

**Fertility in Nigeria and Guinea: a comparative study of trends and determinants**

**By**

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## Keywords

Nigeria

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Education

Marital-status

Gender



## Abstract

### **Fertility in Nigeria and Guinea: a comparative study of trends and determinants**

**Background:** The present study was conceived to examine the trend and factors affecting fertility in Nigeria and Guinea. Fertility has declined by about nineteen percent in Nigeria between 1982 and 1999. In the same period it has declined by five percent in Guinea. The decline is observed in data from censuses and surveys. Studies have reported that fertility transition is in progress in most Sub-Sahara African countries (Bongaarts 2008; Guttmacher 2008), Nigeria (Feyisetan and Bankole 2002) and Guinea (measuredhs 2007). Studies and surveys done in some regions and among ethnic groups suggest that fertility is declining in Nigeria (Caldwell *et al.* 1992) and Guinea (measuredhs 2007). However, these studies and surveys are devoid of national representativeness as they are localized in specific regions or selected ethnic groups. Thus, they cannot be used as a national reference. The trend of the total fertility rate (TFR) from the three consecutive Demographic and Health Surveys in Nigeria did not show any meaningful decrease over time. In the same vein, no evidence of fertility decline was observed in Guinea from the Demographic and Health Surveys. The claim that fertility is declining in these two countries which assures the funding organizations that Family Planning programs are successful is beyond the scope of the present study. Based on Demographic and Health Surveys the claim that fertility is decreasing in Nigeria may be misleading, whereas in Guinea fertility has shown stability. This suggests that while the factors affecting fertility may be similar, their impacts differ from country to country.

**Method:** Data from the Demographic Health Surveys (DHS) conducted in Nigeria and in Guinea were used in the study. Trends in TFR by background were extracted from the censuses and DHS final reports in Nigeria and Guinea. Data from DHS 1999 and DHS 2003 in Nigeria and DHS 1999 and DHS 2005 in Guinea were used for the actual analysis. The sample sizes of 8199 and 7620 of DHS 1999 and 2003 respectively for all women aged 15 - 49 were included in Nigeria. The sample sizes for Guinea were 6753 and 7954 for DHS 1999 and 2005 respectively. The trends in knowledge and current contraceptive use, unmet needs, desires for last child, current pregnancy, visiting of health facility, visitation by family planning workers and respondent approval of Family Planning (FP) were examined by age groups. Univariate and bivariate analyses were executed to explain the association and

determinants of contraceptive use by socio-demographic characteristics. Stepwise multinomial regression was carried out to determine the variables affecting total number of children ever born (TCB).

**Result:** Total fertility rate has increased in Nigeria between 1990 and 2003 by background characteristics. It has increased by eleven and fourteen percent in rural and urban residence respectively in Nigeria within the same interval. Fertility increased by thirteen and seventeen percent among women with primary and higher education respectively in Nigeria. Unmet needs for child spacing decreased by three percent. Over seventy percent of women have never discussed FP with their partners and other people. Over sixty percent of Women neither visited a health facility (HF) nor were visited by a health worker in 2003. Forty-eight percent of the women approved of FP in 2003, which represents an increase of five percent of 1999. Over ninety percent wanted their last child and current pregnancy in 2003. However, there are incidences of mistimed and unwanted births and pregnancies. There was an association between contraceptive use and all the socio-demographic variables examined. The age of the respondent, current use of contraceptive, age at first sexual intercourse and partner's education have positive effects on fertility. However, education of women, place of residence and age at marriage has a negative effect on fertility.

Total fertility rate has remained stable in Guinea. It increased by eight percent in rural areas and decreased by fifteen percent in urban areas between 1992 and 2005. In Guinea, fertility decreased by over twenty percent for women with primary and secondary education between 1992 and 2005. Unmet needs for child spacing and limiting declined by three and one percent. Over eighty percent of women have not discussed FP with their partners and other people. Women that did not visit a HF remained stable at sixty-six percent, while ninety-two percent were not visited in their homes by a FP worker. The women who approved of FP were forty-seven percent, showing a decline by eleven percent from 1999. Over eighty percent of the women wanted their last child and current pregnancies in 2005. There was an association between contraceptive use and all the socio-demographic variables examined. The significance of the regression coefficient shows that the age of the respondent and current use of contraception has a positive effect on TCB. Education, place of residence, age at marriage and religion have negative effects on TCB.

**Conclusion:** The general patterns observed do not give confidence that fertility is declining or showing a tendency towards declining in Nigeria. In addition the use of modern contraceptive has no bright future as a vehicle to regulate fertility in Nigeria. Fertility in Guinea shows some potential for reduction which may be transitory because some of the indicators that favour fertility reduction seem to be losing their grip. There are overall negative attitudes to contraceptive use and FP in Guinea. This is similar to the observed situation in Nigeria. Expectation that intensified campaigns on contraceptive use and FP will reduce fertility and ultimately reduce population growth in Nigeria and Guinea is not likely to be met, because the desire for large families abound.



## DECLARATION

I declare that fertility in Nigeria and Guinea: a comparative study of trends and determinants is my own work, that it has not been submitted for any degree or examination in any other University and that all the sources I have quoted have been indicated and acknowledged by complete references.

Full name: **Osuafor, Godswill Nwabuisi** Date: \_\_\_\_\_



Signed \_\_\_\_\_

## DEDICATION

Am grateful to all who touched my life positively and wished me best in their volitions.



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## **LIST OF ABBREVIATIONS**

ACQUIRE - Access Quality and Use in Reproductive Health

CPR - Contraceptive prevalence rate

DHS - Demographic Health Surveys

FP - Family Planning

HF - Health facility

IEC - Information, Education and Communication

IUD - Intrauterine device

LAM - Lactational amenorrhoea

TCB - Total number of children ever born

TF - Total fecundity

TFR - Total fertility rate

UN - United Nations

UNDP - United Nations Development Programme

UNFPA - United Nations Population Fund

UNICEF - United Nations Children Emergency Fund



## **CHAPTER ONE**

### **GENERAL INTRODUCTION**

#### **1.0 BACKGROUND**

The state of fertility in the developing countries has been a matter of great concern to International organizations such as the United Nations (UN), the United Nations Development Programme (UNDP), the United Nations Children Emergency Fund (UNICEF), the United Nations Population Fund (UNFPA) and non-governmental organization, especially in Africa. Total fertility rate of developing countries has dropped from 6.0 births per woman in the 1960s to 2.9 in 2000-2005 (United Nations 2007). These declines are most rapid in Asian, North African and Latin American countries where socioeconomic development has been relatively brisk (Bongaart 2008).

There is evidence that fertility transition is on the way, but there is no consistency in the declining trend in Sub-Sahara African countries (Bongaart 2008; Guttmacher 2008). For instance the total fertility rates from DHSs conducted between 1998 and 2004 shows 5.7 in Guinea; 3.8 in Zimbabwe; 4.4 in Ghana; 5.7 in Nigeria and 6.1, 6.9 and 5.7 in Rwanda, Uganda and Tanzania respectively (Bongaart 2008). However, critical examination of the trends in TFRs between the two consecutive DHSs shows that fertility has stalled in many of the Sub-Sahara African countries (Bongaart 2008; Guttmacher 2008). Stalling of fertility decline poses a threat to the anticipated sustainable development in Sub-Sahara African countries. Poor socioeconomic development in Sub-Sahara African has been attributed to high fertility (Bongaart 2005; Caldwell 1982; Easterlin 1975).

#### **1.1 PROBLEM STATEMENT**

It has been reported that fertility transition has begun in many developing countries since 1960s (Bongaarts 2008). Whether the prevailing factors driving fertility transition are the same across the African countries is not yet conclusive. Data from censuses in Nigeria reflect a progressive increase in population. Feyisetan and Bankole, (2002) reported that fertility is decreasing from Demographic Health Surveys (DHS) of 1990 and 1999. Similarly, there is evidence of fertility decline in Guinea as in the case of Nigeria. If fertility is declining in both



countries, we therefore hypothesize that similar factors may account for the fertility decline in Nigeria and Guinea. This raises the question on what the prevailing conditions could be that underlie the fertility decline in both countries.

Previous studies have focused on the specific factors assumed to be associated with fertility, such as median age at marriage (Feyisetan and Bankole 2002; Harwood-Lejeune 2001), education (Vavrus and Larsen 2003), contraception (Westoff and Bankole 2001), postpartum insusceptibility (Makinwa-Adebusoye and Feyisetan, *op cit.*) and prevalence of polygamy (Feyisetan and Togunde *et al.* 1988). There are also studies on aspects of sexual behaviour related to fertility, impact of HIV/AIDS epidemics (Zaba *et al.* 2004; Ntozi *et al.* 2001; Lewis *et al.* 2004), abortion (Diallo 1996), fertility desire (Bongaart 1990) and culture and tradition (Isiugo-Abanihe 1994). Thus the present study was conceived to compare the trends and proximate determinants of fertility in the most populous and one of the least populated countries of West Africa, Nigeria and Guinea respectively.

## 1.2 RESEARCH QUESTIONS

There are sufficient studies on the trends and proximate determinants of fertility across Sub Saharan countries of Africa, but comparative studies are scanty. It is claimed that fertility transition is on its way in developing countries (Bongaarts 2008). There is evidence that it has stalled in most of the countries (Guttmacher 2008). The fate of fertility transition therefore becomes a matter of concern as many donor agents foster programs to ensure its completion. The study was conceived based on the assumption that fertility transition has declined in Nigeria and Guinea. Secondly there is evidence that fertility is high in West Africa where the two countries are situated geographically. Furthermore, the two countries have conducted three DHSs at relatively comparable pointing times. The present studies therefore have the following batteries of question to address.

- Is fertility actually declining or stalled in Nigeria and Guinea?
- What are the factors modulating the fertility trend in Nigeria and Guinea?
- Is there evidence that fertility will reach replacement level as projected by 2050?
- How does age influence fertility in Nigeria and Guinea?
- How does the place of residence affect fertility in Nigeria and Guinea?

- What impact does a woman's level of education have on fertility in Nigeria and Guinea?
- To what extent will contraception and family planning programs drive fertility decline in pro-natalist countries like Nigeria and Guinea?

### **1.3 PURPOSE OF THE STUDY**

The study will be of great importance to already existing reproductive health programs and services for evaluation. It will equally be of great relevance in order to strategize about future programs on fertility regulation without violating the reproductive rights of citizens. Bearing in mind the prevailing differences in governance, politics, belief and culture, we do not intend to give an assertive conclusion to the reasons underlying fertility rates in Nigeria and Guinea, but to offer a concise comparison of the fertility rates in both countries. For instance, studies on fertility at comparative levels are prone to reveal variations in the levels of proximate determinants of fertility across the countries under investigation. Comparative studies are the best platform to examine the effectiveness of population policies in various countries. We intend to lay down the tenets and an enabling platform that may usher in further comparative studies on fertility in other developing countries. This will offer guidance to a policy suitable for good governance in developing countries. The study will in part be a reference point to predict the fertility rates in the densely or sparsely populated countries of Africa where similar proximate determinants of fertility exist.

### **1.4 OBJECTIVES OF THE STUDY**

The intension behind the study is to examine the trends in some determinants of fertility from DHSs in Nigeria and Guinea. For clarity, the demographic health survey referred to is the Nigeria Demographic and Health survey (NDHS) and in Guinea as the Enquête Démographique et de Santé (EDSG).

- The study will evaluate the trends and compare age-specific fertility rates and TFR in Nigeria and Guinea.
- The study will evaluate the trend in a range of factors that affect fertility in Nigeria and Guinea based on background characteristics.

- The study will examine the degree of fertility desire among the women of reproductive age in Nigeria and Guinea.
- The study will investigate the trends in contraceptive use and attitudes of the women toward fertility regulation in Nigeria and Guinea.
- The study will assess the prospects of contraceptive use in Nigeria and Guinea.



## CHAPTER TWO

### LITERATURE REVIEW

Most of the Sub Saharan countries began to undergo fertility transition about four decades ago (Bongaarts 2005). Fertility transition suggests that there has been a shift from the variables driving high fertility rates to low fertility levels. Recent evidence suggests that while transition is still on the way, it has stalled in Sub Saharan countries (Bongaarts 2008). Studies revealed that two-thirds of Sub Saharan countries (which include Burkina Faso, Rwanda, Cameroon, Malawi, Zambia, Guinea, to mention but a few) did not reflect reasonable changes in the TFR between two most recent Demographic and Health surveys (Bongaarts 2008; Guttmacher 2008). Furthermore, fertility increased in six out of the sixteen countries of Sub Saharan Africa during the second interval of DHSs (Guttmacher 2008). The dynamics of fertility transition is indeed complex because of the interplay of many variables involved. These variables that modulate the trend in fertility transition are known as the proximate determinants of fertility.

#### 2.1 TREND IN TOTAL FERTILITY RATES FROM DIFFERENT DATA SOURCES IN NIGERIA AND GUINEA

Nigeria has five records of census data, 1952/53, 1963, 1973, 1991 and 2006. The 1973 census was cancelled because it was confounded with underestimation and overestimation ([countrystudies.us](http://countrystudies.us)). None of the censuses conducted in Nigeria was devoid of gross allegations of underestimation or overestimation. However, the 2006 census in Nigeria has been considered the most free and fair exercise. Four Nigeria Demographic and Health surveys (NDHS) have been conducted in 1990, 1999, 2003 and 2008. Nigeria also conducted the National Rural Demographic Sample survey in 1965/66 and the Sentinel Survey in 1992-1994. Thus, the estimates of total fertility rate from the world fertility survey (WFS), censuses, post enumeration survey (PES) and DHSs were properly documented.

There are many explanations for the discrepancies in the fertility rate observed in different surveys conducted in Nigeria. There is the possibility of distorted fertility rates where different survey coverage periods overlap due to erroneous date of birth records. Furthermore, there is often a tendency of pushing more recent births back in time, which

depletes the rates for the five years before and inflates those of 5-9 years and 10-14 years before the survey (Blacker et al. 2005). In addition, births that occurred in the more distant past may be brought forward into periods nearer the survey (Blacker et al. 2005).

The estimate of total fertility (TFR) in Nigeria from 1965 to 2003 as reported by the WFS, national fertility survey (NFS) and DHS has been shown in Appendix 1. The estimates of total fertility rates from 1965 to 1986 in Nigeria suggest a stable trend of high fertility levels. There was seemingly a gradual decrease in the TFR from 1986 to 2006, which shows features of stalling. However, Feyisetan and Bankole (2002) doubted the decline in the TFR from 7 in 1975 to 6.34 in 1980/82 because of the following reasons:

- The desired fertility in 1981/82 was higher than that of 1975.
- Fifteen percent reduction in fertility in a five year interval where only 2.6 percent of women were efficiently on contraception is dubious.
- There were no strong populations or socioeconomic policies that would have accounted for such a considerable decline in fertility between 1975 and 1980.

Guinea has conducted three official government censuses in 1972, 1983 and 1996. Three EDSGs have been conducted for the years 1992, 1999 and 2005 which are designated as EDSG-I EDSG-II and EDSG-III respectively. The trend in the TFRs in Guinea from the *Recensement General de la Population et de l'Habitation* 1983 to that of EDSG-III 2005, does not show a decrease at national level (see Appendix 1). The TFR in Guinea has remained stable over time.

## **2.2 PROXIMATE DETERMINANTS OF FERTILITY**

Proximate determinants of fertility are the biological and behavioural factors that directly influence fertility over the woman's reproductive span (Kaida et al. 2006). These factors are marriage and the onset of permanent sterility (Kaida et al. 2006). Marriage and the onset of permanent sterility specifically determine the duration a woman's reproductive period will last. Other proximate determinants that influence the rate of childbearing and the duration of birth intervals are contraceptives, age at sexual intercourse, postpartum amenorrhoea, abstinence, frequency of sexual activity and induced abortion (Kaida et al. 2006). Changes in proximate determinants as a result of behavioural and biological variations may promote or hinder fertility. For instance, an increase in age at marriage may affect fertility negatively,

whereas changes in other proximate determinants will have positive effects (decline in the duration of postpartum infecundity). However, Bongaarts and Potter (1983) reported that proximate determinants effects may offset one another, although the net impact is not necessarily zero.

Analysis of the Nigeria Fertility Survey (NFS) 1981-82 shows that first marriage is the main proximate determinant of fertility, followed by breastfeeding and postpartum sexual abstinence (Chimere 1990a). Chimere (1990a) observed that breast-feeding and post-partum abstinence curbed childbearing in the rural areas substantially more than in urban areas. However, the examination of proximate variables on urban and rural fertility did not show reasonable differences. The diffused differential effects have been attributed to urban mothers' higher fertility in the first half of the childbearing age range and depressed effects of breast-feeding and post-partum abstinence on rural fertility (Chimere 1990a). Multiple classification analysis on urban and rural fertility in Nigeria shows that the differential effects of age, duration of marriage, and motherhood duration on the rate of fertility were minimal (Chimere 1990b). Breast-feeding and postpartum sexual abstinence accounted for eighty percent of all reductions in marital fertility in urban and rural areas (Chimere 1990b). Breast-feeding showed considerable reducing effect on the rate of fertility in rural areas of the northeast of Nigeria (Chimere 1990b).

Dual effects of the factors affecting fertility have been reported. A factor that promotes fertility decline in one region may coincidentally enhance it in another region. Never married status reduced fertility in all regions except in the northwest of Nigeria (Chimere 1990a). Therefore never married status which should have a negative effect on fertility, promotes fertility. Marital disruption while depressing fertility in urban northern regions increased it in the southeast of Nigeria (Chimere 1990b). Marital stability in conjunction with education and religion reduced fertility in rural areas in Nigeria (Chimere 1990a). However, this impact was not observed among Koran-educated, Moslem and traditional religious groups in Nigeria (Chimere 1990b).

There is evidence that among the indicators of proximate determinants in Nigeria, postpartum insusceptibility has the greatest inhibiting effect on fertility. The evidence is based on the analysis of the three NDHSs carried out by Ibisomi (2008). This is followed by

marriage/sexual activity, contraception and then sterility (Ibisomi 2008). Bongaarts' model shows that these proximate indices collectively reduced total fecundity by 12.5, 8.9 and 9.5 births in the total sample of married women in 1990, 1999 and 2003 respectively (Ibisomi 2008). Furthermore, Stover's model showed that among sexually active women, these indices decreased by 17.7, 16.1 and 16.5 births in 1990, 1999 and 2003 respectively (Ibisomi 2008). It is noteworthy that the model of Bongaarts et al. (1984) refers to total fertility as total fecundity while Stover's model relates total fertility to potential fertility. This may be due to the fact that Bongaarts model considered married women whereas Stover's model dealt with sexually active women. However, these indices did not show the same effect among women with tertiary education. This suggests that education shows differential effects on the fertility of married women and sexually active women.

### **2.2.1 Age at marriage**

Rising age at marriage reported in developing countries (National Research Council 2005) did not show meaningful increase in Nigeria and Guinea. Median age at first marriage in Nigeria was 17.1 in 1990, 18.3 in 1999 and 17.2 in 2003 (NDHS 1990, 1999, 2003). The proportion of women that first married at exactly 15 years in Nigeria was twenty-eight percent, 24.3 percent and thirty percent in 1990, 1999 and 2003 respectively. In Guinea, the proportion of women aged 15-19 who married at exactly 15 years was 19.5 percent in 1992, twenty percent 1999 and 12.2 percent in 2005 (EDSG-I 1992; EDSG-II 1999; EDSG-III 2005). The proportion of women that married at exactly 15 years declined modestly in Guinea. Median age at first marriage in Guinea was 15.8 in 1992, 16.5 in 1999 and 16.2 in 2005. In general, Guinean women marry at age slightly younger than Nigerian women. However, the rate at which first marriage occurs is higher in Nigeria than Guinea. Decline in the median age at marriage may favour increased fertility. For instance, it was reported that the decline in median age at marriage increased fertility in Colombia, the Dominican Republic and Turkey (Bongaarts 2005). Early marriage increases the number of reproductive years in marriage with the concomitant exposure to risk of conception. High fertility as a result of early marriage was observed in Peru (Bongaarts 2005). On the other hand, rising age at marriage was reported to have contributed to the fertility decline in Tunisia and Algeria (Fargues 1988).

### 2.2.2 Contraception

Contraceptive use was considered as the most important proximate determinant of fertility by Bongaarts and Potter (1983). Their assertion is consistent with offsetting of high fertility as a result of early marriage in Peru by increased contraceptive use (Bongaarts 2005). Caldwell et al. (1992) posit that demand for contraception by young women was possibly the main cause of the rise in the age at marriage. The use of contraceptives and reproductive preferences are important data in DHS surveys. As a result, the information is sourced on the costs of birth control and benefits of children. It has been established that a rise in contraceptive use is the principal cause of decline in fertility (Bongaarts and Potter 1983). Before the dawn of transition, fertility was high in Sub Saharan countries and the use of contraceptives was low (United Nations 1999). On the other hand, in countries where transition is completed, fertility is low and a greater number of couples practice some form of contraception (Bongaarts 2005). A strong correlation between contraceptive use and decline in fertility has been substantiated in Bangladesh (Cleland 1993) and in Thailand (Institute of Population Studies, Chulalongkorn University 1987).

In Nigeria, contraceptive use has not yet contributed significantly to fertility decline at national level. The impact has been felt in urban areas and among women with higher education (Feyisetan and Bankole 2002). Contraceptive usage had no effect on fertility in the northeast and limited effect by other background variables (NFS 1981/82). Marital disruption and contraception play reducing roles in urban fertility, this is though inadequate to offset the factors supporting fertility increase in remote rural areas of Nigeria (Chimere 1990b). Effects of contraception on fertility are weak in Nigeria and Cameroon whereas they are strong in the Ivory Coast and Ghana (Chimere 1993). The differences in the contraceptive depressing magnitude may reflect changes in the contraceptive prevalence rate (CPR) and level of efficient use of contraception. However, there is an increasing trend in contraceptive use in Nigeria, especially the modern methods of contraception. Evidence from the WFS of 1981/82 shows that 6.2 percent of women that were exposed to the risk of childbearing were on contraception, out of which 0.7 percent were effectively on the modern method (Feyisetan and Bankole 2002). In 1990, 7.5 percent and six percent of all women and currently married women respectively were using contraception (Feyisetan and Bankole 2002). By 1999, the use of contraceptives had increased to sixteen percent for all women and about nine percent



of the women were using modern methods of contraception (Feyisetan and Bankole 2002). Currently, married women were at least 1.9 times more likely to use contraceptives in 1999 compared to 1990 (Oladosu 2001). The use of contraception has been observed to be higher in the southern part of Nigeria especially the southwest, in urban areas and among highly educated women (NDHS final report 1999). It was also observed that the use of contraceptives in the rural areas has increased tremendously by 233 percent between 1990 and 1999 (Feyisetan and Bankole 2002).

In recent times, several integrated and vertical programs have been in progress to increase family planning delivery and services. There is implementation of community based distribution programs in many parts of Nigeria. There is involvement of non-governmental organizations (NGOs) in providing family planning awareness, education, counseling and service delivery. Several NGOs such as the Planned Parenthood Federation of Nigeria (PPFN) have offered various reproductive health services to adolescents, and these are expected to address adolescent pregnancies and fertility. The integration of family planning and maternal cum child health services under the primary health care system is aimed at increasing the reach of potential clients (Ihejiamaizu 2002). One of the most spectacular advances by NGOs in recent times is designing programs that accommodate men in family planning activities. Notably, male participation in family planning has been documented for the Southwest and Southeastern part of Nigeria (Feyisetan *et al.* 1998; Odimegwu 1999). Male participation in family planning is an indication that hindrances to contraceptive approval are losing their hold. In addition, awareness of family planning through mass media has been found to be effective in changing the attitude of Nigerians toward contraceptives (Odimegwu 1999). Hence, using mass media for Information, Education and Communication (IEC) with regards to family planning is expected to lead to further increases in contraceptive use in the country.

