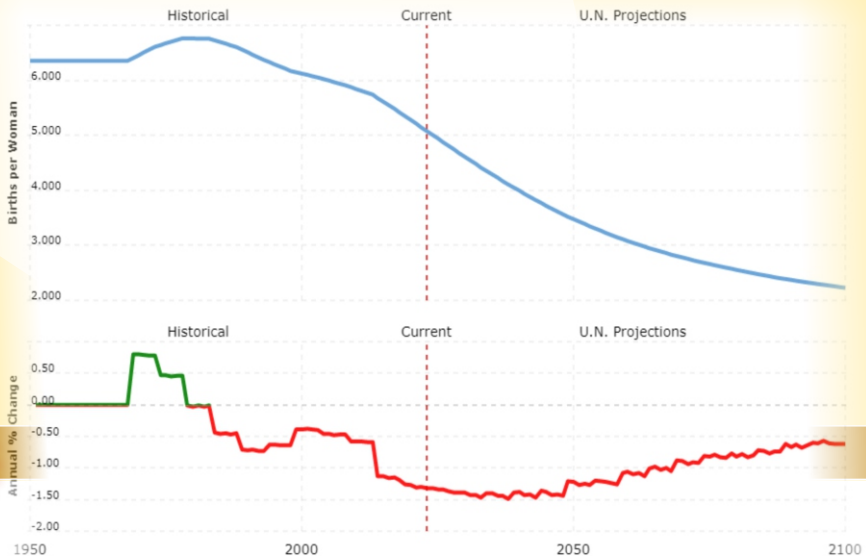




FEDERAL UNIVERSITY OF LAFIA
INAUGURAL LECTURE SERIES NO.11
FACULTY OF SOCIAL SCIENCES



FERTILITY:
DOUBLE EDGED SWORD

DAVID BETELWHOBEL UGAL
Professor of Demography and Population Studies
Department of Sociology

November 22, 2023



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Dedication

This work is dedicated to GOD, my creator who has been my strength.

THE PRESENTER



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SALUTATION/ACKNOWLEDGEMENTS

The Chairman of the occasion and Vice Chancellor,
The Deputy Vice Chancellors,
Registrar, Bursar and the Librarian,
Provost, College of Medicine,
Dean, School of Postgraduate Studies,
Deans of faculties,
Directors of Centres and Directorates
Distinguished Professors present
Members of Senate,
Heads of Academic and Administrative Departments,
Colleagues,
Distinguished Guest,
Dear friends,
My Dearly Beloved Family,
Ladies and Gentlemen

I wish to welcome you very fervently to this inaugural lecture. I wish to thank especially the Chairman of the occasion and the Vice Chancellor for creating and sustaining a conducive environment and a very fertile ground for Professors to profess through different approaches – paying most of the bills and nudging them to profess.

I wish to thank you all for making out time from your very crowded schedules to be physically present at this programme. I am indeed honoured to stand before this momentous crowd to present this inaugural lecture which is the second from the faculty of Social Sciences and the Department of Sociology but the first from Demography and Population Studies. I am grateful to God for keeping me alive to this day to be able to share with us the very familiar topic of fertility yet very complicated in its trends, patterns and impact on individuals, families, State and the world. Despite the Creators' urging to *Go unto the world and Multiply*, this multiplication when unguarded portends catastrophic consequences for sustenance, development and survival.

I wish to thank in a special way my dearly beloved family for laying a solid foundation for the attainment and the consummation of my scholastic pedigree manifesting in the professorial professing that all deserving professors must pass through as a final capping of a chair that never gets remove till eternity. I thank the memory of my late father Papa Canice Ushieye Ugal who as a pioneer educator in our community saw nothing good in anything but education which he believed was the only means of breaking the shackles of ignorance and the jinx of poverty while acknowledging the illuminating stance of scholarship. He manifested this in seeing to the education of every member of his extended family to some level culminating in producing the first Doctor of Philosophy (PhD) in our family and community who is today an Emeritus Professor of Psychology from the University of Calabar Calabar – Professor Godwin Agogo Ugal who did his sabbatical in our University in the 2018/2019 session. His attainments actually spurn me to following his footsteps. I remember when he returned from overseas with a white woman and our village people coming to give complains of all types of sicknesses since he was called *Doctor* I desired so much to be like him especially while staying with him at the University of Calabar staff quarters seeing Professors with big books and professing knowledge of different kinds and colours. I thank my dear mother Mrs Cecilia Ugal who did everything to see me through school and making sure I lacked nothing despite the difficult financial situation, her love and persistent advice urged me unto this height, you are greatly loved and appreciated. I appreciate my siblings – Peter, Ugal, Vicky, Eunice, Veronica, Tony, Augustine and my aunt who sees everything good in me – Aunt Christy Atsua and other members of my extended family too numerous to mention.

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Introduction

The historical underpinnings for population and its study dates back to antiquity, though the purpose for which these often, speculative comments were made not strictly to form framework for the study of population, rather to create a framework for policy making. The earliest of these comments can be traced to the works of Confucius and his school who made allusions to the retrogressive effects of excessive population growth on per worker output and the possibility of strife. Other issues relating to this situation was the contention by these philosophers that population increases in the face of insufficiency of food to feed it. The early Greek philosophers were however more concerned with the policy thrust that could effectively accommodate the population at a level that will equal availability of resources to maintain it. Meanwhile, Plato and Aristotle discussed the question of the “Optimum population” in respect to the Greek-city-state. In his the “Laws”, Plato held that for the common good to be achieved, the citizens in the Greek City State should be such that there will be no excess or shortage in the resources to maintain it (He placed, it at 5,040) from here, several later theories on population were built.

