Computed from NDHS, 2013 dataset. P<0.05

5.2.4 Region of residence and children ever born

Furthermore, region of residence is another factor that influences fertility. Region of residence is significant predictor of children ever born. Since there are cultural diversities and different levels of educational background in regions, mean number of children ever born showed disparities. North East and North West have higher mean of 3.65 and 4.01 respectively. However, North Central and other Southern regions recorded close means ranging from 2.42 to 2.58. Fertility in the Southern regions is therefore lower according to the table.

Table 5.2.4. Mean number of Children Ever Born by region of residence

Region of Residence:		421.195	0.000
North Central	2.58		
North East	3.65		
North West	4.01		
South East	2.51		
South South	2.45		
South West	2.42		

Source: Computed from NDHS, 2013 dataset. P<0.05

5.2.5. Marital status and children ever born

Marital status is yet another significant predictor of children ever born. The data reveals clear disparity between those married and those never in union. Married category recorded 4.12 as against 0.10 mean numbers of children ever born. Widowed category recorded the highest mean of 4.95.

Table 5.2.5. Mean number of Children Ever Born by marital status

Marital Status:		3904.010	0.000
Never in union	0.10		
Married	4.12		
Living together	2.58		
Widowed	4.95		
Divorced	2.77		
Separated	3.13		

Source: Computed from NDHS, 2013 dataset. P<0.05

5.2.6. Religion and children ever born

Religion plays important role in fertility regulations and is a significant predictor of children ever born. Certain beliefs and practices cause prohibitions in abortion and contraceptive use which influence fertility. Christians had the lowest mean number of children ever born of 2.45 whiles Muslims and Traditionalists recorded 3.69 and 4.54 respectively. Traditional believers thus have higher mean number of children ever born.

Table 5.2.6. Mean number of Children Ever Born by religion

Religion:		588.175	0.000
Christians	2.45		
Muslim	3.69		
Traditional	4.54		
Other	3.12		

Source: Computed from NDHS, 2013 dataset. P<0.05

5.2.7. Ethnicity and children ever born

Ethnicity is also a significant predictor of children ever born. There are a number of ethnic groups in the country but only four were considered in this analysis as the main ethnic groups with all others categorized as 'Other'. Hausa recorded the highest mean number of children ever born of 4.07 which is followed by Fulani at 3.87.The Igbo recorded the lowest mean of 2.41 with the 'other' recording 2.83.

Table 5.2.7. Mean number of Children Ever Born by ethnicity

Hausa	4.07		
Igbo	2.41		
Fulani	3.87		
Yoruba	2.34		
Other	2.83		

Source: Computed from NDHS, 2013 dataset. P<0.05.

5.2.8. Wealth and children ever born

Wealth is highly significant in the data. Mean number of children recorded in each category had a sequential ordering from the poorest to the richest. The poorest recorded 4.33 as mean number of children ever born, followed by the poorer with 3.64 .The richer and the richest recorded 2.62 and 1.99 respectively. This shows that poor people have more children than the rich.

Table 5.2.8. Mean number of Children Ever Born by wealth status

Wealth status:		712.862	0.000
Poorest	4.33		
Poorer	3.64		
Middle	3.07		
Richer	2.62		
Richest	1.99		

Source: Computed from NDHS, 2013 dataset. P<0.05

5.2.9. Occupation and children ever born

Occupation is also significant predictor of fertility. According to the data, those in Professional/Clerical/Managerial category recorded 2.35 as against 4.32 in the agricultural category. The table further indicates that those in Sales and Services have higher number of mean children ever born than those in Professional category. However, those not working recorded the least mean number of children ever born of 1.83.

Table 5.2.9. Mean number of Children Ever Born by occupational status

Occupation:		1245.481	0.000
Not working	1.83		
Prof/ Clerical/ Managerial	2.35		
Sales/services	3.92		
Agriculture	4.32		
Manual	3.44		

Source: Computed from NDHS, 2013 dataset. P<0.05

5.2.10 Age at first birth and children ever born

Age at first birth is also highly significant predictor of children ever born. The data shows that most of the women had their first birth before age 20. They had the mean of 4.88. The rate descended as age increases. Hence, 20-29 recorded 3.67 with 30-39 recording 2.46. Those in the age category 40-49 recorded the lowest mean of 1.38. The data shows that the higher the age at first birth the lower the woman's fertility.