In Guinea, the percentage of women that use modern contraceptives has increased in all age groups except for the women aged 35-39 and 45-49. The use of modern contraception increased by 147 percent, fifty-two percent and seventy percent among women aged 15-19, 20-24 and 25-29 respectively (Osuafor and Stiegler 2009). This is consistent with the postulation of Caldwell *et al.* (1992) that the first group to adopt contraceptive use will be young women in attempts to avoid pregnancy and expulsion from school. Modern

contraceptive use increased from 9.9 percent in 1999 to 13.2 percent in 2005 (an increase of 33.3 percent) among the urban women (Osuafor and Stiegler 2009). An increase of 52 percent in modern contraceptive use was observed in the rural areas between two time points. In terms of educational level, an increase in modern contraceptive use was observed in all categories. Percentage increases in modern contraceptive use was 37.5, 35.4, 14.9 and 32.9 percent among women with no education, primary, secondary and higher education respectively between 1999 and 2005 (Osuafor and Stiegler 2009). An increase in modern contraception was observed in all the regions except in Moyenne Guinee and Guinee Forestiere between 1999 and 2005 (measuredhs 2007). In Haute Guinee contraceptive use increased from 2.9 percent in 1999 to 6.7 percent in 2005; while in Conakry it increased from 7.6 percent to 13.9 percent (an increase of about 131 percent and 82.9 percent respectively). Increased modern contraceptive use from the various backgrounds is a good indication of the desire to regulate fertility in Guinea. This may ultimately lead to fertility decline in Guinea. There is evidence where increased contraceptive use did not correspond to decreasing fertility (Bongaarts 2005). This has been attributed to either error in measurement or counter roles of other proximate determinants. Other proximate determinants may supersede contraception under the condition of ineffective contraceptive use or when the desired family is not accomplished. Efficient use of contraceptives may lead to low fertility, while weak or no contraceptives favour high fertility (Bongaarts and Potter 1983).

### **2.2.3 Fertility transition and Contraception**

Countries with a history of contraceptive use show that, a rise in contraceptive use is associated with the onset of transition (Bongaarts and Johansson 2002; United Nations 1999). It has been reported that fertility declining in the Ekiti district of Nigeria correlates with rising levels of contraceptive use (Caldwell *et al.* 1992). The reductions in fertility in Botswana, Kenya and Zimbabwe have been attributed to modern contraception and family planning. Contraceptive use among married women in these countries was about twenty-seven to forty-four percent of any method and eighteen to thirty-two percent of modern methods (Caldwell *et al.* 1992). However, it is difficult to disentangle the role of a decrease in infant mortality rates in the fertility decline of these countries. A unique feature of Botswana, Zimbabwe and Kenya was that infant mortality rates were below 70 per thousand live births (Caldwell *et al.* 1992), a level which no other country has in Africa. Currently, the

infant and maternal mortality rates are 100 per 1000 and 800 per 100,000 in Nigeria; while Guinea has infant and maternal mortality of 113 per 1000 and 740 per 100,000 (Population Reference Bureau 2007). This indicates an existence of similarity in infant and maternal mortality between Nigeria and Guinea. Reduced infant and maternal mortality may play a bigger role in increasing contraceptive use which favors fertility transition.

#### 2.2.4 Categories of contraceptives

According to the DHS standard, there are three categories of contraceptive methods. They are as follows:

- **The modern methods.** Female and male sterilization, female and male condoms, the pill, the intrauterine device (IUD), injectables, implants, diaphragm, foam or jelly.
- **Traditional methods.** Periodic abstinence (safe period or rhythm method) and withdrawal and, the lactational amenorrhoea (LAM).
- **Other methods.** Herbs, teas, grasses or other methods mentioned by the respondent.

#### 2.2.5 Demand and unmet needs for contraception

Data on the use of contraceptives may be equally important in measuring the progress of family planning programmes and in the formulation or implementation of population policies. Greater demand for family planning is inevitably dependent on the demand for contraceptives by the non users. Couples who desire to have contraception, but do not have access are said to have an unmet needs for family planning (Westoff and Bankole 1995). The measurement of current use is straightforward but the analysis of demand and unmet needs is confounding. (Bongaarts 2005). Bongaarts (2005) reported that the analysis for contraceptive use primarily focuses on limiting births instead of spacing. Hence, the DHS method for estimating the demand for spacing may be biased which cannot be corrected easily (Bongaarts 1991). So it becomes difficult to measure the actual demand for contraceptives for family limitation (Bongaarts 2005), in the midst of demand for child spacing. The prevalence of use of contraceptives to limit child bearing is a strong predictor of fertility, because it has shown a high correlation with the TFR (Bongaarts 2005).

### 2.2.6 Family Planning Programs

Unmet needs for contraception as documented in the 1960s, convinced policymakers of the need for family planning programs. It has been reported that, thirty-six percent of all the pregnancies in the developing world were unplanned and twenty percent ended in abortion (AGI 1999). Hence, there exists an agreement on the desire and rationale to usher in family planning and reproductive health programs. But controversy on the impact of these programs on fertility remains (Bongaarts 2005). Pritchett (1994:39), in the most fervent critique of these programs asserted that to achieve low fertility, "... it is fertility desires and not contraceptive access that matters". He argued that "if ...improved family planning programs were driving fertility declines, they should be accompanied by a reduction in excess fertility". Bongaarts (1997a) refuted the arguments of Pritchett in a scenario that justified the fertility-inhibiting effect of family planning programs. Bongaarts acknowledged that lack of accurate measures of the impact of family planning programs on fertility may not be resolved in the near future due to the following reasons:

- **No robust indicator of the program strength** – the most widely used measure is the "program effort" index developed by Lampham and Mauldin (1972). The demerit of this measure is on its reliability, because a few informants per country give subjective assessments on various dimensions of family planning programs (Bongaarts 2005).
- **There is a nonlinear association between program efforts and unwanted fertility as well as with unmet needs for limiting births** – cross country studies between program effort score and the level of unmet needs for unwanted fertility or birth limiting show weak correlation. Bongaarts (1994) reported that in countries with high desired family size, unwanted fertility is low irrespective of the strength of the program. The reason being that women use most of their reproductive lives to achieve their desired family size, while little reproductive time remains to bear unwanted children (Bongaarts 1994).
- **No sufficient experimentation** – the convincing way to show the impact of well-designed family planning services would be evidence from controlled experiments. However, these types of experiments are expensive and time consuming, so only few have been conducted (Bongaarts 2005). It is noteworthy that such an experiment has been conducted in the Matlab district of Bangladesh (Cleland et al. 1994). Interestingly, the results demonstrated that well designed programs can reduce unmet needs for contraception even in traditional settings (Cleland et al. 1994). There was a sharp increase in contraceptive

use which maintained low fertility over time in the Matlab district of Bangladesh. A broad study in Northern Ghana proved that well-designed programs can alter reproductive behaviour and fertility, by contraceptive use (Philips et al. 2003). For instance, the percentage of non-contracepting women in 1995 who were using contraception in 1998 increased by twelve percent in Northern Ghana ( Feyisetan *et al.* 2003)

The lack of success of the FP revolution in Nigeria has been attributed to the failure of the programmes to recognize the importance of male attitudes and place in fertility decision-making (Duze and Mohammed 2006). The three dominant tribes and other ethnic groups in Nigeria are patriarchal, signified by strong male dominance. Thus, commitment of males towards contraceptive use is indispensable for fertility decline (Duze and Mohammed 2006). It was suggested that women may not get FP services in government owned hospitals without the consent of the husband (Duze and Mohammed 2006). In addition, health facilities are largely in urban areas thus, access to the bulk of women in rural areas is circumvented (Duze and Mohammed 2006).

There are reports that fertility is high in Nigeria due to resistance to family planning. However, Nigeria was among the first countries that started controlling the number of children a couple should have (Caldwell 1990, 121). Like any other African nation, the government of Nigeria is not forceful in implementing population control programs because of beliefs and religious views on fertility (Caldwell 1990, 121). Furthermore, perpetuation of family lineage is of particular importance not only to Africans but also to the Indians (Kapadia 1966; Varma and Babu 2007). A study conducted in Nigeria reported that contraceptive practice was high among men who were exposed to family planning through the media (Odimegwu 1999). This suggests that media is relevant for promoting family planning programmes. Furthermore, seventy-one percent of married women who knew a family planning method reported their husbands' approval to practice family planning (Odimegwu 1999). This study does not support the claim that there is resistance to family planning. However, the attitude of an individual towards adoption of FP is influenced by age, education, income, place of residence (Odimegwu 1999) and the prevailing human influences.

In Guinea, UNICEF, World Bank European Union, USAID led by UNFPA co-funded an integrated family planning program aimed at reducing population growth, maternal and infant mortality from 1995 to 2000 ([kfw-entwicklungsbank.de](http://kfw-entwicklungsbank.de)). However, diverse interests of the multiple funding agencies led to undefined indicators. In the course of the program implementation, UNFPA gradually backed out from co-funding the program due to managerial lapses. The National Family Planning programme was considered a success because the observed contraceptive prevalence rate (CPR) of eight percent, exceeded the target by four and half percent between 1992 and 1999.

Despite the withdrawal of UNFPA from the integrated family planning program in Guinea, the CPR rose to ten and half percent in 2005. However, the CPR declined and dwindled considerably with the termination of the program in 2000. Available data show that current utilization rates of the family planning program were about thirty to forty percent below target value ([kfw-entwicklungsbank.de](http://kfw-entwicklungsbank.de)). This integrative program of the National Primary Health Program in Guinea, which received maximal support from UNICEF (United Nations Children's Fund) and other donors such as the World Bank, the European Union and USAID achieved increased CPR with no meaningful impact on fertility rates. The services for the reproductive health and family planning did not work creditably after the termination of the funding in 2000. In addition, the national family planning program in Guinea has inherent degrees of developmental ineffectiveness and incompetence. It is noteworthy that the integrated program fostered the policy on reproductive health despite political and administrative oppositions.

In 2004, the Access Quality and Use in Reproductive Health (ACQUIRE) Project in Guinea, in conjunction with the country's Ministry of Health (MOH), embarked on the implementation of a three-phase project to increase access to and awareness of long-acting and permanent methods of family planning (LAPMs) particularly the intrauterine device (IUD), and to increase the MOH's capacity to provide these services (Frajzyngier *et al.* 2008). This project demonstrates an unprecedented increase in IUD use. This suggests that an increase in method use can occur when well-targeted, relevant messages are disseminated with a minimal communications budget. For instance, as many as 700 new IUD users were served in ACQUIRE-supported facilities during the communications campaign in 2006, compared with 82 in 2005 and 37 in 2004. However, this project suffered a major setback and

was unable to adequately satisfy client demand because it often ran out of stock. In addition, short-term communications duration caused reduction in the current users. The number of new IUD users at the seven targeted facilities declined from 700 during the active project phase in 2006 to 225 in the year following the project 2007. This suggests that consistent communication is essential for sustaining the use of an already adopted contraceptive method. Although family planning faltered in Guinea due to technical lapses, its effective implementation in Kenya, Botswana and Zimbabwe fostered fertility decline.

As far as fertility decline is concerned in Kenya, family planning programs played a decisive role. Regional differences in socioeconomic, cultural and family planning programs that exist in Kenya are partly a reflection of contraceptive use. Kimani and K'Oyogu (2004 p, 46) concluded that family planning programs had the greatest impact, followed by socioeconomic factors while cultural variables had a minimal role in declining fertility. The Working Group on Kenya, set up by the US National Research Council's Committee on population, observed in 1993 that one in three women in Kenya uses contraceptives, while two-thirds obtain supplies from official service delivery points (Blacker *et al.* 2005). A Working Group on Factors affecting Contraception throughout Sub Saharan Africa noted a clear association between program implementation and contraceptive use (Blacker *et al.* 2005). They further emphasized that continued development of strong family planning programs is imperative to meet the demand for family limitation and as a solution to high fertility (Working Group on Factor affecting Contraceptive use 1993 pp, 214-5). In Botswana, Kenya and Zimbabwe, government commitments coupled with population policies supportive of family planning offered enabling platforms for the implementation of the programs. Government participation in family planning programs may promote fertility decline. In all the countries that had considerable reduction in fertility levels, efforts of donor agents were complimented by the national government (Blacker *et al.* 2005). In recent times, there is no country where the government overtly opposes family planning programs (United Nations 2004). However, there are countries where fertility transition occurred without government facilitation. For instance, in France fertility fell below replacement level despite the strong opposition from the Roman Catholic Church in the 1930s (United Nation 2004). Also, in Gabon, a Sub-Saharan African country, fertility is declining without any support from the government (United Nations 2004).

### 2.2.7 Desired family size

Desired family size is synonymous with ideal family size. It is relatively easy to measure and interpret as an indicator of fertility preference. However, it can be biased due to conventional estimates of rationalizing and non-response (Bongaarts 2005). It is because of the flexibility by parents on the number of children they want. Alternatively, the wanted TFR indicator is used. The declining desired family size which resulted in fertility transition has been attributed to contraceptive use (Bongaarts and Johansson 2002), decreases in infant mortality (Caldwell *et al.* 1992), effective family planning programs and socio-economic development (Zhang 2004). On the other hand, there is no conclusive evidence as to whether the family planning program affects the popular fertility preferences (Freedman 1997). A change in fertility preferences due to rapid socio-economic development has been observed in China since the late 1970s, but it is still difficult to measure programmatic effects (Zhang 2004). However, there is no concrete evidence that these forces will bring fertility to replacement level. It is of paramount importance to recall that in the origin of demographic transition, the principle motivation for fertility control was for the families to compensate for declining mortality (Caldwell 1976; Kirk 1996). This implies that the purpose was to maintain traditional family size in the face of improved health and never to change it. In his wealth flow theory, Caldwell (1982) stated that the essence of large families in the developing world is for agricultural ventures. Hence, high fertility in the developing world is for the children to be engaged in agricultural productivity.

Pritchett (1994) substantiated that contraceptives cannot bring fertility down when desired family size is constant using experiences from different countries. For instance, Haiti and Zimbabwe have the same desired fertility of 4.3 but different contraceptive prevalence rates (CPR) of five percent and thirty-six percent in 1977 and 1989 respectively. However, fertility in Haiti was only 0.4 births higher than that of Zimbabwe (5.6 versus 5.2), despite the gap in modern contraceptive use. The relationship between the TFR and CPR in Bangladesh is a good instance where modern contraceptive use could not reduce fertility to replacement level as anticipated. The CPR was forty-five percent in 1993/1994, forty-nine percent in 1996/1997 and fifty-four percent in 1999/2000 (Bairagi & Datta 2001). The TFR in those three periods was 3.4, 3.3, and 3.3 respectively (Bairagi & Datta 2001). However, an increase in the CPR by fifty percent since 1993/1994, was not associated with a decrease in the TFR during the



same period (Bairagi & Datta 2001). In summary the collective efforts of the Government of Bangladesh, non-governmental, private and international organizations to solve the problem of population through several programmes reduced fertility from 7 to 3.3 births per women (Bairagi & Datta 2000). This implies that desired family size exerts regulatory effects on birth control measures.

### **2.2.8 Sex preference and desired family size**

It is noteworthy that the empirical examples do not offer convincing evidence as to why fertility remains the same in different populations with very different levels of contraceptive use but with the same level of desired family size (Bairagi & Datta 2000). Until recently, attention has been given to the current desired family size and the practice of son preference (Varma & Babu 2007).

One of the reasons why fertility has remained high in Sub Saharan African, especially West Africa, was the desire for male children for the continuity of family lineage. The desire for male children is an important factor sustaining the practice of polygyny. Traditionally, if a woman by the end of her reproductive life had only female children, the possibility of getting a second wife who will give birth to a male child is imminent. Polygyny itself initiates a facet of competition among the wives to gain greater assets of the family, which depends on the number of male children. A craving for male children in the African setting cannot be over emphasized knowing the intricacies of culture, religious beliefs and customs. Furthermore, African society is not unaware of its high child mortality especially among male children. Under these conditions, it is likely that fertility preference will exceed the desired family size. The preference for male children is not specific to African countries. It is a practice that cuts across India and China.

There is evidence that the actual ideal family size would be a bit higher than two children in China (Whyte and Gu 1987: 478), since most people preferred the traditional Chinese norm of one son and one daughter (*ernu shuangquan*), against officially advocated one child only. Thus, Whyte and Gu (1987: 478) concluded that it would be misleading that the family size preference, as revealed in Chinese survey data, is two children. This simply suggests that

fertility preference was not marred by the policy implementation of 1990, because the popular ideal family size was still higher than what the state demanded (Zhang 2004).

The major impasse with fertility reduction in India is how to subdue the desire for large families which is partly sustained by a strong preference for sons (Clark 2000; Pattanaik *et al.* 2000). Furthermore, the desire for children is greatly influenced by factors like the number of surviving children, sex composition of the surviving children and certain other psychological and socio-economic ones including religious beliefs and customs (Varma & Babu 2007). Kapadia, (1966) wrote “traditionally, apart from social prestige and the felt need to carry on the family name, the existence of a son in an Indian family is considered very important, to take care of parents in their old ages and to provide eternal comfort in heaven to the parents”. There is a formidable basis for the desire for male children in African society, which socioeconomic development is not likely to change in the near future. Furthermore, son preference was found to be prevalent and significantly influencing the contraceptive behaviour in Tanzania (Mwageni *et al.* 2001).

### **2.2.9 Unwanted fertility**

Unwanted total fertility (UTFR) is the difference between the observed TFR and the wanted total fertility rate (Bongaarts 2005). The unmet needs for contraception to limit family size are most likely the cause of unwanted child births. Evidence from countries with multiple DHS data shows unwanted fertility of 1.0 birth per woman (Bongaarts 2005). Unwanted fertility rose steeply from very low levels in the 1980s in Ghana and Kenya despite a rapid increase in contraceptive use. Bongaarts (1997b) suggested that the cause was that both countries were still in their nascent stage of fertility transition. In addition, unwanted fertility is considered to be low at the beginning of the transition because desired family size is still high. Unwanted fertility may rise considerably when a large proportion of women who want no more children have no access or neglect effective contraception. It is important to note that wanted and unwanted fertility did not change when transition stalled (Bongaarts 2005). Likewise, the levels of unwanted fertility and unmet needs for contraception were not significantly elevated while fertility stalled (Bongaarts 2005). It can be argued that in the midst of transition stalling, the impact of unmet needs for contraception is secondary to fertility preference. However, unwanted fertility is the main reason why fertility significantly exceeds replacement levels in Colombia, Peru and Bangladesh (Bongaarts 2005).

### 2.3 THE BONGAARTS FERTILITY DIFFERENTIAL MODEL

Bongaarts model was applied in the analysis of proximate determinants of fertility in Nigeria and Guinea. This framework assumes total fecundity (TF) as the average number of children a woman would produce in the absence of any inhibiting effects. Bongaarts and Potter (1983, p.79) believe it is within the range of 13 and 17. The degree to which the assumed value of TF is reduced by the determinants involved is represented by indice values of between 0 and 1. When there is no fertility-inhibiting effect of a given determinant, it takes the value of 1; complete fertility inhibition takes the value 0. The product of all the indices and the assumed TF gives an expected value for total fertility that is compared with the observed value. An assumed TF of 16.5 births per woman was adopted because it achieves a general consistency between the estimated and observed values of total fertility (Blacker et al. 2005). The values of the other indices were calculated in accordance with the definitions stipulated by Brass and Jolly (1993). These equations explain the basic structure of the Bongaarts *et al.* (1984) formulation of fertility measures of the proximate determinants.

$$TFR = C_m * C_c * C_a * C_i * TF$$

Where: TFR is the total fertility rate; TF is the total fecundity rate and  $C_m$ ,  $C_c$ ,  $C_a$  and  $C_i$  are the indices of marriage, contraception, induced abortion and postpartum fecundability respectively.

- **Estimation of the index of marriage ( $C_m$ )**

$$C_m = \{\sum m(a) * g(a)\} / \sum g(a)$$

Where,  $m(a)$  = age-specific proportion married;  $g(a)$  = age-specific marital fertility rates.  $m(a)$  is obtained by dividing the number of married women in a specific age group by the number of women in that age group. In the study women who were living together with their partners were considered married.  $g(a)$  is obtained by dividing the births in a specific age group by the number of women in that same age group.

- **Estimation of the index of postpartum infecundability ( $C_i$ )**

$$C_i = 20 / (18.5 + i)$$

Where,  $i$  = average duration of postpartum amenorrhea caused by breast feeding and postpartum abstinence. In the study, the index of postpartum fecundability was estimated using the median duration of postpartum insusceptibility.

- **Estimation of the index of contraception ( $C_c$ )**

$$C_c = 1 - 1.08 * u * e$$

Where,  $u$  = proportion using contraception among married women of reproductive age (15-49).  $e$  = average effectiveness of contraception; the adjustment factor 1.08 accounts for the removal of sterile women in the equation. The indices of use effectiveness for specific contraceptive are pill = 0.90, IUD = 0.95, sterilization = 1.00, condom = 0.91, diaphragm/foam/jelly/cream = 0.87, rhythm = 0.82 and others 0.7 (Bongaarts and Potters, 1983).

- **Estimation of the index of abortion (Ca)**

$$Ca = TFR/TFR+b*TAR = TFR/TFR*0.4*(1 + u)*TAR$$

Where, TAR = total abortion rate,  $u$  = contraceptive prevalence,  $b$  = average number of births averted per abortion;  $b = 0.4*(1 + u)$ .  $b = 0.4$  when  $u = 0$  and  $b = 0.8$  when  $u = 1.0$ .

$Ca = 1.0$  if the TAR is 0. Abortion rate in the study is assumed to be 1.0, since there are no national statistics on abortion rates in Nigeria and Guinea.

## 2.4 IMPACT OF ABORTION ON FERTILITY

Abortion in Nigeria and Guinea is illegal, although it may be considered expedient to save the life of the woman or for restoration of mental and physical health (Abortion Review UN, 2007). Apart from being an illegal process, it carries an ethical and cultural stigma in both countries (Abortion Review UN, 2007). Hence, reliable statistics on the prevalence and incidence of abortion are unattainable. This does not suggest that the impact of abortion as a proximate determinant of fertility is negligible. There is evidence that about 610,000 abortions at the rate of 25 abortions per 1000 women age 15-44 occur in a year (Henshaw *et al.* 1998) in Nigeria. Furthermore, less than fifty percent of the abortions are estimated to be performed by qualified physicians in established health facilities (Feyisetan and Bankole 2002). This means that a greater percentage is performed by unqualified personnel who may advise the client to seek proper medical attention in the case of complications. It has been previously reported that almost 20 million abortions in 2003 (nearly half of the worldwide total) were done through unsafe procedures, and ninety-seven percent of these occurred in developing countries (Abortion Review UN, 2007). Unsafe procedures made up more than half of all abortions in the developing world, but fewer than one in 10 in developed countries (Abortion Review UN publishes world abortion information.htm, 2007). Under the atmosphere of illegal abortion more cases of unsafe abortion will occur.