The Romans viewed population in the perspectives of a great empire. This is because; it was in the period of conquest and power, several Roman writers and rulers re-directed attention from the size of population in an area to the need for growing and expanding population which meant for them more power, strength and possibility of conquest. The Hebrew sacred books emphasized procreation and multiplication as divine injunction. As a result, theories at this time argued along this time. This is because Early and Medieval Christian writers considered the question of population almost entirely from a moral point of view. The Moslem authors also shared this view. Worthy of note is the writings of the fourteenth century Arab Scholar Ibn Kaldun who pointed that a densely settled population was conducive to higher

levels of living since it permitted a greater division of labour, a more effective use of resources and military and political security. He further maintained that a state's period of prosperity alternate with period of decline and that cyclical variation on the population occurs in rhythm with these economic fluctuations.

Favourable economic conditions and political order stimulated population growth by increasing natality and checking mortality. In the wake of this period of economic progress came luxury, rising taxes and other changes, which several generations produced politics, economic depression and depopulation.

The fifteenth and late eighteenth centuries herald the Renaissance that witnessed the emergence of the nation state and new scientific discoveries, exploration of new territories and rapid growth in trade. The earliest theory in this regard was the mercantilist, and physiocratic strands of theorizing. The Machiavellian and Bodinian “Absolutist State” set on motion several issues culminating in the theory of mercantilism. This focused on the power and the wealth of the states. i.e. the accumulation of money and precious metals. The means by which these will be attained it was stated, was through the expansion of foreign trade and the development of manufacturing. Though, it did not develop an elaborate population theory but focused on policy formulation for societal development. One of the scholars, Botero maintained that the strength of the state was found in its population and the predominance of the industry over agriculture. The sum of the focus of these is that they see as advantageous a large and growing population and favoured policies aimed at stimulating population growth including measures to encourage early marriage and large families. Others included Child, Coke, Daventant and Bossuet who argued that wealth itself consists in the largest possible population, while others like Fortrey and Becher, stressed that combination of a large population and much money was desirable.

The physiocratic school of thought hinged its argument against the mercantilist, stating that natural order must be followed. They emphasized agricultural production to support the increasing population. They rejected the populationist position of the mercantilist who advocated large populations even at the expense of living condition. The physiocratic school rather argued for a balance between population growth and standard of living.

The Political Arithemattick was the strand expounded by Graunt in his “Natural and Political observations on the bill of Mortality” (1662), which became the first to discuss an underlying order in vital statistics. He reviewed several issues ranging from bills of mortality, reports of births and burials and their numerical regularity. Others included sex ratio at birth, relationship between burials and christenings in London comparing this with others in rural areas. He did the future growth of the city and schematic life table design. Petty with whom Graunt collaborated not only analyzed the data but also maintained that arithmetic could be applied to population, economy and political affairs and developed a “political arithemattick” theory which involved a more searching study of population in human affairs and *This is considered the precursor of modern Demography*. They stressed the importance of population as human capital referring to labour as the father and active principle of wealth while land was the mother”

Graunt was also the first to attempt an estimate of “human capital” as well as of income and he was the first to introduce the division of the population and the economy into primary, secondary and tertiary activities. Around the middle of the eighteenth century the research already initiated by Graunt and Petty was further carried by Susmilch who saw in the regular patterns in population movements and relate this to the divine hand of providence, which ruled human society, noting the existence of a number of checks to population growth and sundry issues. All these traditional writers held the prevailing populationist view but nevertheless

recognized that the means of subsistence determined population. Their major contributions was the fact that even with limited statistics at their disposal and lack of basic theoretical concepts and methods of analysis, they extended one way or the other the horizons of thought in population theory by breaking down limitations imposed on it in earlier times.

The eighteenth century witnessed profound change in intellectualism with decisive influence on social and economic condition as well as population theorizing. Old religions and philosophic traditions were abandoned in the reawakening enlightenment. The scientific tradition was gaining momentous insights into the possibilities of continuous societal progress. Malthus writing in the tradition of his time basing his thinking on his own idea of necessary relations as established in his principle of population. He deviated from the equalitaristic persuasion of his time and articulated that, he envisaged the inevitability of a class society where the poor will be condemned to live at the subsistence level. Though several scholars like Botero, Hung Liang-Chi had severally indicated the possible imbalance between population growth and subsistence. Malthus most forcefully presented it. He was the first to develop a consistent and comprehensive population theory in relation to economic conditions and his writings exercised a great influence on population and economic theory. In his "Principle of Population (1798), he wrote against the postulation of earlier scholars on the perfectibility of human nature that was asserted to be corrupted only by social institution. He asserted that the social institutions were only natural and imperfectability inevitable asserting 'the absolute impossibility from the fixed laws of nature, that the pressure of want can never be removed from the lower classes of society' and that "the principal and most permanent cause of poverty has little or no direct relation to forms of government, or the unequal distribution of poverty."

Having formulated this principle, he concluded that, man could only increase subsistence only in arithmetical progression whereas his numbers tended to increase in geometric progression. He contended that man's capacity to increase his means of subsistence was much less than his capacity to multiply and that the evils of over – population existed and had always existed. He stated further, that population always tended towards the limits of positive and preventive checks, with the exception of the deferment of marriage which would take the form of rather misery or vice'.

His prepositions basically were that:

1. Population is necessarily limited by the means of subsistence
2. Population invariably increase where means of subsistence increase unless prevented by powerful and obvious checks
3. These checks are the checks which repress the superior power of population and keeps its effects on a level with the means of subsistence and are all resolvable into moral constraints-vice and misery

Humans throughout history have generally favored large families. This was particularly necessary to ensure the survival of a particular family line or racial group. In the early centuries, high death rates from plagues, predators, and wars led people to produce as many children as possible. Many parents were not sure how many will be alive to continue the family line. This encouraged polygamous marriages. In the course of time marrying many wives and having many children became a status symbol.