Table 5.2.10.. Mean number of Children Ever Born by age at first birth.

Age at first birth:		8390.971	0.000
Not had birth	0.000		
Less than 20 years	4.88		
20-29	3.67		
30-39	2.46		
40-49	1.38		

Source: Computed from NDHS, 2013 dataset. P<0.05

5.2.11 Contraceptive use and children ever born

The bivariate analysis shows that contraceptive use is not significant predictor of children ever born in Nigeria. The data shows that those who have ever used contraceptives have 3.07 as the mean number of children compared to 3.06 for those never used contraception.

Table 5.2.11. Mean number of Children Ever Born by contraceptive use.

Contraception:		0.075	0.0784
Never used	3.06		
Ever used	3.07		

Source: Computed from NDHS, 2013 dataset. P<0.05

5.3 Relationship between socio-demographic variables and children ever born.

Regression analyses establish relationship between the independent variable as well as the control variables, the intermediate variables and the dependent variable. This study used two different models to illustrate the relationship between the variables. The first model contains the socio-economic variables against the dependent variable whiles the second model looks at the relationship between the same variables in addition to the intermediate variables. The multiple regressions were performed with the following reference categories shown in brackets. These are age (15-19),place of residence (Urban), region of residence (North Central), marital status (Not in union),religion (Muslim),ethnicity (Hausa), wealth status (Poorest), occupation(Not working), education(No education), age at first birth (less than 20 years) and contraception (No method).

Education has a highly statistical significant effect on children ever born. In model 1, the table shows that a woman with primary education has less than 0.009 children than a woman with no education. Also a woman with JHS/Middle education has 0.42 children less than one

with no education. The same trend applies to a woman with higher education having 0.039 children less than a woman with no education. In model 2, the data shows a 0.008, 0.05 and 0.04 children less than a woman with no education respectively for Primary, JHS/Middle and higher education. This proves that the higher the educational level of a woman the lower her fertility.

Age is a significant predictor and indicates a major impact on children ever born. The results indicate a rise in age corresponds to an increase in fertility. The results show a 0.8 increase in fertility in age group 20-24 than at age group 15-19.Likewise, a woman aged 40-49 has 0.5 more number of children than those in age group 15-19. Model 2 displays the same trend. Both models confirm that the higher the age of a woman the higher the number of children ever born

Region of residence showed statistically significant association with children ever born in model 1.In model 2, North East and North West recorded 0.03 and 0.01 more compared to North Central. The other southern regions proved different. The results show higher fertility in the north than in the southern regions. This is consistent with the findings from Bankole, (2008) which is mainly due to their religious affiliations.

There is statistically a significant association between marital status and children ever born. The two models proved significant. The results show that married women have more children than the one not in union.

The results indicated that religion is significant in fertility regulations. According to the data, Christians have 0.03 children less than Muslims in both models. Traditional religion recorded 0.004 and 0.007 respectively in both models above Islam.

Ethnicity also has significant impact on children ever born. Both models showed that the Fulani's have 0.2 children less than the Hausas. The results show that Hausas have higher fertility than all the ethnic groups.

Wealth status is a statistically significant predictor of children ever born. Both models show that the higher the status of wealth of a woman, the lower her fertility. Model 1 showed 0.8 children above the poorest category while model 2 showed 0.6 children above the poorest category.

Occupation is a significant predictor of children ever born. Both models recorded 0.2 children less in the professional category than the non-working category. This shows that as women engage in Professional jobs, their fertility is regulated.

Contraception is not statistically significant in the model. This is shown in model 2 with age at first birth. The results show that those who have ever used contraception have 0.001 points above non users of contraception. There is also a statistically significant association between age at first birth and children ever born. The results indicated that women less than 20 years have 0.2 children higher than women in age group 20-29. Likewise, women in age group 30-39 have 0.159 children less than the reference category. When compared to those in their forties, they have 0.035 children less number of children. This shows that most of the women give birth early before attaining age 20.This may increase their fertility level as they have more years of exposure to child birth.

When all the independent variables were included in the analysis, it explained 65 percent of the variability of children ever born in model 1.This proves that these variables have strong associations with children ever born.