Considering the age at which Guineans commence sexual activity and level of contraception, there is no reason to believe that the abortion rate is low. School girls may always resort to abortion to avoid expulsion from school (Caldwell *et al* 1982). Evidence of hospital data in Conakry revealed that seventeen percent of maternal deaths were due to induced abortions and forty-two percent of abortions occurred among women aged 15-20 (UNICEF 1990). A survey comprising forty-two percent of women aged 15-24 reported twenty-two percent incidence of abortion in Guinea (Gorgen *et al.* 1998). Prospective and retrospective hospital surveys conducted in Deen and Donka respectively, reported substantial prevalence and death related to illegal or unsafe abortions. A prospective study in Jan-Dec 1992 revealed 31 adolescents out of 83 patients with complications from illegal abortions (Diallo 1996). Out of the 83 patients, 10 died. A retrospective study of 1990-1993 revealed eighty percent singles and forty percent school girls with complications following illegal abortion (Diallo 1996). The death rate in the retrospective study was twenty percent. Thus, abortion does not only promote fertility decline, but also depletes the population of the reproductive women.

## **2.5 IMPACT OF HIV/AIDS ON FERTILITY**

The impact of HIV/AIDS epidemics on fertility in Sub Saharan Africa (SSA) cannot be underestimated. The initial assumption was that HIV/AIDS infection may lead to low fertility (Ntozi *et al.* 2001). This was based on speculation that death associated with HIV/AIDS would be high among women and children. There is the possibility that parents may not live long enough to enjoy the benefits of having children due to HIV/AIDS related death, resulting in lower fertility (Ntozi *et al.* 2001). This could happen when parents' life span is shortened due to AIDS. Hence they could not produce more children within their shortened life span.

Studies in developed countries have shown that HIV-infected women are less likely to become pregnant (Forsyth *et al.* 2002; van Benethem *et al.* 2000) and give birth (Hankins *et al.* 1998; Thackway *et al.* 1997), compared to uninfected women. In addition, higher rates of induced and spontaneous abortions have been reported for HIV-infected women than the unaffected (Hankins *et al.* 1998; Thackway *et al.* 1997). About 14 million women of childbearing age are currently living with HIV/AIDS in SSA (Joint United Nations Programme on HIV/AIDS, 2005). It is reported that HIV-infected women in SSA have

between twenty-five percent and forty percent lower fertility compared to non-infected women (Lewis *et al.* 2004). In addition, population-attributable declining in fertility of 0.37 percent (95 percent CI. 0.3-44 percent) has been reported for every one percent increase in population prevalence of HIV in SSA (Lewis *et al.* 2004). The 700,000 fewer births in Uganda between 1980 and 2000 have been attributed to the combined effects of increased mortality among women with HIV and an assumed twenty percent reduction in fertility (Kaida *et al.* 2006). Indeed, high rates of induced abortion have been documented in Uganda (Gray *et al.* 1998), Ivory Coast (Desgrees-du-Lou *et al.* 1998), Cameroun and Kenya (Okeibunor 1999) among HIV-infected women compared to HIV-negative women. HIV infection has been reported to have decreased fertility in these countries (Ntozi 2006).

Furthermore, the fear of death could instill caution among couples to limit childbearing. Grieser *et al.* (2000 p.225) reported that most respondents in a study conducted on HIV-positive couples in Zimbabwe opted for fewer children due to perceived increase in child mortality. There is an allusion that AIDS may increase fertility by two dimensions; firstly, young people may decide to marry early and give birth as soon as possible in Nigeria (Feyisetan and Bankole 2002); secondly, couples may resolve to have as many children as possible for fear of unpredictable deaths from AIDS. A study that investigated condom use and perceptions of the risks of HIV infection in Nigeria, reported that AIDS may not reduce fertility through increased contraception (Smith 2003). It concluded that condom use is widespread and largely determined by social norms regarding contraception and fertility, but not necessarily as a response to fears of AIDS (Smith 2003). The findings of Smith (2003) seem to confirm the recent trend in HIV/AIDS morbidity in Nigeria. In 2007, about 2,600,000 people were infected with HIV and approximately 170,000 people died from AIDS in Nigeria (UNAIDS 2008). Consequently, the impact of AIDS has reduced the average life expectancy to 53.8 years for women and 52.6 years for men in 1991 and 46 for women and 47 for men in 2007 (WHO 2008). Nigeria ranks 158 on the UNDP Human Poverty Index, which means that it may not contain the challenges of its HIV/AIDS epidemic (UNDP 2007/2008). Thus, HIV/AIDS may have a devastating impact on fertility in Nigeria.

In Guinea, incidents of HIV/AIDS were first reported in 1986. The prevalence of HIV among women attending antenatal care clinics was 2.8 percent with a range of 1.9 percent in the middle Guinea region compared to five percent in Conakry (WHO 2005). In 2004, prevalence was 4.2 percent with no differential in prevalence in urban and rural places, which

was found to be 4.1 and 4.3 percent respectively (WHO 2005). Furthermore, about 170,000 adults and children were living with HIV/AIDS at the end of 2004 (WHO 2005). WHO considered Guinea as a country facing a generalized HIV/AIDS epidemic in 2005 (WHO 2006). The spread of HIV/AIDS in Guinea is propagated by proximity to high-prevalence countries, an influx of refugees and internal and sub regional instabilities (WHO 2006). Guinea as a poor country may not contain the challenges of combating the spread of HIV/AIDS. The HIV/AIDS epidemics will have reducing effects on the entire population and fertility.

## **2.6 SOCIOECONOMIC DEVELOPMENT**

The effect of proximate determinants of fertility at various stages within the woman's reproductive life span has been documented. However, proximate determinants do not act in isolation. Social, economic, cultural and gender related determinants of fertility such as economic development, urbanization and maternal education regulate their effects on fertility (Caldwell 2008; Guttmacher 2008; Bongaart 2008). Socioeconomic changes have been viewed as the driving force behind the fertility transition in Sub Saharan countries (Guttmacher 2008). Stagnancy of economic growth in the 1990s has been suggested to be the cause of fertility stalling (Guttmacher 2008). Economic growth and declining mortality are associated with a decrease in fertility in Sub Saharan Africa (Guttmacher 2008). Notestein (1953) in his classical demographic transition stated that fertility is high in traditional agricultural societies to offset high mortality and consequently ensure population survival. This implies that industrialization, urbanization, rising education and investment in public health will lead to a decline in mortality and to a change in the cost and benefits of children (Bongaarts 2005). Hence, an increase in child survival coupled with the rising cost and declining economic value of children are the forces that underpin fertility transition (Caldwell 2008). Therefore, what compels parents to opt for smaller family sizes may be the differential ratio of cost and benefit in the face of declining mortality (Bongaarts 2005).

There have been controversies over how and under which conditions socioeconomic changes affect reproductive behavior. The classical demographic transition theory of Notestein was tested by Ansley Coale and his team in the 1970s, using province-level data 1870–1960 of European countries. This study suggested that socioeconomic conditions are weak predictors

of fertility decline as transitions commenced at widely differing levels of development (Watkins 1986 and 1987). Furthermore, once fertility decline has started in a region or country, it ignites the decrease in neighboring regions with the same language or culture even if they were less developed (Watkins 1986 and 1987). Studies in contemporary developing countries do not portray a strong association between development indicators and fertility decline (Bongaarts and Watkins 1996). A significant correlation exists between some developments and fertility, but early phases of transition and the pace of decline are weakly predicted by these indicators (Bongaarts 2005). The wanted fertility in Kenya and Ghana is 3.6 and 3.7 respectively, despite the fact that development indicators have largely leveled off (Bongaarts 2005). This may suggest that fertility preferences take precedence over socioeconomic determinants over the desired family size. However, there is strong evidence between the cause and effect of association between socioeconomic changes and fertility decline. An analysis of fertility transition in Brazil by Potter and his colleagues (2002:739) showed consistent relationships between the decline in fertility and measurable changes in social and economic developments.

However, the mediating explanation for these inconsistencies is the role of diffusion and social interaction processes (National Research Council 2001; Behrman et al. 2002). Diffusion is the spread of information, ideas, and behaviour among individuals, communities and countries, while social interaction is the influence of individuals' attitude and behaviour on others. These two processes have been suggested to either promote or hinder fertility declines. There is evidence of resistance to the adoption of birth control measures in pre-transitional societies. This resistance is responsible for keeping fertility unchanging even when a country begins to develop and the demand for children declines (Bongaarts 2005). Once this resistance is subdued, fertility may decline rapidly as enclosed demand for birth control is maximally satisfied under cost effective conditions (Bongaarts 2005). This explanation has been substantiated in many developing countries and those countries with low levels of development. It is noteworthy that the knowledge about contraception and access to contraceptive methods through family planning programs are underground work of diffusion (Bongaarts 2002:297; Rodriguez and Aravena 1991). This is demonstrated in Kenya where fertility declined among all strata of women as a result of family planning programmes (Blacker *et al.* 2005). In summary, Bongaarts (2002:297), concluded that both classical and diffusion perspectives are important, although their roles in the course of the transition may



change. In addition, diffusion and social interaction processes catalyzes early decline in the transition. On completion of the early process, late fertility transition is tied to the level of socioeconomic developments (Bongaarts 2002: 297).

## **2.7 CAUSES OF FERTILITY DECLINE**

Caldwell (2008) reported that the primordial cause of fertility decline was the engagement of men in other types of work apart from farming. These jobs were executed away from the home, making it impossible for the children to copy their fathers. The absence and experiences of their fathers at work created the need for universal and prolonged education to secure better paid jobs for their sons (Caldwell 2008). The imposed direct and indirect cost of education and non productive children were too expensive for most parents (Caldwell 2008). Hence the first demographic transition took place. Furthermore, industrial development fostered additional opportunities for female employment, which triggered a further decline in fertility from the 1960s (Guttmacher 2008). Farming, where children's labour was valuable paved the way to life in industrialized urban areas, where their work was of less value (Caldwell 2008). The decline in the value of children and indeed the extra cost were critically increased by the growing tendency of sending them to school in the nineteenth century (Caldwell 1980).

The mechanism of delay in marriage or no marriage at all, with limited sexual relations outside marriage decreased fertility (Caldwell 2008). The hallmarks of this mechanism was that young married persons should not live with or depend on their parents. This postponed marriage until they could afford accommodation, furniture and other obligations of family life (Caldwell 2008). Fertility was cut down by half in Western Europe around 1880 to the early 1900s using diverse methods: abstinence, abortion, and some infanticide, douching with spermicides, thick rubber condoms, withdrawal, pessaries and suppositories (Caldwell 2008). Toward the end of the transition, Dutch caps and diaphragms were made available to middle class people (Caldwell 2008).

However, very low fertility (below replacement level in most of Western Europe) was largely achieved by deferred marriage and births within marriage (Caldwell 2008). Furthermore education partly preceded contraceptive use in Europe (Beck and Lash 1994). There was a

desire of women to enter the workforce for higher income so that the family could partake of the benefits of the consumer society. Incidentally, higher levels of education became the criteria for the desired higher income.

## **2.8 CAUSES OF FERTILITY STALLING**

It has been suggested that the cause of fertility stalling has reduced funding for the promotion of family planning programs (Cleland *et al.* 2006, Blanc and Tsui 2005). This has been contested because there was neither a decrease in program effort scores nor a rise in unwanted fertility as well as unmet needs for contraception (Bongaarts 2005). There was a slight increase in unwanted fertility in Kenya, but other countries did not have a general increase in unmet needs for limiting births or unwanted fertility during the late 1990s (Westoff and Cross 2006). An absence of a meaningful increase in unmet needs does not justify an adequacy of family planning service because levels of satisfaction of demand for contraception are low, about thirty-four percent in Ghana and twenty-four percent in Kenya (Bongaarts 2005). However, it is pertinent to address the problems that militate against the adoption of family planning. Rejection of family planning for fear of the adverse effects, opposition from husbands and religion may play a role in the stalling of fertility (Caldwell 2008; Bongaarts 2005).

Little evidence exists that declining access to contraception is the main cause of stalling in fertility. The sudden stalled TFR despite the increase in contraceptive use in Bangladesh raises batteries of questions about the factors of fertility dynamics and future prospects among policy makers and planners (Bairagi 2001). The stalling of fertility, despite an increase in contraceptive use, was the highlight of the seminar organized by the United Nations Population Fund (UNFPA), held at Dhaka on 17 May 2001 (Bairagi 2001). It had been previously reported that family planning programs can reduce unwanted fertility, but their effects on desired family size is apparently weak (Freedman 1997). Although the TFR remains above the replacement level, many experts agreed that family planning programs were the main factors responsible for fertility decline in Bangladesh (Cleland *et al.* 1994; Robey *et al.* 1993). Some other experts argued that the major change in fertility has been brought about by other changes in the desire to have children not by birth control methods (Caldwell *et al.* 1999; Becker 1991). Pritchett (1994:39), the most fervent critic of these

programs asserted that to achieve low fertility, "... it is fertility desires and not contraceptive access that matters". He argued that "if ...improved family planning programs were driving fertility declines, they should be accompanied by a reduction in excess fertility". Based on Pritchett's argument, it is likely that a sustained high fertility rate in Nigeria and Guinea is in part due to the large desired family size.

## **2.9 THE EFFECT OF GOVERNMENT POLICIES ON FERTILITY**

In some countries, demand for family planning activated policy effectiveness, while in others independent factors such as an economic crisis and international pressure pressed policy makers into action on population policy (Lush *et al.* 2000). For instance, it was reported that unprecedented cases of abortion pushed family planning policy in Zimbabwe and Zambia in the early 1980s (Maveneka 1995; Kalumba 1995). However governments that developed more successful policies were those which acknowledged economic factors as the basis to reduce population growth (Lush *et al.* 2000). Indeed economic reasons were instrumental to population policy formulation in Nigeria and Guinea (IMF 2000). How well the policy has achieved the objectives remains unclear.

One of the targets stipulated in the Nigerian national population policy (1988) was to reduce the TFR from 6 to 4 children per woman by the year 2000. Presently, this target has not been met. The federal government of Nigeria has teamed up with non-governmental organizations to reduce national population growth rate to two percent by 2010. Evidently, advocacy for family planning is on the increase, but the impact is yet to be accounted for in fertility decline Ihejiamazu (2002). On 29 January 2004, the then Nigerian Minister of Health, Eytayo Lambo, announced a new policy that would replace the 1988 national population policy under which each couple was encouraged to have four children or more (RedOrbit, 2004). Lambo said that the new policy encouraged Nigerians to have the number of children they could cater for, since there was no ceiling on the number of children per couple. He said the target for the 2004 policy was to ensure that Nigeria's population growth rate was reduced from the current three percent per annum by 2015. The government would check population surges, by promoting the use of modern contraceptives. Indeed, there is nothing different in this new policy compared to that of 1988. The expectation that it would affect population growth and fertility carries little confidence.

Population growth was considered a threat to macroeconomic and social development by the government in Guinea and as a result, a national population policy was formulated in 1992 and was updated in 1996 (IMF, 2000). The scope of family planning services was widened and integrated into the system of primary health care. This was to control the rate of population growth. It is noteworthy that the entire programmes for fertility control and population growth are externally funded. Government dependency on external funding for population programme makes these largely unsustainable.

Evaluation of program impact for several countries by measuring the strength of demand for fertility reduction and the strength of government effort to promote family planning was studied by Mauldin and Ross (1991). The study revealed two important things. First, there was an association between the program strength and socio-economic development, although there was evidence of a few countries with low levels of development and strong programs. Secondly, strong programs do reduce fertility but their effects are subordinate to the influence of socio-economic development. Divergence in population policies are neither casual nor can they be satisfactorily buttressed by inter-country differences in social-economic development (Lush et al. 2000). Furthermore, the possibility of government commitment in providing family planning information and services depend on the actual or perceived demand for such services (Lush *et al.* 2000). Paul Demeny (1992:34) puts it succinctly “it is difficult, nay impossible to maintain hamburger outlets in a resolutely vegetarian neighborhood”.

### **2.91 Socio-economic characteristics and policy**

United Nations Population Division and the Population Council have several compendia of population policies extracted from various government documents (Demeny 1977; Lush *et al.* 2000). However the government documents do not account for the implementation assessment. Countries that have certain commonalities along social, economic and cultural aspects tend to hold on to similar policies (Lush *et al.* 2000). Nevertheless, no two countries are actually identical in the true sense of the word. Furthermore, policies and programs are dynamic and evolve overtime (Lush *et al.* 2000).

The role of government on population policy varies across countries. Government interest in population policy implementation could be religious or cultural. For instance, with the coming to power in 1986 of Corason Aquino, an adherent of the Roman Catholic Church in Philippines, formal population policy declined and dwindled. The Catholic opposition was influential and thus created ambivalence at government level to family planning (Lush, *et al.* 2000). In 1992, Fidel Ramos, a protestant, came to power and revived the family planning scheme through relevant government agencies (National Statistical Office 1994). Islamic opposition to population policy was strong in Pakistan (Mahmoud 1995). One of the acts of General Zia ul-Haq was to freeze the population program and ban publicity for family planning (Khan 1996). At the same time, President Ziaur Rahman of Bangladesh was consolidating the foundations for a new population program (Lush *et al.* 2000). National commitment to the implementation of family planning programs can be measured by the amount of funding dedicated to family planning programs and related activities expressed in absolute terms per head (Lush *et al.* 2000). Government readiness to spend its own resources rather than rely on donor funding is an indication of political priorities. However, it has not been easy to streamline the expenditures on family planning from those of health (Lush *et al.* 2000).

Countries may have similar levels of socio-economic development, but cultural differences play some roles as was observed in Zambia and Zimbabwe. In 1992, only nine percent of women were using modern methods of contraception (University of Zambia 1993), whereas the proportion rose from twenty-seven percent in 1984 to forty-two percent in 1994 for Zimbabwe (Lush *et al.* 2000). Taken together, population policy initiatives and provision of public sector family planning services were instrumental to fertility decline in Tunisia, Bangladesh and Zimbabwe (Lush *et al.* 2000). On the other hand, fertility decline had started before the adoption of a population policy in Thailand, Algeria and the Philippines (Lush *et al.* 2000).

## **2.10 OTHER FACTORS THAT AFFECT FERTILITY DECLINE**

Apart from the proximate determinants of fertility and economic development, socio-economic factors like education and child survival contribute to fertility decline (Bongaarts 2001). The WFS of forty countries of Asia, Latin America and the Caribbean, between 1974

and 1984 shows that women who had several years of schooling had lower fertility than those with less education (Ashurst *et al.* 1984). The reason why progressive affluence and high education decrease fertility is not very clear. However, Blacker *et al.* (2005) suggested that when prosperity is followed by a downturn in the economy in a way that it threatens the increasing burden of a large family and peoples' aspirations, the onset of fertility transition may be triggered. This prosperity coupled with education creates a climate of opinion favourable to family limitation. Where the climate of opinion for family planning is not ripe, any decline in fertility associated with the economic downturn may be transitory (Blacker *et al.* 2005). This may have accounted for the sudden stalling of fertility decline in Nigeria. With the oil boom in Nigeria, the TFR rose to 7 in the mid 1970s due to increased food imports and a rise in salaries of workers (Bankole and Bamisaye 1985). However, female education as a facilitator of fertility decline does not agree with the trend in Kenya. Despite high levels of literacy and schooling in Kenya, fertility has stalled at almost five births per woman (Bongaarts 2005). The contribution of poor living standards in Kenya in this stalling in fertility is not clear. However, faltering of the decline in fertility as evidenced by the Kenya DHS 2003 was the implementation of the Information, Education and Communication (IEC) strategy in 2000. In addition, funding of population activities by the UN declined and dwindled between 1998 and 2003. There was equally a shift of interest from reproductive health activities to implementation of programmes on HIV/AIDS and other sexually transmitted diseases (STDs) as well as sensitization to gender issues (Blacker *et al.* 2005).

The introduction of Structural Adjustment Programs in 1986 created an economic condition that increased the cost of child rearing by the family (Feyisetan and Bankole 2002). It is plausible that the fall in the periodic specific fertility rates was partly due to the adjustment of reproductive behavior which was triggered by the socioeconomic climate. Thus, economic upheaval at the societal and personal levels contributed to the postponement or stopping of child bearing (Markinwa-Adebusoye and Feyisetan *op.cit.*). The TFR of 6.3 and 5.2 in 1986-1990 and 1995-1999 in Nigeria may be partly due to socioeconomic threats. It is documented in the Nigerian Demographic Health Survey final reports that women employed in the formal sectors had fewer children. In recent times, there is an association between unemployment and lower fertility. Marriage and child bearing are postponed due to unemployment and a long period of economic consolidation.

On the other hand, despite the poor economic conditions in Guinea, the TFR has remained high. The socioeconomic conditions do not have any effect on family planning. What drives high fertility in Guinea is still the desire to have more children. The EDSG-III shows that seventy-eight percent and ninety-three percent of currently married women and men respectively want more children. Indeed, female education and employment have decreasing effects on fertility. Evidence from FOS (1997) and NDHSs indicated lower fertility among women with secondary school and above compared to those without education. This is consistent with the report of EDSG-III 2005 in Guinea, where TFR rates were 6.2, 5.1 and 3.3 for women with no education, primary and above primary education respectively. There could be variations at regional and district levels with regards to women educational levels on fertility.

The extent to which women education, employment and contraception will decrease fertility is not certain in Nigeria and Guinea. It is documented that African culture endorses high fertility. In Nigeria and Guinea, children are still viewed as insurance for the aging parents. The desire to have more children is still high. Moreover, child mortality is still high in Nigeria and Guinea. Hence, high fertility is perceived as needed because the rate of survival is low and unpredictable. Furthermore, in Nigeria family planning programs do not seem to have adequate support from the government and pressure groups. Hence, the greater burden of family planning delivery rests on external funding which operates in the areas of interest of donor agencies (Feyisetan and Bankole 2002). There is fear of domination among the ethnic groups and population has been playing a key role in controlling power at the center. It is plausible that further declines in fertility may be stalled by regional government policies in order to ensure that the populations of their regions compare favorably with other regions (Feyisetan and Bankole 2002). In addition, the desire for children is still high in Nigeria. Desire for more children is still high in Guinea. Despite the fact that approximately 100 percent of the women know about contraceptives, only nine percent are using it. Therefore, future trends in fertility in Nigeria and Guinea remain uncertain.

## CHAPTER THREE

### RESEARCH METHODOLOGY AND PROCEDURES

This chapter describes and explains the methods, techniques, and procedures used in the collection of the data relating to this study.

#### 3.0 RESEARCH SETTING

The aim of the Demographic and Health Survey was to produce unbiased nationally representative data and statistics for Nigeria. The NDHS 1990 Sample was drawn from the National Master Sample for the 1987/1992 National Integrated Survey of Households (NISH), which was based on the 1973 census enumeration areas (EA). A sample of about 10,000 households in 299 EAs was designed with twofold oversampling of the urban stratum, yielding 132 urban EAs and 167 rural EAs. However the NDHS did its own EA identification and listing operation. Hence, a new listing of housing units and households was compiled in each of the selected 299 EAs. A fixed number of 34 households per EA were taken in order to have better control of the sample size. Thus, the NDHS sample is a weighted sample, maintaining the twofold oversampling of the urban sector.

NDHS of 1999 used the Primary Sampling Units (PSUs) of the 1991 National Population Census as the sampling frame. The frame contains 212,079 EAs that are mutually exclusive and collectively exhaustive of the territorial land areas of Nigeria. Similarly the sample frame used for the NDHS of 2003 was the list of enumeration areas (EAs) designed for the 1991 Population Census. Approximately 212,080 EAs, with household and population information of 1991 census, was evaluated as a potential sampling frame for the 2003 NDHS. The EAs were grouped by states, by LGAs within a state, and by localities within an LGA, stratified separately by urban and rural areas. Any locality with less than 20,000 population constitutes a rural area.