At the end of the 20th century, advances in technology of one sort or another lowered the rate at which people were dying. Birth rate grew at a rate faster than death rate (mortality). It resulted in a global “population explosion”. The World is currently gaining

about 90 million people every year. Most of this increase is noticed in poorer countries (developing countries), including Nigeria. Given this trend, the global population exceeded 6 billion in the early 2000s, and it has reached 8 billion in the 2020s. Understandably, sociologists around the world exhibit urgent concern about these increases because of the associated problems in population growth (many mouths to feed versus few productive hands). This situation invariably drew the attention of the sociologists and the demographers to this social situation where different groups in the society perceive it differently hence having a double edge.

The need to regulate the rate of child birth arose from societies in Europe and America. This understanding led to the formulation of population policies, fertility control measures and family planning among others. Thus, the evolution of societies has been associated with fertility transition or changes in birth rate. It has been reported that, birth rates are declining slightly on the average but with a wide variation between the developed and the developing countries. While experts are concerned about the decline in the population of the developed countries below the replacement level of 2.1, the population of developing countries especially Sub-Saharan Africa is expected to grow dramatically within the next 50 years (Kwaghga, 2019).

Fertility is one of the most universally celebrated demographic processes; it is more popular than mortality and migration, the other factors in population change. This may be attributed to the role it plays in human life. Married couples often wish to experience the birth of a child. Families need children to ensure its continuity. Communities and societies need new members to replenish the dying ones. Infertility or absence of child birth forms a source of conflict among couples and families. Historically, human societies have laid much emphasis on the relevance of child birth with little consideration to related

implications. This led to a historical era of high fertility across societies. This is because while other societies see fertility as slowing the engine of growth, others see it as a source of growth, political positioning and other pecuniary considerations - the double edge.

Globally, fertility trends and patterns have been altered dramatically over the last few decades. There has been an unprecedented downward transition of fertility across countries and regions, yet there have been wide differentials in patterns and trends of childbirth. More developed regions of the world's fertility patterns and trends stand at a sharp contrast with the less developed regions at the Mid-twentieth century (Bongaarts & Hodgson 2022). While the more developed regions are experiencing rapid fertility decline regime, the less developed regions are having only marginal fertility transitions towards fewer children per woman. This situation became overt after the United Nations Population Fund Activity (UNPFA) bifurcated all countries of the world into "less developed regions and more developed regions". This categorization was created by the United Nations Population Fund Activities (UNPFA) in recognition of the obvious differentiations in patterns and trends between these regions' fertility.

While the more developed regions manifested in higher levels of industrialization and urbanization and experiencing dwindling or declining fertility transition, the less developed regions manifested predominantly in non-industrial and urban centres were witnessing at best very slow or less decline in their fertility regime. The more developed regions include Europe, United States of America, Canada, Australia New Zealand and Japan while the less developed regions are Asia excluding Japan, Latin America and the Caribbean, Africa and Oceania excluding Austria and New Zealand (Bongaarts & Hodgson, 2022).

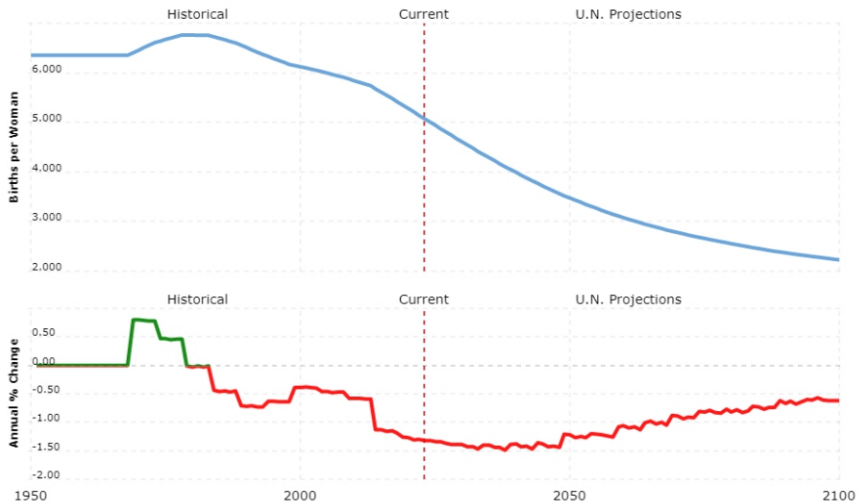


Figure 1: Global Population Trends

Source: United Nations

With a population of 1.72 billion people in 1950, with a total fertility rate of six children per woman, the world population had grown to 6.5 billion people in 2020 and about 8 billion in 2023 with growth rate of 2.6 children per woman. Though the world fertility rate according to the 2015 estimates of Revision of World Population Prospects was 2.5 children per woman globally yet this seeming decline in global average has masked very wide regional and continental differentiations. This is because Europe is experiencing the largest fertility decline of 1.6 children per woman while Asia and Latin America and the Caribbean have fertility rates of 2.2 children per woman closely followed by Oceania with 2.4 children per woman.

Fertility rates are higher in Africa than in any other major region of the world. Consequently, controversy surrounds the likelihood of these rates declining in the near future. The total fertility rate in Africa, taken together is approximately 6.0 to 6.5 births per woman. A total fertility rate of 6.5 in the face of substantially declining mortality does leads to a substantially high growth in

size of the population (Cohen, 1993). It was also estimated that fertility rate in Africa would increase by 72% if the fertility inhibiting effects of breast feeding and postpartum abstinence is removed. Whereas heeding such warning is actually desirable, it is not an easy thing to do. In this era of improved child nutrition additive outside of the breast, makes it possible for mothers to shorten the period of lactation without bringing any adverse nutritional effects on the baby. Consequently, trends in African fertility has been constant in decline at a snail pace rate (Bongaarts et al., 1990). Africa however remains the bastion of high fertility rate and is experiencing the highest fertility in the world with over 6.0 children per woman. There are very wide variations within Africa as middle and Western Africa is witnessing a particularly high and a non-declining fertility of over five children per woman (UNESECO, 2015).