However, in model 2, the independent variables explained 74 percent of the variations in children ever born. This implies that 26 percent of the variability in children ever born may be explained by other variables not included in this model. This means that when age at first birth and contraceptive use were included in the model, the percentage of variability between the controlled variables and children ever born went higher as shown by the R-square. Therefore, age at first birth and contraceptive use have higher influence on fertility. The first birth signals the actual beginning of reproductive life. The NDHS dataset revealed higher birth performances from age 12-19.Therefore, looking at the model, it is obvious that women in the other categories had lower numbers of children ever born than those in less than age 20 category. A closer look at the pattern discloses a rather steady increase of age at first birth from the youngest to the older cohorts. The youngest women who never went to school and school dropouts start childbearing earlier than their counterparts who remained in school (Bankole, 2008, Akpotu, 2008). Similar patterns have been observed in Kenya (,Céline 2009). However, the problem of causal linkage still remains unresolved. It may be that those women who attained Secondary-level education and above are those who successfully avoided premarital births at early ages while those who fell victims to it were compelled to abandon schooling .

Again, the model observes that the effect of contraceptives use has been insignificant. Though contraceptive use has increased among educated women (Bankole, 2002), this study points out that not all educated women use contraceptives. Negligible percentage used contraceptives in the study. This result is consistent with the findings of Onoja (2012) on the use

of contraceptives by married women. It also confirms the findings of Akpotu (2008). However, the possibility to avoid first birth at early age prompts some young women to use contraceptives while others also use in order to remain in school.

Model 1

Table 5.3. Multiple linear regressions of children ever born by demographic characteristics

Variables	**(Beta)**	**Standard error**	**Significance**
Education:			
No education (R.C)			
Primary	0.-009	0.031	0.027
JHS/Middle	0.-042	0.036	0.000
Higher	0.-039	0.043	0.000
Age:			
15-19 (R.C)			
20-24	0.082	0.032	0.000
25-29	0.237	0.035	0.000
30-34	0.361	0.038	0.000
35-39	0.467	0.040	0.000
40-49	0.485	0.043	0.000
Place of residence:			
Urban (R.C)			
Rural	0.001	0.024	0.817
Region of residence:			
North Central (R.C)			
North East	0.048	0.035	0.000
North West	0.042	0.042	0.000
South East	0.020	0.063	0.003
South South	0.023	0.035	0.000
South West	0.003	0.042	0.573
Marital status:			
Never in union (R.C)			
Married	0.148	0.030	0.000
Living with partner	0.032	0.066	0.000
Widowed	0.017	0.065	0.000
Divorced	0.-009	0.090	0.006
Separated	0.-002	0.090	0.492
Religion:			
Christians	0.-032	0.030	0.000
Islam (R.C)			
Traditional	0.004	0.099	0.148

Other	0.001	0.134	0.838
Ethnicity:			
Hausa (R.C)			
Igbo	0.-061	0.066	0.000
Fulani	0.-021	0.045	0.000
Yoruba	0.-064	0.054	0.000
Other	0.-064	0.040	0.000
Wealth quintile:			
Poorest (R.C)			
Poorer	0.-019	0.032	0.000
Middle	0.-024	0.035	0.000
Richer	0.-045	0.038	0.000
Richest	0.-085	0.044	0.000
Occupation:			
Not working (R.C)			
Prof./Clerical/Managerial	0.-027	0.047	0.000
Sales/Services	0.019	0.024	0.000
Agriculture	0.030	0.036	0.000
Manual	0.-003	0.034	0.410

Source: Computed from NDHS, 2013 dataset.NB: R-Square= 0.655 P<0.05. Durbin Watson=1.

Model 2

Table 5.4.Multiple linear regressions of children ever born by demographic characteristics.