The Enquête Démographique et de Santé-II (EDSG-II) adopted the list of the 4911 zones of enumeration (ZE) created for the purpose of *Recensement General de la Population et de*



*l'Habitation* 1996 (RGPH-96) as the basis for the survey. However, the populations of the refugee camps located in 193 ZEs were excluded from the survey. The Enquête Démographique et de Santé-III (EDSG-III) used the zones of enumeration (ZE) created for the purpose of Recensement *General de la Population et de l'Habitation* of 1996 (RGPH-96) as the basis for the survey. However, 163 ZEs occupied by refugees were eliminated. Thus, the 2005 survey contains 4941 ZEs.

### **3.1 INSTRUMENT**

The instruments used were the DHS model B questionnaires, which were designed for use in countries with low contraceptive prevalence. The individual questionnaire was used for the purpose of the present study. The wordings of questions in DHS surveys were consistent over time. The questionnaire gave a number of options, and the interviewers were asked to fill in the questionnaire according to respondents' answers.

### **3.2 STUDY DESIGN**

The design of the study is cross sectional oriented, because we are going to investigate present functional status, quality of life and access to contraceptive and family planning of women in their reproductive ages in Nigerian and Guinea. We will employ descriptive analysis and interpretation of already existing conditions surrounding fertility in both countries.

### **3.3 DATA SOURCE**

The data used in the study were secondary data from the DHS conducted in 1990, 1999 and 2003 in Nigeria and the EDSG of 1992, 1999 and 2005 in Guinea. The three surveys used roughly the same sampling frames and sample size country wise. Although they did not constitute panel data, as a result of changes in the number of regions, but it is still meaningful to examine the trends of events over time.

### 3.4 STUDY POPULATION

The study population was women of reproductive ages 15-49 in Nigeria and Guinea. The NDHS covered a population of about 8199 and 7620 women in 1999 and 2003 respectively. The EDSG of 1999 and 2005 covered 6753 and 7954 women respectively. Table 3.2 shows the frequency distribution of women in Nigeria and Guinea by age groups.

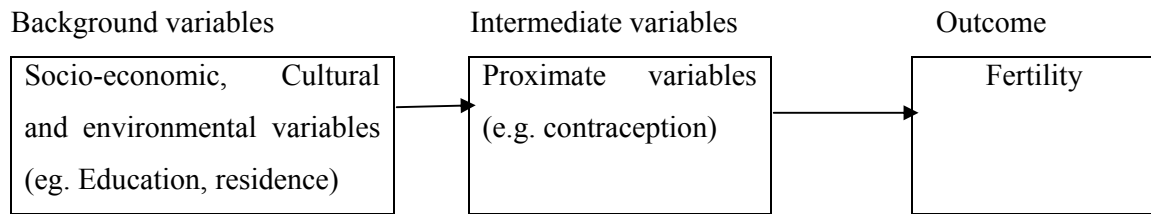
**Table 3.1: Percentage distribution of women by age group in Nigeria 1999-2003 and Guinea 1999-2005**

Age group	Nigeria		Guinea	
	1999	2003	1999	2005
15-19	21.6	23	19.8	20.5
20-24	18.6	19.2	16.3	14.3
25-29	18.6	17.8	18.5	15.6
30-34	13.9	12.3	14.2	14
35-39	12	10.5	13.8	15
40-44	8.4	9.1	9	10.4
45-49	6.9	8.1	8.3	10.2
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Population size</b>	<b>8199</b>	<b>7620</b>	<b>6753</b>	<b>7954</b>

### 3.5 STUDY VARIABLES

Women were interviewed on a range of variables that affect fertility directly or indirectly. The hallmark of analysis of the present study is based on the Bongaarts' et al proximate determinants of fertility (1984). In this model, the background and socioeconomic characteristics are posited to influence fertility through their effects on the intermediate variables.

**Figure 1: Bongaarts' model on the role of the proximate variables on fertility**



The variables used in the study are as follows:-

**Background characteristics variables**

- Age
- Type of place of residence
- Highest educational level
- Total number of children ever born
- Desire for more children
- Number of living children
- Visitation by FP worker
- Respondent approval of FP
- Discuss family planning with partner and others
- Visiting of health facility
- Ideal number of children
- Would use contraceptive if ever get married
- Husband approval of FP
- Respondent approval of FP
- Religion

**Intermediate variables**

- Current contraceptive method
- Knowledge of contraceptive methods
- Current use of contraception
- Current marital status
- Current pregnancy wanted
- Wanted last child
- Intention to use contraception

- Unmet needs for contraception
- Age at first sexual intercourse

**Dependent Variable**

- Total fertility rate (TFR)

**3.6 DATA ANALYSIS**

Data was coded, organized and analyzed using the Statistical Package for Social Sciences (SPSS) and STATA 10 software. Frequency tables, and cross tabulations and chi-square were used to analyze the data and subsequently presented by percentages in tables and graphs. The binary logistic regression model was used for current contraceptive use due to the dichotomous nature of the dependent variable while stepwise multinomial logistic regression was used for total children ever born. Binary logistic regression was applied to determine the predictors of current contraceptive use by background characteristics after establishing association by chi-square analysis. In an attempt to explain the role of socioeconomic factors on fertility, multinomial stepwise logistic regression was fitted. In the model the total number of children ever born is the dependent variable (Y) whereas age of the respondent (X1), education in single years (X2), place of residence (X3), current use of contraceptive (X4), age at marriage (X5), age at first sexual intercourse (X6), religion (X7), partners education (X8) and employment all the year (X9) are the independent variables. The mathematical form of the model is as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8 + \beta_9X_9$$

## CHAPTER FOUR

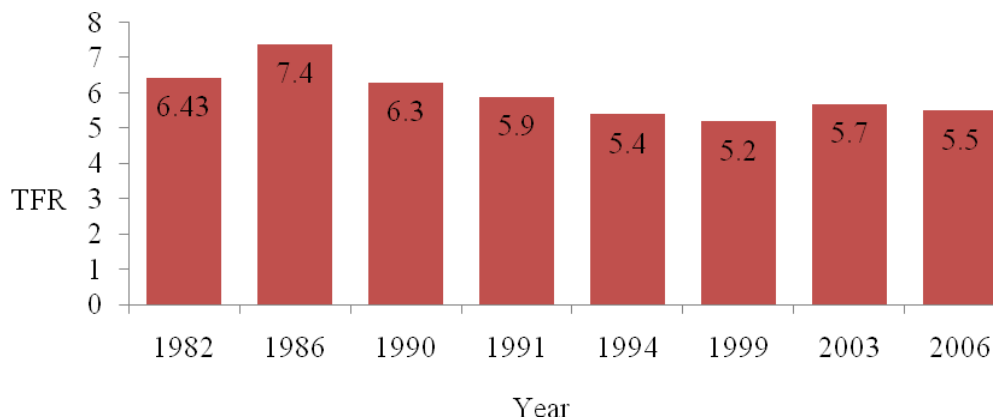
### DATA PRESENTATION AND ANALYSIS OF FINDINGS

#### 4.0 TRENDS IN TOTAL FERTILITY RATES AT NATIONAL LEVELS IN NIGERIA AND GUINEA

Fertility indices for at least the last 20 years in Nigeria and Guinea are shown in figures 2 and 3 respectively. The TFRs in Nigeria showed a consistent decreasing trend from 1986 to 1999. The TFR increased slightly in 2003, but the increase remained stable in 2006 (CIA World Factbook). The trend considering the DHS 1990 and 2003 may suggest prospects of further decline.

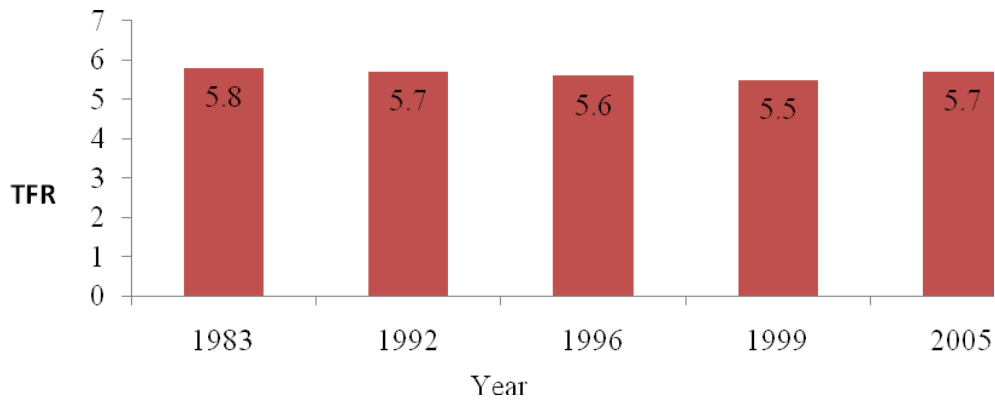
The TFRs in Guinea from the *Recensement General de la Population et de l'Habitation* 1983 to that of EDSG-III 2005, do not show a decrease at national level. The trend in the TFR in Guinea does seem to agree with the hypothesis that fertility is declining in sub Saharan African.

**Figure 2: Trend in Total fertility in Nigeria from 1978-2006**



**Source:** National population Bureau Lagos, 1994; Makinwa-Adebusoye and Feyisetan, 1994; National population Commission Abuja, 2000; National population Commission Nigeria and ORC Macro.2004; National population Commission Nigeria, 1994; National population Commission Nigeria and ORC. 2006.

**Figure 3: Trend in Total fertility in Guinea from 1983-2005**



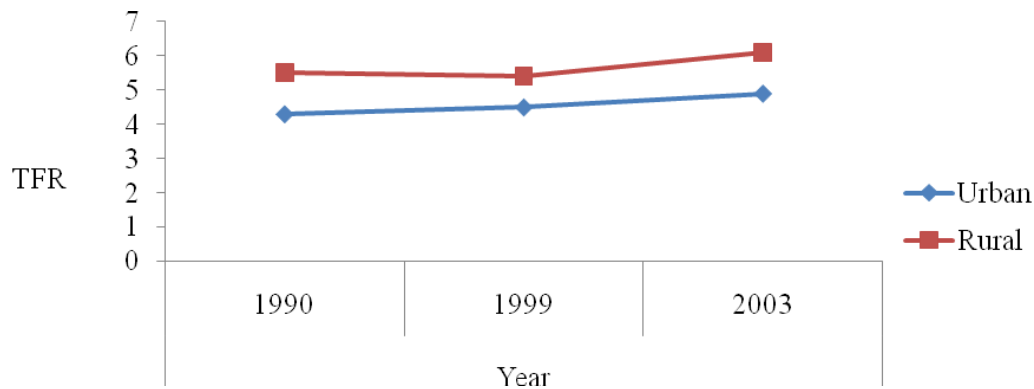
**Source:** Direction Nationale de la Statistiques and ORC Macro.1993; Direction Nationale de la Statistiques and ORC Macro.2000; Direction Nationale de la Statistiques and ORC Macro.2004; Direction Nationale de la Statistiques and ORC Macro.2006.

#### **4.1 TRENDS IN TOTAL FERTILITY RATES BY PLACE OF RESIDENCE IN NIGERIA AND GUINEA**

The trend in the TFR by place of residence in Nigeria is shown in figure 4a. Fertility is higher among rural women compared to their urban counterparts. The TFR for both rural and urban women has been stable from 1990 to 1999 in Nigeria. Fertility in the case of rural women increased by 1 child in 2003. Both rural and urban TFRs show some potential for further increase.

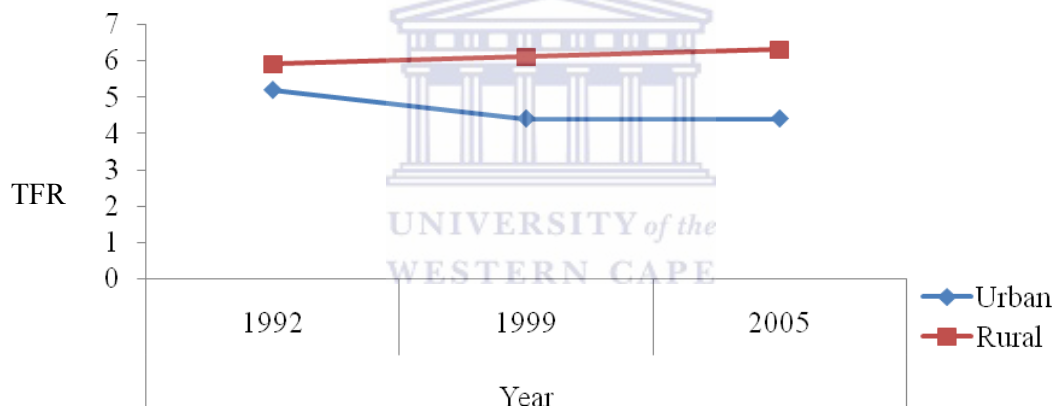
Trends in the TFR by place of residence in Guinea are shown in figure 4b. In Guinea, the trend in the TFR among urban women shows a slight decrease from 1992 to 1999, and stabilized by 2005 while that of rural women show stability at 6. Trends in the rural TFR shows potential for further increase.

**Figure 4a: Trend in TFR between urban and rural women in Nigeria 1999-2003**



**Source:** National population Commission Abuja, 2000; National population Commission Nigeria and ORC Macro.2004.

**Figure 4b: Trend in TFR between urban and rural women in Guinea 1992-2005**



**Source:** Direction Nationale de la Statistiques and ORC Macro.1993; Direction Nationale de la Statistiques and ORC Macro.2000; Direction Nationale de la Statistiques and ORC Macro.2006.

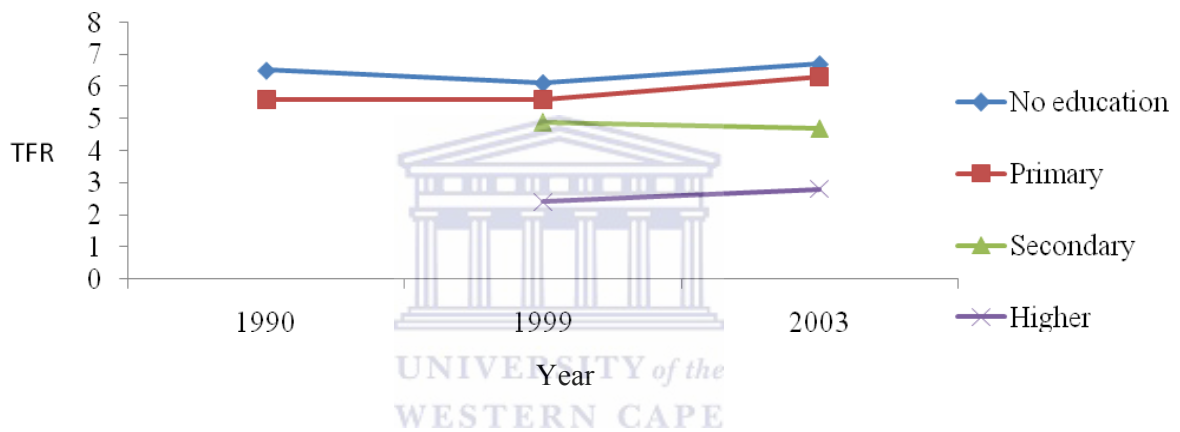
#### **4.2 TREND IN TOTAL FERTILITY RATES BY EDUCATIONAL LEVEL IN NIGERIA AND GUINEA**

Fertility trends in Nigeria in terms of educational level of women are shown in figure 5a. Among women without and those with only primary education in Nigeria, the TFR increased slightly above 6 per woman in 2003. The TFR of women with secondary education decreased

slightly between 1999 and 2003. The TFR of women with higher education increased from 2 in 1999 to 3 per woman in 2003.

The Trend in the TFR by educational background in Guinea is shown in figure 5b. The TFR among women without education has been increasing slowly since 1992. The TFR for women with primary education did not show a consistent trend over time. It has decreased from above 6 in 1992 to 5 per woman in 2005. The TFR of those with secondary education plus has decreased from 4 in 1992 tending to 3 per women in 2005.

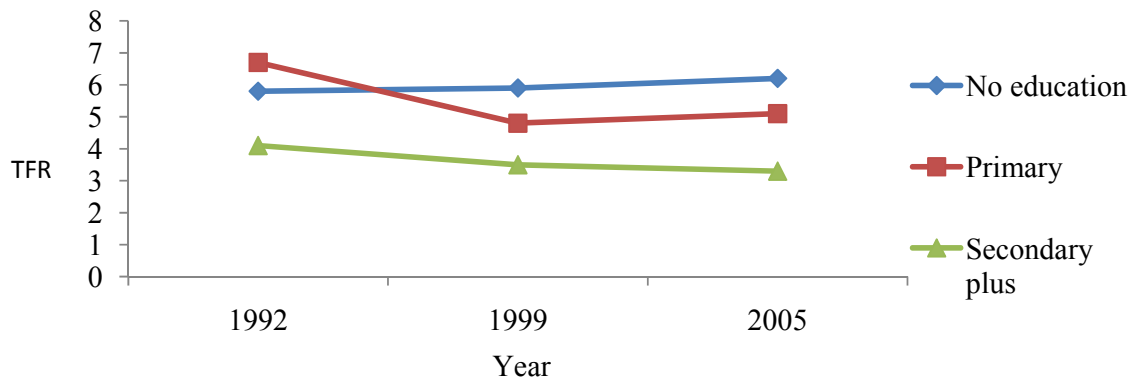
**Figure 5a: Trend in TFR by educational levels of women in Nigeria 1990-2003**



**Source:** National population Commission Abuja, 2000; National population Commission Nigeria and ORC Macro.2004.



**Figure 5b: Trend in TFR by educational levels of women in Guinea 1992-2005**



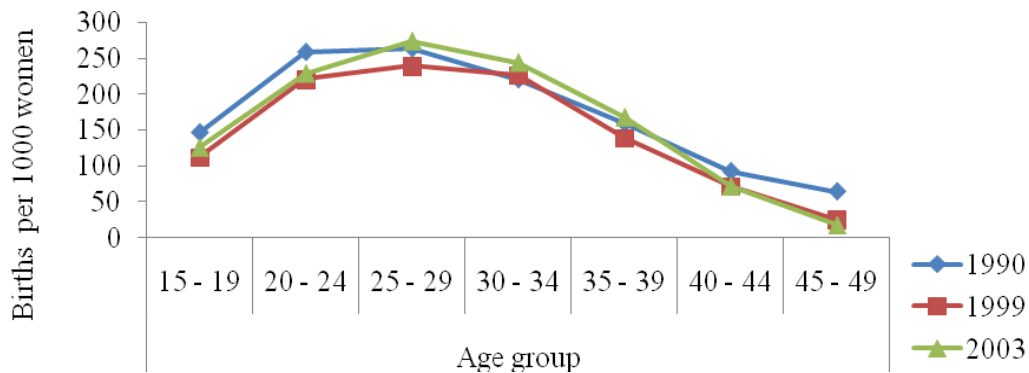
**Source:** Direction Nationale de la Statistiques and ORC Macro.1993; Direction Nationale de la Statistiques and ORC Macro.2000; Direction Nationale de la Statistiques and ORC Macro.2006.

#### 4.3 TREND IN AGE-SPECIFIC FERTILITY RATES (ASFRs) IN NIGERIA AND GUINEA

The ASFRs for Nigeria at national level are shown in figure 6a. There is no consistent trend over time from the NDHSs. However, ASFRs peak at the age group 25-29 and then decline gradually in the older age groups tending to zero. The trends in ASFRs for age groups 15-19 and 20-24 have decreased from 146 and 258 per 1000 population in 1990 to 126 and 229 per 1000 population in 2003. ASFRs for the age groups 30-34 and 35-39 have increased from 220 and 159 per 1000 population in 1990 to 244 and 168 per 1000 population in 2003. ASFRs are generally higher in 2003 compared with 1999 except for the age group 45-49.

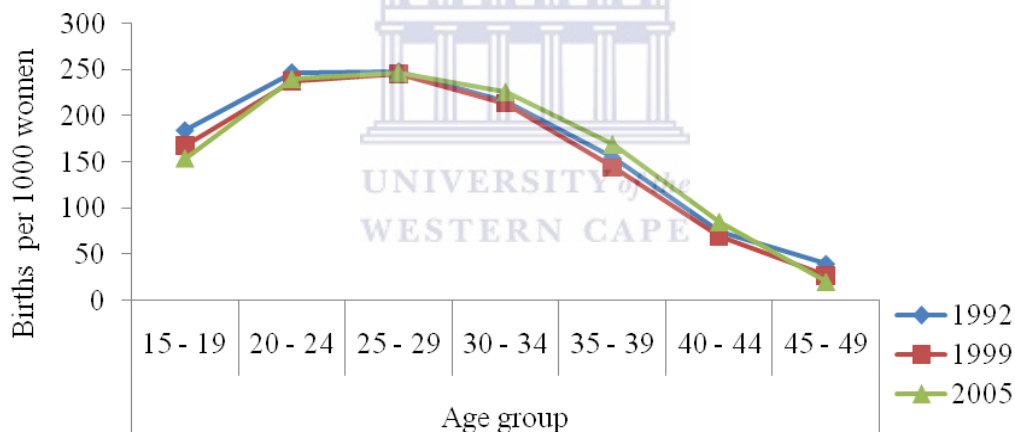
In the case of Guinea figure 6b, ASFRs peak at the age groups 25-29 for 1999 and 2005 compared to the age groups 20-24 in 1992 and decrease gradually in the older age group. This is consistent with recent increase of age at first birth. ASFRs have declined for the age groups 15-19 and 45-49 from 184 and 64 per 1000 population in 1992 to 154 and 18 per 1000 population respectively in 2005. ASFRs increased modestly for the age groups in the range of 30-44 between the intervals of 1992 and 2005.

**Figure 6a: Age specific fertility rate trends in Nigeria from 1990-2003**



**Source:** National population Commission Abuja, 2000; National population Commission Nigeria and ORC Macro.2004.

**Figure 6b: Age specific fertility rate trends in Guinea from 1992 - 2005**



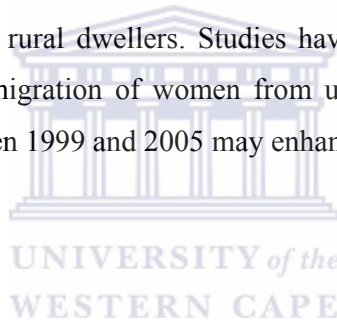
**Source:** Direction Nationale de la Statistiques and ORC Macro.1993; Direction Nationale de la Statistiques and ORC Macro.2000; Direction Nationale de la Statistiques and ORC Macro.2006.

#### 4.4 PERCENTAGE DISTRIBUTION OF WOMEN AGED 15-49 BY PLACE OF RESIDENCE IN NIGERIA AND GUINEA

Information on place of residence was available for the two NDHS conducted in 1999 and 2003 as shown in table 4.1. The percentage of women living in rural areas has decreased

among all age groups between 1999 and 2003, leading to a corresponding increase in urban dwellers in 2003. There are no significant differences in the distribution of women by age groups (1999 -  $\chi^2_{(6)} = 0.278$  and in 2003 -  $\chi^2_{(6)} = 0.491$ ). However, over fifty-five percent and almost forty percent of all women dwell in rural and urban areas respectively in 2003. Over forty percent of women of age group 25-29 and 35-39 dwell in urban areas.

Table 4.1 presents the percentage distribution of women by place of residence in Guinea. There are significant differences in the distribution of women by age groups (1999 -  $\chi^2_{(6)} = 0.000$  and in 2005 -  $\chi^2_{(6)} = 0.000$ ). The percentage of women dwelling in rural areas of Guinea increased with age over time. About seventy percent of all women dwell in the rural areas of Guinea in 2005. There was a decrease in the proportion living in the urban areas in all age groups except for the women aged 30-34 between 1999 and 2005. The trend shows potential for further increases with a concomitant decrease in urban dwellers. In general Nigeria and Guinea are mainly rural dwellers. Studies have shown that rural women have high fertility rates. The mass migration of women from urban to rural areas in Guinea is shown by the differential between 1999 and 2005 may enhance high fertility.