Today, about 46 percent of the world's population lives in countries experiencing lower level of fertility and women therein have fewer than two children on the average. Another 46 percent live in intermediate countries where they are already experiencing substantial fertility decline and women have on the average between 2 - 5 children.

Eight percent of the world population lives in high fertility countries that have experienced only limited decline. In these countries, on the average women have five or more children over her life time. Almost all of these are found in Sub-Saharan Africa.

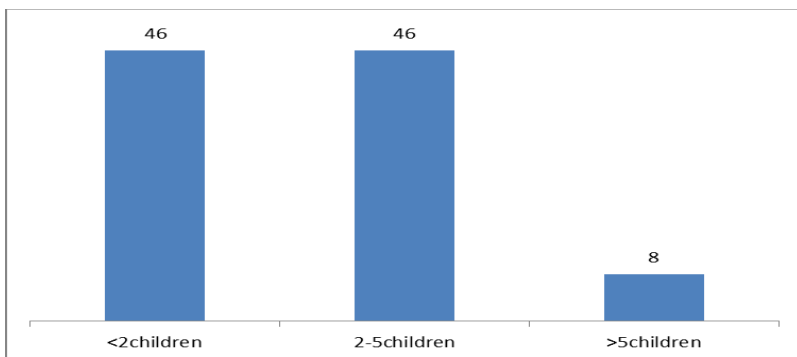


Figure 2: Distribution of fertility rate according to number of children

Global total fertility has been projected to decline to 2.4 children per women by 2030 and 2.2 children per women by 2050. In Africa however, the projection place the decline at 3.9 children per women by 2030 and 3.1 children per woman by 2050. These projection where the pace of fertility decline in Africa compare with the pace experienced by Asia, Latin America and the Caribbean at similar levels of fertility has important demographic and development implication for Africa generally and Nigeria particularly.

The net reproduction rate is the average number of daughters that would be born to a woman taking into account the prevailing levels of fertility, female mortality and the sex ratio at birth (UNESCO, 2015). Whenever the net reproduction rate is one it means that each woman is exactly replacing herself with one surviving daughter implying that fertility is at replacement level. In cases and situations where more boys than expected are born compared with girls, the net reproduction rate will be lower than expected for a given fertility rate and the long term population growth rate will be lower as a result.

Globally, the net reproduction rate is 1.1 surviving daughters per woman. In almost all the regions of the world, the net reproduction rate is one or below this level except for Africa where the net reproduction rate is 1.9. This means that, on the average, each African mother is replacing herself with nearly two daughters which lead to fast growing populations as it is the case today.

Adolescent birth rate is the number of births per 1,000 women ages 15-19. Early child bearing poses increased health risks to adolescent mothers and reduces the level of education attained and employment opportunities that adolescent girls might have had otherwise. Though there is a global downward decline in all regions of the world in relation to adolescent birth rate. But Africa

has the highest birth rate and the decline over time has been very slow (UNESCO, 2015).

The greater proportional decline of childbearing of women at older ages has led to a decreasing mean age at childbearing in Africa. As a result younger women who are usually adolescents are being initiated into child bearing and they stay very long hence giving birth to relatively many children as compared to other regions of the world. It follows therefore that there is an uneven and differentiated distribution of births by the age of mothers. This is because countries may have the same fertility rates but there could be great differences in the adolescent birth rate. For example, both Nigeria and Afghanistan have a high fertility level of 5.1 children per woman but adolescent childbearing accounts for 13 per cent of birth in Nigeria and only 9 percent of births in Afghanistan. The implication of this is that though two countries may have the same fertility birth rates but the adolescent birth rate may be different as is the case in most of Africa where over forty percent of birth in these countries is by adolescents. This situation exposes the adolescent to health risks, distorted opportunities and reduction in the general life chances of the girl child. This impacts negatively on the other indicators of progress, growth or development of the region or countries.

Despite the seeming bleak and hopeless situation of most African and sub-Saharan African countries in achieving a sustained declining fertility transition, Nigeria is worst because it is faced with a very daunting challenge of appreciating this precarious condition of poor fertility tracking, documentations, analysis etc.

Accordingly Nigeria is still struggling fervently with the attainment of lower fertility transition. This is because Nigeria's population has been growing in leaps and bounds from about 56 million people in 1963 to above 200 million in 2019. It has been further projected to increase to 450 million in 2050 at the pace it is

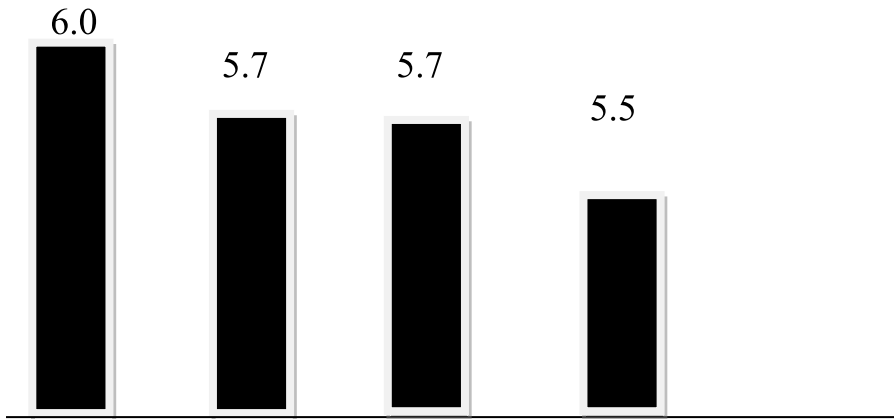
growing. The factor in the rapidly growing population is the high fertility rate and it appears to be very daunting in every ramification.

