

MODELLING REGIONAL DIFFERENTIAL OF EARLY
CHILDBEARING AMONG WOMEN OF CHILD BEARING AGE IN
NIGERIA.

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**MODELLING REGIONAL DIFFERENTIAL OF EARLY
CHILDBEARING AMONG WOMEN OF CHILD BEARING AGE IN
NIGERIA.**

BY

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B.SC MATHEMATICS(IBADAN)

MATRIC NO: 133625

**A Project in the Department of Epidemiology and Medical Statistics in partial
fulfilment of the requirement of degree of**

MASTERS OF SCIENCE IN MEDICAL STATISTICS

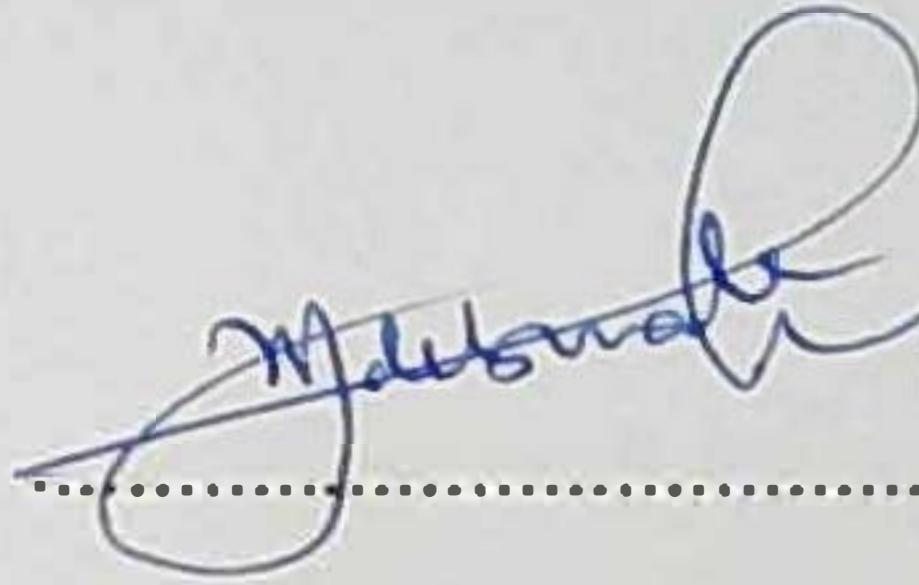
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THE UNIVERSITY OF IBADAN

MARCH, 2014

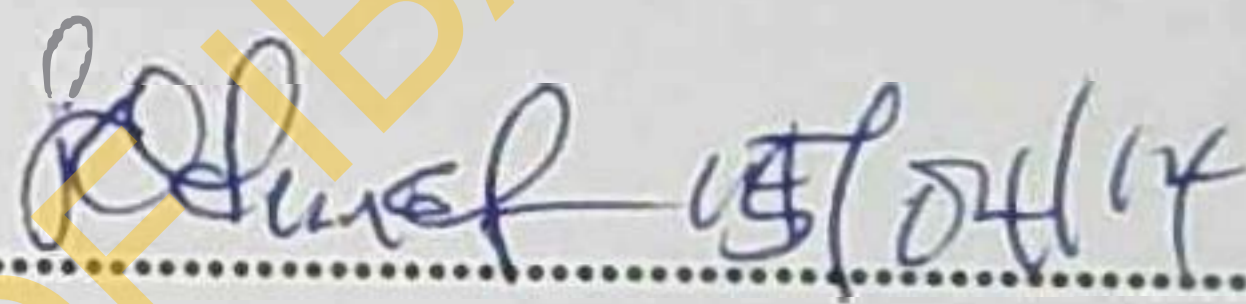
CERTIFICATION

This is to certify that this project was carried out by Dolapo Lateefat, OGUNDARE in the Department of Epidemiology and Medical Statistics, Faculty of Public Health, University of Ibadan.


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DEDICATION

This work is dedicated to Almighty Allah and my ever supporting family members

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ACKNOWLEDGEMENT

I will be grateful to God for making this project a success even when I had thought that doing this project may be impossible.

I also want to appreciate the Support of my Supervisor, Dr Adebowale for assisting in the realization of this project work. My sincere appreciation to all my lecturers in the Department, Dr Akinyemi for his assistance during the period of absence of my supervisor. I also express my gratitude to other lecturers in the department for their moral supports in the course of the project write-up.

I thank all colleagues in M.Sc Medical Statistics class for making the atmosphere conducive for me during the period of this programme.

It gives me a great pleasure to express my sincere appreciation to my immediate and extended family members for their prayers and encouragement in the course of gathering information towards the accomplishment of the goal.

Finally, I thank my lovely and caring husband Engr. Abdul lateef Abiola Oguntola for his guidance and technical assistance during the project write-up. I will forever be faithful and grateful to you.

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ABSTRACT

BACKGROUND: Early child bearing(EC) remains a public health problem in developing countries particularly Sub-Saharan Africa. The Socio economic and health implication of this demographic hazard is enormous. In Nigeria, early child bearing is one of the cultural practices in some parts of the country most especially where women are poorly educated. Studies that explore regional differences in EC are relatively scarce in Nigeria. Therefore, this study explores modelling regional differential of EC among women of child bearing age in Nigeria.

METHOD: The study is based on the analysis of National Demographic and health Survey (NDHS), 2008 data set. The Data were analysed using the frequency Distribution, Chi-square and Cox-proportional hazard model. Early child bearing in the context of this study was defined as women who had their first birth at ages less than 18 years.

RESULT: There were variation in patterns of early child bearing across age, education, religion, wealth Index, Place of residence. The respondents in the Northern region showed a higher proportion of earlier ages at First birth. North Central (58.4%), North East (69.6%), North west(70.5%) as compared to respondents from the Southern parts. South east(35.6%), South South (36.3%) and South west (42.0%). When early childbearing was cross tabulated with the socio-demographic characteristics, It was also observed that the pattern of early childbearing too varied across the regions in Nigeria. Respondents with no education from the Northern parts showed a higher proportion of early childbearing. North Central (41.5%), North East (57.7%), North west (54.0%) as compared to southern parts. South east (35.9%), South South (39.0%), South west (28.2%). In the Cox proportional Hazard model of early childbearing in the whole country, the hazards of having early childbearing was 3%, (95% C.I=0.25-0.36) of those with higher education and 92% of those with primary education (95% C.I=0.87-0.98) as compared to those with no level of education.

CONCLUSION: Early child bearing is still a common practice in Nigeria and It is more common among women residence in the regions in the North than south. Health education targeting early child bearing (EC) should be improved in Nigeria and should focus more in the Northern region.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

Waiting until a woman is at least 18 years old before trying to have children improves maternal and child health (Brown H.L et al, 1991). The World Health Organization estimates that each year, 358,000 women die due to complications related to pregnancy and childbirth: 99% of these deaths occur within the most disadvantaged population groups living in the poorest countries of the world (World Health Organization, 2011)

Adolescent girls who give birth each year have a much higher risk of dying from maternal causes compared to women in their 20's and 30's. These risks increase greatly as maternal age decreases, with adolescents under 16 facing four times the risk of maternal death as women over 20 (WHO, 2011). Too early childbearing also negatively impacts the survival of newborns. Studies have shown rates of newborn death to average about 50% higher to adolescent mothers versus mothers above 18 (Macro International, 2008).

Adolescent Pregnancy is a major contributor to maternal and child mortality, and to the vicious cycle of ill-health and poverty. The Global strategy for women and children's health, launched by the United Nations Secretary-General in 2010 stresses the importance of addressing the health and welfare of adolescent girls in order to achieve the fifth millennium Development Goal on maternal mortality reduction.

In May 2011, the World Health Assembly adopted a resolution urging member states to accelerate actions to improve health of young people. It included these specific measures

- reviewing and revising policies to protect young people from early child-bearing
- Providing access to Contraception and reproductive health care services, and
- Promoting access to accurate information on sexual and reproductive health.

Early childbearing is defined as having the first birth at ages below 18 years is still a common demographic phenomenon in sub-Saharan Africa. The implication of early child

bearing is enormous and may have strong influence on the achievement of millennium development goals. Most of the themes of the MDG's are yet to be accomplished despite the fact that a year is left to the target. Non-realization of these goals is traceable to childbearing dynamics of a country particularly the rate and timing of childbearing among women.

Age at First birth is of particular interest to both researchers and the public. The average age of women when they have a child, especially their first birth influences the total number of births that a woman is likely to have in her life which impacts the size, composition and future growth of the population (Mathews et al, 2009). The age of mother at the time of her first birth, both younger and older, plays a strong role in a range of birth outcomes (e.g birthweight, multiple births, and birth defects) which makes it a necessity to know the average age at which women have their first birth. Also, early life events such as early childbearing have a strong tendency to influence later aspects of life. The timing of first birth is known to affect both demographic and non-demographic phenomena in the life course of a woman (Mirowsky & Ross, 2002). For Instance, the timing of first birth has strong effects on both individual and aggregate levels of fertility, as well as broader implications for women's role and social change. In the absence of any effective birth control, or situations where It is only used for spacing, but not for preventing childbearing, the total number of children a woman bears is principally dependent on the age at which child bearing begins (Gyimah, 2003).

This is however not always the case in developed countries, where the pervasiveness of reduced child bearing and increased use of modern contraceptives mean that young women who gave birth early in life may delay childbearing at later parts of her childbearing years (Grindstaff, Balakrishnan and Dewit, 1991). Early childbearing can interrupt a young woman's education and also limit her opportunity in modern economy. Women who begin childbearing early in life spend less time preparing for their careers limiting them to low social economic status. Early child bearing also endangers the health of the mother and her offspring and contributes to high childhood and maternal mortality (Zabin and Kiragu, 1998).

It also exposes young women to a high risk of HIV infection, due to lack of bargaining power with their partners in regard to the use of condoms (Zabin and Kiragu, 1998).

In the United States in 2005, one in every twelve women have their first birth at ages 35 or older, while in 1970, it was just one in one hundred (Ready, 2007). This is a trend that is becoming popular among all round the globe towards having their first birth later than their mothers had theirs. However, evidence suggests that early childbearing is commonly practiced in developing countries than developed countries. In sub-Saharan Africa, the mean age at first birth in most countries in this region is below 19 years. Nigeria, the most populous country in the region is among the countries with the least age at first birth. Although, there have been tremendous improvement in age at first birth in Nigeria, the pace of increase is relatively low compared to other countries. The 1990 Nigeria Demographic and Health Survey (NDHS) showed that one half of all women in Nigeria become mothers before age 20; 10-12% gives birth before age 15 years and 21-28% gives birth between 15-17 years (FOS, 1992). Also the 1999 NDHS results, revealed that mean age at first birth was less than 19 years (NDHS, 1999) and the 2003 survey showed a slight increasing trend.

The decline in childbearing in most societies often proceeds in two stages. The first stage is the decline in childbearing due to an increase of age at first birth. (Gupta and Mahy, 2003). This stage is more applicable in developing countries where timing of first birth is known to affect completed fertility. However, this first stage of transition has received little or no attention.

Researchers have shown much interest in proximate determinants of fertility in sub-Saharan Africa (Makinde –Adebusoye and Ebigbola, 1992, Foot, Hill & Martin 1993, Cleland, Onuoha and Timaeus, 1994, Makinde Adebusoye 2001, Cald and Caldwell 2002, Norville, Gomez and Brown, 2003, Baschieri and Hinde 2007, Kazembe, 2009). The majority of the researchers concentrate on other determinants of fertility but ignore the timing of First Birth. Their argument is that childbearing only occurs within marriage. This might be true only for population where majority of brides are virgin.

1.2 STATEMENT OF THE PROBLEM

High population growth and total fertility rate in Nigeria has been a source of concern to government and international Agencies. As a result, the Federal Republic of Nigeria instituted a policy in 1988 to check the pace of growth, this policy was reviewed in 2004 (Nigeria Population Policy, 2004). Despite increasing efforts of the government of Federal Republic of Nigeria, Population growth rate is yet to be curtailed to bearable minimum and health problems associated with childbearing remain a challenge. Under five and maternal mortality rates are high. For instance, the 2008 demographic health Survey conducted in Nigeria put the Infant and Under five mortality figures at 75 and 157 deaths per 1000 live births respectively. (NDHS, 2008. Also, the maternal mortality rate in Nigeria (545 deaths per 1000 live births) (NDHS, 2008) ranks among the highest globally (WHO, 2007). Early childbearing is known to be important determinant of these menaces (Kongnyuy et al, 2008, Kramer and Lancaster, 2010).

Higher proportion of women of child bearing age in Nigeria are illiterates and are lagging behind their contemporaries in advanced countries like USA, Europe and so on (Kitetu C, 2001).

Early childbearing has been proved to hamper female's education and their socio-economic status (Obare, Agwanda and Magadi, 2006). Education has numerous influences on life course processes including age at first birth (Gupta and Mahy, 2003). The level of literacy in Nigeria calls for concern on its possible implication on demographic indices particularly fertility level which is widely known to be influenced by the women's age at first birth (NDHS, 2008).

Modern Contraceptives have been identified as good means of protecting individual against pregnancies particularly when not wanted (Mischell, 2007: NPC, 2009). Researchers found its usefulness in improvement of women's health and can cause a shift in the pattern of childbearing in any nation (Isiugo-Abanihe 1996, Bloom and Canning 2003). However in Nigeria, the prevalence of modern contraceptive use is low (8%) and its unmet need is high (23%) (NDHS, 2008). The age at first birth is known to be higher in countries where the use of modern contraceptive particularly among women of childbearing age is on the increase. (World population data sheet, 2009)

1.3 RESEARCH JUSTIFICATION

Going by the importance of childbearing on women and the nation, a study that models the age patterns of ages at which childbearing occurs in Nigeria is necessary. It is quite agreed that age at first birth is low in Nigeria, but variation exist across different segment of the population. Therefore, modelling the patterns of child bearing will reveal the subgroup of the Nigeria population that needed more attention of family planning and other health programmes that could facilitate a positive change in age at first birth in Nigeria.

Also, despite the relevance of age at first birth as it relates directly to fertility and mortality, few studies have focused on the regional differences in age at first birth in Nigeria. (Gupta and Mahy 2003, Oyefara, 2012, Mathews et al 2009)

Despite the acceptability and media information on family planning programmes in Nigeria data are evidenced that the total fertility rate (5.7) remains unchanged between 2003 and 2008 (NDHS, 2008; NDHS, 2003) Age at first birth has been identified in the past as one of the reasons for such stagnancy in total fertility in the country.

The regional difference in age at first birth is still a grey area for research in Nigeria. Most researchers have assumed that child bearing only occurs within marriage, hence majority of studies are focused on age at first marriage (Yadav et al, 1997; Thomas Ermans, 2011). But this assumption is not always true in modern times where a large number of children are born outside wedlock, hence, a study that will show pattern of age at first birth is important at this time.

1.4 OBJECTIVES OF THE STUDY

1.4.1 Main Objectives

The main objective of this study is to describe the pattern of age at first birth among women of child bearing ages in the six regions in Nigeria.

1.4.2 Specific Objectives

The Specific objectives of the study are to:

- (1) Describe the socio-demographic characteristics of women according to regions in Nigeria.
- (2) Examine the association between age at First birth and region in Nigeria
- (3) Identify what factors contribute to regional differential in early childbearing in Nigeria.
- (4) Explore the interactive effect of socio-demographic factors on early childbearing in Nigeria.

1.5 RESEARCH QUESTIONS

The objectives of the study will be achieved using the research questions below;

- Is there association between age at First birth and region?
- Does pattern of early childbearing vary across the regions in Nigeria?
- What are the factors responsible for regional differential in early childbearing in Nigeria?