**Table 4.1 Percentage distribution of women by place of residence in Nigeria 1999 – 2003 and Guinea 1999-2005**

Age group	Nigeria				Guinea			
	1999		2003		1999		2005	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
15-19	31.9	68.1	39.4	60.6	44.0	56.0	38.3	61.7
20-24	34.6	65.4	40.5	59.5	39.8	60.2	36.0	64.0
25-29	32.3	67.7	41.4	58.6	34.1	65.9	27.7	72.3
30-34	34.8	65.2	38.9	61.1	30.0	70.0	28.0	72.0
35-39	32.6	67.4	42.7	57.3	29.7	70.3	24.1	75.9
40-44	32.8	67.2	38.7	61.3	30.0	70.0	24.8	75.2
45-49	29.7	70.3	38.5	61.5	25.8	74.2	21.2	78.8
	$\chi^2_{(6)} = 0.278$		$\chi^2_{(6)} = 0.491$		$\chi^2_{(6)} = 0.000$		$\chi^2_{(6)} = 0.000$	
Total(N)	2697	5502	3057	4563	2344	4409	2355	5599

#### **4.5 PERCENTAGE DISTRIBUTION OF WOMEN BY LEVEL OF EDUCATION IN NIGERIA AND GUINEA**

Education of women has been linked with fertility. Studies have shown lower fertility to be associated with higher levels of education (Ashurt et al 1984). Distribution of women in Nigeria by level of education shows significant differences in (1999 -  $\chi^2_{(18)} = 0.000$  and in 2003 -  $\chi^2_{(18)} = 0.000$ ) in table 4.2. About forty percent of all women in 1999 within the reproductive age have no formal education, which remained unchanged by 2003. Over twenty percent have primary education which did not show significant change between 1999 and 2003. About thirty percent have secondary education in 1999 which has increased to thirty-two percent by 2003. However, the percentage of all women with higher education has remained stable at six percent from 1999 to 2003. The trend shows that older women are less

educated than younger women. The primary school level education attainment is stable around twenty to twenty-five percent for all women. Over fifty percent of women aged 15-19 have attained secondary school education in Nigeria. The distribution shows that education is rising among the younger women.

In Guinea between 1999 and 2005, there were no meaningful changes in the level of education of all women, table 3. Older women are less educated than younger women. Education is rising among the younger women. About seventy-nine percent and seventy-eight percent of all women have no formal education in 1999 and 2005 respectively. However distribution of women by educational levels shows significant differences (1999 -  $\chi^2_{(18)} = 0.000$  and in 2005 -  $\chi^2_{(18)} = 0.000$ ). The percentage of women of age group 15-19 with no education decreased from 67.3 percent in 1999 to 54.4 percent in 2005. The proportions within primary education remained constant at ten percent while the percentage of women with secondary education increased from seven percent to ten percent between 1999 and 2005. The proportion with higher education decreased from two percent to approximately one percent. The increase in women's educational level has been associated with lower fertility. The general pattern of education shows that Nigerian women are more educated than their Guinean counterparts. For instance over fifty percent of women aged 15-19 in Nigeria have secondary school education whereas less than twenty-three percent of their counterparts in Guinea have secondary education. The trend in levels of education in both countries does not pose potentials for fertility decline especially in Guinea.

**Table 4.2: Percentage distribution of women by educational levels in Nigeria 1999 – 2003 and Guinea 1999 - 2005**

<b>Nigeria</b>								
Age group	1999				2003			
	None	Primary	Secondary	Higher	None	Primary	Secondary	Higher
15-19	25.9	21.8	51.4	0.9	26.4	21.3	50.7	1.5
20-24	32.5	20.0	40.0	7.6	30.0	18.6	43.2	8.1
25-29	36.4	24.4	30.3	8.9	36.1	22.6	32.2	9.0
30-34	44.1	22.6	25.0	8.2	43.8	23.7	25.2	7.2
35-39	52.3	23.3	14.8	9.7	47.6	25.1	19.3	8.0
40-44	63.0	23.4	8.3	5.4	57.0	23.5	12.2	7.3
45-49	64.6	24.9	5.5	5.0	68.9	20.6	4.7	5.8
	$\chi^2_{(18)} = 0.000$				$\chi^2_{(18)} = 0.000$			
Total(N)	40.6	22.6	30.5	6.4	39.4	21.9	32.3	6.4
	3325	1850	2503	521	3005	1666	2462	487
<b>Guinea</b>								
Age group	1999				2005			
	None	Primary	Secondary	Higher	None	Primary	Secondary	Higher
15-19	67.3	21.2	11.4	0.1	54.4	23.7	21.8	0.1
20-24	75.5	12.3	10.6	1.6	74.5	9.9	14.9	0.8
25-29	81.5	10.0	6.1	2.5	85.5	8.6	5.4	0.5
30-34	81.8	7.5	7.8	2.8	84.2	8.7	6.3	0.8
35-39	84.9	6.2	6.1	2.8	88.9	5.2	5.8	0.2
40-44	86.6	4.7	4.9	3.8	86.3	6.3	6.7	0.7
45-49	90.0	3.2	4.1	2.7	89.1	5.8	3.7	1.5
	$\chi^2_{(18)} = 0.000$				$\chi^2_{(18)} = 0.000$			
Total(N)	79.4	10.7	7.8	2.1	78.3	10.9	10.3	0.6
	5361	721	530	141	6228	864	816	46

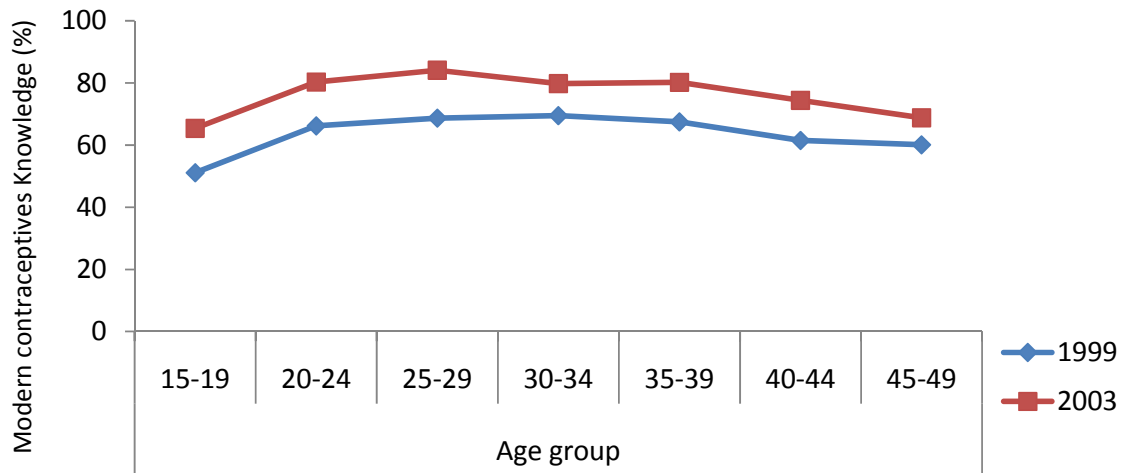
#### **4.6 THE KNOWLEDGE OF CONTRACEPTIVE METHODS AMONG WOMEN IN NIGERIA AND GUINEA**

The knowledge of modern contraceptive methods among the women of reproductive ages 15-49 has increased with time. Figure 7a shows the trend in knowledge of contraceptive methods in Nigeria. The knowledge of modern methods has increased among all women from sixty-

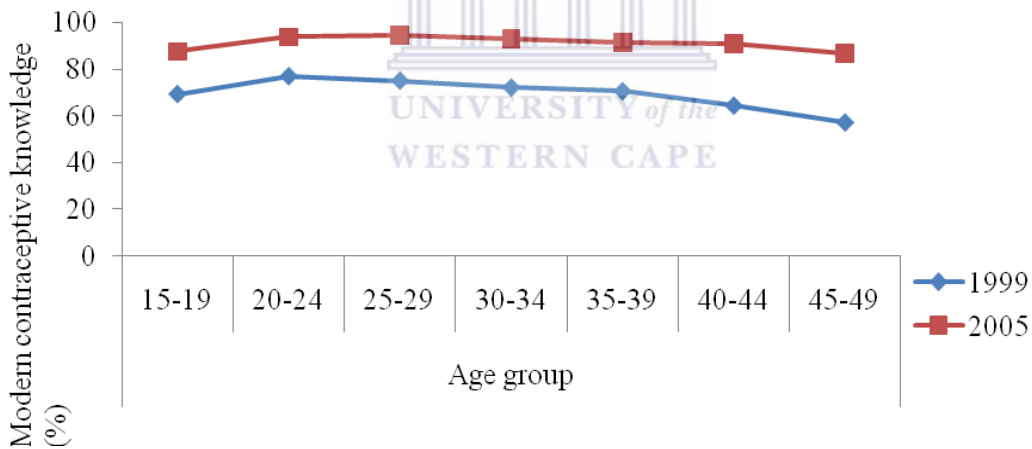
three percent to seventy-six percent between 1999 and 2003. The age groups 20-24, 25-29 and 35-39 show greater knowledge of modern contraceptive methods compared to other age groups. However, the knowledge of other methods has remained stable and low in all age groups over time, see Appendix 2. There was decline in the knowledge of traditional method in all age groups. The percentage of women without any knowledge of contraceptive methods has declined between 1999 and 2003 see Appendix 2.

Figure 7b shows the trend in knowledge of modern contraceptive methods in Guinea. The knowledge of modern methods has increased among all women from seven-one percent in 1999 to ninety-one percent in 2005. Consistent with the trend in Nigeria, age groups 20-24 and 25-29 show greater knowledge of modern contraceptive methods compared to other age groups. The percentage of all women ignorant of any method has decreased from twenty-eight percent to eight percent between 1999 and 2005 see Appendix 2. The knowledge of folkloric and traditional methods still remained low for all age groups in Guinea see Appendix 2. In Nigeria and Guinea the age groups 15-19 and 45-49 respectively have the least knowledge of modern methods of contraception. However, higher knowledge of modern contraception seems to be associated with urban residence. For instance, the women of age groups 20-24, 25-29 and 35-39 have the highest proportion residing in urban areas of Nigeria. The knowledge of modern contraception is also highest for these age groups in Nigeria. In Guinea, women of age groups 15-19, 20-24 and 25-29 have a higher percentage residing in urban areas. Consequently knowledge of modern contraception was highest among these age groups except for the women aged 15-19. In Guinea, the percentage of women 15-19 living in urban areas is highest compared to other age groups. Their lowest percentage of knowledge may be due to the fact that most of them are still young, not sexually active and thus have no need for contraception.

**Figure 7a: Percentage of women by knowledge of modern contraception in Nigeria 1999-2003**



**Figure 7b: Percentage of women by knowledge of modern contraception in Guinea 1999 - 2005**



#### 4.7 CURRENT CONTRACEPTIVE METHODS AMONG WOMEN IN NIGERIA AND GUINEA

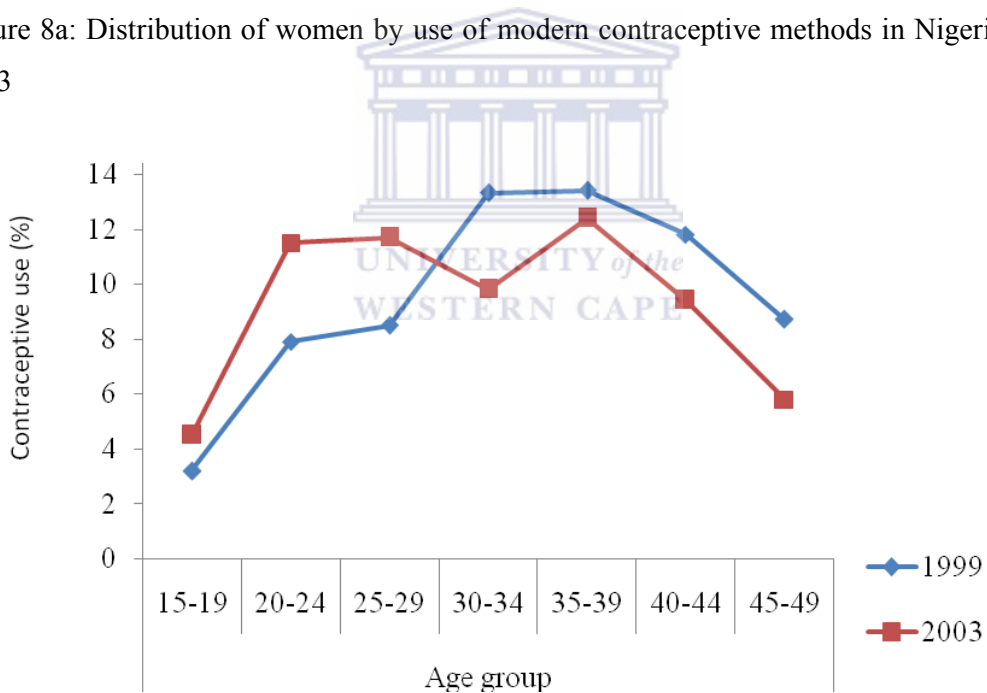
The current use of modern contraceptives in Nigeria is shown in figure 8a. The proportion of all women in Nigeria that use modern methods has increased by 0.4 point between 1999 and 2003. However, women of age range 30 – 49 showed a downward trend in contraceptive use after 1999. Between 1999 and 2003, the percentage of all women that do not use any



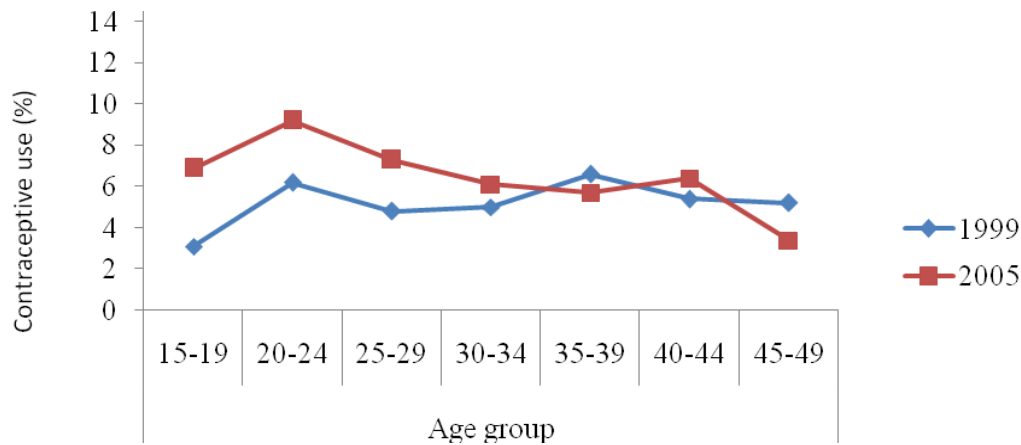
contraceptive method increased by 2.3 points see Appendix 3. The use of folkloric methods remained stable while traditional methods decreased slightly between 1999 and 2003 see Appendix 3.

In Guinea, the current use of modern contraception among women has increased by 1.5 points between 1999 and 2005 see figure 8b. The percentage of women that use modern contraception has increased in all age groups except for the women aged 35-39 and 45-49. The use of modern contraceptives is highest for the women of age group 20-24. The proportion of all women that do not use any method has declined by 2.4 points between 1999 and 2005 see Appendix 3. The percentage of all women that use folkloric methods increased by 2.4 points, while those using traditional methods declined by 1.4 points between 1999 and 2005 see Appendix 3.

Figure 8a: Distribution of women by use of modern contraceptive methods in Nigeria 1999-2003



**Figure 8b: Distribution of women by use of modern contraceptive methods in Guinea 1999 - 2005**



#### 4.8 UNMET NEEDS FOR CONTRACEPTION AMONG WOMEN IN NIGERIA AND GUINEA

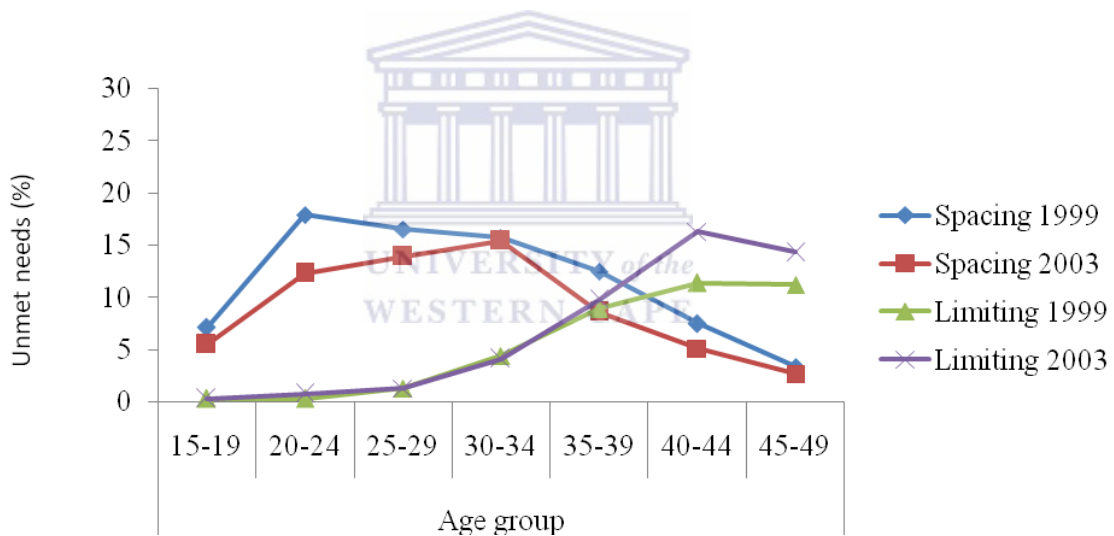
The trend in unmet needs of contraceptive use in Nigeria is shown in figure 9a. The unmet needs for spacing has declined by four points whereas for limiting child births it increased by one point for all women between 1999 and 2003. Unmet needs to space declined gradually over time in all the age groups except for women aged 30-34 and 45-49. Unmet needs for spacing was above ten percent for the age groups 20-24, 25-29 and 30-34 in 2003. Unmet needs to limit did not change for all age groups except for the women aged 40-44 and 45-49 between the two time points. The trend in unmet needs to limit increased by five points and three points for the age groups 40-44 and 45-49 respectively between 1999 and 2003.

The trend in unmet needs of contraceptive use in Guinea is shown in figure 9b. The unmet needs to space has decreased by 3.1 points for all women between 1999 and 2005. There were no reasonable changes in unmet needs to space for the age groups 15-19, 40-44 and 45-49. Unmet needs to space has remained above ten percent for the age groups 15-19, 30-34 and 35-39; above fifteen percent for age group range 20-29; and below five percent for women aged 40-44. Unmet needs to limit rises with increasing age. Unmet needs to limit has remained above fifteen percent for age groups 40-44 and 45-49; below five percent for

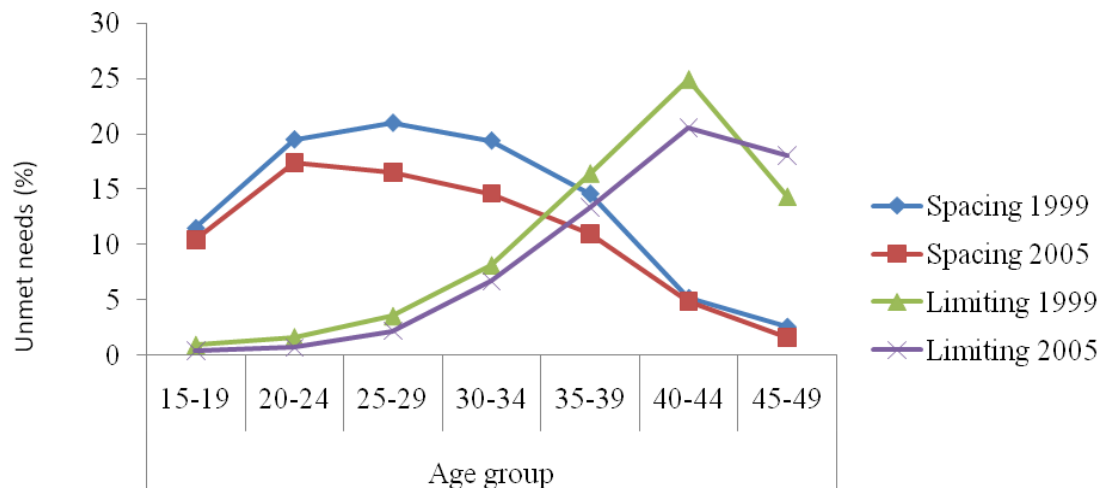
age group range 15-29, and below ten percent for women aged 30-34. The entire age groups show a declining trend in unmet needs for limiting child birth except the age group 45-49. However, unmet needs to limit was highest for the women of age range 40-44, while unmet needs for spacing was high for the age group range 20-34.

Taken together, the unmet needs to space births is high among women ages 20-39 and much lower among women 15-19 and those in their 40s in Nigeria. The unmet needs for limiting is low among younger women and higher among women ages 35 and older. In the case of Guinea, the unmet needs to space births is high among women ages 15-39 and much lower among women in their 40s. On the other hand, the unmet needs for limiting is low among younger women and higher among women ages 30 and older.

**Figure 9a: Unmet needs of contraceptive use in Nigeria 1999-2003**



**Figure 9b: Unmet needs of contraceptive use in Guinea 1999 - 2005**



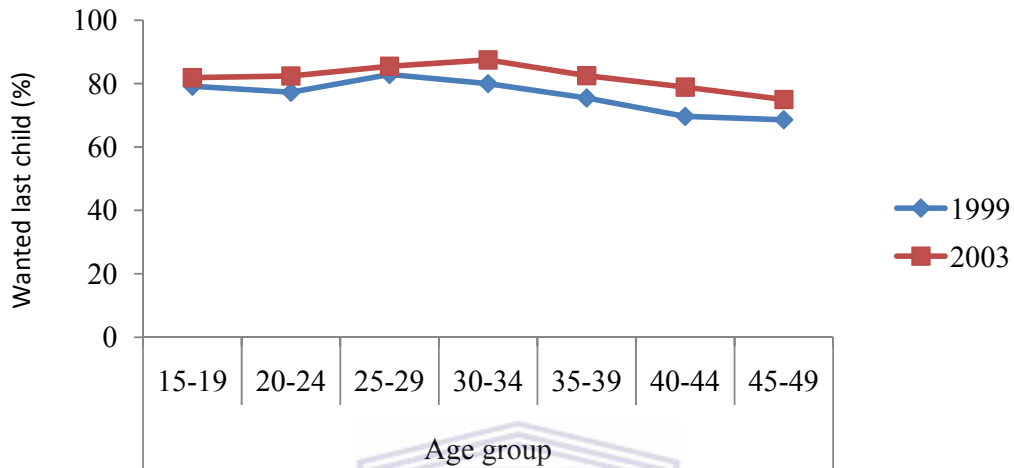
#### 4.9 DESIRE FOR THE LAST CHILD IN NIGERIA AND GUINEA

In order to measure the level of unwanted births, women were asked if the last child they gave birth to was wanted at that time, later or not at all. Figure 10a shows the percentage of Nigerian women who wanted their last child. The percentage of women that wanted the last child increased over time. Over seventy percent of each age group wanted their last child in 2003. Miss-timed births decreased from seventeen percent in 1999 to ten percent in 2003, see Appendix 4. The proportion that does not want their last child at all increased over time by three points between 1999 and 2003. Unwanted births increased over time from fifteen percent to twenty-one percent for the age group 45-49, see Appendix 4. Over ten percent of women aged 40-44 do not want their last child at all. Less than ten percent of each remaining age group do not want their last child.