Meanwhile, one of the objectives of Nigeria's National Policy on Population is to reduce the high level of fertility in the country (NPC, 2004). The guiding principles in achieving this objective is the emphasis on the voluntary acceptance of fertility planning methods in accordance with fundamental human rights that all couples and individuals should decide freely and responsibly on the timing, number and spacing of their children for a manageable family size and that the Government has a responsibility to facilitate people's ability to make informed choices and to create an enabling environment where they can effectively manage their lives (Ugal, 2021).

According to Ugal (2021), the chances of dying in early childbearing are much higher when children are born to mothers who are too young or too old, when children are born at least more than a two-year birth interval and when they are high birth order children. Furthermore, very young mothers may experience difficult pregnancies and deliveries because of their physical immaturity. Older women may also experience age-related problems during pregnancy and delivery. A mother is considered to be too young if she is less than 18 years and too old if she is older than 34 years at the time of delivery (Ugal, 2021). A short birth interval is a birth occurring within 24 months of a previous birth (NDHS, 2013).

Fertility rate in Nigeria from time immemorial has remain very slow in its downward transition. In all the NDHS (1990-2018), fertility decline have been marginal. According to Ugal, (2021), the total fertility rate (TFR) declined from 6.0 children per woman in 1999 to 5.5 children per woman in 2013. A breakdown indicated that in 2004, there were 5.7 births per woman while it remained the same in 2009 and the women who desire to have one or more children

are mostly likely to have over four children alive (Ugal, 2021). It remained unchanged throughout the preceding years.



1999 NDHS 2004 NDHS 2009 NDHS 2014 NDHS

Figure 3: Trends in Total Fertility Rate (TFR)

Source: Ugal, 2021

Statistically, the TFRs in Nigeria have remained relatively high. The projections have not been achievable; birthrate has remained high thus hindering the onset of fertility transition. There are more incidences of multiple births (Ikechebelu, et al 2016) causing a geometric progression in birth rate. A summary of the United Nations (UN) and National Population Commission (NPC) projections and the reality of birth rate in the country is shown in table below:

Table 1: Nigeria's Total Fertility Rates (TFR) from 1966 -2018

Year	Projected TFR (UN)	Projected TFR (NPC)	Obtained TFR	Rural TFR	Urban TFR
1966	-	-	6.60	-	-
1970	-	-	6.50	-	-
1971-1973	-	-	7.30	-	-
1975	-	-	7.00	-	-
1978-1982	-	-	6.43	-	-
1983-1986	-	-	7.40	-	-
1987-1990	-	-	6.0	6.3	5.0
1992-1994	-	-	5.40	-	-
1995-1999	-	-	5.20	6.1	-
2003	5.16	5.18	5.7	6.3	4.9
2008	4.76	4.91	5.7	6.2	4.7
2013	4.37	4.63	5.5	5.9	4.7
2018	3.58	4.07	5.2	5.9	4.5

Sources: NPC, 2019, Kwaghga, 2023.

As shown in the table above, between 1990 and 2018, TFR has remained largely the same. Total fertility rate for Nigeria in 2018 was 5.2 while in 2020 it was 5.3 children per woman 1.27% decline from 2019. In 2021, it was 5.2 children per woman, a 1.3% decline from 2021 and finally in 2023, there is 5.1 children per woman, a 1.3% decline from 2022.

It is therefore very crucial and important to engage in an elaboration of the fertility trends, patterns and differentiation of the Nigerian-Nation-State because of the implicit consequences on the lives, opportunities, growth, progress and developmental aspirations of the country. It is against this backdrop that the present exposition was undertaken.

Trends and factors in fertility in Nigeria

a. Trends

The baseline in the literature indicating when the documentation of Nigeria fertility behaviour began was in 1950. This is because scholars have not really taken interest in the fertility trends as studies have shown that at that point - 1950, the fertility rate was 6.3 children per woman and the growth rate was 0.000 percent (United Nations, 2023), Ugal, (2021), Osazuwa & Ugal (2020) Ugal & Osazuwa (2022). From 1950 to 1970, the fertility rate

remained unchanged. The factors are not far-fetched. This ranged from poor quality data or non-availability of data, underestimation and poor documentation/non-documentation of births (Feyistan & Bankole, 1981).

Meanwhile, fertility trends can be analysed in two ways. One is to compare NDHS data with previous surveys and the second can be based on NDHS data alone (NDHS, 1990). In using the first method, the first NDHS data (survey) of 1990 will be compared with the last National estimate of total fertility from data collected in the 1981/82 Nigeria Fertility Survey (NFS). According to NDHS (1990), the comparison of the three years total fertility rates as estimated by the NDHS and the NFS that were almost a decade apart yielded almost the same total fertility rates (5.9 for NFS and 6.0 for NDHS) (NFS 1982 & NDHS, 1990).

The 1965/1966 National Rural Demographic Sample Survey indicated a crude birth rate of 50 per 1,000 persons and a family size of 3.6 children (Federal Office of statistics (FOS), 1968). As indicated elsewhere, the fertility rate has remained relatively stable at high levels. The factors in this rise can be explained partly by the dramatic rise in revenue from oil export which led to a sharp increase in food import as well as workers' salaries (Bankole & Bamiseye, 1985).

By 1970, fertility trend or rate had moved on to 6.456 children per woman. After this time, there was a rapid upward transition of fertility rates. Factors responsible for this upsurge were improving wealth status, employment and other considerations (Feyistan & Bankole, 1985). The upward transition continued from 1970 till about 1979 when it peaked at 6.762 children per woman.

From 1980 till 2023, there has been a decline in the fertility transition. The sustained decline can be attributed to several factors.