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Early life events have a strong tendency to influence later ones. Globally, the timing of first birth is known to impact both demographic and non-demographic on the life course of women. (Taniguchi, 1999, Mirowsky and Ross 2002). In sub-Saharan Africa, early child bearing has strong effects on both individual and aggregate levels of fertility as well as broader implications for women's roles and social changes in general (Mirowsky and Ross, 2002). In the absence of any effective contraceptive, or where contraception is only being used for spacing, but not for limiting fertility, the total number of children a woman bears is principally a function of the age at which childbearing begins. (Gyimah, 2003). This is however not always the case in developed countries, where pervasiveness of low fertility norms and increasing use of modern contraceptives mean that young women who gave birth early in life avoid child bearing later. (Grindstaff, Balakrishnan, and Devit, 1991). Age at first birth is an important issue of discourse in population dynamics that has attracted a lot of attention in literature. (Oyefara, 2013)

2.2 TRENDS OF EARLY CHILD BEARING

2.2.1 Globally

Substantial declines in early childbearing have occurred in North Africa and Asia, but levels are still high in some countries. In Latin America, where the level of teenage childbearing is moderate, declines are less prevalent and some increases have occurred. (Singh, S 1998). In the United States, the average age of first time mothers increased 3.6 years from 1970 to 2006, from 21.4 to 25.0 years. Increases in average age at first birth were more pronounced in the 1970's and 1980's. The average age at first birth increased in all states and Districts of Columbia (5.5 years) and Massachusetts (5.2 years) had the largest increases since 1970. In 2006, Asian or Pacific Islander women had the oldest average age at first birth (28.5) years and American Indian or Alaska Native women had the youngest (21.9) years. (Hamilton et al, 2009). In many developing nations, the age at first birth has been increasing.

2.2.2 Sub-Saharan Africa

Sub-Saharan Africa has some of the highest levels of adolescent child bearing in the world. Since the 1980's, several countries in the sub-Saharan country have begun a transition toward lower fertility and this has been accompanied by an upward trend in the age at first birth, however wide variations still exist across countries. Early childbearing is most common in sub-Saharan Africa, which is put at 26 percent of women ages 15 to 19. (Zlider et al, 2003). In the central Africa republic, Chad, Guinea, Madagascar, Mali, and Nigeria, over one third of adolescent women have had their first birth. Most Data in existing literatures point to the fact that there is high prevalence of early childbearing among adolescents than in any of the other regions of the world. According to (Singh S, 1998) in his study , the analysis revealed that some sub-Saharan countries are experiencing a reduction in the rate of adolescent childbearing, but the proportion of adolescent births will continue to increase unless unmarried couples adopt contraception.

2.2.3 Nigeria

The age at first in Nigeria according 2008 NDHS is 19.4 which still remain relatively low among other countries of the world. Between 1980 and 2003, the birth rate among women aged 15-19 decreased by 27% (from 173 births to 126 births per 1000 women). Nonetheless, 46% of women nationally and about 70% of those in some regions still gave birth before their 20th birthday (NPC, 2004). Nigerian women who start having children while they are still adolescents face severe social and health disadvantages, including curtailed educational opportunities, which reduce women's social and economic status long term, elevated rates of peri-natal death. With a population of close to 124 million in 2003, Nigeria is one of the most populous country in Africa. The country's population more than tripled between 1960 and 2000, and is expected to double again by the year 2025 (World population prospects, 2002). In a report by the Guttmacher Institute (2004), It reported that among women aged 20-24, the proportion marrying during their teens is high among those with fewer than seven years of Schooling (84%) and those in the North East and North West Regions (80-89%), intermediate among women in urban areas (40%), and low among those in the Southern regions (20-28%) and those with more education (26%). As fewer young women are marrying in their teens, adolescent child bearing is decreasing in many parts of Nigeria. Nationally, 59% of the women aged 40-44 gave birth to their first child before their 20th birthday compared with 46% of those aged 20-24. The generational change was obvious in the two Southern regions, with dramatic falls in the South-East region (from 69%-27%). However, in the

North East region, there has been no reduction in the high proportion of women having a child before 20. According to the report, Education is a key factor behind the decline in adolescent childbearing observed at national level. Child bearing before age 20 has also increased among less educated women, in both urban and rural areas. Better educated women aged 20-24 are about half as likely as their equally educated older counterparts to have had a child in their adolescent years (Guttmacher Institute, 2004).

But despite the decline in early childbearing in many parts of Nigeria, very early Motherhood has by no means disappeared totally.

2.3 DETERMINANTS OF EARLY CHILD BEARING

In the literature, many factors have been found as the determinants of early childbearing. Some of these factors are described below;

2.3.1 Current age of Respondents

Demographic studies in the traditional societies especially where there is little or no use of contraception show a positive relationship between age and fertility level of women.

2.3.2. Education

In most countries, education has been demonstrated to have a significant effect on pattern of child bearing. Education gives new outlook about life in addition to important skills that enable them take up new opportunities particularly for women. The attainment of higher level of education is regarded as one of the factors that is fast eroding traditional values like large families and replacing them with smaller families marked by material aspiration (Singh S, 1998). A strong correlation between women's education and age at first birth consistently emerges from studies throughout the world (Ainsworth 1994, Martin Juarez 1995). Akpa and Ikpotiyin (2012) in their study found out that women with no education and those with secondary education had 1.36 times the risk and a 17% increase in fertility (respectively) over those with higher education. A study in Nigeria showed that showed that the mean numbers of children ever born of older mothers with secondary and higher levels of education were significantly lower than their counterparts who are adolescent mothers with the same levels of education (Oyefara, 2013). He also noted that older women with primary school level of education and those of without any formal education had higher fertility rates than their counterparts who were adolescents at the time they had their first childbirths. In the analysis

of Demographic and health survey data from eight countries of sub-Saharan Africa, Mahy and Gupta (2001) found that girls who had attained at least secondary level of education were less likely to have a child before the age of 18.. In their study of Mexican women , Lindstrom and Bambila (2001) found that an increase in the number of years in School reduces the likelihood of early childbearing. Choe et al (2005) estimate a proportional hazards model in order to examine the covariates of early motherhood in Nepal and found that education plays an important role. Although, Cochraine (1979) argued that identifying the direction of any causal relationship between early child bearing and education is complex. As shown in most studies on inter-relationship between age at first birth and education, there is always an inverse relationship between educational level and age at first birth. As pointed out by Schultz (2002), In developing countries, fewer number of children which is facilitated by delayed childbearing allows women to devote more time to self employment activities, thereby contributing to family Income.

2.3.3. Religion

Religion, according to max weber is the opium of the masses. Religion is believed to play a part in shaping the views, norms, belief, attitudes and practices of the people which in turn affects the reproductive behaviour. In Nigeria, religion affects have a great effect on the pattern of childbearing. Studies done in India indicate that Hindus marry and bear children at younger ages than non-hindus (Blom and Reddy, 1986). In Tanzania, religion influences childbearing ages. Religions such as Islam that places absolute emphasis on pre-marital chastity, this will ultimately result in early marriage and as a result early pre-disposition to sexual intercourse, thereby leading to early childbearing ages, (Ngaalinda). In his study, Muslims showed a lower mean age of child bearing of 18years than other religious affiliate.

2.3.4. Wealth Index

The economic state of a woman as measured by wealth index has impact on her reproductive status. Researchers have shown that women from higher wealth quintile are more likely to be better educated than those from lower wealth quintile. Also, wealth quintile has been found to be positively associated with contraceptive use and age at first sexual intercourse. Consequently, It is tempting to argue that wealth quintile have influence on age at first birth or early childbearing.

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2.3.5. Place of Residence

So many studies done in the past have observed that women living in urban areas start bearing child early enough than their counterparts in the rural setting. Adebimpe et al, (2011) in Osun found that the mean age at first birth among rural respondents was 20.8 ± 3.7 years and 23.2 ± 5.1 years among urban respondents, also the mean number of births per woman was 3.4 ± 1.8 births per woman in rural, and 2.9 ± 1.5 births per urban woman. They concluded that there was a significant association between locations of residence and the mean age at first birth.

Cohen (1993), in his argument argued that women living in urban areas are assumed to have better knowledge of contraception, and also access to it which will one way affect their reproductive outlook. An independent association between place of residence and risk of early childbearing was found significant in Cote d'Ivoire, Ghana, and Senegal. Girls living in Urban areas were found to be over 30% less likely to have a first birth before 18 as compared to rural residents in a study by Mahy and Gupta, 2003. In Nsukka, Nigeria, where a study was conducted on married adolescents, the study revealed that 10.5% of the total respondents have given birth in Nsukka Urban town as compared to 25.5% in the rural community. The study indicated that experience of childbirth among married adolescents girls was higher in the rural community than in Nsukka town (Ezeah, 2012).

2.3.6 Contraceptive Use

Contraception has been defined as a means of controlling fertility by using various methods that inhibit conception which can be traditional or modern method. The 1990 Nigeria Demographic and health Survey showed that Knowledge of family planning method witnessed a remarkable improvement between 1981 and 1990 because about 46% of all women aged 15-49 at the study knew at least one method of family planning, with about 44% Identifying modern methods of which the pill, injection, condom, IUCD and female sterilization were most commonly known. The 2003 NDHS results also confirmed this. In an analysis between age at first birth and Contraceptive use among women of child bearing age in Osun, the study revealed that older mothers had relatively better knowledge about contraceptives than adolescent. 94.0% of older mothers against 83.2% among adolescent mothers had knowledge about contraceptive use. (Oyefara, 2013)

2.3.7 Age at First Sexual Intercourse

The age at first sexual intercourse is the age when sexual initiation begins. It is an important indicator of exposure to risk of pregnancy and early child bearing. In cases where the use of the most effective contraceptive method is absent, usually the age at first sexual intercourse is very close to the age at First Birth (Gobopamang and Halima, 2002). In a study by Uthman (2008), North West and North East had the highest proportion of women who had reported early sexual debut.

2.3.8 Marital Status at First Birth

The timing of first marriage or union is an important dimension of women's reproductive behaviour with far reaching consequences. The age at which women marry continues to vary widely both across and within the country education, and urbanization. (P. Makinwa and Adebusoye, 1995). A women's age at first marriage continues to be a useful indicator of her status and the start of childbearing. Most researchers have assumed that childbearing only occurs within marriage (Yadav, et al 1997; Thomas Ermans, 2011) but this assumption does not hold true in modern societies. The transition of women into motherhood in turkey still takes place relatively early despite the rise in the average age of birth over time. The average age at first birth was 21.2 in 2003, up from 19.3 in 1983. In turkey, an important characteristic of the transition into motherhood of women is that almost all are married at the time of first birth. (Blossfeld and De Rose, 1992)

2.3.9 Ethnicity

Ethnic Identity is the most basic and politically salient form of Identity in Nigeria. In competitive and non-competitive settings, Nigerians are more likely to define themselves in terms of their ethnic affinities than any other identity. The Ethnic group a woman belongs to cannot be dissociated from the fertility pattern a woman is bound to experience. A study by Akpa and Ikpotiyin, 2012 revealed that while Hausas and Igbo women were found to be more likely to have higher fertility than those from the minority groups, there was eighty percent decrease in the level of fertility among the Yoruba women when compared with the minority groups. In the 2008 NDHS, It was reported that lowest fertility rate was reported for the South west zone which is predominantly inhabited by the Yorubas.

2.3.10 Region

The main regions in Nigeria consist of are the North, South, and East. It was later broken down into six geo-graphic zones: North central, North East, North West, South East, South South and South West regions. Patterns of Fertility and child bearing vary across all these regions. The North central region has a Total fertility rate (TFR) that is lower than the core Northern regions, but which is still on the average , one child more than the TFR of the Southern regions (Reed and Mberu). The total fertility in the North has been over two children per woman higher than that of the South in both 2003 and 2008. Also, the mean number of children ever born (a measure of past fertility) was 3.1 in 2003 for Nigeria as a whole but a difference of over one child per woman was observed between the North and the South. In the Study by Reed and Mberu, showed that adolescent motherhood and pregnancy are lowest in the South West and South East regions in 2003. In Contrast, 38% and 37% of adolescents aged 15-19 in the North East and North West were mothers in 2003, the highest level in the country.

2.3.11 Life Time Number of Sexual Partners

Young Ages at first intercourse is associated with subsequently having multiple sexual partners and more frequent intercourse , both of which increase the risk of contracting sexual sexually transmitted disease (STDs) and becoming pregnant which subsequently leads to early child bearing (Moore et al, 1995).

2.4 DEMOGRAPHIC CONSEQUENCES OF EARLY CHILD BEARING

Differing patterns of child bearing for different countries will definitely come along with its attended consequences. It definitely will shape the demographic profile of any country in terms of its infant and child mortality, changes in fertility patterns, maternal health indices, and the number of children ever born by a woman.

2.4.1 EARLY CHILD BEARING AND INFANT AND CHILD MORTALITY

First Births are associated with very young mothers. The children of these young mothers tend to have higher risk of death because young mothers having their first birth may not have fully reached their physical and reproductive maturity. (Oyefara, 2013) Different studies have reported that children born to mothers who are teenagers experience greater health problems and mortality risks than those of older mothers. It has been reported that early childbearing is

associated with worse antenatal health care and vaccination behaviour, lower birth weights and so on (Le Grand and Mback'e (1993), Westoff (1992), Zabin and Kiragu (1998). Women who are younger during their first birth face greater risks of obstetric fistula, preclampsia, haemorrhage, and pelvic bone immaturity which increases the likelihood of cephalopelvic disproportion which later on result in high incidence of premature birth, prolonged labour and sometimes difficult childbirth. (UNICEF 2001)

2.4.2 EARLY CHILD BEARING AND MATERNAL HEALTH RISK

First birth from teen pregnancies and deliveries mostly involve complications which often result in greater risk of maternal mortality and morbidity as compared to pregnancies of women in their twenties (WHO 2000), Ransom and Yinger (2002). Deaths relating to pregnancy are the leading cause of mortality for 15-19 year old girls worldwide (WHO 2000). Younger ages at first birth is associated with increased risk of cervical cancer and endometrial cancers but there is an unclear correlation between maternal age at first birth and site specific malignancies such as ovarian, colorectal, thyroid, pancreatic and kidney cancers. (Fugal et al, 2005). In Zaria, Nigeria, maternal mortality among women younger than sixteen is six times higher than compared to women aged 20-24 with similar findings being reported from Cameroon and Ethiopia (Zabin and Kiragu, 1998). Younger women who have unintended pregnancies may experience serious maternal morbidity and mortality from unsafe abortion (Atuyanmbe et al, 2005, Dahlback et al, 2007)

2.4.3 EARLY CHILDBEARING AND FERTILITY PATTERNS

Fertility patterns vary among adolescents all over the world. The High fertility in traditional African societies, according to Caldwell and Caldwell (1987) is associated with the economic benefits that children provide to their parents. The need for such support (financial) is responsible for the high fertility norm in Africa. Women in Africa begin to have children early enough, thereby bringing an upward shift in fertility pattern as compared to the industrial societies who prefer small family. In a study of Tanzanian women by Ngalinda (1998), It was evident from the study that the mean number of children ever born decreases with increasing age at first birth since women with younger ages at first birth has a prolonged reproductive life span, hence showing a positive association between age at first birth and fertility. Although, the differences in levels of completed fertility between early and later childbearing is on the increase, women who have their first birth as teenagers tend to have larger families by about one child on the average. (CBASSE, 1987).

2.4.4 EARLY CHILD BEARING AND CHILDREN EVER BORN

Children ever born refer to the total number of life births a woman has ever had during the time of the survey. When women start child bearing late, this shortens the reproductive life cycle thereby decreasing the number of children that would have been born. Several studies have found evidence of faster subsequent childbearing and an increased chances of unwanted childbirths if the first child is born at an early age (Casterline and Trussell, 1980; Finas and Hoem, 1980; Balakrishnan, 1988). Oyefara (2012) in his work revealed that adolescent mothers had higher parity levels in comparison with older mothers in Osun state.

2.5 ECONOMIC CONSEQUENCES OF EARLY CHILD BEARING

No doubt, the consequences of increased or decreased age of child bearing will also be felt in the economic sense.