Variable	Beta	Standard error	Significance
Education:			
No education (R.C)			
Primary	0.-008	0.027	0.022
JHS/Middle	0.-052	0.038	0.000
Higher	0.-048	0.033	0.000
Age:			
15-19 (R.C)			
20-24	0.011	0.029	0.002
25-29	0.157	0.032	0.000
30-34	0.294	0.035	0.000
35-39	0.412	0.037	0.000
40-49	0.437	0.039	0.000
45-49	0.494	0.040	0.000
Place of residence:			
Urban (R.C)			
Rural	0.-004	0.021	0.259
Region of residence:			
North Central (R.C)			
North East	0.030	0.031	0.000
North West	0.017	0.037	0.001
South East	0.011	0.054	0.060
South South	0.000	0.031	0.908
South West	0.-003	0.037	0.514
Marital status:			
Never in union (R.C)			
Married	0.-065	0.033	0.000
Living with partner	0.-028	0.060	0.000
Widowed	0.-060	0.060	0.000
Divorced	0.-052	0.080	0.000
Separated	0.-050	0.081	0.000
Religion:			
Christians	0-031	0.026	0.000
Islam (R.C)			
Traditional	0.007	0.086	0.000
Other	0.-001	0.116	0.590
Ethnicity			
Hausa (R.C)			
Igbo	0.-041	0.057	0.000
Fulani	0.-021	0.039	0.000
Yoruba	0.-059	0.047	0.000
Other	0.-060	0.035	0.000

Wealth quintile:			
Poorest (R.C)			
Poorer	0.-015	0.027	0.000
Middle	0.-024	0.030	0.000
Richer	0.-039	0.033	0.000
Richest	0.-062	0.038	0.000
Occupation:			
Not working (R.C)			
Prof./Clerical/Managerial	0.-028	0.041	0.000
Sales/Services	0.-004	0.021	0.269
Agriculture	0.015	0.031	0.000
Manual	0.-007	0.029	0.018
Age at first birth:			
Less than 20 years (R.C)			
20-29	0.-201	0.021	0.000
30-39	0.-159	0.059	0.000
40-49	0.-035	0.387	0.000
Contraception:			
Never used (R.C)			
Ever used	0.001	0.036	0.784

Source: Computed from NDHS, 2013 dataset. NB.R-square=0.740. P<0.05 Durbin Watson=1.915

CHAPTER SIX

SUMMARY, RECOMMENDATIONS, CONCLUSION

6.1 CONCLUSION

The results are robust in both bivariate and multivariate analysis for almost all the variables. The results show that Educational levels are higher in the southern regions as the colonialists built more schools in order to propagate the gospel through education. This brings to light the variations in the educational levels and subsequent differentials in levels of fertility.

Age is a statistically significant predictor of children ever born. As the age of a woman rises, the number of children ever born also goes up. There are disparities in both place of residence and region of residence. Results proved that rural women have higher number of children ever born than their counterparts in the urban areas. Religion and Region of residence are statistically coherent. The Northern Regions have higher number of Muslims than Regions in the south. As such children ever born are higher in the Northern Regions than in the Southern Regions.

Marital status is statistically significant in the study. Married women have higher number of children ever born than those never in union. The widowed category explains the fact that they may have already attained the peak of childbearing in marriage before losing their husbands. There are a number of ethnic groups in the country. Hausa, Igbo, Yoruba and the Fulani proved to be the largest ethnic groups. The study showed that ethnicity significantly predicts fertility.

Wealth is a significant predictor of fertility in this study. This is also linked to the occupational status of the woman. Those engaged in Professional work spend much time on work and their financial standings are also good (Onoja, 2012).Their financial standing make them autonomous such that decisions about fertility are also compromised (Basu, 2010).

Age at first birth is a statistically significant predictor of children ever born in Nigeria. The results showed higher percentage in less than age 20 category compared to other categories. This culminates in higher fertility and lower levels of education among these women. Majority of these women do not continue their education to the higher level because of early pregnancy (Akpotu, 2008).As women give birth early, there is the possibility of having greater number of children before menopause.

Contraceptive use is not widespread among females in Nigeria. The univariate analysis showed that only 24.2 percent of the respondents have ever used contraceptives as compared to 75.8 percent who have never used contraception. This has implications on high fertility.

6.2 RESEARCH QUESTIONS

Is the relationship between female education and fertility still inverse in Nigeria?

The relationship between female education and fertility as has been established by researchers already: Cochrane (1979), Jejeedboy (1995) Terry et al, (2007) Akpotu (2008), Onoja, (2012) is still inverse in Nigeria. This study revealed that women who have higher educational levels have lower fertility than those with no education. Again, progress in the educational ladder reduces fertility of a woman.

How does age at first birth influence fertility?

Age at first birth according to this study is significant predictor of fertility. First birth before age 20 recorded the highest percentage in the univariate analysis. This means that these women have several years ahead of them for procreation. In effect, completed fertility of children ever born will be high for these women on attaining the peak of reproduction. It therefore, suggests that when more women fall into this group, the result is higher fertility.