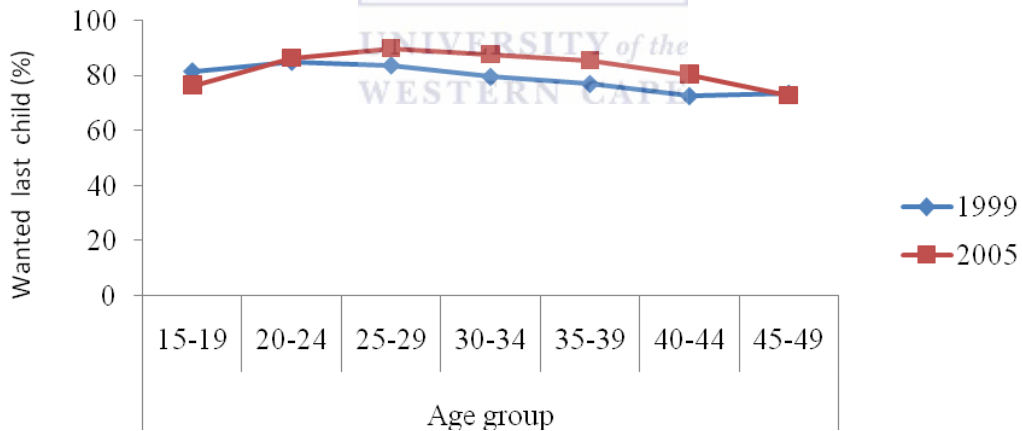
Figure 10b shows the response of Guinea women on their last child. Over seventy percent of all women in their specific age groups wanted their last child in 2005. The percentage of women who wanted their last child increased between 1999 and 2005 in some specific age groups except for the women aged 15-19, 20-24 and 40-44. However, the women of age group 15-19 had over twenty percent of the last child miss-timed in 2005. The proportion of all women that do not want their last child at all decreased by one point between 1999 and 2005. The percentage of women aged 45-49 with unwanted birth was over twenty percent in

2005, showing a similar trend in Nigeria. Unwanted births in other groups remained below ten percent over time except for the age groups 40-44 and 45-49. The trend in miss-timed births and unwanted births are shown in Appendix 4.

**Figure 10a: Desire for last child in Nigeria 1999-2003**



**Figure 10b: Desire for the last child in Guinea 1999-2005**



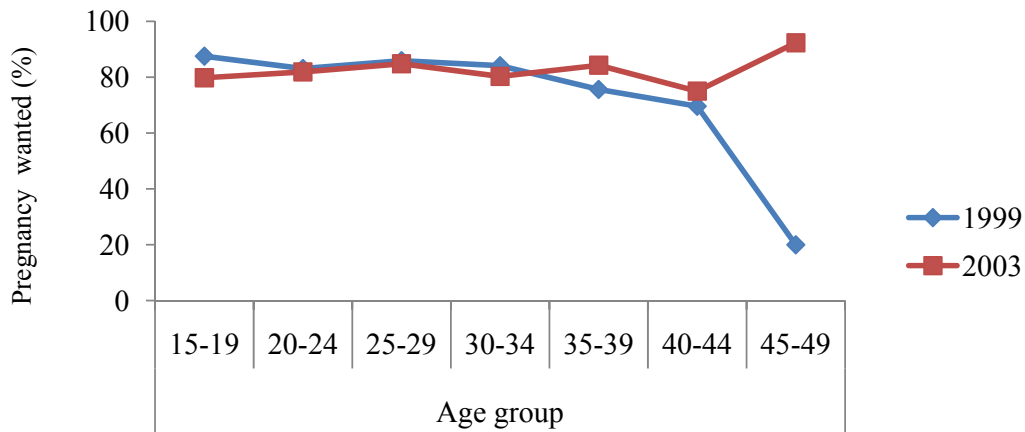
#### **4.10 CURRENTLY PREGNANT WOMEN IN NIGERIA AND GUINEA DURING THE SURVEYS**

The response of women by age group on their current pregnancies in Nigeria during the NDHS is shown in figure 11a. The percentage of all women who wanted the current pregnancy was eighty-three percent in 1999 and eighty-two percent in 2003. Within the age

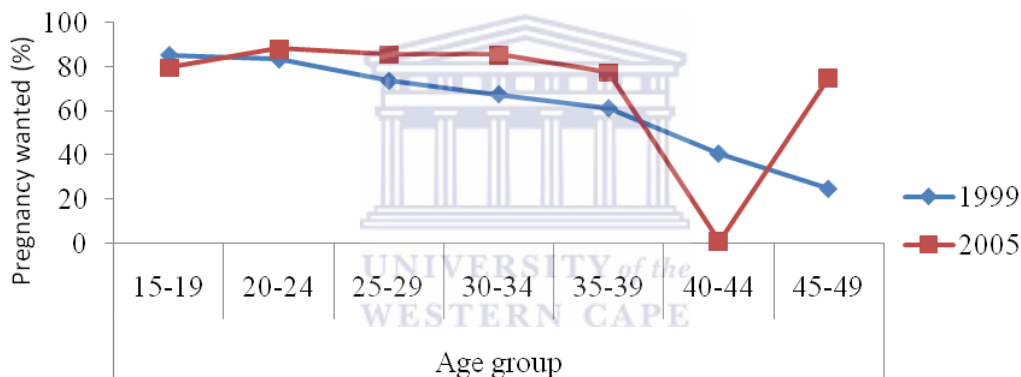
groups, wanted pregnancies increased for women aged 35-39, 40-44 and 45-49 between 1999 and 2003. There was an enormous increase in that ninety-two percent of women aged 45-49 wanted their current pregnancies in 2003 as against twenty percent in 1999. The percentage of women aged 15-19 who wanted the current pregnancies decreased from eighty-eight percent in 1999 to eighty percent in 2003. Miss-timed pregnancies decreased by one point, while unwanted pregnancies increased by 1.3 points for all women between 1999 and 2003, Appendix 5. Miss-timed pregnancies were highest in 1999 by seventeen percent and twenty percent for the age groups 40-44 and 45-49 respectively. The percentage trend of women that did not want the pregnancies at all did not show reasonable changes over time for most age groups. However, the percentage of women aged 45-49 who do not want the pregnancies at all decreased from sixty percent in 1999 to zero percent in 2003. The trend in unwanted pregnancies stabilized at thirteen percent for age group 40- 44 between 1999 and 2003.

The response of Guinea women on their current pregnancies is shown in figure 11b. All the age groups except the women of age groups 15-19 and 40-44 showed increased desire for the current pregnancies. The percentage of all women who wanted the current pregnancies increased from seventy-four percent in 1999 to eighty-three percent in 2005. The percentage of all women who had miss-timed pregnancies decreased from twenty-two percent to fourteen percent between 1999 and 2005 see Appendix 5. Unwanted pregnancies decreased by two points for all women see Appendix 5. The percentage of women aged 40-44 that do not want their current pregnancies decreased from thirty-six percent in 1999 to fourteen percent in 2005, while unwanted pregnancies for women aged 45-49 remained stable over time. Unwanted pregnancies increased over time for the women aged 15-19. The women of age groups range 20-34 did not have unwanted pregnancies but instead miss-timed pregnancies.

**Figure 11a: Desire for current pregnancy in Nigeria 1999-2003**



**Figure 11b: Desire for the current pregnancy in Guinea 1999-2005**



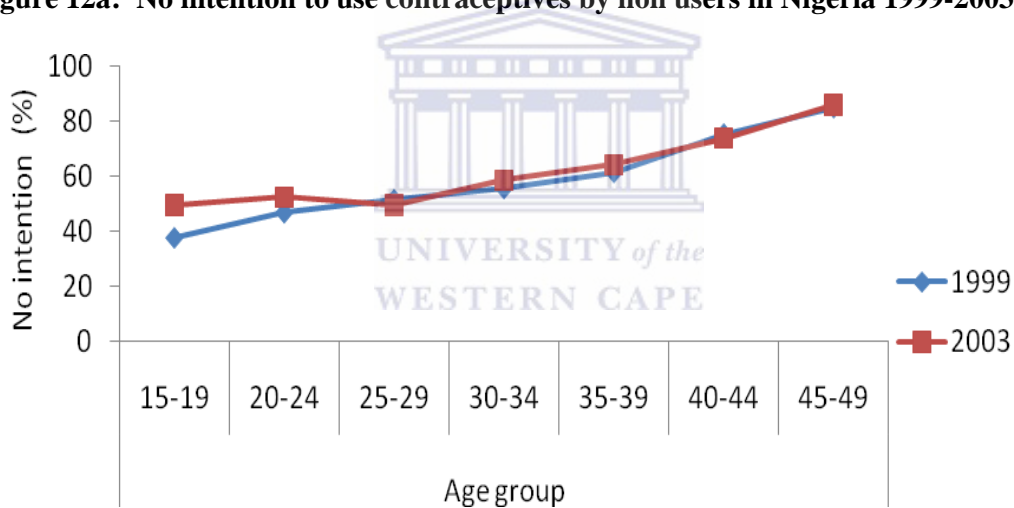
#### 4.11 WOMEN WHO DO NOT INTEND TO USE CONTRACEPTIVES

Women who do not use any method of contraception were asked of their intention to use in the future. The response for Nigerian women is shown in figure 12a. The percentage of all women who do not intend to use contraceptives increased from fifty-three percent in 1999 to fifty-nine percent in 2003. The proportions that do not intend to use contraception increase with age. The trend has remained stable over time for the age group range 25-49. The percentage of women of age groups 15-19 and 20-24 who do not intend to use increased over time. For all women, the proportions who intend to use later increased by three points between 1999 and 2003 see Appendix 6. The percentage of all women who were not sure as

to use has decreased from twenty-two percent in 1999 to fourteen percent in 2003 see Appendix 6.

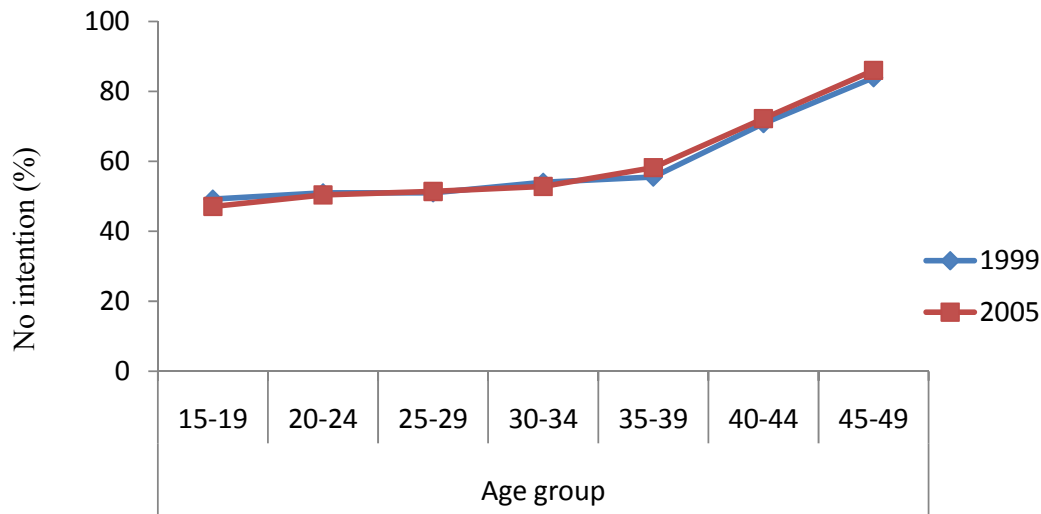
Figure 12b shows the trend in response of Guinea women on their intention on contraceptive use in the future. Consistent with the trend observed in Nigeria, no intention to use increases with age. Less than ten percent of women age groups 40-44 and 45-49 were unsure about to use, while over seventy percent of them do not intend to use. The percentage of all women that do not intend to use remained very high at eighty-five percent. This high percentage may pose a threat to campaigns for fertility decline. The percentage of women who intend to use later decreased in all age groups while those unsure to use increased see Appendix 6. The percentage unsure to use increased by six points for all women. The women of age group 15-19 and 20-24 showed high uncertainty to use.

**Figure 12a: No intention to use contraceptives by non users in Nigeria 1999-2003**





**Figure 12b: No intention to use contraceptives by non users in Guinea 1999-2005**



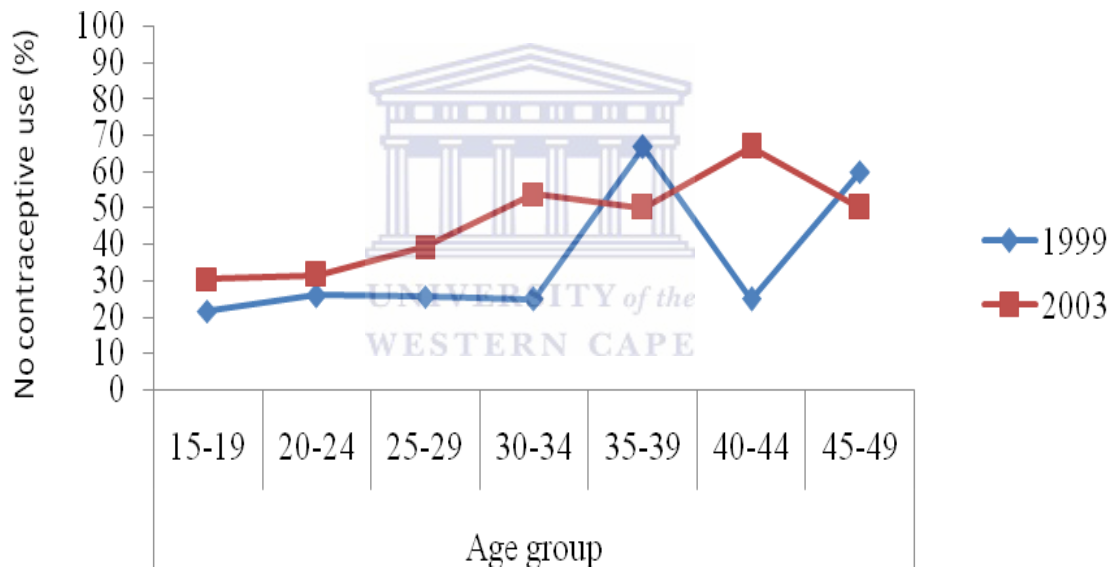
#### **4.12 INTENTIONS OF UNMARRIED WOMEN ON CONTRACEPTIVE USE SUPPOSING THEY GET MARRIED**

During the 1999 and 2003 NDHS, unmarried women were asked if they would use contraceptives if ever married. Figure 13a shows the response of Nigerian unmarried women. The percentage of women who said “NO” has increased over time by 9.2 points between 1999 and 2003. The percentage of women who said “NO” has increased in all age groups except for women of age groups 35-39 and 45-49. The percentage of women who said “YES” has increased over time by 2.6 points between the two intervals, see Appendix 7. The percentage of all women that does not know if they will ever use was sixty-four percent in 1999 and fifty-two percent in 2003 see Appendix 7. The zero percent values among some age groups in Appendix 7 may possibly be due to data quality or small numbers that are insignificant. However, this proportion that does not know whether to use is a potential population to be targeted for family planning.

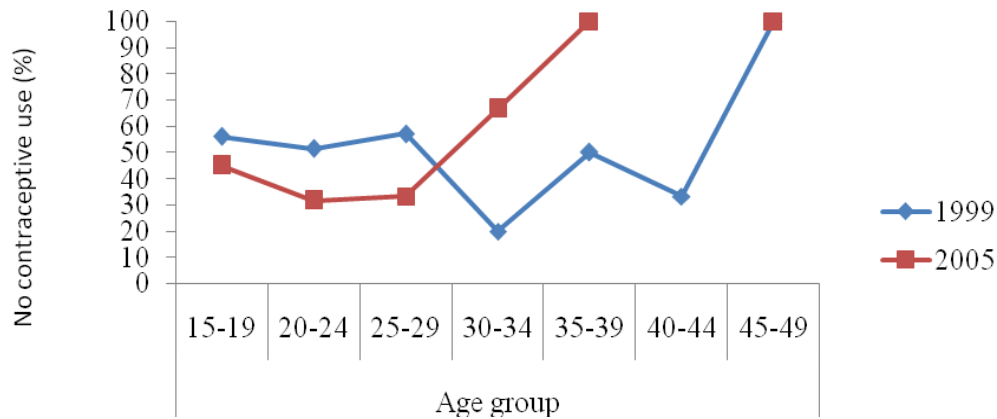
The response of Guinea women is shown in figure 13b. The percentage of unmarried women who said “NO” has decreased by eleven points between 1999 and 2005. The percentage of women who do not intend to use has decreased for the age range 15-29, but increased for the

age groups 30-34, 35-39 and 45-49. The missing value for women aged 40-45 may be due to an error in the quality data or that the number is negligible. The percentage of unmarried women who said “YES” has decreased by eight points between 1999 and 2005 see Appendix 7. The percentage that said “YES” has decreased in all age groups. The percentage of those that do not know if they would ever use contraceptives was twenty-five percent in 1999 and increased to forty-four percent in 2005 see Appendix 7. The decrease in the percentage of women of age range 15-29 in Guinea who said “NO” as opposed to increase of the same age range in Nigeria may favour fertility decline in the former.

**Figure 13a: Intention of unmarried women on contraception if ever married in Nigerian 1999-2003**



**Figure 13b: Intention of unmarried women on contraception if ever married in Guinea 1999-2005**



#### **4.13 PERCENTAGE OF WOMEN WHO WANT NO MORE CHILDREN BY THE NUMBER OF LIVING CHILDREN**

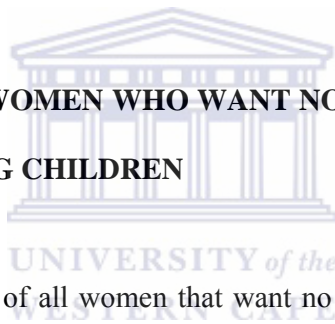


Table 4.3 shows the proportion of all women that want no more children by the number of living children in Nigeria and Guinea. The desire to have no more children increases with an increasing number of living children. The percentage of women who want no more children increased over time after 4 living children in Nigeria between 1999 and 2003.

In Guinea, the percentage of women who do not want more children did not change with up to 4 living children. The percentage of women who do not want more children with 4 or 5 living children is the same in Nigeria and Guinea in 2003 and 2005 respectively. The percentage of women with seven children or more in Nigeria and Guinea who do not want more children is fifty-seven percent and seventy percent respectively. This shows that the desire for more children is higher in Nigeria. In Nigeria, population policy advocates for four children. However, the percentage that wants no more children with four living children is twenty-six percent in Nigeria by 2003.

**Table 4.3: Percentage distribution of women aged 15-49 who want no more children by number of living children**

Number of living children	Nigeria		Guinea	
	1999	2003	1999	2005
0	1.4	5.0	1.5	1.6
1	1.2	1.5	4.6	5.1
2	4.6	6.1	8.3	7.1
3	9.9	10.4	14.0	15.0
4	17.0	26.0	26.6	26.8
5	19.3	39.5	44.8	41.0
6	17.5	47.5	55.8	53.7
7+	29.1	56.8	62.6	69.5

#### 4.14 IDEAL NUMBER OF CHILDREN IN NIGERIA AND GUINEA

Table 4.4 shows the response of Nigerian women on what they consider to be the ideal number of children. The percentage of women that said six and above increased over time from forty-two percent in 1999 to fifty percent in 2003. The responses on the ideal number of children in Nigeria did not show meaningful differences between 1999 and 2003.

The percentage of Guinea women who said that six children and above is ideal remained stable at forty-three percent between 1999 and 2005. The responses on the ideal number of children in Guinea did not show meaningful differences between the two points in time. The percentage of women that considered three children to be ideal is higher in Guinea compared to Nigeria in 1999. The percentage that conceived four children to be ideal is the same in Nigeria and Guinea in 2003 and 2005 respectively.

**Table 4.4: Ideal number of children in Nigeria 1999-2003 and Guinea 1999-2005**

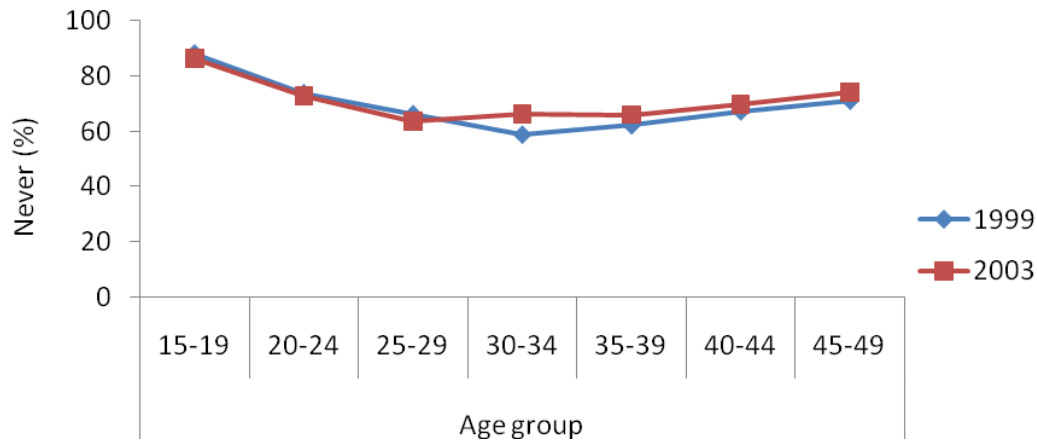
Ideal number of children	Nigeria		Guinea	
	1999	2003	1999	2005
0	0.7	0	0.3	1.0
1	0.3	0.1	0.2	0.3
2	1.6	1.4	2.2	2.3
3	4.9	4.7	7.7	6.0
4	18.7	18.4	22.8	18.8
5	14.0	14.6	19.4	17.0
6+	42.2	49.8	43.0	42.7
Population size	8199	7620	6753	7954

#### **4.15 DISCUSSION OF FAMILY PLANNING BY WOMEN WITH THEIR PARTNERS IN NIGERIA AND GUINEA**

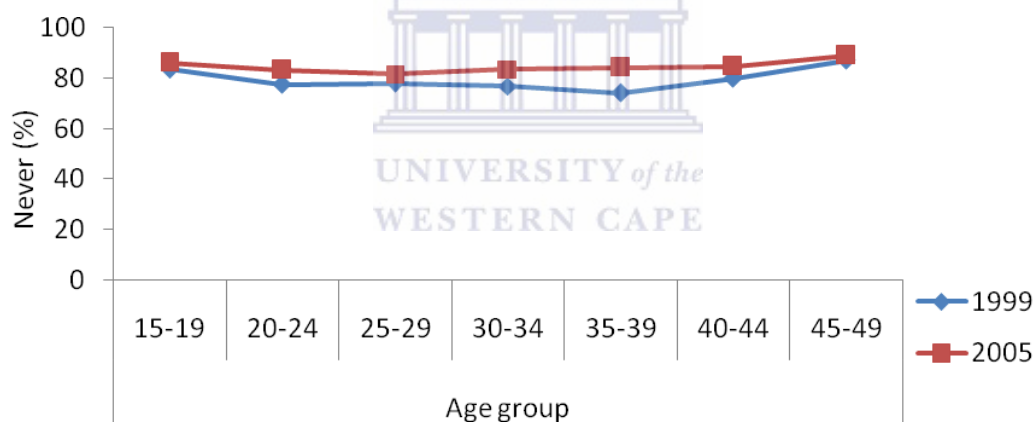
Women in Nigeria and Guinea were asked during the interview whether they have ever discussed family planning with their partners once, twice or more often. The percentage of all women who have never discussed FP with their partners in Nigeria remained high at about seventy percent in 2003, see figure 14a. The percentage of women who never discussed FP with their partners did not change for the women of age range 15-29 between the two points in time. The percentage of women aged 30-49 who never discussed FP with their partners increased between 1999 and 2003. The percentage of all women who have discussed FP with their Partners once or twice remained stable, while those that discussed it more often decreased by three points between 1999 and 2003 see Appendix 8.