2.5.1 School Drop-outs

Education is seen as a tool for advancement of the socio-economic status of women in the developing countries. (World Bank, 2006). In a bid for women to achieve this goal, and the natural goal of fertility, there are often clashes between this educational attainment and the attainment of fertility which often result in delayed school outcomes like graduation and performance outcomes. There has been long history of research on childbearing and schooling (Hoffert et al, 2001). Literature review indicates that there is lack of consensus on the way early ages at childbearing affects schooling. Meekers and Ahmed 1999, Madhavan and Thomas 2005 indicate that early childbearing is detrimental to schooling while other studies found that school pregnancy does not inhibit schooling outcomes and that women giving birth in school have similar chances of graduating from school to those who never did (Upchurch and Mc Carthy, 1990). Evidence suggested a linkage between adolescent child bearing and interruption in school attendance. However, the direction of causality is unclear-whether poor performance in school leads to pregnancy and school dropout or whether the occurrence of pregnancy leads to school dropout. (Grant and Hallman, 2008) An analysis of DHS data in 20 sub-Saharan countries indicated that South Africa had the highest number of pregnancy-related dropouts (Lloyd and Mensh, 2006) in sub-Saharan Africa. Parents too do not help matters; they force their daughters who get pregnant in school to drop out to avoid embarrassment within the community before the pregnancy becomes an object of ridicule. However, studies by Upchurch and McCarthy, 1990 found that school pregnancy

does not affect schooling outcomes and women giving birth in school have similar chances of graduating from school to those who never gave birth.

Furthermore, studies from Kenya suggest that majority of young women pregnant do so after dropping out from school (Mensch et al, 2001), implying that most pregnancies do not affect schooling because these women would still not be in school even if they did not fall pregnant. Without regard to precise causal mechanism, It is likely that adolescent mothers can have impaired long term Social and economic mobility (Jewkes, Morwell and Christofides, 2009)

2.5.2 UNSTABLE AND LESS REMUNERATIVE EMPLOYMENT

In most cases, education is likely to be hampered by pregnancy especially if it occurs at high school. Young girls who experience early child bearing and who have to support their child may enter the job market earlier enough than their counterparts. However, studies carried out in Barbados, Chile, Guatemala and Mexico in the 1990's reveal that young mothers seem to enter labour force early, work more and earn less than other mothers (Buvinic 1998). Ashcraft and Lang (2006) in their study found out that delay in child bearing ages reduces the probability that girls complete high school and it also adversely affects the number of other adult outcomes.

CHAPTER THREE

METHODOLOGY

3.1 Brief Description of the Study Area

Nigeria came into existence as a nation – state in 1914 through the amalgamation of the Northern and Southern protectorates. Prior to that time, there were various separate cultural, ethnic and linguistic groups. The British established a crown colony type of government after the amalgamation. The affairs of the colonial administration were conducted by the British until 1942, when a few Nigerians became involved in the administration of the country. In the early 1950's, Nigeria achieved partial self government with a legislature in which the majority of the members were elected into an executive council of which most were Nigerians. Nigeria became fully independent in October 1960 as a federation of three regions (Northern, Western, and Eastern) under a constitution that provided for a parliamentary system of governance. The Lagos area became the federal capital territory. Nigeria is in the West African sub region, lying between latitudes 4°16' and 13°53' north and longitudes 2°40' and 14°41' east. It is bordered by Niger in the North, Chad in the North east, Cameroon in the East, and Benin in the west. To the south, Nigeria is bordered by approximately 850 kilometres of the Atlantic Ocean, stretching from Badagry in the West to the Rio del Rey in the east, with a total land area of 923,768 square kilometres. Nigeria is the fourteenth largest country in Africa.

Presently, Nigeria is made up of thirty-six states and a federal capital territory (FCT), grouped into six geopolitical Zones namely: North Central, North East, North West, South East, South-South, and South West with about 774 constitutionally recognized local government areas. She has two predominant religions namely, Islam and Christianity.

3.2 Data collection procedures

The 2008 Nigeria Demographic and Health Survey (2008 NDHS) was implemented by the National Population Commission from June to October 2008 on a nationally representative sample of more than 36,000 households. All women age 15-49 in these households and all men age 15-59 in a sub-sample of half of the households were individually interviewed. The primary objectives of the 2008 NDHS project were to provide up-to-date information on fertility levels; nuptiality; sexual activity; fertility preferences; awareness and use of family planning methods; breastfeeding practices; nutritional status of mothers and young children;

early childhood mortality and maternal mortality; maternal and child health; and awareness and behaviour regarding HIV/AIDS and other sexually transmitted infections.

3.3 Sample Design

The survey was cross sectional in design and the sample for the 2008 NDHS was designed to provide population and health indicators at the national, zonal, and state levels. The sample design allowed for specific indicators, such as contraceptive use, to be calculated for each of the 6 zones and 37 states (36 states plus the Federal Capital Territory, Abuja). The sampling frame used for the 2008 NDHS was the 2006 Population and Housing Census of the Federal Republic of Nigeria conducted in 2006, provided by the National

Population Commission (NPC). Administratively, Nigeria is divided into states. Each state is subdivided into local government areas (LGAs), and each LGA is divided into localities. In addition to these administrative units, during the 2006 Population Census, each locality was subdivided into convenient areas called census enumeration areas (EAs). The primary sampling unit (PSU), referred to as a cluster for the 2008 NDHS, is defined on the basis of EAs from the 2006 EA census frame. The 2008 NDHS sample was selected using a stratified two-stage cluster design consisting of 888 clusters, 286 in the urban and 602 in the rural areas¹. A representative sample of 36,800 households was selected for the 2008 NDHS survey, with a minimum target of 950 completed interviews per state. In each state, the number of households was distributed proportionately among its urban and rural areas.

A complete listing of households and a mapping exercise were carried out for each cluster from April to May 2008, with the resulting lists of households serving as the sampling frame for the selection of households in the second stage. All private households were listed. The NPC listing enumerators were trained to use Global Positioning System (GPS) receivers to take the coordinates of the 2008 NDHS sample clusters. In the second stage of selection, an average of 41 households was selected in each cluster, by equal probability systematic sampling. All women age 15-49 who were either permanent residents of the households in the 2008 NDHS sample or visitors present in the households on the night before the survey were eligible to be interviewed. Detailed information about the activities involved during the data collection exercise is available in the report of the data originator (www.measuredhs.com).

3.4 Operationalization of key variables

3.4.1 Dependent Variable

Early Child bearing was the dependent variable used in the analysis. Women were asked the question on age at first birth and the response was obtained in quantitative terms. The variable was however recoded to reflect early childbearing.

3.4.2 Independent Variable

Demographic variables

The demographic variables were: Age (V012), Age at First Sexual Intercourse (V525), Marital Status at First Birth (V501), Place of Residence (V102).

Age: This was measured by the current age of the respondents as at the time of survey. It is recoded into 15-24, 25-34, and 35-49.

Age at First Sexual Intercourse: This was measured at the ages at which respondents had their first birth. This is recoded into <15, 15-17, 18 and above.

Marital Status at First Birth: This was obtained by proxy, by computing a new variable which is the difference between age at first birth and age at first marriage. Those with negative ages were those not married at time of first birth, hence coded as not married, while those with positive ages were those married at the time of first hence were recorded as married.

Place of Residence: The residence of the respondents was grouped into rural and urban.

Socio-economic variables

The variables were: Education (V106), Religion (V130), Wealth Index (V190).

Education: This was grouped into None, Primary, Secondary and Higher education categories.

Religion: The religions of the respondents were recoded into Christian, Muslim, Traditional, and Others.

Wealth Index: The wealth index was grouped into Poorest, Poorer, Middle, Richer and Richest.

Behavioural variables

The variables were: Ever use of Contraceptives and Total Life Time Number of Sexual Partners (V836)

Ever Use of Contraceptives (V302): This was recorded into Never used and Ever used. Those who used only Folkloric Method, used only Traditional Method, and used Modern Method were recorded into Ever used.

Life Time Number of Sexual Partners (V836): This was grouped into only one sexual partner and 2+

3.5 Method of Analysis

The analyses began with the use of percentage frequency distribution of the women included in this study according to demographic and socioeconomic characteristics. At the bivariate analysis stage, Chi-square model was used to examine the association between the age at first birth and socioeconomic and demographic characteristics of the women. In the context of this study, the age at first birth was categorized as follows: 9-14, 15-17, 18-24, 25+. The categorization was based on the women who had early childbearing (at ages less than 18 years), late youths (18-24 years) and 25+ years.

Multiple regression analysis

The dependent variable used was age at first birth which was categorized into two as early childbearing (first birth at ages less than 18 years) and those who had their childbearing at later ages (18 years and above). Thus, the status variable is age at first birth recoded as 1 if the respondents have first birth at ages less than 18 years and 0 if otherwise. The timing variable is age at first birth in quantitative terms. The nature of these variables suggested that a survival analysis approach would be suitable for the multivariate analysis. The basic model used for this study is the proportion hazards model proposed by Cox in 1972. It is also known as the Cox regression model and based on the assumption of proportional hazards. Since it does not assume any particular form of distribution for survival times, it is referred to as a semi-parametric model. Proportional hazard is the ratio of the hazards for two subjects' j and k at time t is the same for all values of t , i.e.

$$h_i(t)/h_j(t) = \psi \text{ for } t \geq 0 \quad \psi \text{ is a constant and } \psi > 0.$$

If $\psi < 1$, the hazard of having the first birth at time t is smaller for an individual and greater if $\psi > 1$, compared to the reference category where $\psi = 1$. Since $\psi > 0$, set $\psi = \exp(\beta)$. Therefore, $\beta = \log \psi$ (log of the hazard ratio). In such situation, any value of β in the range $(-\infty, \infty)$ will make ψ positive. $h_i(t) = h_j(t) \exp(\beta)$. Let $h_i(t)$ be the hazard of the i -th subject at time t and let X be

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an indicator variable such that $x=1$ if a woman has given birth to a child at ages less than 18 years and $x=0$ if otherwise. If x_i is the value of x for the i -th woman in the study then;

$$h_i(t) = h_0(t)\exp(\beta x_i)$$

We assumed that the hazard of given birth at a particular time depends on the values x_1, x_2, \dots, x_p of p explanatory variables x_1, x_2, \dots, x_p . Let \underline{X} be a vector representing the set of the p explanatory variables, so that $\underline{X} = (x_1, x_2, \dots, x_p)$. Let $h_0(t)$ be the hazard function for an individual woman whom the values of all the p explanatory variables are zero. Therefore;

for the i -th individual the hazard function is; $h_i(t) = \psi(\underline{x}_i)h_0(t)$. Where $\psi(\underline{x}_i)$ is a function of the explanatory variables for the i -th woman and this is interpreted as the hazard at time t for an individual whose vector of explanatory variables is \underline{x}_i , relative to the hazard for an individual for whom $\underline{x} = 0$. This produces a linear model for the logarithm of the hazard ratio.

$$\begin{aligned} \log\{h_i(t)/h_0(t)\} &= \beta_1 x_{1i} + \beta_2 x_{2i} + \dots + \beta_p x_{pi} \\ &= \sum_{j=1}^p \beta_j x_{ji} \end{aligned}$$

Note: There is no assumption concerning the actual form of $h_0(t)$ the baseline hazard function. This is because, it is not of primary interest and it is not necessary to substitute for it in order to estimate the β -coefficients. Thus the model is non-parametric with respect to time but parametric in terms of the explanatory variables x_1, x_2, \dots, x_p ; and is thus 'semi-parametric'. The explanatory variables are; age, residence, education, region, religion, wealth index, ethnicity, etc. The inclusion of these variables is as a result of their relationship with timing of birth as expressed under variable description above.

CHAPTER FOUR

ANALYSIS AND RESULTS

4.1 Univariate

4.1.1 Socio Demographic Characteristics of the Respondents

From Table 4.1 below, a higher proportion of respondents in the age group 35-49 (97.7%) have had their first birth followed by the age group 25-34 which had 87.9% and the least in the age group 15-24 with 58.4% from the North Central region. Also, in the North East region, 96.8% of respondents in the age group 35-49 have had their first birth which is highest, followed by the age group 25-34 (95.8%) and the least is observed in the age group 15-24 (69.6%). Across all other regions, North West, South East, South-South, and South West, the highest percentage of those who have their first birth was observed in the age group 35-49, followed by the age group 25-34, and the least was observed in the age group 15-24.

In respect to Education, respondents who had no Education had a higher proportion (91.0%) of those who have their first birth, followed by those with primary Education (90.0%), and the least was observed in those with higher education (63.3%) from the North Central region. The same pattern of those who have had their first births exist in North East, South East, South South and South West with those with none education having the highest proportion of those who have their first birth, followed by primary, secondary, and the least in highest. A slightly different pattern existed in the North West. A higher proportion was observed in the non-education category (88.8%), followed by primary (88.3%) and higher education (83.6%) and the least was observed in those with secondary education (83.6%)

A higher proportion of respondents from the North Central region who have others religion (89.5%) have had their first birth followed by Traditional religion (89.1%), Muslim religion (84.6%) and the least was observed in Christianity religion (80.5%). From the North East, a higher proportion of Traditional religion (95.0%) have had their first birth followed by Muslim religion (88.6%), others (88%) and Christianity (83.4%). In the South East region, a higher proportion of respondents who are traditional religion (91.3%) have had their first birth, followed by Muslim (88.9%), others (75.0%) and the least was observed in Christianity (70.3%). In the South west, a higher proportion were from Traditional religion 87.5%, followed by Muslim 82.4%, others (81.8%), and Christian (76.0%)

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In the North Central region, 87.4% occupy the poorer wealth category of those who have had their first birth, followed by poorest (85.4%), Middle (84.3%) and the least was observed in the richest wealth index, also in the North East region, a higher proportion of those who have had their first birth were from the poorer (89.1%), Middle (88.9%), poorest (87.4%) and the least in richest (83.3%). A similar pattern exists in the South South. In the South West, a higher proportion (90.5%) was from poorest, followed by poorer (83.2%), and the least in richest (76.0%).

A higher proportion of respondents who have had their first birth who live in rural (84.3%) are from the North central region, followed by Urban (77.2%). In the North East and North West, a higher proportion is from Urban, 88.6% and 88.0% respectively and 87.4% and 87.7% from rural respectively. In the South South and South West, a higher proportion was seen in rural, 71.8% and 84.4% respectively, with 60.6% and 74.5% in rural respectively.

Respondents who have never used contraceptives that have their first birth have a higher proportion (82.4%), compared with those who have ever use (82.0%) from the North central region. In the North East and North West region, a higher proportion have ever use, 91.6% and 93.6% respectively compared with those in rural, 87.2% and 87.3% respectively. In the South west region, a higher proportion had never used (81.0%), followed by 76.5%. Respondents who have their age at first intercourse below 15 years that have had their first birth had a higher proportion (87.1%), followed by age group 15-17 (84.8%), 18-24 (78.3%) and the least in 25years above (73.0%) are from North central region. In the North East region, those below 15years had a higher proportion (92.5%), followed by 25 years above (87.1%), age 15-17 (85.7%). In the South East, a higher proportion (80.9%) in age group <15 years, followed by 25 above (73.2%), 15-17(70.7%) and the least in 18-24 (68.4%). In the South west, a higher proportion (82.7%) were in age below 15years, 15-17 (80.5%), 18-24 (76.9%), 25 above (76.8%). Those married and not married that have had their first birth had equal proportions across all the regions. Respondents who had one life time sexual partner that have had their first birth had a higher proportion (82.8%) compared to those with more than one(80.8%) that are from North central region. A higher proportion exist with those who have more than one lifetime partner in the North East and North West region, 89.5% and 92.2% respectively, and 86.8% and 71.4% respectively with those who have one lifetime partner.