6.3 Hypotheses of the study

The higher the educational level of a woman, the lower her fertility.

This hypothesis is confirmed in the study. The results showed that those in no education category had higher number of children ever born than those with Primary, as Primary level also has higher number of children ever born than those with JHS/Middle level, and then the higher level.

Age at first birth is inversely related to the number of children ever born to a woman.

This hypothesis also confirmed in this study. The results indicated that those who had their first birth earlier had higher number of children ever born than those who had their first birth later.

6.4 Discussion

This study examined the association between Female education and fertility, highlighting age at first birth as the main intervening variable with contraceptive use in Nigeria. It also has the intention to assess the contribution of the controlled independent variables and their level of association to fertility. It was found that all the selected variables were strongly associated with

fertility. Level of education of the female was found to be significantly associated with fertility. It was revealed that women with higher levels of education were more likely to have fewer children compared to women with lower levels of education and no education. A study conducted by Onoja (2012) in Nigeria found 50 percent increase in fertility from women with no education and only primary education. Alene and Worku (2008) also found that women with higher education showed nearly a two-third reduction in fertility compared to women with no education in Ethiopia. Their engagement in professional occupation enhances their prestige and further reduces their fertility level as they spend much time outside the home and take conscious care for their children (Wusu, 2012).

Age at first birth is a statistically predictor of children ever born. This is consistent with a study by Celine (2009) in Kenya where he found that adding one year of education decreases by at least 10 percentage points the probability of teenage fertility. Bankole (2008) also reported that postponement of birth by younger women has accounted for the recent decline in fertility in Nigeria.

,

Status of wealth was statistically significant in this study. The results showed a one-third reduction of fertility of a wealthy woman as compared to the poorest woman. Basu, (2010) in his studies on education and fertility found that wealth status of a woman influences her ability to become autonomous. Studies done by Jejeeddbhoy (1995) and Caldwell (2002) also confirm this result as well as Onoja (2012).

Religious affiliation and ethnicity cannot be left out in fertility regulations. The study found that Muslims have higher number of children ever born than the other religions. Also,

Hausa women have higher number of children than all the other ethnic groups. The results are coterminous with the study by Bankole (2008) and Onoja (2012).Bankole saw that fertility decline is yet to usher among the Hausas.It is also consistent with the study by Falola (2001) which pointed out that traditional religion clamor for higher number of children.

Furthermore, region of residence is influential to fertility in this study. It was found that regions from the Northern sector have higher fertility than in the south. Bankole (2002) noted that conditions fostering fertility decline in the North are virtually absent. This situation may due to Muslim teachings, such as 'sharia' and also the teachings by Muslim fundamentalist sect"boko haram" which attribute anything from the west as forbidden (Abimbola, 2010).

Contraceptive use is not encouraging in this study; however, it shows statistical significance in the model. Only 24.2 percent of the respondents have ever used contraception. This finding is consistent with studies by Akpotu (2008) and Onoja, (2012). Akpotu found that whiles educational levels of the women are low; they are also not willing to embrace contraceptive use. Onoja in his studies found only 13 percent of married women using modern methods of contraception. To enhance further decline in fertility, education of the female should be improved in order to manage age at first birth as well as the improvement in contraceptive use.

6.5 SUMMARY

Education of the female is a statistically predictor of fertility in Nigeria. There are other control factors that also predict fertility. Among the factors are occupational status, wealth status, religion, ethnicity, region of residence and age at first birth. All these socio-economic and demographic factors are significant predictors of fertility. The study revealed that all these

factors influence fertility in Nigeria. The hypothesis drawn in the study confirmed that age at first birth is inversely related to the number of children ever born whiles educational levels too have inverse relationship with children ever born. The results points out that most of the women give birth before age 20 and it has the consequence of increased fertility. Contraceptive use is low among Nigerian women. Further decline in fertility needs more acceptances in contraceptive use.

6.6 RECOMMENDATIONS

Education of the female is critical and must cut across all the regions. There must be a policy in addition to the existing ones to intensify and promote female education to the higher level. Nigeria has a policy on education since 1976 that enhanced girl-child education. Other things such as employment after school and scholarships must be awarded to female students to encourage higher enrollment. Women must be supported to become self reliant and economically strong in order to achieve autonomy in their decisions about fertility.