Between 1980 and 1989, fertility was slowly declining from 6.8, 6.8, 6.6, 6.8, 6.7, 6.7, 6.6, 6.6, and 6.6 respectively. From the 1990s, the advent of the Nigeria Demographic and Health Surveys (NDHS) changed the calculation and estimation of fertility rates completely. For instance, in the 1990 NDHS, the fertility trend was extended to include variables that were never used before in the calculation, estimation and or projection of fertility rates. This included the age specific fertility rates where live birth were isolated occurring within the 1-36 months preceding the survey and classifying them by the age (in age cohort of five) and the mother's age at the time of birth (determining the mother's age from the date of birth of the first child). It therefore gives the number of women - years lived in each of the specified five year cohorts during the one to thirty six months preceding the survey. By so doing, it became easier to estimate the age category or cohort that contributes more or less to the fertility burden of the entire country. Following from here, the age spacing fertility rate during this period was used to determine the total fertility rate (TFR) summing the age specific fertility rates. It is also the number of children a woman would give birth to by the end of her childbearing years if she were to pass through those years bearing children at the currently observed rates. If fertility were to remain constant at current levels, a Nigeria woman would give birth to an average of six children (NDHS, 1990).

Following from above, there were about 6.6 children per woman in the Northern part of the country as against 5.5 children per woman in the southern part of the country with a National sum of 6.05 children per woman. The annual number of births in a population per 1,000 persons otherwise called the Crude Birth Rate (CBR) was estimated from the birth history data and the age specific distribution of the household population. It was indicated that there were about 39 births per thousand population over the last three years (NDHS, 1990).

Between 1990 and 1999, there was no fertility surveys conducted during this period but the 1999 NDHS took cognizance of the period lap within which a lot of data may have been lost and most of the information escaped the demographic radar. The 1999 NDHS however, collected data relating to fertility through its questionnaire that sought to explore different aspects of the fertility discourse. Data collected for this purpose indicated that if fertility rates were to remain constant at the level prevailing during the 1994-1998 period, a Nigerian woman would bear 5.2 children in her life time. The Age specific rates indicated a pattern of late childbearing with a peak at age group 25-29 and the rate at age group 30-34 being slightly higher than that of the 20-24 age group and the crude birth rate for the period 1994-1998 was 38 per 1,000 persons while the general fertility (GFR) for same period was 176 per 1,000 women (NDHS, 1999).

It can be observed that using the method already mentioned elsewhere in this paper, a cursory comparison using the reference materials of one fertility rate can be seen that there has been a declining fertility rate in Nigeria. This can be seen in the comparison of the 1981/82 Nigeria Fertility Survey (NFS), the 1990 NDHS, the 1991 Post Enumeration Survey (PES) and the baseline report of the 1994 sentinel survey, there appears to have been a decline in the total fertility rate in Nigeria from 6.3 in 1981-82 to 5.2 in 1999. Data suggested that on the average a Nigeria woman has one child less in 1999 than she would have had in 1981-82 (NDHS, 1999).

According to the NDHS (2003), the total fertility rate (TFR) for Nigeria was 5.7 children per woman. The specific fertility rate (ASFR) indicated that Nigerian women experienced their prime reproductive years during their twenties and early thirties. The rural women experienced both high total fertility rates (6.1 versus 4.9) rural and urban women respectively and prime reproductive years rising from age 15-19 years to age 20-24 peaking at age 25-29 and then decline (NDHS, 2003). There is a significantly higher

fertility rate for the NDHS of 2003 (5.7) than the NDHS of 1999 (5.2). It is an indication that there was underreporting of births in the 1999 NDHS.

Accordingly, the CBR was 42 births per 1,000 populations with a clear differential along location or residence lines (Urban -36 births versus 45- birth rural). According to the NDHS (2008), fertility rates for the three years preceding the survey indicated that the total fertility rate (TFR) was 5.7 births per woman. It meant that on an average, a Nigerian woman will give birth to 5.7 children by the end of her childbearing years. This is the same with the 2003 TFR. Fertility peaked in the age group 25-29 with 265 birth per 1,000 women and declines thereafter. The General Fertility Rate (GFR) was 194 meaning that there were 194 births for every 1,000 women during the three year period preceding the survey. The crude birth rate (CBR) was 40.6 per 1,000 population for the same period.

Rural areas had a much higher TFR than Urban areas (6.3 versus 4.7) and there were large urban-rural differentials in ASFRs for all the groups. The largest variation were however in age groups 15-19 and 20-24. In those groups, the rates for rural women exceeded those for urban women by 78 and 77 births per thousand women respectively.

The NDHS of 2013 indicated that the TFR was 5.5 birth per woman. It follows that on average, Nigeria woman will give birth to 5.5 children by the end of their childbearing years. The current TFR of 5.5 means that 0.2 children per women less than that reported in the 2003 and 2008 NDHS (5.7 each). Fertility peaked at the 25-26 age group in urban areas (237 births per 1,000 women) and the 20-24 age group in rural areas (267 birth per 1,000 women) and declines thereafter (NDHS 2013). The general fertility rate was 190, that is, there were 190 births for every 1,000 women during the three years period preceding the survey. CBR was 39 per 1,000 populations for the same period. Rural areas had

higher TFR than urban areas (6.2 versus 4.7) and large urban-rural differentials in ASFR for all age groups. Largest variations were in the 15-19 and 20-24 age groups, in these groups the rates for rural women exceeded those for urban women by 100 and 79 births per 1,000 women respectively.

The NDHS (2018) indicated that there were 5.3 children per women meaning that on average a woman would have 5.3 children by the end of her childbearing years if she bore children at the current age specific fertility rate. The ASFR was the 15-19 age group of 106 births per 1,000 women peaking at the 25-29 age group (256 birth per 1,000 women and drops thereafter to 23 birth per 1,000 women in the 45-49 age group. ASFR were lower in urban areas than rural areas among women of all ages on average, rural women have 1.4 more children than urban women (5.9 versus 4.5 children).