Table 4.1: Percentage distribution of the women with first birth according to region by socio-demographic factors

	Region						Total No of women
	North Central %(N)	North East %(N)	North West %(N)	South East %(N)	South South %(N)	South West %(N)	
Age							
15-24	58.4(1037)	69.6(1167)	70.5(2223)	35.6(721)	36.3(1465)	42.0(1236)	7850
25-34	87.9(1317)	95.8(1264)	95.3(2398)	73.7(1028)	75.1(1667)	83.7(2120)	9795
35-49	97.7(1127)	96.8(1191)	96.6(2289)	92.8(1029)	96.2(147)	96.3(1894)	8778
Education							
None	91.0(1365)	89.5(2651)	88.8(5418)	93.8(193)	95.4(284)	93.8(729)	10640
Primary	90.0(911)	89.6(537)	88.3(822)	91.9(738)	88.4(1167)	92.1(12100)	5385
Secondary	67.8(912)	75.3(360)	77.7(542)	60.9(1426)	59.0(2325)	73.5(2384)	7949
Higher	63.3(294)	69.4(72)	83.6(128)	57.7(421)	51.1(603)	60.9(929)	2447
Religion							
Christian	80.5(1645)	83.4(669)	80.7(414)	70.3(2677)	67.6(4188)	76.3(3326)	13318
Muslim	84.6(1130)	88.6(2886)	88.2(6356)	88.9(9)	78.1(114)	82.4(1855)	12556
Traditional	89.1(64)	95.0(40)	87.1(85)	91.3(80)	90.9(44)	87.5(48)	362
Others	89.5(38)	88.0(25)	92.9(56)	75.0(12)	73.5(34)	81.8(22)	188
Wealth Index							
Poorest	85.4(740)	87.4(1753)	88.2(2333)	86.5(126)	79.1(263)	90.5(199)	5415
Poorer	87.4(748)	89.1(844)	87.8(2258)	85.9(227)	79.7(548)	84.3(521)	5415
Middle	84.3(855)	88.9(567)	87.8(1144)	72.8(696)	74.7(939)	83.2(673)	4873
Richer	77.7(619)	85.3(3480)	87.9(728)	67.7(920)	63.4(1346)	76.4(1324)	5284
Richest	72.7(520)	83.3(108)	84.6(449)	66.2(810)	61.0(1282)	76.0(2536)	5705
Place of Residence							
Urban	77.2(988)	88.6(891)	88.0(1222)	67.8(1286)	60.6(1430)	74.5(3175)	14640
Rural	84.3(2494)	87.4(2731)	87.7(5688)	73.6(1492)	71.8(2950)	84.4(2077)	6535
Ever use of contraceptive							
Ever Use	82.0(1018)	91.6(391)	93.6(456)	69.1(1314)	63.9(2631)	76.5(3042)	6535
Never Use	82.4(2464)	87.2(3230)	87.3(6455)	72.5(1464)	74.5(1749)	81.0(2210)	14640
Age at first sexual intercourse							
<15	87.1(661)	92.5(1472)	92.8(2896)	80.9(283)	77.7(748)	82.7(404)	6464
15-17	84.8(1358)	85.7(1509)	85.7(3059)	70.7(819)	70.2(1806)	80.5(1520)	10070
18-24	78.3(1315)	81.1(610)	78.6(894)	68.4(1366)	61.9(1710)	76.9(3031)	8924
25+	73.0(148)	87.1(31)	85.5(62)	73.2(310)	66.1(115)	76.8(298)	964
Marital status at first birth							
Married	100.0(2671)	100.0(3069)	100.0(5937)	100.0(1792)	100.0(2404)	100.0(3747)	19620
Not married	100.0(137)	100.0(65)	100.0(119)	100.0(105)	100.0(328)	100.0(269)	1024
Lifetime number of sexual partners							
One	82.8(2494)	87.1(2686)	86.8(5649)	71.4(1583)	66.3(1139)	76.9(2671)	16798
2+	80.8(911)	89.5(903)	92.2(1100)	69.4(1116)	69.0(1762)	80.1(2520)	9103

In Table 4.2 below, early childbearing was cross tabulated with some socio-demographic factors.

In the North central region, those respondents who are in the age group 15-24 have a higher proportion (50.4%) of those who had early childbearing compared to those age group 25-34 (31.5%) and 35-49 (29.8%). This was statistically significant. Across the North East, North West and South West, the proportion of those with early childbearing decreases across the age groups while in South East and South South, higher proportions were recorded in the age group 15-24, (30.1% and 40.5%) respectively, followed by the age group 35-49, (19.4% and 33.0%) respectively, with the least in age group 25-34, (14.2% and 21.7%) respectively and these were also statistically significant at $p < 0.001$.

Respondents with no education (41.5%) had a higher proportion of those with Early childbearing, which was followed by those in Primary (38.5%), Secondary (23.8%) and Higher education category (10.2%) from the North central which is statistically significant at $p < 0.001$. In the North East and North West, the proportion of early childbearing decreases across the levels of educations. This was also statistically significant at $P < 0.001$. In the South west, a higher proportion was observed in respondents with none education (28.2%), Primary (22.6%), Secondary (11.9%) and Higher (4.2%). These were also statistically significant.

In the North central region, a higher proportion of respondents are traditional religion (49.1%) who had early childbearing, followed by others (38.2%), Muslim (36.5%) and the least was observed in Christianity (33.2%). This association was not statistically significant at $p < 0.001$. In the North west, a higher proportion of Muslim (52.8%) had early child bearing which was followed by others (51.9%), Traditional (45.9%) and the least was observed in Christianity (31.1%). This association was statistically significant at $p < 0.001$. Respondents who are Muslims from the South West showed a higher proportion (20.9%) of those with early childbearing, followed by traditional (14.6%), Christianity (13.9%) and others (0.0%). This was also statistically significant.

Respondents from the North Central who showed a higher proportion of early childbearing was found in those in the poorest Wealth Index category (39.8%), followed by poorer (39.1%), Middle (37.5%) and the least in Richest. This was also statistically significant. In the North East, higher proportions in poorest (55.9%), Poorer (54.7%), Middle (50.6%) and the least in Richest (35.6%). In the South South and South West, there were corresponding decrease in proportion of early childbearing across the Wealth Index category, Poorest (42.8% and 29.4% respectively), Poorer (39.8% and 27.1% respectively), Middle (34.3% and

22.1% respectively), Richer (30.7% and 18.4% respectively), Richest (14.9% and 10.2% respectively). All these were statistically significant.

Those respondents who live in the rural areas showed a higher proportion (37.5%) of those who had early child bearing than those who live in urban areas (27.7%) from the North Central region. Also, in the North East region, a higher proportion was observed in rural (54.7%) compared to in urban (48.2%). This was a statistically significant association. In the South South and South West region, a higher proportion was observed in the rural areas, (32.5% and 23.0% respectively), and lower proportions in the urban area areas (22.6% and 11.7%). This was also a statistically significant association.

From the North Central, those respondents who had early childbearing that had never used contraceptives had a higher proportion (35.5%) compared to those who had ever used (33.4%). Across all the regions, respondents who had never used contraceptives showed a higher proportion compared to those who had ever used. In the South West, a higher proportion had never used (20.3%) compared to those who had ever used (13.5%). This association was statistically significant at $P < 0.001$

In the North Central region, a higher proportion of respondents who had their age of first sexual intercourse below 15 years (79.7%) had early childbearing, followed by age group 15-17 (46.8%) and the least was in those who had first intercourse at ages 18 years and above (0.1%).

Also in the South west region, a higher proportion of early childbearing was observed in those ages at first intercourse below 15 years (74.5%), followed by 15-17 (35.3%). These associations were also statistically significant.

The respondents who were not married showed a higher proportion (71.7%) of those who had early child bearing compared to those who were married (1.2%) from the North West. This is a statistically significant association. A higher proportions were also recorded in those that were not married in the South East, South South and South West regions. These associations were also statistically significant.

Those respondents who had one lifetime number of sexual partner showed a higher proportion (51.6%) of those who had early child bearing compared to those who had more than life time number of sexual partners (46.7%). This association was also statistically significant association that are from the North East. In the South West, a higher proportion was also recorded with those with one life time partner (19.9%) compared to those with more than one life time partner (13.1%). This was also a statistically significant association at $p < 0.001$

Table 4.2: Percentage Distribution of Early Childbearing (having children at age less than 18 years) by region according to socio-demographic characteristics

Background Characteristics	Region						Nigeria
	North Central	North East	North West	South East	South South	South West	
Total							
Age							
<i>p-value</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15-24	50.4(607)	66.8(811)	67.9(1569)	30.1(256)	40.5(531)	33.7(519)	55.4(2381)
25-34	31.5(1158)	49.6(1211)	47.4(2285)	14.2(758)	21.7(1253)	14.1(1774)	31.8(2680)
35-49	29.8(1101)	46.9(1153)	44.1(2212)	19.4(954)	33.0(1199)	13.9(1824)	31.7(2678)
Education							
<i>p-value</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000
None	41.5(1242)	57.7(2374)	54.0(4810)	35.9(181)	39.0(272)	28.2(684)	50.7(4847)
Primary	38.5(820)	47.4(481)	52.1(726)	27.9(678)	39.0(1033)	22.6(1115)	36.4(1766)
Secondary	23.8(6.8)	28.8(271)	32.1(421)	12.7(868)	24.9(1371)	11.9(1752)	19.3(1021)
Higher	10.2(186)	19.6(151)	13.1(107)	2.9(244)	10.4(308)	4.2(566)	7.3(106)
Religion							
<i>p-value</i>	0.035	0.000	0.000	0.008	0.730	0.000	0.000
Christian	33.2(1645)	32.3(558)	31.1(334)	18.3(1881)	29.5(2829)	13.9(352)	24.1(2360)
Muslim	36.5(1130)	57.5(2557)	52.8(5605)	50.0(8)	32.6(89)	20.9(1528)	47.6(5197)
Traditional	49.1(54)	56.4(39)	45.9(74)	30.1(73)	25.0(40)	14.6(41)	37.5(121)
Others	38.2(34)	54.5(22)	51.9(52)	11.1(9)	36.0(25)	0.0(18)	38.8(62)
Wealth Index							
<i>p-value</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Poorest	39.8(633)	55.9(1532)	52.2(2057)	26.6(109)	42.8(208)	29.4(180)	49.9(2354)
Poorer	39.1(654)	54.7(753)	53.9(1983)	25.6(195)	39.8(437)	27.1(439)	46.6(2078)
Middle	37.5(720)	50.6(504)	52.1(1005)	24.9(507)	34.3(702)	22.1(560)	38.5(1540)
Richer	32.4(481)	43.8(297)	49.5(640)	18.0(623)	30.7(854)	18.4(1010)	29.8(1163)
Richest	17.2(378)	35.6(90)	37.5(379)	10.1(536)	14.9(781)	10.2(1927)	14.8(605)
Residence							
<i>p-value</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Urban	27.7(763)	48.2(789)	47.9(1075)	15.5(873)	22.6(866)	11.7(2365)	25.4(1712)
Rural	37.5(2104)	54.7(2387)	52.3(4990)	21.5(1098)	32.5(2117)	23.0(1753)	41.7(6028)
Contraceptive Use							
<i>p-value</i>	0.0289	0.057	0.003	0.056	0.071	0.000	0.000
Ever Use	33.4(836)	48.3(358)	44.6(426)	17.0(908)	28.3(1680)	13.5(2328)	42.0(6154)
Never Use	35.5(2031)	53.7(2818)	52.1(5638)	20.3(1062)	31.3(1303)	20.3(1789)	24.3(1586)
Age at First Sexual Intercourse							
<i>p-value</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<15	79.7(576)	77.0(1361)	71.8(2687)	70.9(230)	74.5(581)	74.5(334)	74.1(5768)
15-17	46.8(1152)	49.3(1293)	45.7(2622)	35.6(579)	35.3(1269)	35.3(1223)	42.5(8137)
18 above	0.1(1138)	0.0(521)	0.0(756)	0.2(1162)	0.2(1134)	0.0(2560)	0.1(7271)
Marital status at first birth							
<i>p-value</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.001
Married	34.5(2671)	53.1(3069)	51.2(5937)	17.4(1792)	27.2(2404)	15.5(3747)	36.4(7141)
Not married	41.6(137)	61.5(65)	71.7*(120)	33.3(105)	42.8(327)	24.5(269)	41.4(424)
Life Time number of Sexual partners							
<i>p-value</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000
One	35.7(2064)	55.2(2339)	51.6(4903)	21.4(1130)	30.4(1139)	19.9(2054)	40.8(5556)
2+	32.2(736)	46.7(808)	50.8(1015)	15.6(775)	29.3(1762)	13.1(2019)	28.5(2031)

In table 4.3 below, the age at First birth was cross tabulated with socio-demographic factors.

A higher proportion of respondents in the North East (12.6%) showed a higher proportion of those who had their First Birth at ages 9-14 compared to those in North Central, North West, South South, South East, and South West who had 6.7%, 10.5%, 5.9%, 3.5% and 2.6% respectively and this was significant at $p < 0.001$.

Respondents whose ages were 15-24 had a higher proportion (10.2%) of age at First birth within age (9-14) compared to those whose ages are (25-34), (35-49) with 6.2% and 7.3% respectively. This was significant at $p < 0.001$. There was a higher proportion of those with no education (10.7%) that had their first birth in the age (9-14) when compared to primary (7.9%), Secondary (2.9%), Higher (0.8%). This was statistically significant at $p < 0.001$.

A higher proportion of respondents who are Muslims (10.1%) had their first birth in the age group (9-14) compared to Christians (4.4%), Traditional (9.0%), Others (6.9%). This was also statistically significant at $p < 0.001$. Respondents who occupy the poorest wealth Index had the highest proportion (10.6%) of those who had their first birth in the age group (9-14) compared to those in Poorer (9.2%), Middle (8.1%), Richer (5.9%) and Richest (2.6%). This was statistically significant.

Respondents in the rural area showed a higher proportion (8.5%) in the age group (9-14) compared to those in the urban area (5.3%). This is significant at $p < 0.001$. Those who had never used contraceptives showed a higher proportion (8.6%) compared to those who had ever used (4.8%). This is statistically significant at $p < 0.001$.

A higher proportion of respondents who are Hausas (10.7%) had their first births in the age (9-14) compared to Igbos (3.6%), Yorubas (2.1%), Others (8.6%). This is statistically significant at $p < 0.001$. A higher proportion of respondents who had their age at First sexual Intercourse below 15 years showed a higher proportion (27.0%) of those who had their first birth at age (9-14)

compared to ages at First Sexual Intercourse at (15-17), (18-24), (25 above) with 0.2%, 0.1% and 0.0% respectively. This is a statistically significant association at $p < 0.001$.

Those respondents who were never married had a higher proportion (14.4%) of those who had their first birth at age (9-14) compared to those who are married (7.2%). This is a statistically significant association at $p < 0.001$.

Those with one lifetime number of sexual partner had a higher proportion (8.0%) of those who had their first birth at ages (9-14) compared to those with more than one lifetime number of sexual partners (6.3%).