According to the study, contraceptives use is not directly related to education and that policy makers should look at other possible sources that impede the use of contraception. There must be strong civic education about the use of contraceptives especially in the Northern Regions of the country. Men should also be encouraged to become part of the decision to curtail more births in the country.

REFERENCES

Abadian, S. (1996). "Women's Autonomy and its impact on Fertility". *World Development.* Vol.24, No 2:1793-1809.

Abimbola,A, (2010).The Boko Haram Uprising and Islamic Revivalism in Nigeria. *In Africa spectrum,* 45 (2) 95-108.

Adebimpe,W.O. (2011).Comparative Study of Socio-demographic determinants and fertility pattern among women in rural and urban communities in South Western Nigeria. *Continental Journal of Medical Research,* Vol, 5 (1): 32-40.

Adedoyin S, David B, Joycelyn F, Salal H, Andrew M, Olawre W,and Olaningaso, (2010).Prospects for Economic Growth in Nigeria:A demographic perspective. *Journal of Economics,* Harvard School of Public Health,Boston.

Alene,G.D.,and Worku,A.(2008). Differentials of fertility in North and South Gondar zones,Northwest Ethiopia:*A comparative cross-sectional study. BMC Public Health* (2008),8"397 doi:10.1186/1471-2458-8-397

Akpotu, E. (2008). Education as Correlate of Fertility Rate among Families in Southern Nigeria.*Deparment of Educational Administration and Policy Studies*, Delta State. University,Abraka, Nigeria

Aryee, A.F.(1989). "Socio-cultural Policies and Programs for Efficient Family Planning in Africa." *In development in family planning policies and programs in Africa*, RIPS, Legon.

Bankole,A., Bamikale J., Feyisetan. (2008). Fertility Transition in Nigeria: Trends and Prospect. *The David and Lucile Packard Foundation*, Los Altos, California. 506-528.

Bankole,A.(1995). "Desired Fertility and Fertility Behavior among the Yoruba of Nigeria: A Study of Couple Preferences and Subsequent Fertility". *Population Studies, Vol*. 95, No.2.

Basu,A. M, (1999). Women's Education and Fertility in South Asia: Do Men Really Matter? *Critical Perspectives on Schooling and Fertility in Developing World. National Academy Press,* Washington DC. 138-176

Basu,A. M,(2002).Why does education lead to lower fertility. A critical review of some of the possibilities. Elsevier science Ltd. *World development*, Vol. 30, No.10 pp.1779-1790

Becker, G.S. (1960). "An Economic Analysis of Fertility". *In National Bureau Committee for Economic Research. Demographic and Economic Change in Developed Countries, a conference of the Universities, Princeton, N.J. Princeton University Press.*

Becker, G.S. (1981). *Treatise on the Family*. Harvard University Press, Cambridge.

Bledsoe, Caroline H, Casterlin, John B, Johnson K, Jenifer A, Haaga, Jonh G. (1999). *Critical Perspective on Schooling and Fertility in the Developing World*. National Academy Press, Washington D.C

Bongaarts, J. (2008). "Fertility Transitions in Developing Countries: Progress or Stagnation". *Studies in Family Planning* .39 (2) pp.105-110.

Bongaarts, J. (2003). "Completing the Fertility Transition in the Developing World: The role of Educational Differences and Fertility Preferences". *Population Studies*. 57 (3) 321-335.

Bongaarts, J. and Casterline, J. (2012).Fertility transition: Is sub-Saharan Africa different? *The population and development review*, 38 (supplement): 153-168.

Caldwell, J., (1975). "Education as a factor in Mortality decline". *Population Studies*, vol. 33 No. 3 p.395

Caldwell, John, C., Orubuloye, I.O., Caldwell, P. (1992). Fertility decline in Africa: A new type of transition? *Population and Development Review* 18(2) 211-242. *Quarterly Journal of Economics*.