(b) Factors

i. Fertility trend examines the children ever born and living. This refers to all children that have been born to a woman that are surviving. Though data for this purpose is generated through the ability of women to recall but the data is crucial to determine the level of survivorship and the ages at which more or less/fewer children are born and the women of childbearing age. Policy advocacy on factors of surviving and the distribution of children ever born to different ages helps in providing framework for decision making. This is usually done by devoting the mean/average number of children ever born for all women and globally, it increase with age so that by the end of a woman childbearing years, she would have given birth to almost seven children as determined by parity. Usually, the distribution of women according to birth indicates that almost one quarter of teens have already born a child and nearly one-third of women age 15 and over have nine or more children if they are giving birth at the current fertility rate.

From the 1981-82 Nigeria Fertility Survey (NFS) the trend had remained largely the same as younger women who were married experienced similar birth level as against the unmarried women with very minimal fertility difference. Differences existed at older ages. Though this is minimal yet it reflects the impact of marital dissolution and a measure of primary infertility. Voluntary childlessness that is found in some countries but is very rare in African nay Nigeria hence married women with no live births are mostly unable to bear children. Result from the NDHS has indicated that about 4 to 5 percent of Nigerian women were unable to bear children (NDHS, 1990).

Between 1990 and 1999, 18 percent of all women age 15-19 years have given birth to at least one child indicating early child bearing and an explanation for high level fertility in Nigeria. This is explained within the framework that if teens of 15-19 years have given birth, it follows that the childbearing role that last up to 49years will allow women have more than ten children. It also follows that a majority of women are not in school because of early childbearing as they drop out of school to get married and begun the functions of child production. Data also indicated that there was a rapid rise in the number of children born by age group. It follows therefore that women would have given birth to a child in her early twenties, four children by their early thirties and six children by their early forties. In fact, one third of women in their forties have given birth to eight or more children (NDHS, 1999).

By 2003, seven in ten women have given birth by 15-19 years. This trend continues till the thirties before declining. Only three percent of married women 45-49 reported that they have had no children - an indication of falling primary infertility (NDHS, 2003). The mean number of children ever born for all women was 3.1 and for currently married women, it was 4.1 children.

According to NDHS (2008), more than three-fourth of women aged 15-19 (82 percent) have never given birth but this declined

to 9 percent for women age 30-34 and 5 percent or less among women age 35 and older. This is an indication that childbearing among Nigerian women is nearly universal, that is the trend of the onset of childbearing globally begins from late twenties and terminates at late thirties (UN, 2021). This is also an indication as will be seeing later that declining fertility begun at this point when a majority of women at the lower age of 15-19 have not begun giving birth. This pattern can also be seen for currently married women except that the mean number of children ever born was higher (4.0 children) compared with all women (3.1 children). This difference can be attributed to the fact that a substantial proportion of young and unmarried women in the former category exhibited lower fertility (NDHS, 2018). The percent of women in their forties who have not given birth remained unchanged at 3 percent.

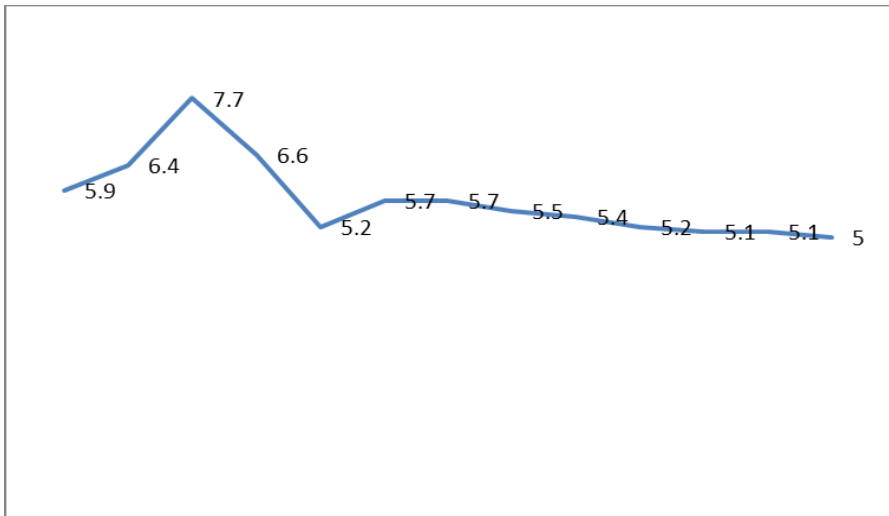


Figure 4: Fertility Transition of Nigeria from 1981/82-2023

Authors compilation

Between 2009 and 2013, the percentage of women who have never given birth at age 15-19 had increased from 82 percent to 83 percent and remained the same as was in 2008 that was at 9 percent among women 30-40 and 5 percent or less among women aged 35 and above. This pattern remains unchanged as was the case in 2008 because currently married women remained the same except that the mean number of children ever born was higher (4.0 children). Primarily, infertility level remained unchanged at 3 percent.