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4.2 BIVARIATE ANALYSIS

Table 4.3: Percentage Distribution of Age at First Birth according to socio-demographic characteristics

Background Characteristics	Age at First Birth				No of Women	χ^2 -value	p-value	Mean Age at 1 st Birth
	9-14	15-17	18-24	25 above				
Total								
Region								<i>P=0.000</i>
North Central	6.7(192)	28.1(807)	53.5(1533)	11.7(335)	2867	2573.915	0.000	19.55±4.2
North East	12.6(400)	40.5(1285)	41.4(1315)	5.5(176)	3176			17.97±3.6
North West	10.5(634)	41.1(2491)	42.2(2558)	6.3(381)	6064			18.10±3.6
South East	3.5(69)	15.3(302)	52.6(1037)	28.5(562)	1970			22.02±4.9
South South	5.9(176)	23.7(706)	54.3(1619)	16.1(481)	2982			20.23±4.4
South West	2.6(105)	13.9(573)	59.1(2434)	24.4(1005)	4117			21.73±4.4
Age								<i>P=0.000</i>
15-24	10.2(440)	45.2(1942)	44.5(1913)	0.0(0)	4295	1426.497	0.000	17.37±2.4
25-34	6.2(523)	25.6(2158)	53.4(4510)	14.8(1249)	8440			19.95±4.1
35-49	7.3(614)	24.5(2065)	48.2(4073)	20.0(1691)	8443			20.50±5.0
Education								<i>P=0.000</i>
None	10.7(1027)	40.0(3820)	41.9(4002)	7.4(712)	9561	3432.476	0.000	18.27±3.8
Primary	7.9(384)	28.5(1382)	53.6(2602)	10.0(484)	4852			19.31±4.0
Secondary	2.9(154)	16.4(867)	61.6(3267)	19.1(1013)	5301			21.11±4.2
Higher	0.8(11)	6.5(95)	42.7(625)	50.0(731)	1462			24.46±4.7
Religion								<i>P=0.000</i>
Christian	4.4(435)	19.7(1925)	55.3(5404)	20.6(2013)	9777	1504.485	0.000	20.95±4.6
Muslim	10.1(1101)	37.5(4096)	44.5(4857)	7.9(863)	10917			18.49±3.9
Traditional	9.0(29)	28.4(92)	50.0(162)	12.7(41)	324			19.31±4.2
Others	6.9(11)	31.9(51)	46.3(74)	15.0(24)	160			19.45±4.4
Wealth Index								<i>P=0.000</i>
Poorest	10.6(500)	39.3(1854)	42.9(2027)	7.2(339)	4720	2139.06	0.000	18.30±3.8
Poorer	9.2(412)	37.4(1666)	45.4(2025)	8.0(357)	4460			18.57±3.9
Middle	8.1(1214)	30.4(1214)	50.2(2008)	11.3(450)	3997			19.29±4.2
Richer	5.9(232)	23.8(931)	56.1(2191)	14.1(552)	3906			20.07±4.3
Richest	2.6(106)	12.2(499)	54.8(2244)	30.4(1243)	4092			22.32±4.6
Type Of place of residence								<i>P=0.000</i>
Urban	5.29(348)	20.3(1364)	53.1(3572)	21.5(1444)	6728	765.461	0.000	20.93±4.7
Rural	8.5(1228)	33.29(4800)	47.9(6923)	10.4(1496)	14447			19.05±4.1
Ever use of Contraceptives								<i>P=0.000</i>
Ever Use	4.8(314)	19.5(1272)	55.2(3608)	20.5(1341)	6535	750.970	0.000	20.89±4.5
Never Use	8.6(1262)	33.4(4892)	47.0(6888)	10.9(1599)	14641			19.09±4.2
Ethnicity								<i>P=0.000</i>
Hausa	10.7(611)	41.8(2389)	42.0(2403)	5.6(319)	5722	2357.428	0.000	18.00±3.5
Igbo	3.6(93)	14.0(359)	52.6(1353)	29.8(765)	2570			22.17±4.9
Yoruba	2.1(74)	13.3(472)	60.8(2162)	23.8(848)	3556			21.76±4.4
Others	8.6(798)	31.6(2944)	49.1(4578)	10.8(1008)	9328			19.16±4.2
Age at First Sexual Intercourse								<i>P=0.000</i>
<15	27.0(1557)	47.1(2719)	22.4(1290)	3.5(203)	5769	14535.20	0.000	16.43±3.3
15-17	0.2(14)	42.3(3444)	51.1(4155)	6.4(524)	8137			18.75±3.2
18-24	0.1(4)	0.0(2)	77.1(5051)	22.8(1494)	6551			22.59±3.3
25+	0.0(0)	0.0(0)	0.0(0)	100.0(720)	720			28.77±2.9
Marital Status at First Birth								<i>P=0.000</i>
Married	7.2(1408)	29.2(5734)	49.3(9681)	14.3(2797)	19620	92.223	0.000	19.69±4.4
Not married	14.4(147)	27.1(277)	50.2(514)	8.4(86)	1024			18.75±3.9
Lifetime number of Sexual partners								<i>P=0.000</i>
One	8.0(1094)	32.7(4462)	48.5(6604)	10.8(1469)	13629	486.38	0.000	19.11±4.1
2+	6.3(449)	22.2(1583)	51.9(3693)	19.5(1390)	7115			20.63±4.7

In Table 4.4, After adjusting for all other variables in the North Central region, For Model 1, Only age and age at First sexual Intercourse were found significant in the cross tabulation. The results showed that those respondents in the age group 25-34 are 0.74 times likely to have early childbearing than those age group 15-24 (95% C.I=0.65-0.85) and respondents of age group 35-49 are 64% as times likely to have early childbearing (95% C.I=0.56-0.73) Respondents in the age group who had their age at first sexual intercourse at the age 15-17 were 29% times as likely to have early childbearing compared to those who had it in the age below 15 years of age (95% C.I=0.27-0.34).

In Model 2, respondents who had secondary level of education were 59% times likely to have early childbearing compared to those who had no education (95% C.I=0.49-0.71) while those who had tertiary level of education were just 26% times likely to have early childbearing (95% C.I=0.17-0.39).

There was no variable significant in the cross tabulation for model 3, In Model 4, which is the interaction model, respondents aged 25-34 were 74% times as likely to have early childbearing compared to those age group 15-34 (95% C.I=0.64-0.84) while respondents who are aged 35-49 years are 0.63times likely to have early child bearing (95% C.I=0.55-0.73). Respondents who had their age at First sexual Intercourse in the age 15-17 were 3% times likely to have early childbearing compared to those age group below 15 years of age (95% C.I=0.27-0.34).

4.3 MULTIPLE REGRESSION ANALYSIS

Table 4.4: Cox-proportional Hazard model of Early Childbearing in the North Central Nigeria

Background Characteristics	Model 1 Hazard Ratio (95% C.I of Exp(β))	Model 2 Hazard Ratio (95% C.I of Exp(β))	Model 3 Hazard Ratio (95% C.I of Exp(β))	Model 4 Hazard Ratio (95% C.I of Exp(β))
Demographic Factors				
Age				
15-24				
25-34	0.74(0.65-0.85)*			0.28(0.15-0.54)*
35-49	0.64(0.56-0.73)*			0.25(0.78-0.80)*
Age at first sexual intercourse				
<15				
15-17	0.3(0.27-0.34)*			0.27(0.18-0.39)*
18 above	0.00(0.00-0.00)*			0.25(0.00-1E+022)
Marital status at first birth				
Married				
Not Married				
Place of Residence				
Urban				
Rural	0.94(0.82-1.07)			1.38(0.84-2.27)
Socio-economic factors				
Education				
None				
Primary		0.94(0.82-1.07)		0.94(0.58-1.52)
Secondary		0.59(0.49-0.71)*		0.91(0.55-1.51)
Higher		0.26(0.17-0.39)*		0.4(0.05-3.49)
Religion				
Christian				
Muslim		1.03(0.91-1.17)		0.93(0.59-1.46)
Traditional		1.29(0.92-1.82)		2.09(0.99-4.38)
Others		0.97(0.58-1.63)		1.49(0.44-5.08)
Wealth Index				
Poorest				
Poorer		0.99(0.84-1.15)		1.16(0.74-1.82)
Middle		0.99(0.85-1.17)		1.07(0.67-1.71)
Richer		0.93(0.77-1.12)		1.21(0.68-2.15)
Richest		0.64(0.49-0.83)*		1.05(0.39-2.81)
Behavioural factors				
Ever use of contraceptive				
Ever Use				
Never Use				
Lifetime number of sexual partners				
One				
2+				18849.767
-2Loglikelihood	18853.357	20821.700		2167.589
Chi-square	2163.735	151.820		

*Significant at 0.1%; **Significant at 1%; ^Significant at 5%; Ref. Cat.; Reference Category

In table 4.5 below, after adjusting for all other variables in the North East, for model 1, the age of respondents and age at First sexual Intercourse were found significant in the cross tabulation which were later moved to the multivariate analysis. Those respondents who are aged 25-29 years 71% times as likely to have early childbearing compared to those aged 15-24 years while those aged 34-49 years were 0.68 times likely to have early child bearing (95% C.I=0.62-0.76). Respondents who had sexual intercourse in the ages 15-17 years are 38% times as likely to have early childbearing compared to those respondents below 15 years of age (95% C.I=0.35-0.41).

In Model 2, those respondents with secondary education were 56% times as likely to have early childbearing compared to those with no education (95% C.I=0.46-0.69) while those with tertiary education were just 37% times as likely to have early childbearing compared to those with no education (95% C.I=0.21-0.63). Muslim respondents were 66% more likely to have early childbearing compared to Christian respondents (95% C.I=1.46-1.89).

For model 3, respondents who had more than one lifetime number of Sexual partners were 79% times likely to have early childbearing as compared to those who had just one partner (95% C.I=0.71-0.87).

The Interaction Model which is Model 4, showed that respondents who are aged 25-29 were 73% times likely to have early child bearing compared to those who are aged 15-24 (95% C.I=0.66-0.81). Respondents who had their age at sexual intercourse at age 15-17 are 38% times likely to have early childbearing compared to those who had at age below 15 years (95% C.I=0.34-0.41). Respondents with lifetime number of sexual partners above 1 are 76% times likely to have early child bearing compared to those with one lifetime number of partners (95% C.I=0.69-0.84).

Table 4.5: Cox-proportional Hazard model of Early Childbearing in the North East Nigeria

Background Characteristics	Model 1 Hazard Ratio (95% C.I of Exp(β))	Model 2 Hazard Ratio (95% C.I of Exp(β))	Model 3 Hazard Ratio (95% C.I of Exp(β))	Model 4 Hazard Ratio (95% C.I of Exp(β))
Demographic Factors				
Age				
15-24				
25-29	0.71 (0.64-0.78)*			
34-49	0.69 (0.69-0.76)*			0.73 (0.66-0.81)*
Age at first sexual intercourse				
<15				0.72 (0.65-0.79)*
15-17	0.38 (0.35-0.41)			0.38 (0.34-0.41)
18 above	(0.00)0.00-1E+023*			0.00 (0.00-1E+023)
Marital status at first birth				
Married				
Not Married				
Place of Residence				
Urban				
Rural				
Socio-economic factors				
Education				
None				
Primary		0.88 (0.78-0.99)^		(0.96)0.84-1.08
Secondary		0.56 (0.46-0.69)*		0.82 (0.67-1.01)
Higher		0.37 (0.21-0.63)*		0.82 (0.48-1.41)
Religion				
Christian				
Muslim		1.67 (1.46-1.89)*		1.06 (0.92-1.21)
Traditional		1.73 (1.23-2.43)**		1.33 (0.94-1.88)
Others		1.64 (0.97-2.75)		1.07 (0.63-1.79)
Wealth Index				
Poorest				
Poorer		0.96 (0.87-1.06)		1.05 (0.95-1.16)
Middle		0.9 (0.80-1.02)		1.07 (0.95-1.20)
Richer		0.86 (0.73-1.01)		1.15 (0.97-1.35)
Richest		0.76 (0.54-1.06)		1.14 (0.82-1.58)
Behavioural factors				
Ever use of contraceptive				
Ever Use				
Never Use				
Drinking alcohol or smoking cigarette				
No				
Yes				
Lifetime number of sexual partners				
One			0.79 (0.72-0.87)	0.76 (0.82-1.58)*
2+				
-2Loglikelihood	37494.673	39075.087	38866.351	37044.278
Chi-square	1472.151	195.830	23.283	1506.657

*Significant at 0.1%; **Significant at 1%; ^Significant at 5%; Ref. C: Reference Category

In the table 4.6 below, respondents aged 25-34 years were 65% times as likely to have early child bearing compared to those age 15-24 years (95% C.I=0.59-0.71) while respondents aged 35-49 years were 52% times as likely to have early childbearing (95% C.I=0.48-0.58). Respondents who had their first sexual Intercourse in the age 15-17 were 39% times as likely to have early child bearing compared to those who had it below 15 years of age. (95% C.I=0.36-0.42).

In model 2, respondents with secondary education level of education were 53% times as likely to have early childbearing as compared to those with no education (95% C.I=0.43-0.67) while respondents with higher level of education were 23% times as likely to have early childbearing compared to those with no education (95% C.I=0.13-0.40).

There was no variable significant in the cross tabulation to be put in the multivariate analysis of Model 3.

The Interaction Model which is Model 4, respondents age 25-34 were 65% times as likely to have early childbearing compared to those aged 15-24 (95% C.I=0.59-0.71) while those aged 35-49 years were 52% times likely to have early child bearing (95% C.I=0.48-0.58)

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In the table 4.6 below, respondents aged 25-34 years were 65% times as likely to have early child bearing compared to those age 15-24 years (95% C.I=0.59-0.71) while respondents aged 35-49 years were 52% times as likely to have early childbearing (95% C.I=0.48-0.58). Respondents who had their first sexual Intercourse in the age 15-17 were 39% times as likely to have early child bearing compared to those who had it below 15 years of age. (95% C.I=0.36-0.42).

In model 2, respondents with secondary education level of education were 53% times as likely to have early childbearing as compared to those with no education (95% C.I=0.43-0.67) while respondents with higher level of education were 23% times as likely to have early childbearing compared to those with no education (95% C.I=0.13-0.40).

There was no variable significant in the cross tabulation to be put in the multivariate analysis of Model 3.

The Interaction Model which is Model 4, respondents age 25-34 were 65% times as likely to have early childbearing compared to those aged 15-24 (95% C.I=0.59-0.71) while those aged 35-49 years were 52% times likely to have early child bearing (95% C.I=0.48-0.58)

Table 4.6: Cox-proportional Hazard model of Early Childbearing in the North West Nigeria

Background Characteristics	Model 1 Hazard Ratio (95% C.I of Exp(β))	Model 2 Hazard Ratio (95% C.I of Exp(β))	Model 3 Hazard Ratio (95% C.I of Exp(β))	Model 4 Hazard Ratio (95% C.I of Exp(β))
Demographic Factors				
Age				
15-24	0.65(0.59-0.71)*			0.65(0.59-0.71)*
25-34	0.53(0.48-0.58)*			0.52(0.48-0.58)*
35-49				
Age at first sexual intercourse				
<15				0.38(0.35-0.41)*
15-17	0.39(0.36-0.42)*			0.00(0.00-6E+02)
18 above	0.00(0.00-7E+024)			
Marital status at first birth				
Married				
Not Married				
Place of Residence				
Urban				
Rural				
Socio-economic factors				
Education				
None		0.99(0.88-1.12)		1.09(0.96-1.22)
Primary		0.53(0.43-0.67)*		0.88(0.70-1.01)
Secondary		0.23(0.13-0.40)*		1.04(0.59-1.82)
Higher				
Religion				
Christian		1.39(1.11-1.74)**		0.8(0.64-1.01)
Muslim		1.29(0.88-1.88)		0.82(0.56-1.19)
Traditional		1.47(0.94-2.28)		0.70(0.45-1.09)
Others				
Wealth Index				
Poorest		1.06(0.97-1.15)		1.05(0.96-1.14)
Poorer		1.09(0.98-1.22)		1.20(1.08-1.35)*
Middle		1.11(0.96-1.27)		1.25(1.08-1.44)**
Richer		1.12(0.90-1.39)		1.47(1.19-1.81)*
Richest				
Behavioural factors				
Ever use of contraceptive				
Ever Use				
Never Use				
Lifetime number of sexual partners				
One				45671.286
2+		47287.167		1425.867
-2Loglikelihood	45705.703			
Chi-square	1396.224	89.697		

*Significant at 0.1%; **Significant at 1%; ^Significant at 5%; Ref. Cat.; Reference Category

In table 4.7 below, after Adjusting for all other variables, in the South East region. For Model 1, Those respondents who had their first sexual intercourse at ages 15-17 were 29% times as likely to have early child bearing (95% C.I=0.23-0.36).

In model 2, those who had secondary school education are 32% times as likely to have early childbearing compared to those with no education (95% C.I=0.23-0.46) while those with Higher education were just 8% times as likely to have early childbearing (95% C.I=0.03-0.19).