Caldwell, John, C. (1980). Mass Education as a Determinant of the timing of fertility decline. *Population and Development Review* 6(2) 225-255

Caldwell, J and Caldwell, P.(2002). Africa: The new family planning frontier. *Studies in Family Planning 33 (1):76-86.*

Central Bank of Nigeria, (2013). *Federal Government of Nigeria.*

Ce'line, F.,' (2009). Age at first child. Does education delay fertility timing? The Case of Kenya. *The World Bank, Human Development Division.*

Cleland, J, and Shireen, Jejeedbhoy. (1996). "Maternal Schooling and Fertility: Evidence from Censuses and Surveys". In Girl's Schooling, Autonomy and Fertility Change in South Asia. Roger J and Basu, A.M. (Eds). *Thousand Oaks C.A., Sage Publications*. P 72-106

Davis, K, and Blake, J. (1956)."Social Structure and Fertility: An analytic framework". *Economic Development and Cultural Change*, Vol.4 No. 3. 211-235.

Datsu, H.K,. (1994). "Fertility levels, patterns and differentials in Nigeria's Federal Capital Territory, Abuja. *M.A Thesis, RIPS, Legon. University of Ghana*.

Falola, T. (2001). Culture and Customs of Nigeria. *Journal of Africa. Greenwood Press, United States of America.*

Iroli, F.A. (1977). Urbanization and Fertility. A case study of Western Nigeria. *A paper presented at International Seminar on Integration of Theory and Policy in Population Studies, Legon, Ghana. P .7.*

Jejeedbhoy, S.H. (1995).*Women's education, autonomy and reproductive behavior. Experience from developing Countries*. Oxford University Press. New York.

Knowles, Stephen, Lorgelly, P. Owen, P. (2002). Are educational gender gaps a brake on economic development? Some cross-country empirical evidence. *Oxford Economic Papers. 54 (1) 118-49.*

Lam, D., Duryea, S. (1999). Effects of Schooling on Fertility, labor supply and investments in children, with evidence from Brazil. *Journal of Human Resources*. 34 (1), 160-192

Leiweing, J, and Karren, H. (2014). Women's education, family planning or both? Application of multistate demographic projections in India. *International journal of population research.* vol. 2014.

Mason, K.O. (1986). The status of women, conceptual and methodological debates in demographic studies. *Sociological forum*. 1. 284-300

Mcdonald, P. (1984). Nuptiality and completed fertility. A study of starting, stopping and spacing behavior. *WFS comparative studies*. No. 35

National Population Commission, 2006. *Population Census of Nigeria*. Abuja.

Onoja, M. Osayomore, I. (2012). Modeling the determinants of fertility among women of childbearing age in Nigeria: Analysis using the Generalized Linear Modeling Approach. *International Journal of Humanities and Social Sciences*.Vol. 2. No. 18.

Wusu, O. (2012). A re-assessment of the effects of female education and employment on fertility in Nigeria.*Demographic and Social Statistics*, Covenant University, Nigeria.

Ogunlewe, A.O. (1994). Female education and fertility in Nigeria. *M.A .Dissertation, RIPS, Legon.*

Ostien, P. (2009). Jonah J. and Jasawa: Ethnic Religious Conflict in Jos, Nigeria. *Muslim-Christian Relations in Africa.www.sharia-in Africa.net. publications.php.*

Osili.O. and Long, T. B. (2008). Does female schooling reduce fertility? Evidence from Nigeria. *Journal of Development Economics*.Vol, 87(1) 57-75.

Oyeka, ICA. (1989). Influence of the number of living sons on contraceptive use among female teachers in Nigeria. *In studies in family planning*. Vol., 20. No. 3 pp 170-175.

Population Reference Bureau, (2013). *World Population Data Sheet, Washington D.C.*

Rosenzweig, M.R., Schultz, T.P. (1989). Schooling, information, and nonmarket productivity; Contraceptive use and its effectiveness. *International Economic Review*. 30 (2) ,457-77

Ross,J.A. (1979). "Decline in the age and family size of family planning program acceptors. *International trends in studies of family planning*. Vol., 10 p. 290-299.

Schultz, Paul T, E.D. (2002). Why Governments should invest in more to educate girls. *World Development*. 30: 207- 225.

Unite Nations Department for Economic and Social Information and Policy Analysis, Population Division, (1995). Women's Education and Fertility Behavior. *New York: United Nations.*

United Nations, (2007). World Population Prospects: *The 2006 Revision, New York. United Nations.*

Wardatul, A. (2002).Women's education and fertility rates in developing countries, with special reference to Bangladesh. *Eubios journal of Asian and International Bioethics*. (12) (2002) 138-143.