In Guinea, over eight-four percent of all women have never discussed FP with their partners' in 2005 see figure 14b. This is an increase of five points compared to seventy-nine percent in 1999 who never discussed it. All the age groups showed an increasing trend of never discussing FP with their partner between 1999 and 2005. In general the percentage of women who never discussed FP with their partner is higher in Guinea compared to Nigeria. The percentage of women who discussed FP once or twice and more often decreased by two points and three points respectively between 1999 and 2005 in Guinea, see Appendix 9.

**Figure 14a: Distribution of women by age group who never discussed family planning with their partners in Nigeria 1999-2003**



**Figure 14b: Distribution of women by age group who never discussed family planning with their partners in Guinea 1999-2005**



#### 4.16 INTEREST AND DEMAND FOR FAMILY PLANNING

Table 4.5 shows information on visitation to a health facility (HF), by FP worker, discussion of FP with others and approval of FP which were used to examine the interest or demand for FP. The percentage of women in Nigeria who visited a health facility in the last 12 months increased by eight points between 1999 and 2003. The trend in visitation of women by FP did not change at the two points in time. Discussion of FP with other people is below one point in 2003. The percentage of women who approved of FP increased by five points, while those that disapproved increased by fifteen points between 1999 and 2003.

In Guinea, the percentage of all women that visited a HF in the last twelve months did not change between 1999 and 2005. Visits by FP worker increased by two points within the same interval. The percentage of women that disapproved and approved of FP increased and decreased by nine points and eleven points respectively between 1999 and 2005. The percentage of women that discussed FP with other people did not change between 1999 and 2005.

**Table 4.5: Percentage interest in FP among women in Nigeria 1999-2003 and Guinea 1999-2005**

Variable	Nigeria				Guinea			
	NO		YES		NO		YES	
	1999	2003	1999	2003	1999	2005	1999	2005
Visited Health facility last 12m	75.7	67.5	24.3	32.5	66.1	66.7	33.9	33.3
Visited by FP worker last 12m	94.9	95.2	5.1	4.8	93.2	91.7	6.8	8.3
Discussed FP with others	99.4	99.6	0.6	0.4	98.8	99.4	1.2	0.6
Respondent approves FP	24.4	39.6	43.3	48.2	32.9	41.4	57.8	47.3

#### **4.17 CURRENT CONTRACEPTIVE USE BY SOCIODEMOGRAPHIC CHARACTERISTICS**

Table 4.6 presents the association between current contraceptive use and socio-demographic characteristics (Age, education, residence, knowledge of contraceptive method, marital status and number of living children) in Nigeria and Guinea. In Nigeria, there was overall decline in current contraceptive use from 15.5 percent in 1999 to 13.2 percent in 2003. By age groups, current contraceptive use declined in all except among women aged 25 – 29 (16.9 percent in 1999 and 17.5 percent in 2003). Considering the current use of contraceptives by marital

status, the percentage of married women decreased from 23.4 percent in 1999 to 17.2 percent in 2003. In addition, the association between marital status and current contraceptive use was not significant in 2003, ( $\chi^2_{(4)} = 0.140$ ). Current contraceptive use by residence, educational level, knowledge of contraceptive method and number of living children showed downward trends between the two point intervals. Contraceptive prevalence among women whose husband approves FP was 37.5 percent in 1999 and 34.6 percent in 2003. Among the respondents that approve of FP, 31.3 percent were currently using while 68.7 percent were not in 1999. The currently using decreased to 25.2 percent in 2003. However, the approval of FP by a husband or the respondent has an impact on current contraceptive use. For instance, disapproval of FP by a husband shows that the percentage of women currently using contraceptives was 6.5 percent in 1999 and 4.3 percent in 2003. Disapproval by the respondent further reflects that 3.7 percent and 2.4 percent currently use contraceptives in 1999 and 2003 respectively. Prevalence of current contraceptive use increased from 45.8 percent in 1999 to 51.6 percent in 2003 among those who engage more often in discussion of FP with their partners. It is likely that consistent discussion on FP with partners may favour the use of contraceptives in Nigeria. The cause of the declining trend in the background examined in the midst of massive campaign on contraceptive use is not known. The declining trend by these background characteristics, implies that negative attitude to contraception is persisting.

In Guinea, current contraceptive use increased from eight percent in 1999 to 10.4 percent in 2005. It increased in all age groups except for the women of age groups 35 - 39 and 45 - 49. An increase from 15.7 percent and 3.9 percent among the urban and rural women respectively in 1999 to 16.9 percent and 7.7 percent in 2005 was observed. By educational level, current contraceptive use increased from 4.6 percent and 41.8 percent among women with no education and higher education respectively in 1999 to 7.9 percent and 45.7 percent in 2005. Considering marital status, the current use of contraceptives increased among never married and married (13.1 and 6.6 percent) in 1999 to 15.3 percent and 9.2 percent respectively in 2005. Widowed, divorced and women not living together showed downward trends in current contraceptive use between the two point intervals. There was an increase in contraceptive use among women with no child, four and over five living children. However there was no significant association between current contraceptive use and the number of living children in 1999 ( $\chi^2_{(2)} = 0.063$ ). Current contraceptive use increased from 18.3 percent in 1999 to 24.6



percent in 2005 among women whose husband approves of FP. It increased from 3.6 percent and 6.1 percent among those where the husband disapproved of FP in the same interval. Current use increased from thirteen percent in 1999 to 16.4 percent in 2005 for respondents that approved of FP. Use of contraception was higher among those who discuss FP more often with their partners than those discussed once or twice. Taken together, the Pearson Chi-Square result with p – values less than the significant level of 0.05 indicate an existing relationship between the current use of contraceptives and the socio-demographic variables. Association between current contraceptive use and background characteristics showed significant differences in Guinea. This is consistent with the observed association in Nigeria. However, while Guinea was showing an increasing trend in current contraceptive use Nigeria was experiencing a declining trend. This may suggest that efforts to control fertility by contraceptive use are more successful in Guinea than in Nigeria.

**Table 4.6 Contraceptive uses by socio-demographic characteristics in Nigeria 1999-2003 and Guinea 1999 - 2005**

Age group	Nigeria				Guinea			
	1999		2003		1999		2005	
	None	User	None	User	None	User	None	User
15-19	93.4	6.6	93.9	6.1	94.3	5.7	89.2	10.8
20-24	84.1	15.9	84.8	15.2	90.2	9.8	85.1	14.9
25-29	83.1	16.9	82.5	17.5	92	8	88.1	11.9
30-34	79.6	20.4	85.4	14.6	91.4	8.6	90.6	9.4
35-39	79.6	20.4	82.8	17.2	90.6	9.4	90.8	9.2
40-44	80.3	19.7	85.3	14.7	91.8	8.2	90.8	9.2
45-49	85.2	14.8	89.8	10.2	93.8	6.2	94.7	5.3
	$\chi^2_{(6)} = 0.000$		$\chi^2_{(6)} = 0.000$		$\chi^2_{(6)} = 0.002$		$\chi^2_{(6)} = 0.000$	
Residence								
Urban	79	21	81.7	18.3	84.3	15.7	83.1	16.9
Rural	87.2	12.8	90.2	9.8	96.1	3.9	92.3	7.7
	$\chi^2_{(1)} = 0.000$		$\chi^2_{(1)} = 0.000$		$\chi^2_{(1)} = 0.000$		$\chi^2_{(1)} = 0.000$	

**Table 4.6 Continued.....**

	Nigeria				Guinea			
Age group	1999		2003		1999		2005	
	None	User	None	User	None	User	None	User
Educational level								
No education	94.1	5.9	95.6	4.4	95.4	4.6	92.1	7.9
Primary	83.1	16.9	86.4	13.6	87.5	12.5	87.7	12.3
Secondary	78.9	21.1	80.3	19.7	73	27	74.3	25.7
Higher	55.3	44.7	66.9	33.1	58.2	41.8	54.3	45.7
	$\chi^2_{(3)} = 0.000$		$\chi^2_{(3)} = 0.000$		$\chi^2_{(3)} = 0.000$		$\chi^2_{(3)} = 0.000$	
Knows a modern method								
No	98	2	99.4	0.6	99	1	99.4	0.6
Yes	76.6	23.4	82.8	17.2	89.1	10.9	88.7	11.3
	$\chi^2_{(1)} = 0.000$		$\chi^2_{(1)} = 0.000$		$\chi^2_{(1)} = 0.000$		$\chi^2_{(1)} = 0.000$	
Marital status								
Never married	83.2	16.8	86.4	13.6	86.9	13.1	84.7	15.3
Married	85	15	86.9	13.1	93.4	6.6	90.8	9.2
Widowed	93.9	6.1	91	9	86.2	13.8	94	6
Divorced	87.2	12.8	90.1	9.9	75.9	24.1	78.7	21.3
Not living together	70.4	29.6	80.7	19.3	77.1	22.9	79.8	20.2
	$\chi^2_{(4)} = 0.000$		$\chi^2_{(4)} = 0.140$		$\chi^2_{(4)} = 0.000$		$\chi^2_{(4)} = 0.000$	
Living children								
0	86.3	13.7	89.4	10.6	90.9	9.1	87.5	12.5
1-4	85.4	14.6	86.3	13.7	92.7	7.3	90.2	9.8
5+	79.7	20.3	83.5	16.5	91.4	8.6	90.3	9.7
	$\chi^2_{(2)} = 0.000$		$\chi^2_{(2)} = 0.000$		$\chi^2_{(2)} = 0.063$		$\chi^2_{(2)} = 0.003$	

**Table 4.6 Continued.....**

	Nigeria				Guinea			
Age group	1999		2003		1999		2005	
	None	User	None	User	None	User	None	User
Husband approves FP								
Disapproves	93.5	6.5	95.7	4.3	96.4	3.6	93.9	6.1
Approves	62.5	37.5	65.4	34.6	81.7	18.3	75.4	24.6
Don't know	95.2	4.3	96.6	3.4	97.4	2.6	93.6	6.4
	$\chi^2_{(2)} = 0.000$		$\chi^2_{(2)} = 0.000$		$\chi^2_{(2)} = 0.000$		$\chi^2_{(2)} = 0.000$	
Respondent approves FP								
Disapproves	96.3	3.7	97.6	2.4	98.9	1.1	94.6	5.4
Approves	68.7	31.3	74.9	25.1	87	13	83.6	16.4
Don't know	96.5	3.5	98.7	1.3	98.5	1.5	96.8	3.2
	$\chi^2_{(2)} = 0.000$		$\chi^2_{(2)} = 0.000$		$\chi^2_{(2)} = 0.000$		$\chi^2_{(2)} = 0.000$	
Discussed FP with partner								
Never	95.3	4.7	95.7	4.3	97.1	2.9	93.8	6.2
Once or twice	69.1	30.9	75.5	24.5	85.6	14.4	80.6	19.4
More often	54.2	45.8	48.4	51.6	73.7	26.3	67.5	32.5
	$\chi^2_{(2)} = 0.000$		$\chi^2_{(2)} = 0.000$		$\chi^2_{(2)} = 0.000$		$\chi^2_{(2)} = 0.000$	
100%	84.5	15.5	86.8	13.2	92	8	89.6	10.4
Total	6929	1270	6614	1006	6214	539	7127	827

#### **4.18 FERTILITY INDICATOR ONE: PREDICTORS OF CONTRACEPTIVE USE**

Binary logistic regression was applied to determine the predictors of current contraceptive use by background characteristics after establishing an association by chi-square analysis. The findings in table 4.7 show that with the exception of women aged 40 - 44, all other age groups are less likely to use contraception in 1999 compared to women aged 45 – 49. In 2003 other age groups were more likely (at least 1.0 times) to use contraception except women aged 30 – 34. Urban women were more likely to use contraceptives than rural women (1.1 times in 1999 and 1.2 times in 2003). The effect of education on the use of contraceptives was not as expected. A craving for higher education may lead to postponement of childbearing, resulting in high contraceptive usage. Women with primary, secondary and higher education were 0.3, 0.6 and 0.7 times respectively as likely to use contraceptives as the reference category in 1999. This likelihood did not show any meaningful change in 2003. The knowledge of modern contraceptive method shows that women were 0.3 and 0.2 as likely to use contraceptives as the reference category in 1999 and 2003 respectively. Women whose husbands approve and those that don't know the stand of their husband on FP were more likely to use contraceptives in 1999 and 2003 compared to those whose husbands disapproved of it. Respondents who don't know if their husbands approved of FP were more likely to use contraceptives in 1999 and 2003 than those whose husbands disapproved of it. Those that approved were 0.8 times as likely to use as reference category in 1999 but 1.1 times more likely to use in 2003. Women who discussed FP with their partners once or twice and more often were 0.3 and 0.7 times respectively as likely to use contraceptives as reference category in 1999. Women with no children and those with up to four living children were less likely to use contraceptives in 1999 and 2003 as those with more than five living children.

In Guinea, all age groups were less likely to use contraceptives as women aged 45 - 49 in 1999. However, in 2005, all age groups were more likely (at least 1.7 times) to use contraceptives than reference category. Urban women were 1.7 and 1.3 times more likely to use contraceptives than rural women in 1999 and 2005 respectively. Quite unexpected though similar to the observed trend in Nigeria, women by levels of education were less likely to use contraceptives than those with no education in 1999 and 2005. Women who know of any method of modern contraception were less likely to use contraceptives than those without any

knowledge in 1999 and 2005. Husband and respondent approval of FP has a positive effect on the use of contraceptives in 1999 and 2005 respectively. Discussion of FP with a partner has a negative effect on the use of contraception. Women with no children and up to four children were 0.4 and 0.6 as likely to use contraceptives as the reference category in 2005.

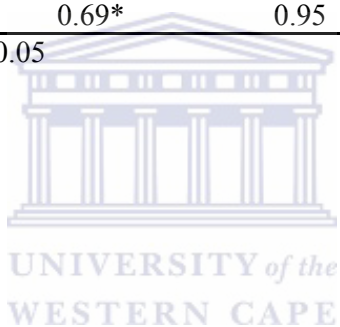
**Table 4.7: Relative odds that women use contraceptives by socio-demographic characteristics in Nigeria 1999- 2003 and Guinea 1999 – 2005**

<b>Indicators</b>	<b>1999</b>	<b>2003</b>	<b>1999</b>	<b>2005</b>
<b>Age group</b>				
45-49 ®				
15-19	0.767	1.202	0.343*	2.497*
20-24	0.439*	1.086	0.55*	2.586*
25-29	0.576*	1.005	0.441*	2.448*
30-34	0.725	0.893	0.655*	1.841*
35-39	0.886	1.082	0.65	1.751*
40-44	1.237	1.064	0.775	1.868*
<b>Residence</b>				
Rural ®				
Urban	1.068	1.224*	1.72*	1.306*
<b>Educational level</b>				
No education ®				
Primary	0.383*	0.39*	0.327*	0.299*
Secondary	0.625*	0.649*	0.537*	0.31*
Higher	0.785	0.832	0.732	0.504
<b>Knowledge of any method</b>				
No ®				
Yes	0.348*	0.207*	0.25*	0.105*
<b>Husband approves FP</b>				
Disapproves ®				
Approves	1.096	1.412	1.545*	0.841
Don't know	1.882*	2.851*	2.379*	1.63*

**Table 4.7: Continued.....**

<b>Indicators</b>	<b>1999</b>	<b>2003</b>	<b>1999</b>	<b>2005</b>
<b>Respondent approves FP</b>				
Disapproves ®				
Approves	0.872	1.13	0.357*	2.374*
Don't know	2.755*	4.963*	2.071*	2.841*
<b>Discussed FP with partner</b>				
Never ®				
Once or twice	0.291*	0.234*	0.303*	0.288*
More often	0.689*	0.458*	0.744*	0.56*
<b>Number of living children</b>				
5+ ®				
0	0.24*	0.117*	1.078	0.482*
1-4	0.845	0.69*	0.95	0.697*

® = reference category, \* =  $p < 0.05$



#### 4.19 FERTILITY INDICATOR TWO: PREDICTORS OF TOTAL NUMBER OF CHILDREN EVER BORN (TCB)

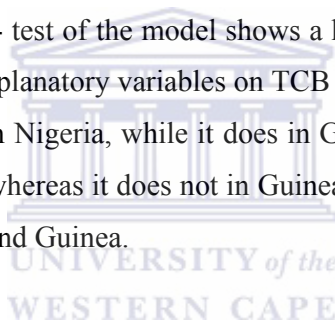
**Table 4.8: Stepwise regression pertaining to the socioeconomic factors affecting fertility in Nigeria**

	Coefficient		Std.Err		t		P>  t	
	1999	2003	1999	2003	1999	2003	1999	2003
Age of the respondent (X1)	0.2128	0.2285	0.004	0.004	50.08	59.03	0.000	0.000
Education in single years (X2)	-0.0176	-0.0557	0.008	0.008	-2.23	-6.66	0.026	0.000
Place of residence (X3)	-0.4403	-0.1406	0.072	0.071	-6.13	-1.97	0.000	0.049
Current use of contraceptive (X4)	0.5655	0.4344	0.071	0.075	7.98	5.82	0.000	0.000
Age at marriage (X5)	-0.1922	-0.2199	0.008	0.008	23.93	-25.9	0.000	0.000
Age at first sexual intercourse (X6)	0.0030	0.0026	0.001	0.001	3.42	2.99	0.001	0.003
Religion (X7)							0.230	0.838
Partners education (X8)	0.4003	0.2302	0.072	0.075	5.58	3.06	0.000	0.002
Employment all the year (X9)							0.376	0.184
Constant	0.4373	0.7116	0.189	0.189	2.32	3.77	0.020	0.000
N	3276	3697						
Prob > F	0.000	0.000						
R <sup>2</sup>	0.53	0.56						

The table 4.8 presents the effects of socioeconomic factors on fertility in Nigeria 1999 and 2003. Age of the respondent, current use of contraceptives, age at first sexual intercourse and partner's education have positive effect on fertility. However, education of women, place of

residence and age at marriage have a negative effect on fertility. Religion and employment have no effect on fertility in Nigeria.  $R^2$  indicates that fifty-three percent and fifty-six percent of the variation in total number of children ever born (TCB) in 1999 and 2003 respectively are due to fluctuations in seven variables in the equation. The F- test with a probability of 0.000 in 1999 and 2003 shows a very high significance of the equation.

The effect of socioeconomic factors on total children ever born in Guinea in 1999 and 2005 is shown in table 4.9. The significance of the regression coefficient shows that age of the respondent and current use of contraceptives have a positive effect on the TCB. Education, place of residence, age at marriage and religion has a negative effect on the TCB. However, age at first sexual intercourse, partner's education and employment of women are not associated with TCB. The  $R^2$  indicates that fifty-three percent and fifty percent of the variations in TCB in 1999 and 2005 respectively are accounted for by the six significant variables in the equation. The F- test of the model shows a high significance of the equation. There are similarities in most explanatory variables on TCB in Nigeria and Guinea. However, religion has no effect on TCB in Nigeria, while it does in Guinea. A Partner's education has an effect on fertility in Nigeria whereas it does not in Guinea. Employment of the women has no effect on fertility in Nigeria and Guinea.





**Table 4.9: Stepwise regression pertaining to the socioeconomic factors affecting fertility in Guinea**

	Coefficient		Std.Err		t		P>  t	
	1999	2005	1999	2005	1999	2005	1999	2005
Age of the respondent (X1)	0.2249	0.2134	0.003	0.003	72.08	74.91	0.000	0.000
Education in single years (X2)	-0.0320	-0.0865	0.006	0.011	-5.63	-7.98	0.000	0.000
Place of residence (X3)	-0.3231	-0.3604	0.066	0.065	-4.9	-5.5	0.000	0.000
Current use of contraceptive (X4)	0.4098	0.4052	0.081	0.061	5.03	6.63	0.000	0.000
Age at marriage (X5)	-0.1531	-0.1305	0.008	0.008	18.56	16.07	0.000	0.000
Age at first sexual intercourse (X6)							0.207	0.843
Religion (X7)	-0.1460	-0.0949	0.037	0.045	-3.96	-2.1	0.000	0.036
Partners education (X8)							0.840	0.754
Employment all the year (X9)							0.791	0.092
Constant	-0.215	-0.414	0.161	0.159	-1.33	-2.6	0.182	0.009
N	4665	5711						
Prob > F	0.000	0.000						
R <sup>2</sup>	0.53	0.5						

#### **4.20 VALUES OF BONGAARTS INDICES OF PROXIMATE OF DETERMINANTS FERTILITY.**

Table 4.10 presents the result of analysis of proximate determinants of fertility in Nigeria and Guinea. In Nigeria, no changes have been observed in the indices of marriage, contraception and postpartum infecundability between the intervals of 1999 and 2003. The total fertilities estimated with the Bongaarts indices are higher than the observed values (7.2 versus 5.2 in 1999 and 7.2 versus 5.7 in 2003. If we have assumed a total fecundity lower than 16.5

agreements would have been closer to the observed total fertilities in 1999 and 2003 in Nigeria. In Guinea, with the exception of contraceptive use, other proximate determinants did not change between the two points in time. Inhibiting effects of contraception increased from 0.24 in 1999 to 0.38 in 2005. The estimated total fertility of 5.7 is a good agreement with observed 5.5 in 1999. However, the estimated total fertility of 4.6 in 2005 is lower than the observed fertility 5.7 by one birth. Thus, differentials in contraception between the two intervals have an effect on fertility. In general, the degree of consistency between the estimated and observed fertilities suggests that the measurements justify the order of the magnitude. We posit that increased contraceptive use in Guinea may contribute to the fertility decline. On the other hand, contraceptive use in Nigeria appeared to have no impact on fertility. It is not known to what extent it was underreported. Possibly our methods failed to measure the exactitude of some indices that exist particularly in Nigeria surveys.

**Table 4.10: Values of Bongaarts' indices of proximate determinants estimated and observed total fertility in Nigeria 1999-2003 and Guinea 1999-2005**

	NDHS 1999	NDHS 2005	EDSG-II 1999	EDSG-III 2005
Marriage $C_m$	0.87	0.87	0.93	0.92
Contraception $C_c$	0.85	0.85	0.76	0.62
Abortion $C_a$	1	1	1	1
Postpartum insusceptibility $C_i$	0.59	0.59	0.49	0.49
$C_m * C_c * C_a * C_i$	0.43	0.43	0.35	0.28
Assumed total fecundity	16.5	16.5	16.5	16.5
Estimated total fertility	7.2	7.2	5.7	4.6
Observed total fertility	5.2	5.7	5.5	5.7

## CHAPTER FIVE

### DISCUSSION

Fertility in Sub Saharan African countries is the main factor sustaining population growth. The annual population growth rate in Nigeria and Guinea are 2.27 and 2.16 respectively (United Nations 2006). TFR trend shown in the study, indicates that fertility has declined progressively especially in Nigeria but that of Guinea has remained stable over time. Using data from different sources for demographic analysis may affect the accuracy because of the level of coverage, time and space. Considering the trend in TFR from DHS data used in the present study, fertility in Nigeria and Guinea has stabilized above 5 per woman. This has raised concern at national, international and with non-governmental organizations. Concerned groups have a common objective that if fertility decline slows down, certain factors causing the delay can be eliminated. Thus, fertility decline can progress in Nigeria and Guinea.