There was no variable significant at the cross tabulation for model 3. In Model 4, which is the interaction model, respondents who had their age of first Sexual Intercourse at ages 15-17 are 3% times likely to have early child bearing compared to those below 15 years of age (95% C.I=0.24-0.37)

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Table 4.7: Cox-proportional Hazard model of Early Childbearing in the South East Nigeria

Background Characteristics	Model 1 Hazard Ratio (95% C.I of Exp(β))	Model 2 Hazard Ratio (95% C.I of Exp(β))	Model 3 Hazard Ratio (95% C.I of Exp(β))	Model 4 Hazard Ratio (95% C.I of Exp(β))
Demographic Factors				
Age				
15-24				
25-29	0.85(0.61-1.18)			
35-49	1.02(0.76-1.38)			0.77(0.55-1.07)
Age at first sexual intercourse				
<15				
15-17	0.29(0.23-0.36)*			0.3(0.24-0.37)*
18 above	0.00(0.00-0.01)*			0.00(0.00-0.01)*
Marital status at first birth				
Married				
Not Married	0.87-1.78			1.21(0.84-1.74)
Place of Residence				
Urban				
Rural				
Socio-economic factors				
Education				
None				
Primary		0.69(0.52-0.91)**		0.88(0.66-1.18)
Secondary		0.32(0.23-0.46)*		0.53(0.36-0.78)**
Higher		0.08(0.03-0.19)*		0.24(0.05-0.61)**
Religion				
Christian				
Muslim				
Traditional				
Others				
Wealth Index				
Poorest				
Poorer		1.07(0.73-1.58)		1.03(0.69-1.53)
Middle		1.32(0.92-1.90)		1.17(0.81-1.69)
Richer		1.11(0.75-1.65)		1.06(0.70-1.59)
Richest		1.03(0.64-1.64)		1.23(0.76-1.98)
Behavioural factors				
Ever use of contraceptive				
Ever Use				
Never Use				
Drinking alcohol or smoking cigarette				
No				
Yes				
Lifetime number of sexual partners				
One				
2+				4187.661
-2Loglikelihood	4213.872	5213.215		4187.661
Chi-square	894.785	111.173		916.513

*Significant at 0.1%; **Significant at 1%; ^Significant at 5%; Ref. Cat.; Reference Category

Table 4.7: Cox-proportional Hazard model of Early Childbearing in the South East Nigeria

Background Characteristics	Model 1 Hazard Ratio (95% C.I of Exp(β))	Model 2 Hazard Ratio (95% C.I of Exp(β))	Model 3 Hazard Ratio (95% C.I of Exp(β))	Model 4 Hazard Ratio (95% C.I of Exp(β))
<u>Demographic Factors</u>				
<u>Age</u>				
15-24				
25-29	0.85(0.61-1.18)			0.77(0.55-1.07)
35-49	1.02(0.76-1.38)			0.82(0.59-1.13)
<u>Age at first sexual intercourse</u>				
<15				
15-17	0.29(0.23-0.36)*			0.3(0.24-0.37)*
18 above	0.00(0.00-0.01)*			0.00(0.00-0.01)*
<u>Marital status at first birth</u>				
Married				
Not Married	0.87-1.78			1.21(0.84-1.74)
<u>Place of Residence</u>				
Urban				
Rural				
<u>Socio-economic factors</u>				
<u>Education</u>				
None				
Primary		0.69(0.52-0.91)**		0.88(0.66-1.18)
Secondary		0.32(0.23-0.46)*		0.53(0.36-0.78)**
Higher		0.08(0.03-0.19)*		0.24(0.95-0.61)**
<u>Religion</u>				
Christian				
Muslim				
Traditional				
Others				
<u>Wealth Index</u>				
Poorest				
Poorer		1.07(0.73-1.58)		1.03(0.69-1.53)
Middle		1.32(0.92-1.90)		1.17(0.81-1.69)
Richer		1.11(0.75-1.65)		1.06(0.70-1.59)
Richest		1.03(0.64-1.64)		1.23(0.76-1.98)
<u>Behavioural factors</u>				
<u>Ever use of contraceptive</u>				
Ever Use				
Never Use				
<u>Drinking alcohol or smoking cigarette</u>				
No				
Yes				
<u>Lifetime number of sexual partners</u>				
One				
2+				4187.661
-2Loglikelihood	4213.872	5213.215		916.513
Chi-square	894.785	111.173		

*Significant at 0.1%; **Significant at 1%; ^Significant at 5%; Ref. Cat.; Reference Category

In table 4.8 below, after adjusting for other variables in Model 1, respondents aged 25-34 years were 68% times as likely to have early child bearing compared to those aged 15-34 (95% C.I=0.56-0.83). Respondents who had their first Intercourse at age 15-17 were 28% times as likely to have early childbearing compared to those of age at first intercourse below 15 (95% C.I=0.24-0.33).

In Model 2, Respondents who are from the richest wealth Index category are 46 times likely to have early childbearing than those in the Poorest category (95% C.I=0.34-0.63).

There was no variable significant in the cross tabulation stage for the multivariate analysis of Model 3.

In model 4, which is the interaction Model, respondents aged 25-34 years are 0.65 times likely to have early child bearing compared to those age group 15-24 years. (95% C.I=0.53-0.80).

Also respondents who had their age at First sexual Intercourse in the age 15-17 were 29% times as likely to have early child bearing. (95% C.I=0.25-0.33).

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Table 4.8: Cox-proportional Hazard model of Early Childbearing in the South South Nigeria

Background Characteristics	Model 1 Hazard Ratio (95% C.I of Exp(β))	Model 2 Hazard Ratio (95% C.I of Exp(β))	Model 3 Hazard Ratio (95% C.I of Exp(β))	Model 4 Hazard Ratio (95% C.I of Exp(β))
Demographic Factors				
Age				
15-24				
25-29	0.68(0.56-0.83)*			0.65(0.53-0.80)*
35-49	0.9(0.75-1.09)			0.82(0.67-1.01)^
Age at first sexual intercourse				
<15				
15-17	0.28(0.24-0.33)*			0.29(0.25-0.33)*
18 above	0.00(0.00-0.01)*			0.00(0.00-0.01)*
Marital status at first birth				
Married				
Not Married	1.36(1.12-1.65)**			1.38(1.14-1.68)**
Place of Residence				
Urban				
Rural				
Socio-economic factors				
Education				
None				
Primary		1.14(0.91-1.42)		1.15(0.92-1.44)
Secondary		0.81(0.65-1.02)		0.82(0.64-1.05)
Higher		0.49(0.32-0.74)**		0.88(0.57-1.35)
Religion				
Christian				
Muslim				
Traditional				
Others				
Wealth Index				
Poorest				
Poorer		1.01(0.77-1.32)		1.02(0.77-1.37)
Middle		0.91(0.71-1.18)		0.99(0.75-1.30)
Richer		0.82(0.63-1.07)		0.89(0.67-1.18)
Richest		0.46(0.34-0.63)*		0.75(0.54-1.04)
Behavioural factors				
Ever use of contraceptive				
Ever Use				
Never Use				
Lifetime number of sexual partners				
One				
2+				
-2Loglikelihood	10440.524	12903.087		10411.313
Chi-square	1117.711	115.502		1144.386

*Significant at 0.1%; **Significant at 1%; ^Significant at 5%; Ref. Cat.: Reference Category

In table 4.9 below, in Model 1, those respondents who had their first Sexual Intercourse at age 15-17 were 26% times likely to have early childbearing compared to those who had Intercourse below 15 years (95% C.I=0.21-0.31).

In Model 2, those with secondary School education were 59% times as likely to have early child bearing compared to those without education (95% C.I=0.12-0.36). Respondents in the richest wealth Index were just 49% times as likely to have early child bearing (95% C.I=0.35-0.72).

In model 3, those who had never used contraceptives were 69% times as likely to have early child bearing compared to those who have ever used contraceptives (95% C.I=0.58-0.83). Respondents who had more than one lifetime of sexual partners were 72% times likely to have early child bearing (95% C.I=0.60-0.86).

In Model 4, those who had their first Intercourse at age 15-17 were 24% times as likely to have early child bearing compared to those below 15 years of age (95% C.I=0.19-0.29). Those who are not married were 87% times more likely to have early child bearing (95% C.I=1.39-2.52).

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Table 4.9: Cox-proportional Hazard model of Early Childbearing in the South West Nigeria

Background Characteristics	Model 1 Hazard Ratio (95% C.I of Exp(β))	Model 2 Hazard Ratio (95% C.I of Exp(β))	Model 3 Hazard Ratio (95% C.I of Exp(β))	Model 4 Hazard Ratio (95% C.I of Exp(β))
Demographic Factors				
Age				
15-24				
25-29	0.73(0.58-0.92)^			0.76(0.59-0.96)^
35-49	0.75(0.59-0.95)			0.78(0.61-0.99)^
Age at first sexual intercourse				
<15				
15-17	0.26(0.21-0.31)*			0.24(0.19-0.29)*
18 above	0.00(0.00-0.03)*			0.00(0.00-0.00)*
Marital status at first birth				
Married				1.88(1.39-2.52)
Not Married	1.59(1.19-2.11)**			
Place of Residence				
Urban				
Rural	1.21(1.01-1.46)			1.13(0.89-1.45)
Socio-economic factors				
Education				
None				
Primary		0.9(0.71-1.13)		1.05(0.83-1.33)
Secondary		0.59(0.46-0.77)*		0.81(0.62-1.06)
Higher		0.21(0.12-0.36)*		0.64(0.36-1.12)
Religion				
Christian				
Muslim		1.25(1.04-1.49)^		1.33(1.10-1.60)**
Traditional		0.94(0.42-2.16)		0.88(0.36-2.14)
Others		(0.00)0.00- 2.0E+087		(0.00)0.00- 7.2E+093
Wealth Index				
Poorest				
Poorer		0.86(0.61-1.22)		1.11(0.78-1.59)
Middle		0.71(0.49-1.01)^		1.97(0.82-1.74)
Richer		0.69(0.49-0.98)^		1.10(0.76-1.60)
Richest		0.50(0.35-0.72)*		1.29(0.85-1.95)
Behavioural factors				
Ever use of contraceptive				
Ever Use			0.69(0.58-0.83)	0.95(0.79-1.15)
Never Use				
Lifetime number of sexual partners				
One			0.60-0.86	*0.55(0.46-0.67)
2+				
-2Loglikelihood	6545.161	8034.719	8082.844	6407.192
Chi-square	1621.845	145.469	32.916	1677.799

*Significant at 0.1%; **Significant at 1%; ^Significant at 5%; Ref. Cat.; Reference Category

In table 4.10 below for the cox proportional hazard model for the whole Nigeria, For Model 1, respondents who are from the North West were 83% times likely to have early childbearing compared to those from the North Central (95% C.I=0.78-0.89). Also, respondents from the South South were 75% times likely to have early childbearing compared to those from the North Central (95% C.I=0.68-0.83)

Respondents age 25-34 were 69% times likely to have early childbearing compared to those age group 15-24 (95% C.I=0.65-0.73) while respondents aged 35-49 were 65% times as likely to have early childbearing (95% C.I=0.61-0.68). Those respondents who had their age at first sexual Intercourse at age 15-17 were 35% times as likely to have early childbearing (95% C.I=0.33-0.36).

In Model 2, those who had secondary education were 59% times as likely to have early childbearing compared to those with no education (95% C.I=0.55-0.65) while those with tertiary education were just 3% times likely to have early child bearing compared to those with no education (95% C.I=0.25-0.36). Respondents who are Muslim were 32% times more likely to have early child bearing than the Christian respondents (95% C.I=0.59-0.72).

In Model 3, respondents who had never used contraceptives were 63% times likely to have early childbearing than those who had ever used (95% C.I=0.60-0.67) and respondents who had more than one lifetime of sexual partners were 8% times likely to have early child bearing.

In Model 4, respondents from the North West were 83% times likely to have early childbearing compared to respondents from the North Central. (95% C.I=0.76-0.91). Respondents age 25-34 were 69% times likely to have early childbearing compared to those ages 15-24 (95% C.I=0.66-0.73). Those respondents who had their age at First sexual Intercourse at age 15-17 were 34% times likely to have early child bearing compared to those below 15 years (95% C.I=0.33-0.36)

Respondents who had more than one lifetime of sexual partners were 75% times as likely to have early child bearing (95% C.I=0.71-0.79).

In table 4.10 below for the cox proportional hazard model for the whole Nigeria, For Model 1, respondents who are from the North West were 83% times likely to have early childbearing compared to those from the North Central (95% C.I=0.78-0.89). Also, respondents from the South South were 75% times likely to have early childbearing compared to those from the North Central (95% C.I=0.68-0.83)

Respondents age 25-34 were 69% times likely to have early childbearing compared to those age group 15-24 (95% C.I=0.65-0.73) while respondents aged 35-49 were 65% times as likely to have early childbearing (95% C.I=0.61-0.68). Those respondents who had their age at first sexual Intercourse at age 15-17 were 35% times as likely to have early childbearing (95% C.I=0.33-0.36).

In Model 2, those who had secondary education were 59% times as likely to have early childbearing compared to those with no education (95% C.I=0.55-0.65) while those with tertiary education were just 3% times likely to have early child bearing compared to those with no education (95% C.I=0.25-0.36). Respondents who are Muslim were 32% times more likely to have early child bearing than the Christian respondents (95% C.I=0.59-0.72).

In Model 3, respondents who had never used contraceptives were 63% times likely to have early childbearing than those who had ever used (95% C.I=0.60-0.67) and respondents who had more than one lifetime of sexual partners were 8% times likely to have early child bearing.

In Model 4, respondents from the North West were 83% times likely to have early childbearing compared to respondents from the North Central. (95% C.I=0.76-0.91). Respondents age 25-34 were 69% times likely to have early childbearing compared to those ages 15-24 (95% C.I=0.66-0.73). Those respondents who had their age at First sexual Intercourse at age 15-17 were 34% times likely to have early child bearing compared to those below 15 years (95% C.I=0.33-0.36)

Respondents who had more than one lifetime of sexual partners were 75% times as likely to have early child bearing (95% C.I=0.71-0.79).

Table 4.10: Cox-proportional Hazard model of Early Childbearing in Nigeria

Background Characteristics	Model 1	Model 2	Model 3	Model 4
	Hazard Ratio (95% C.I of Exp(β))	Hazard Ratio (95% C.I of Exp(β))	Hazard Ratio (95% C.I of Exp(β))	Hazard Ratio (95% C.I of Exp(β))
Demographic factors				
Region				
North C (Ref. C)	0.96(0.89-1.02)			0.96(0.89-1.04)
North East	0.83(0.78-0.89)*			0.83(0.76-0.91)*
North West	0.79(0.70-0.89)*			0.85(0.68-1.07)
South East	0.78(0.71-0.85)*			0.90(0.81-0.99)^
South South	0.75(0.68-0.83)*			0.83(0.71-0.95)
South West				
Age				
15-24 (Ref. C)	0.69(0.65-0.73)*			0.69(0.66-0.73)*
25-34	0.65(0.61-0.68)*			0.65(0.62-0.69)*
35-49				
Age at first sexual intercourse				
<15 (Ref. C)	0.35(0.33-0.36)*			0.34(0.33-0.36)*
15-17	0.00(0.00-0.01)*			0.00(0.00-0.00)*
18 above				
Place of Residence				
Urban (Ref. C)	0.95(0.90-1.01)			0.96(0.89-1.02)
Rural				
Socio-economic factors				
Education				
None (Ref. C)		0.92(0.87-0.98)**		1.05(0.99-1.12)
Primary		0.60(0.55-0.64)*		0.81(0.74-0.88)
Secondary		0.30(0.25-0.36)*		0.75(0.61-0.93)
Higher				
Religion				
Christian (Ref. C)		1.32(1.25-1.40)*		1.03(0.96-1.11)
Muslim		1.29(1.12-1.48)*		1.10(0.94-1.29)
Traditional		1.15(0.91-1.44)*		0.98(0.76-1.26)
Others				
Wealth Index				
Poorest (Ref. C)		1.01(0.95-1.06)		1.06(0.99-1.12)
Poorer		0.99(0.94-1.06)		1.12(1.04-1.19)
Middle		0.93(0.87-1.00)^		1.11(1.02-1.21)*
Richer		0.71(0.65-0.79)*		1.07(0.95-1.21)^
Richest				
Ethnicity				
Hausa		0.65(0.59-0.72)*		1.04(0.84-1.29)
Igbo		0.50(0.45-0.55)*		1.06(0.90-1.24)
Yoruba		0.99(0.94-1.04)		1.059(0.98-1.13)
Others				
Behavioural factors				
Ever use of contraceptive				
Ever Use (Ref. C)			0.63(0.60-0.67)	1.07(1.00-1.14)^
Never Use				
Drinking alcohol or smoking cigarette				
No				
Yes				
Lifetime number of sexual partners				
One			0.76-0.83	0.75(0.71-0.79)*
2+			187108.393	147907.544
-2Loglikelihood	151155.347	190059.071	482.058	9278.69
Chi-square	9230.471	2161.741		

*Significant at 0.1%; **Significant at 1%; ^Significant at 5%; Ref. Cat.; Reference Category

The Hazard Functions showing the different variables that were significant in the whole country was shown below.

Those respondents from the North East and North West showed a higher hazard of early child bearing which was followed by respondents in the North Central region. Respondents from the South West and South east exhibited lower hazard rates compared to other regions.

In Figure 4.2, respondents ages group 15-24 showed a higher hazard of early child bearing compared to those age groups 25-34 and 35-49.

In Figure 4.3, respondents who had their age at First sexual Intercourse at ages 15-17 showed a higher hazard of early childbearing compared to those who had it at ages below 15 and ages 18 and above.

Figure 4.4 shows that respondents with no education exhibited a higher hazard of early childbearing, followed closely by those with primary education. The least hazard of early child bearing was observed in those with respondents with Higher education.

In Figure 4.5, respondents whose religions were Islam showed a higher hazard of early childbearing. The least hazard was observed in respondents who are Christians.

Figure 4.6 showed that respondents with one lifetime number of sexual partners had a higher hazard of early childbearing compared to those with two or more lifetime number of sexual partners.

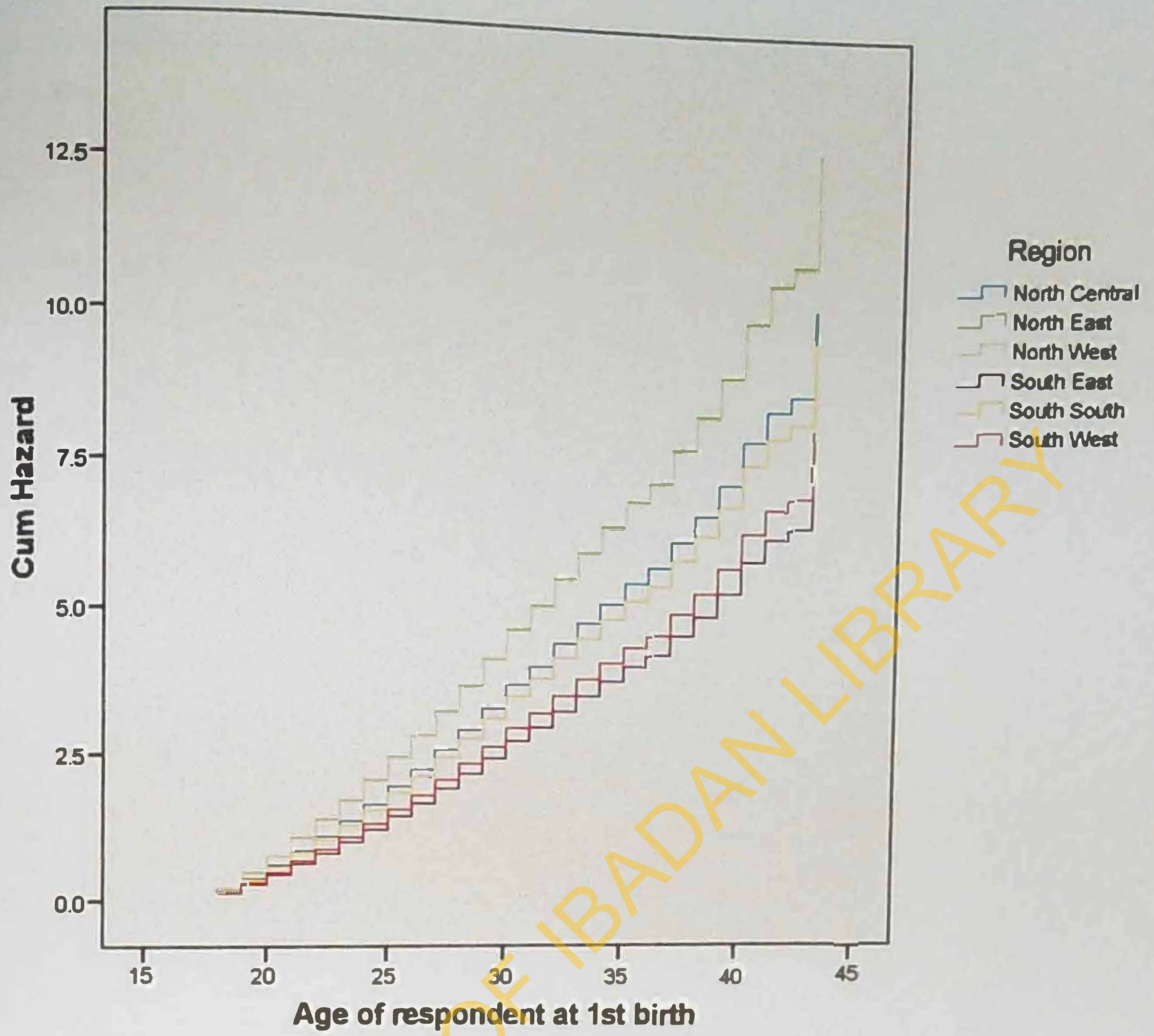


Figure 4.1: Cumulative Hazard Function Showing Region across Nigeria



Figure 4.2: Cumulative Hazard Function Showing Age of Respondents across Nigeria

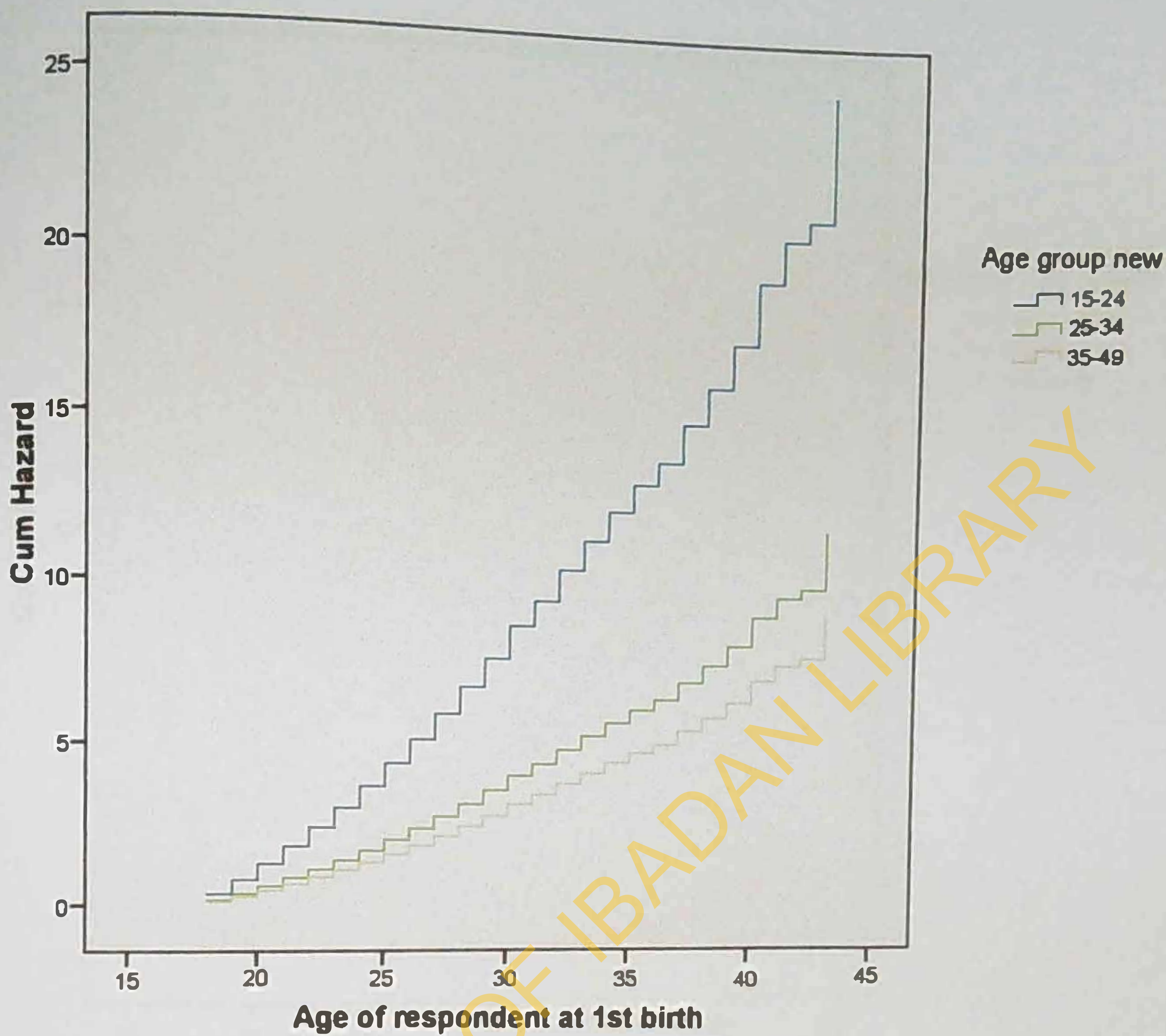


Figure 4.2: Cumulative Hazard Function Showing Age of Respondents across Nigeria

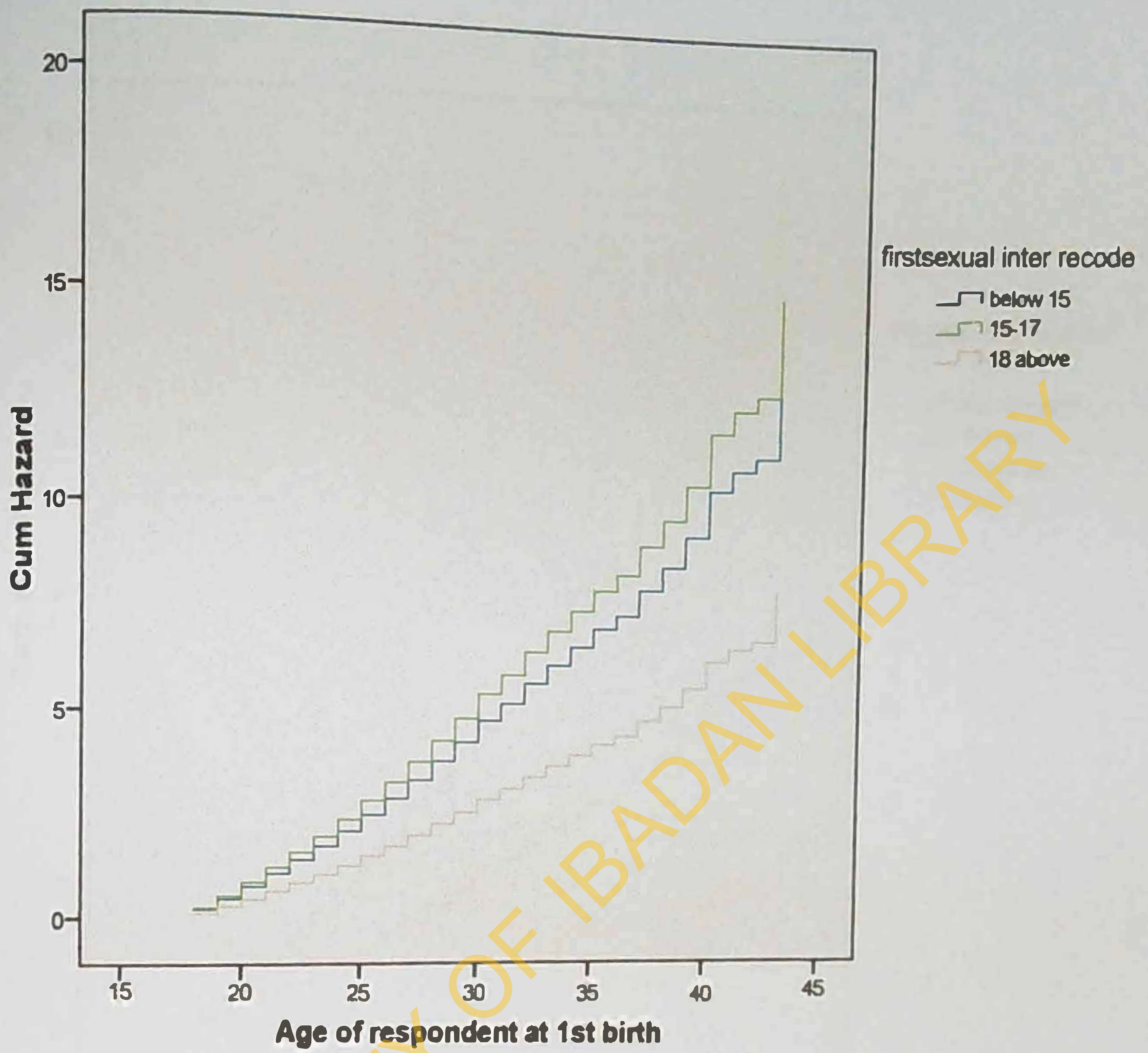


Figure 4.3: Cumulative Hazard Function showing Age at First Sexual Intercourse across Nigeria