#### 5.0 FERTILITY BY BACKGROUND

Our study examined the trend in TFR by place of residence and educational level of the women. The sustained high trends in TFRs by these backgrounds in Nigeria and Guinea are indications that no major changes have taken place in the overall reproductive tenets. Our findings are in line with previous reports that fertility is generally higher among women in rural areas (Isiugo-abanihe 1997; Hyatt and Milne 1993) and those with no formal education (Castro 1995) compared to urban counterparts and those with higher education. In agreement with the previous reports distribution of women by place of residence showed that the bulk of women dwell in rural areas of Nigeria (Caldwell 1990:118) and Guinea ([worldbank.org](http://worldbank.org)). This implies that the general lifestyle is rural in both countries. High fertility rates among rural women in both Nigeria and Guinea can be attributed to factors such as early marriage, exposure to sexual intercourse and polygyny. The prevalence of these practices is higher in rural areas and more common among women with lower levels of education. The numerical strength of women in rural areas and women with no or lower levels of education may sustain high fertility and population growth. In addition, the young age structure of the population in Nigeria and Guinea is an indication of potential for a high fertility state in the

absence of regulation. For instance, births by women aged 15-34 were high and these women constitute seventy-two percent and sixty-four percent of the reproductive women in Nigeria and Guinea respectively.

The assumption that urbanization promotes fertility decline is in conflict with our findings in urban fertility trends in Nigeria. It is expected that an increasing percentage of urban women in Nigeria would be accompanied by a corresponding decline in TFR because of the increase of knowledge and access to effective contraceptive measures. Rising urban fertility may be attributed to shorter breast-feeding and abstinence durations among young urban educated women in Nigeria (Chimere 1993). However, there is a report that fertility does not decline with regards to urban dwellers in Mauritania and Gambia (ECOWAS-SWAC/OECD©2006). On the other hand a massive decline in percentage of all age groups of urban women in Guinea seemed to have contributed to the increasing trend in rural TFRs. However, the TFR among urban women in Guinea remained stable. Living in the cities is quite expensive and may not be an easy place for large families to cope. Hence the economic status and availability of space regulate fertility in urban areas. Consistent with previous reports (United Nations 1995; Jejeebhoy 1995), our results show that higher education of women is associated with low fertility. Although fertility is low among women with higher education, it appears to be increasing. (see figure 4a). There is no difference between the trend in higher educational levels between 1999 and 2003 (see table 4.1) in Nigeria. This implies that there is stagnancy in the higher educational system which might have created a platform for unregulated sexual activity, leading to an increase in births. In the case of Guinea, secondary education in conjunction with higher education demonstrated a decreasing trend in fertility. Education may influence fertility by changing the belief and norms of tradition for large family sizes. It can lead to postponement of marriage and childbearing because of several years devoted to attaining a higher education. Education may increase contraceptive use to delay childbearing within the marriage circuit. However, education does not seem to be contributing much in contraceptive use. Thus, the present study is not in agreement that education depresses fertility by increasing contraceptive use (Kim, 1987; Krishnan, 1988). It is not clear from the present study if education reduces fertility through postponement of marriage. This is because education and age at first marriage have a negative effect on fertility. Educated women are more knowledgeable about contraception, which they are most willing to adopt. However, the proportion of women with higher education is small in Nigeria

and Guinea. Thus, the impact of this small group with higher education on reducing fertility at national may be negligible.

## **5.1 FUTURE PROSPECTS OF CONTRACEPTIVE USE**

Results of the study show an unprecedented increase in the knowledge of modern contraception in Nigeria and Guinea. This is an indication that the various campaigns and programs to promote contraceptive use for fertility control are successfully disseminated. Generally the levels of unmet needs for contraception have declined over time in Nigeria and Guinea. However, Guinea shows a greater decline in unmet needs to limit compared to Nigeria. The differentials in the level of unmet needs may be attributed to the increased use of modern contraceptives in Guinea compared to Nigeria. Guinea seems to have more programmes that are consistent in providing FP services than Nigeria. Furthermore, there is an increase in intention to use contraceptives in Guinea by non user and unmarried women than in Nigeria. It follows that intention to use may have translated into action. It is not clear whether the decrease in unmet needs of contraceptives was as a result of renewed service delivery or increase in preference of last child and pregnancies. For instance, we observed an increased preference of last child and pregnancies compared to the previous surveys in Nigeria and Guinea. Consistent with our findings, unmet needs, unwanted fertility and pregnancies are low where there is high demand for children (Bongaarts 2005). We are therefore of little confidence that the implementation of family planning programs was responsible for the declining unmet needs. We attributed the causes of declined levels of unmet needs firstly to a high desire for more children. Over ninety percent of women in Nigeria and Guinea wanted their last child except that there were cases of mistimed births. The proportion of women with unwanted births was lower than mistimed births in Nigeria and Guinea. Secondly, about ninety-four percent and ninety-seven percent of currently pregnant women in Nigeria and Guinea respectively wanted the pregnancies. However, there were incidences of mistimed pregnancies. We are not unaware of bias due to rationalization in preference of a last child or pregnancies (Bongaarts 2005; Blacker et al. 2005). It is evident from the present study that unmet needs to space birth are higher among younger women whereas, unmet needs to limit birth are higher for the older women. This trend is a common scenario in Nigeria and Guinea from our studies. Therefore, the divergence of unmet needs is an indication that a dual campaign of specificity on FP methods targeting younger women for

spacing births and older women for limiting births is most appropriate to meet family planning needs.

The intention to use contraceptives by non users has increased over time. Some women who intend to use have no time frame to start. However, the proportion that do not intend to use at all still remained higher. Among the unmarried women, their intention to use if ever they get married is not promising for the future prospects of contraception and ultimately low fertility. What could be the reason for the glaring negative attitude to FP? Previous studies have suggested low literacy level (Davis & Blake 1956), prevailing religious, political and cultural beliefs of the people (Duze and Mohammed 2006). Apart from the desire for more children which is visible in our study, adverse effects of contraceptive methods can be a hindrance to their use. Main reasons for disapproval of FP by men were the fear of side-effects and perception of FP as being against religion (Odu et al. 2006). The desire to have children is one fundamental issue which both Christianity and Islam have in common. Children are a gift from God, which makes people desire as many as God grants (Duze and Mohammed 2006).

The present study revealed high degrees of unconcerned attitudes towards FP by the women and FP workers. Over seventy percent and eighty percent of all women in Nigeria and Guinea respectively have never raised discussion on FP with their partners. Almost 100 percent of women in Nigeria and Guinea have never discussed FP with other people apart from their partners. Lack of discussion suggests that social interaction is absolutely non-functional in both countries. This means that social interaction and diffusion roles have not contributed to the promotion of FP in Nigeria and Guinea. In addition, over sixty-five percent and sixty-six percent of all women in Nigeria and Guinea respectively did not visit a health facility in the last twelve months. These attitudes do not pose a bright future for contraception and ultimately fertility control in Nigeria and Guinea. Of particular importance, ninety-five percent and ninety-two percent of the women in Nigeria and Guinea respectively reported that no FP worker visited them in the last twelve months. This could be counterproductive to the FP program promotion. The reason why FP workers did not visit their clients is not known in the case of Nigeria. However, it has been reported in Guinea that there was a general insufficient degree of developmental effectiveness. There was incompetency in the

project executing agency, which could not ensure quality services and the training of sufficient FP workers.

Taken together, the observed trends of factors affecting contraceptive use at the national level does not seem to support that Nigeria and Guinea are soon to adopt a greater use of contraception. There is negligence and a negative attitude to FP. A positive attitude to FP methods will translate into the actual usage and ultimately cause fertility decline. Otherwise, a greater tendency to have unwanted births and high fertility abounds since there is lack of general interest in controlling the reproductive mandate. However, reluctance to discuss FP with partners may be attributed to the patriarchal tradition in Africa (Tsedeke et al. 2006), which tends to give the prerogative to men on issues of fertility.

## **5.2 FUTURE PROSPECTS OF FERTILITY DECLINE**

The use of modern contraceptives does not show good potential for fertility decline in Nigeria and Guinea. There is greater use of modern contraceptives in Guinea than in Nigeria. In line with previous reports, high knowledge of contraceptive methods is not associated with utilization rate (Tsedeke et al. 2006; Bongaarts et al. 1984). The reason for the stagnancy in contraceptive use despite the increasing knowledge of modern methods in Nigeria is not clear from the data. However it does not pose a bright future for fertility decline. There was an increasing trend in respondents' approval of FP in Nigeria which is the reverse of the trend between 1990 and 1999 (Oladosu 2001).

The reasons for the increased desire for children, in the midst of unfavourable economic conditions are not clear from the study. The only explanation we have is that investing in children is still a cherished venture in Africa, and the desire to have a reasonable number of them is acceptable. It may be rooted within the fabric of cultural norms of large family sizes. This supports the motivation of maintaining traditional family size in the face of improved health and never to change (Reher 2007). The increased preferences for births, and pregnancies, over 6 children as ideal number of children, are acceptable within the context of the prevailing desire for large family sizes for the purpose of agricultural activities, since the mainstay of the economy in Nigeria and Guinea is agriculture which is labour intensive. Thus, involvement of children is important for productivity. We did not investigate the

association between farming and desire for more children, but previous studies have reported the desire for children for agricultural productivity in developing countries (Reher 2007; Caldwell 2008). The increasing trends in preferences of births and pregnancies in a single garment of increasing desire for children, do not promote a bright future for fertility decline in Nigeria and Guinea. However, trends in desire for more children and the ideal number of children show that Nigerian women want more children compared to their Guinea counterparts. Hence, the low contraceptive prevalence rates in Nigeria and Guinea, is a reflection of non achieved desired family size. It is arbitrary to expect a decline in fertility at the expense of the desired family size. In addition the increased percentage of women who gave birth three years before the surveys, 1999 compared to 2003 suggests that fertility is not decreasing in Nigeria. On the other hand, a decrease in birth three years before the surveys in 1999 compared to 2005, may be the hallmark of a slight increase in contraceptive use observed in Guinea over time.

Considering the impact of mortality on the traditional norm of large family size and lineage preservation, desire for more children is not unexpected. For instance, the infant mortality rates in Nigeria and Guinea remained high at 100 per 1000 and 113 per 1000 respectively (Population Reference Bureau 2007). These percentages are among the highest in Sub Saharan Africa. In addition, 7000 children under the age of 15 are affected by HIV and the prevalence is highest among people aged 30-34 in Guinea (UNAIDS 2008). The impact of HIV/AIDS is more deadly in Nigeria and the country is included in the US President's Emergency Plan for AIDs Relief (PERFAR) (UNAIDS, 2008). It is not known to what extent infant mortality is influencing a low response to contraceptive use in Nigeria and Guinea. It is clear that the desire to want no more children increases with the number of living children. Our findings show that the number of living children is a predictor of contraceptive use. We therefore conjecture that high infant mortality rates in Nigeria and Guinea may be a hindrance to contraceptive adoption and invariably fertility regulation.

### **5.3 CONCLUSION**

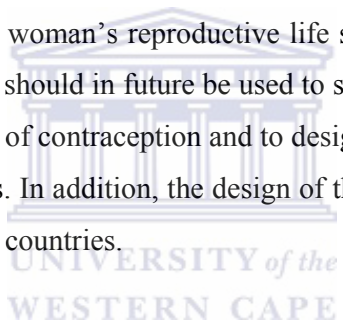
The findings in the study do not suggest brilliant prospects for fertility decline in Nigeria and Guinea. Trends in the use of contraceptives while they remained the same in Nigeria did not show a meaningful increase in Guinea over time. The responses and attitudes of the women



and FP workers do not give a good indication of keenness to use contraceptives for fertility decline. On a national scale, the observed trends of the indicators measured do not appear to suggest that Nigerian fertility is soon to experience a decline. On the other hand, there is no sufficient evidence that Guinea will experience a large fertility decline in the near future. Thus any decline in fertility in Guinea may be transitory.

#### **5.4 FUTURE PERSPECTIVE**

It is clear from our studies that fertility rates in Nigeria and Guinea have stabilized above five children per woman and contraceptive use is very low. However, fertility rates should be considered at regional and tribal or ethnic levels to establish the differentials in fertility within the country. In further studies on the trend and determinants of fertility, variables like breastfeeding, abstinence, post partum amenorrhoea and marriage should be measured since they mediate the link between a woman's reproductive life span and fertility. However, the proceedings of the present study should in future be used to strategize around a campaign that targets women for various needs of contraception and to design an effective population policy suitable for developing countries. In addition, the design of the study is ideal for comparative studies on fertility in developing countries.



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## APPENDICES

### Appendix 1: Recorded and extrapolated estimates of total fertility in Nigeria 1978-2003 and Guinea 1983-2005

<b>Nigeria</b>			
<b>Fertility Survey</b>	<b>TFR</b>	<b>Data Source and Methodology</b>	<b>Source</b>
1978-82	6.43	WFS, 1981-82	National Population Bureau Lagos, Nigeria, and WFS, 1994
1983-86	7.4	NDHS, 1990	Makinwa-Adebusoye and Feyisetan, 1994
1986-1990	6.3	NDHS, 1990	National Population Commission, Abuja, 2000
1991	5.9	PES, 1991	National Population Commission, Nigeria and ORC Macro.2004
1992-94	5.4	Sentinel Survey	National Population Commission, Nigeria, 1994
1995-99	5.2	NDHS, 1999	National Population Commission, Abuja, 2000
2003	5.7	NDHS, 2003	National Population Commission, Nigeria and ORC Macro.2004
<b>Guinea</b>			
1983	5.8	RGPH, 1983	Direction Nationale de la Statistics and ORC Macro.2006
1992	5.7	EDSG-I	Direction Nationale de la Statistics and ORC Macro.1993
1996	5.6	RGPH, 1996	Direction Nationale de la Statistics and ORC Macro.2006
1999	5.5	EDSG-II	Direction Nationale de la Statistics and ORC Macro.2000
2005	5.7	EDSG-III	Direction Nationale de la Statistics and ORC Macro.2006

**Appendix 2: Percentage knowledge of other methods of contraceptives in Nigeria and Guinea**

<b>Nigeria</b>						
<b>Age group</b>	<b>Knows no method</b>		<b>Knows only folkloric</b>		<b>Knows only trad. mth</b>	
	<b>1999</b>	<b>2003</b>	<b>1999</b>	<b>2003</b>	<b>1999</b>	<b>2003</b>
<b>15-19</b>	47.7	33.6	0.6	0.7	0.6	0.3
<b>20-24</b>	32.1	18.5	0.3	0.8	1.4	0.3
<b>25-29</b>	29.2	13.6	0.7	1.6	1.4	0.7
<b>30-34</b>	27.8	18.4	0.7	1.1	2	0.7
<b>35-39</b>	30.5	18.5	0.5	0.8	1.4	0.5
<b>40-44</b>	35.1	23.3	1.6	1.4	1.7	0.5
<b>45-49</b>	34.2	29.8	2.3	0.6	3.4	0.8
<b>Total</b>	<b>34.5</b>	<b>22.5</b>	<b>0.8</b>	<b>1</b>	<b>1.5</b>	<b>0.5</b>

<b>Guinea</b>						
<b>Age group</b>	<b>1999</b>	<b>2005</b>	<b>1999</b>	<b>2005</b>	<b>1999</b>	<b>2005</b>
<b>15-19</b>	30.4	12	0.1	0.2	0.4	0
<b>20-24</b>	22.3	6	0.1	0.2	0.8	0
<b>25-29</b>	24.1	5.1	0.2	0.2	0.9	0.2
<b>30-34</b>	26.8	6.6	0.2	0.4	0.9	0.1
<b>35-39</b>	28.5	8.1	0.2	0.2	0.9	0.2
<b>40-44</b>	34.5	8.5	0.3	0.5	0.8	0
<b>45-49</b>	40.6	12.7	0.7	0.6	1.6	0.1
<b>Total</b>	<b>28.4</b>	<b>8.4</b>	<b>0.2</b>	<b>0.3</b>	<b>0.8</b>	<b>0.1</b>

**Appendix 3: Current methods of contraceptive use by age group of women in Nigeria and Guinea by percentage**

<b>Nigeria</b>						
<b>Age group</b>	<b>No method</b>		<b>Folkloric method</b>		<b>Traditional method</b>	
	<b>1999</b>	<b>2003</b>	<b>1999</b>	<b>2003</b>	<b>1999</b>	<b>2003</b>
<b>15-19</b>	93.4	93.9	0.5	0.4	2.9	1.2
<b>20-24</b>	84.1	84.8	1.1	1.2	6.9	2.6
<b>25-29</b>	83.1	82.5	1.2	1.3	7.1	4.5
<b>30-34</b>	79.6	85.4	0.6	1	6.5	3.8
<b>35-39</b>	79.6	82.8	0.6	0.9	6.4	3.9
<b>40-44</b>	80.3	85.3	2.5	0.7	5.5	4.6
<b>45-49</b>	85.2	89.8	0.9	1.1	5.2	3.2
<b>Total</b>	<b>84.5</b>	<b>86.8</b>	<b>1</b>	<b>0.9</b>	<b>5.7</b>	<b>3.1</b>

<b>Guinea</b>								
<b>Age group</b>	<b>1999</b>		<b>2005</b>		<b>1999</b>		<b>2005</b>	
	<b>1999</b>	<b>2005</b>	<b>1999</b>	<b>2005</b>	<b>1999</b>	<b>2005</b>	<b>1999</b>	<b>2005</b>
<b>15-19</b>	94.3	89.2	0.6	2.5	1.9	1.3		
<b>20-24</b>	90.2	85.1	0.2	4.1	3.5	1.6		
<b>25-29</b>	90.2	88.1	0.4	3.8	2.8	0.9		
<b>30-34</b>	91.4	90.6	0.3	2.5	3.2	0.8		
<b>35-39</b>	90.6	90.8	0.5	2.7	2.3	0.8		
<b>40-44</b>	91.8	90.8	0.3	1.8	2.5	1		
<b>45-49</b>	93.8	94.7	0	1.1	1.1	0.7		
<b>Total</b>	<b>92</b>	<b>89.6</b>	<b>0.4</b>	<b>2.8</b>	<b>2.5</b>	<b>1.1</b>		

#### Appendix 4: Percentage preference for last child in Nigeria and Guinea by age group

Age group	Nigeria				Guinea			
	Wanted later		Wanted no more		Wanted later		Wanted no more	
	1999	2003	1999	2003	1999	2005	1999	2005
15-19	19	9.7	1.8	8.4	17.7	21.8	0.7	1.7
20-24	22.3	11.2	0.4	6.4	14.1	12.5	0.9	1.1
25-29	16.3	11.7	0.8	2.8	15	9.4	1.2	0.7
30-34	16.4	9.5	3.7	2.9	16.2	9.7	4.2	2.5
35-39	16	9.5	8.5	8	12.7	8.7	10.2	5.6
40-44	15.2	8.4	15.2	12.8	8.9	7	18.5	12.6
45-49	11.8	3.8	19.6	21.2	7.9	5	18.9	22.1
<b>Total</b>	<b>17.8</b>	<b>10.2</b>	<b>3.4</b>	<b>6.1</b>	<b>14.3</b>	<b>10.6</b>	<b>4.9</b>	<b>4</b>

#### Appendix 5: Percentage preference for current pregnancy in Nigeria and Guinea by age group

Age group	Nigeria				Guinea			
	Later		Not at all		Later		Not at all	
	1999	2003	1999	2003	1999	2005	1999	2005
15-19	11.5	13.2	10	7	14.6	17.8	0	2.3
20-24	15.9	14.2	1	3.9	15	11.7	1.6	0
25-29	11.5	13.4	2.6	1.8	25.6	14.3	0.6	0
30-34	12.1	13.4	3.8	6.3	25	14.6	7.3	0
35-39	14.4	8.3	10	7.4	25.6	15	12.8	7.5
40-44	17.4	12.5	13	12.5	22.7	12.2	36.4	14.3
45-49	20	7.7	60	0	50	0	25	25
<b>Total</b>	<b>13.3</b>	<b>12.8</b>	<b>3.6</b>	<b>4.9</b>	<b>21.5</b>	<b>14.2</b>	<b>4.9</b>	<b>2.8</b>

**Appendix 6: Intention to use contraceptives by non user in Nigeria and Guinea by percentage**

Age group	Nigeria				Guinea			
	Use later		Unsure about use		Use later		Unsure about use	
	1999	2003	1999	2003	1999	2005	1999	2005
15-19	23.6	24.9	38.5	25.7	39.4	30.5	11.4	22.4
20-24	29.5	33.8	23.5	13.9	29.5	35.5	5.1	14.1
25-29	30.9	38.9	17.5	11.6	43.6	36.8	5.3	11.8
30-34	28.4	29.9	15.8	11.4	41	38.5	4.9	8.7
35-39	22.4	28.2	16	7.6	40.5	33.4	3.9	8.4
40-44	13.4	19.4	11.2	6.8	27	20.7	2.2	7.1
45-49	7.5	8.9	7.4	5.1	14	9.8	2.1	4.2
<b>Total</b>	<b>24.6</b>	<b>28</b>	<b>22.1</b>	<b>14.2</b>	<b>38.1</b>	<b>30.2</b>	<b>5.7</b>	<b>12</b>

**Appendix 7: Intentions of unmarried on contraceptive use if ever get married in Nigeria and Guinea by percentage.**

Age group	Nigeria				Guinea			
	Yes		Don't Know		Yes		Don't Know	
	1999	2003	1999	2003	1999	2005	1999	2005
15-19	12.6	13.3	65.8	56.2	18.2	11.4	25.7	43.6
20-24	13.4	21.6	60.7	47.1	27.3	23.7	21.1	44.7
25-29	12.8	21.4	61.5	39.3	42.9	16.7	0	50
30-34	0	23.1	75	23.1	20	0	60	33.3
35-39	33.3	16.7	0	33.3	50	0	0	0
40-44	37.5	0	37.5	33.3	33.3		33.3	
45-49	20	25	20	25	0	0	0	0
<b>Total</b>	<b>13.1</b>	<b>15.7</b>	<b>63.5</b>	<b>51.7</b>	<b>20.4</b>	<b>12.7</b>	<b>24.9</b>	<b>43.5</b>

**Appendix 8: Percentage distribution of women by age group who ever discussed FP with their in Nigeria and Guinea.**

		<b>Nigeria</b>							
<b>Discussed</b>	<b>Year</b>	<b>15-19</b>	<b>20-24</b>	<b>25-29</b>	<b>30-34</b>	<b>35-39</b>	<b>40-44</b>	<b>45-49</b>	<b>Total</b>
Once or twice	<b>1999</b>	8.9	19	20.2	22.5	21.2	19.6	21.2	19.7
	<b>2003</b>	11.3	19	24.8	22.1	21.4	17.6	18.6	20.2
More often	<b>1999</b>	3.2	7.3	13.6	18.7	16.6	13.2	7.8	12.6
	<b>2003</b>	2.3	8.3	11.6	11.8	12.6	12.7	7.3	10
		<b>Guinea</b>							
Once or twice	<b>1999</b>	10.1	12	12.2	11.9	12.5	9.9	7.1	11.2
	<b>2005</b>	9.1	9.1	10.5	9.3	8.9	10	5.2	9
More often	<b>1999</b>	6.6	10.4	9.9	11.3	13.2	10.2	6	10.1
	<b>2005</b>	4.9	7.6	7.9	7.2	6.9	5.4	5.9	6.8