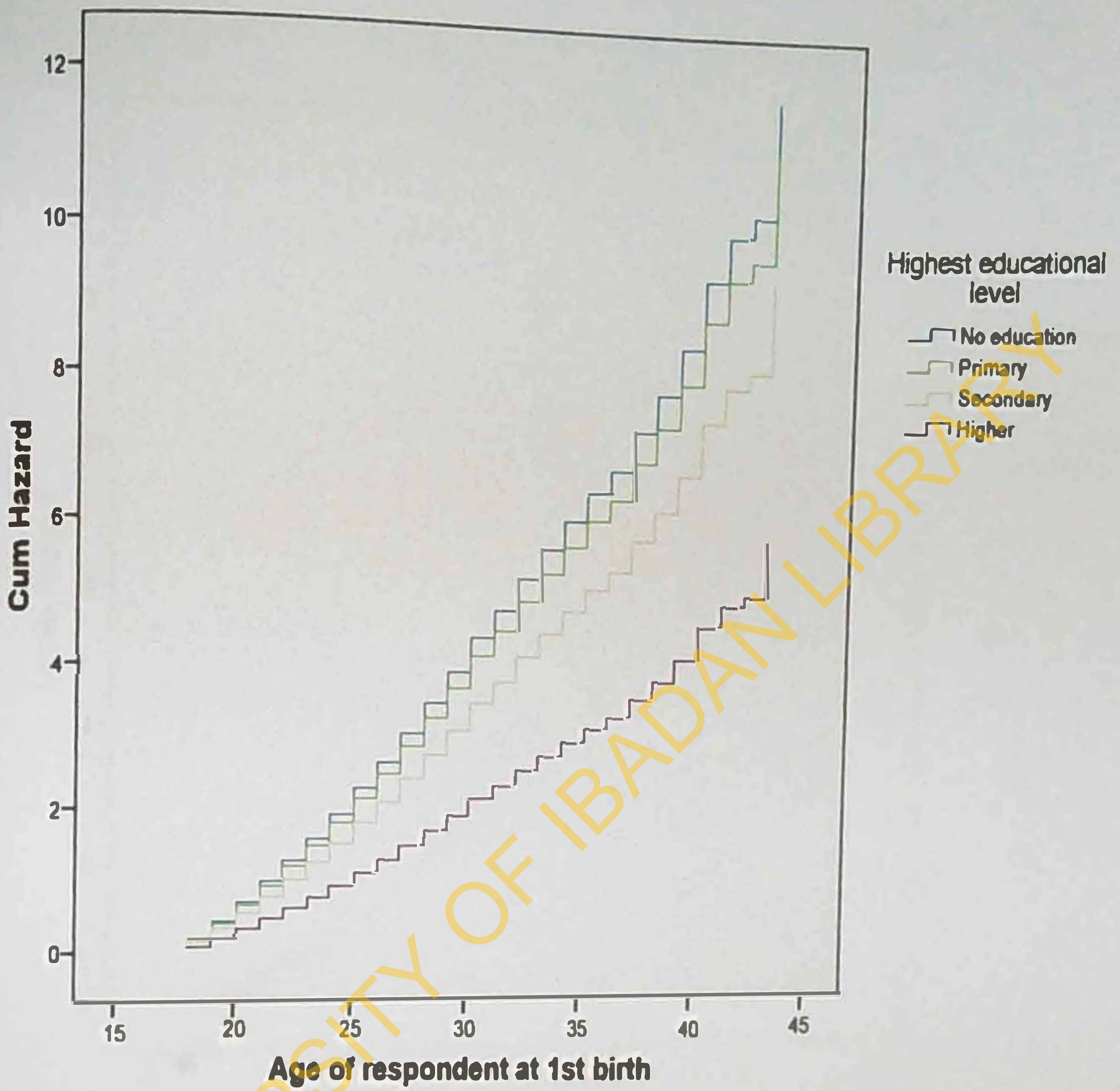


Figure 4.4: Cumulative Hazard Function showing Education across Nigeria

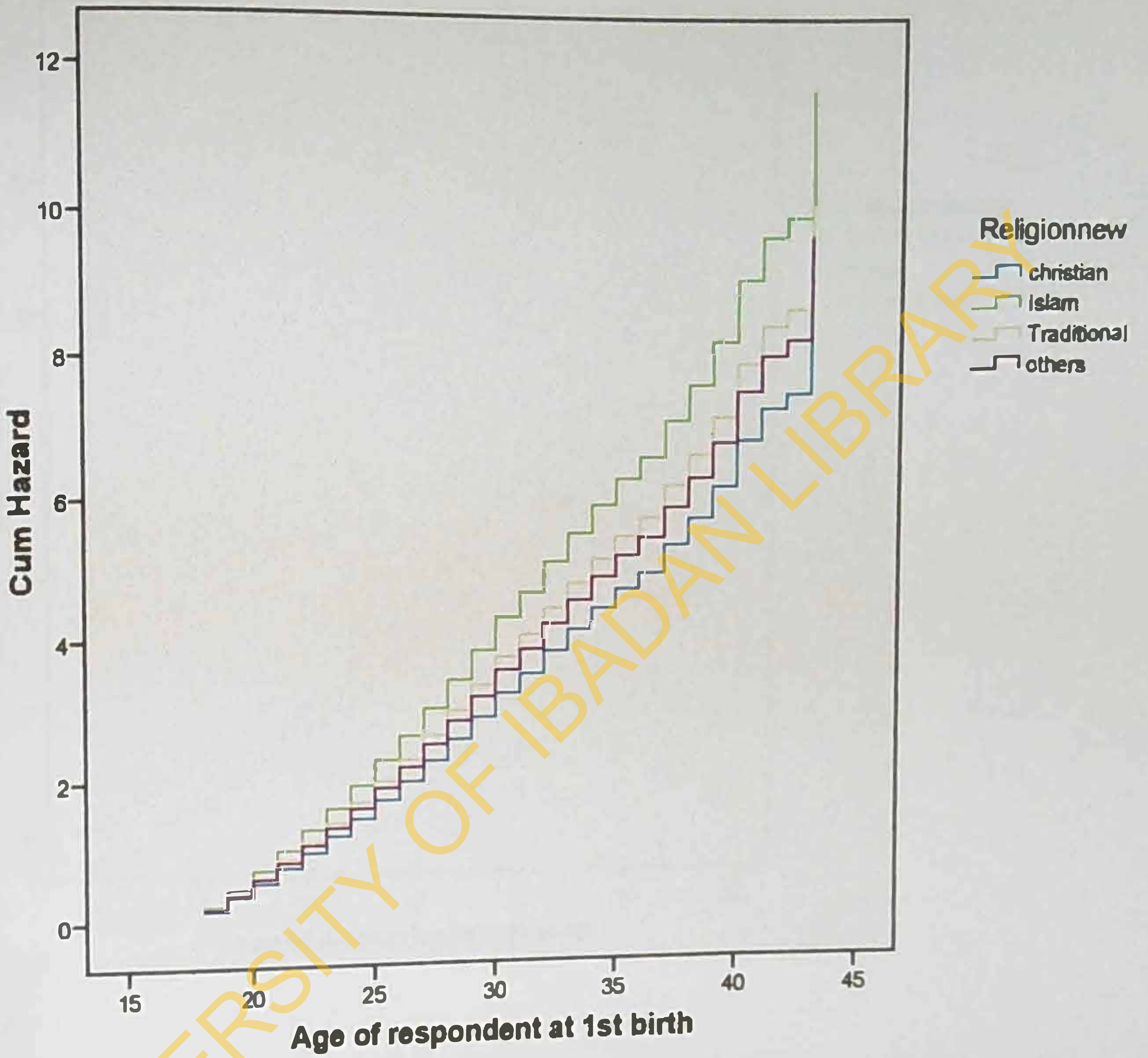


Figure 4.5: Cumulative Hazard Function showing Religion across Nigeria

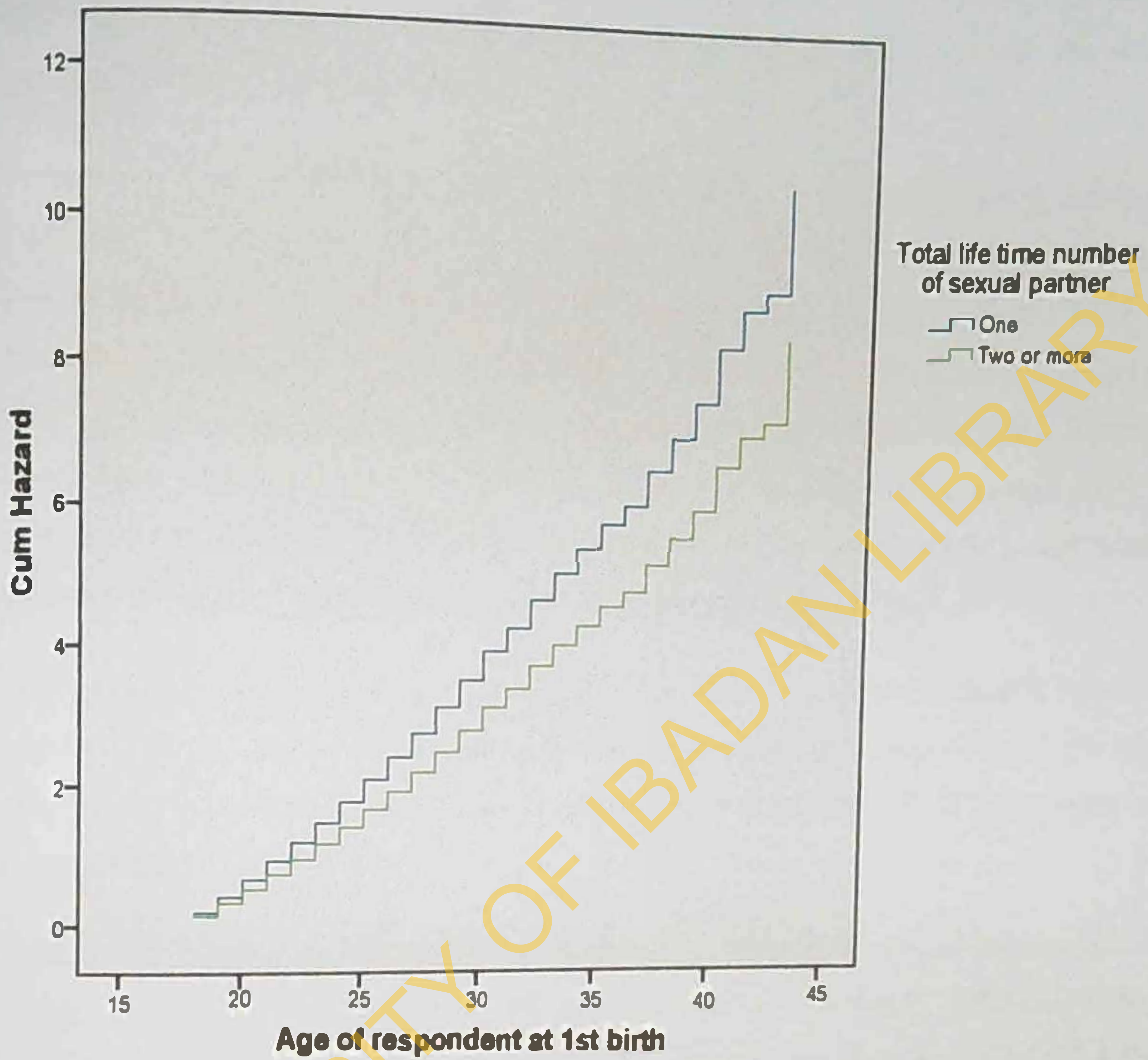


Figure 4.6: Cummulative Hazard Function showing Life Time Number of Sexual Partners across Nigeria

CHAPTER FIVE

DISCUSSION

This paper examined the association between early childbearing and factors that can affect early childbearing among women of child bearing ages in relation to each specific regions and across Nigeria as a whole. It was intended to assess the contribution of selected socio-demographic characteristics of women to the pattern of early child bearing when the determinants were controlled for and vice versa.

In this study, a higher proportion of the women aged 15-24 had early childbearing and more than half had no education. This can be explained by the fact that female rights are undermined and female education is low in developing countries, Nigeria inclusive. Most of the respondents occupy the poorest wealth category Index (49.9%) which is a reflection of the poverty level in Nigeria where majority of Nigerians live below the poverty line. Most of the respondents were rural dwellers (41.7%), which is a reflection of preponderance of Nigerians in the rural areas. This is in line with study by Ekong (2003) where it was found that majority of Nigeria's population live in rural communities (about 70%)

The prevalence of contraceptive use is high (42.0%) which is similar to studies done in Indonesia among married women by Rahyu et al 2009 where the prevalence was 57.4%, but it differs from a study by Adamu et al 2009 where the prevalence was 21.2% in a study in Ghana and in Mali 8%.

From this study, a relatively high number of women have experienced sexual intercourse at ages below 15 years of age. This is in line with a study by Olalekan A. Uthman(2008). Respondents who were not married at the time of first Birth in Nigeria were higher (41.4%) compared to those who were married. This is not in agreement with the findings agreed with the NDHS in which 70% of women of reproductive age were found to married (NPC, 2000).

In this study, the results showed that almost all the factors such as region, age, education, religion, Wealth Index, type of place of residence , Contraceptive use, ethnicity, age at first sexual Intercourse, Marital status at First birth, Life time number of sexual partners have significant relationships with the ages at which first birth occurs. This was supported by

previous studies (Adebimpe et al, 2011, Akpa and Ikpotiyin, 2012; Blom and Redy, 1986; Choe et al. 2005).

A higher proportion of the respondents from the Northern region experience early ages at first birth compared to all other regions of Nigeria. This is in line with findings by (NPC, 2004; United Nations 2007). Respondents with higher level of education had a higher proportion of those who had their age at first birth above twenty five years of age. This is in agreement with a study in Osun by (Oyefara, 2012). Better educated women have broader knowledge, higher socio-economic status and less fatalistic attitudes towards reproduction than do less educated women. A higher proportion of respondent in the Urban setting experience their age at First birth well over 18 years of age. Women in the urban settings stayed longer before they get married. This may be as a result of longer search for better education, white collar jobs and establishing themselves in business towards self sustainability.

A larger proportion of respondents in the poorest wealth Index category experience early ages at first birth. This could be as a result of the fact that majority of poor people do not have occupation that keep them so busy, hence they find recourse in engaging in sexual activities which thereby lead to early ages at First birth. But, in the contrary, in a study conducted among rural Yoruba women, it was found that level of fertility was positively associated with high income level. (Adebimpe et al, 2011)

A Cox proportional hazard model approach was used to test for the behaviour of the model of early child bearing across all the regions. The Model 1 includes the Demographic factors (Age, Age at First Sexual Intercourse, Marital Status at birth, place of Residence. The Model 2 includes the socio-economic factors (Education, Religion and Wealth Index). The Model 3 includes the behavioural factors (Ever use of Contraceptives and Lifetime number of sexual partners). The Model 4 is the interaction Model which includes all the variable in Model 1, Model 2, Model 3

In the North Central region, current age of respondents and the age at First Sexual Intercourse were found to be significantly associated with early child bearing. This may be as a result of the fact that in the north, child bearing starts at younger ages. This is in line with studies by Olalekan (2008) where it was reported that in the North Central region, the highest proportion of women reported early sexual debut.

The level of education of the women was significantly associated with early childbearing. The higher the level of education, the lesser the chances of early childbearing. This is in line

with studies done all over the world (Ainsworth 1994; Martin Juarez 1995; Akpa and Ikpotiyin, 2012). However, this study differs from that of Cochrane, 1979 that argued that identifying the direction of any causal relationship between early childbearing and education is complex.

In the Interaction Model, where all the variables for model 1, model 2, Model 3 were included, only age of respondents, and age at which respondents had their first Intercourse. This may be due to the fact the Age at First sexual Intercourse goes a long way in determining exposure to sexual activities which variably leads to pregnancy.

In the North East regions, age of respondent and age at First Sexual Intercourse were significantly related with early child bearing. Education plays a significant role across all the regions of the North. This may be due to the fact that in the North, not much attention is paid to Western education, as soon as the girl manages to have a primary education, she is as good as being married out to any available suitor. Also, religion which is a very strong determinant of so many things plays a dominant factor in early child bearing, In the North east where majority are

Muslims and Islamic religion supports sexual Intercourse within the confines of marriage, hence most Muslims tend to give birth early.

In the Southern part of the country, age at which Intercourse begins, and Education also play a dominant role. The likelihood of having early child bearing among those with tertiary education was very low. This is in line with studies by (kirk and pillet, 1998; Akpa and ikpotiyin 2012, Neeru and Gupta, 2003). Those who had higher levels of education requires much needed time to devote to their educational pursuit which makes them delay child bearing and amongst those that had sex tend to use contraceptives (Raini and Radheshyam 2007)

In the South western part of the country, Age at First Sexual Intercourse, education, contraceptive use played a significant role. In the South west, a larger proportion of people are aware of Contraceptives, thereby using it and helping them to delay childbearing.

CONCLUSION

Early childbearing is still a problem in Nigeria, although variation exists across the regions. Also, the identified predictors of early childbearing were found to be different across the regions. Early childbearing was more prominent across the regions in the Northern part of Nigeria than the Southern regions. Factors that contributed to regional differential in early childbearing include age at first Sexual intercourse and Education

RECOMMENDATION

1. Education, which played a significant role in early childbearing across all the regions should be improved. Female education up to at least secondary level must be sustained in Nigeria
2. Policy that favour childbearing postponement should be enacted in Nigeria. This has tendency to increase the age at first birth and thus improving socio-economic advancement of women in Nigeria.
3. In the regions of the North, where early childbearing was found to be prominent, a partnership must exist between local communities and Government to ensure that the local communities and leaders help in seeing that girls are kept in School longer before they are married out.

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