Table 2: Total Fertility Rate by zones and states, 2008, 2013 and 2018

State	Total Fertility Rate		
	2008	2013	2018
North Central Zone	5.4	5.3	5.0
FCT-Abuja	4.0	4.5	4.3
Benue	5.9	5.2	4.5
Kogi	4.2	4.2	4.8
Kwara	4.5	5.1	5.2
Nasarawa	4.7	5.4	5.3
Niger	7.5	6.1	5.8
Plateau	5.3	5.4	4.7
North East Zone	7.2	6.3	6.1
Adamawa	6.8	5.8	6.1
Bauchi	8.1	8.1	7.2
Borno	7.1	4.7	5.2
Gombe	7.4	7.0	6.6
Taraba	5.9	6.0	5.4
Yobe	7.5	6.6	5.9
North West Zone	7.3	6.7	6.6
Jigawa	7.1	7.6	7.1
Kaduna	6.3	4.1	5.9
Kano	8.1	6.8	6.5
Katsina	7.2	7.4	7.3
Kebbi	6.0	6.7	6.5
Sokoto	8.7	7.0	7.0
Zamfara	7.5	8.4	6.4
South East Zone	4.8	4.7	4.7
Abia	4.4	4.2	4.9
Anambra	5.0	4.2	4.7
Ebonyi	5.6	5.3	5.4
Enugu	4.4	4.8	4.1
Imo	4.8	4.8	4.5
South South Zone	4.7	4.3	4.0
Akwa Ibom	4.0	3.9	3.6
Bayelsa	5.8	4.5	4.4
Cross River	5.4	5.4	3.7
Delta	4.5	4.1	4.4
Edo	5.3	4.4	4.8
Rivers	4.3	3.8	3.9
South West Zone	4.5	4.6	3.9
Ekiti	5.0	4.3	4.6
Lagos	4.0	4.1	3.4
Ogun	5.4	5.4	3.8
Ondo	4.9	5.2	4.1
Osun	4.0	4.1	3.8
Oyo	5.0	4.5	4.5
Total	5.7	5.5	5.3

As shown in the table, the TFR rates for northeast and northwest regions increased between 2003 and 2008. But as witnessed in the southern part, the northern region also experienced reduced TFR in 2013 and 2018 surveys, though the figures are still higher than that of the southern region. The northeast and northwest zones have pre-transitional TFR of 6.3 and 6.7 respectively in 2013. These zones are predominantly inhabited by Muslim populations consisting mainly of the Hausa, Fulani and Kanuri ethnic groups.

The three geopolitical zones in the southern part of Nigeria (South East, South South and South West) with TFRs ranging between 4.3 (South South) and 3.9 (Southwest) in 2018, are mainly dominated by Christian faithful, consisted largely of the Yoruba, Igbo, Ijaw and other ethnic groups. The TFR among the zones in southern regions is over two children per woman lower than the TFR of each of the two core northern zones (northwest and northeast). The last four consecutive Nigerian Demographic and Health Surveys of 2003, 2008, 2013 and 2018 showed that the TFR of northcentral zone is lower than that of the other northern zones though a little bit higher than that of the southern zones (NPC and ICF Macro, 2018).

In spite of the huge fertility differentials that exist among the six geo-political zones and within each of the zones, as well as their significant implications for policy to Nigeria's demographic and other development challenges, these variations and the patterns of fertility behaviour in the country were not given adequate attention they deserve. It is therefore pertinent to take a critical look at the fertility patterns and the factors that determine such patterns in Nigeria, especially in the zones experiencing high fertility.

Only a marginal transition was recorded by 2018 NDHS. This was because on the whole all women had a mean number of children of 3.0 children as against 3.1 in 2013 and 2.6 surviving children. Currently married women had an average of 4.0 children as

against 4.3 children in 2013. Primary infertility had also dropped from 3 percent to 2 percent by 2018 (NDHS, 2018).

ii. Birth Interval

Birth interval is the difference between birth date of a child and birth date of preceding child in months. Researches have indicated that birth interval plays a very important role in the fertility transition of families and communities. This is because a short birth interval especially that within 24 months of a previous birth has been shown to be related to the poor maternal and child health while longer birth intervals are known to contribute to the health of both mother and child.

Wakeyo et. al. (2022) recommended at least thirty three months of an inter-birth interval between two consecutive live births. Inter-birth interval of <33 months is considered a short birth interval and between 36 and 59 months is considered the optimum birth interval. For children of multiple births, the birth date of the preceding child is the number of months since the end of the pregnancy that ended in a live birth. The birth interval is denoted by the percent distribution of births in the five years preceding a survey by number of months since the previous. From data available between 1981-1990, over one quarter of births were born after an interval of less than 24 months. The median birth length (30 months) is only six months longer than the minimum considered safe.

By 1999, birth interval was 26 percent on non-first births occurring less than 24 months after the previous birth which is usually considered to place the child at higher risk of illness and death. More than one third of births took place 24-35 months after the previous birth with 38 percent occurring at least 3 years after the previous birth. The median birth interval was 31 months for Nigerian women. Seven months longer than the minimum of 24 months reported in the 1990 NDHS (FOS, 1992:31). Younger women had shorter birth intervals compared to older women. This

may be because they (younger women) are more fecund and want to build their families (NDHS, 1999). The median birth interval for women age 15-19 was 27 months compared with 36 months for women over forty.

Between 1999 and 2003, the median birth interval in Nigeria remained unchanged (31 months). It only increased slightly with age from a low of 26 months among mothers aged 15-19 to a high of 39 months among mothers aged 40-49. The death of a preceding birth however shortened the interval (NDHS, 2003). In 2008, median of birth interval remained the same at 31.4 months meanwhile, eight percent of births were less than 18 months apart and 24 percent have an interval of less than two years. Two in five births (38 percent) were born 24-35 months after the previous birth and 80 percent were born after the previous birth. Birth interval accordingly showed that 26.6 months interval for women age 15 – 19 and 37.8 months among women aged 40 – 49.

The median birth interval by 2013 remained almost the same with the previous at 31.7 months. Seven percent of births were less than eighteen months apart and 23 percent had an interval less than two years. Two in five births (39 percent) took place 24 – 35 months after the previous birth and 20 percent occurred 36 – 47 months after the previous birth. According to the NDHS, 2013, number of months since the preceding birth increased markedly with age from 26.3 months among mothers aged 15 – 19 to 37.7 months among mothers aged 40 – 49. There had been no marked difference in the median birth interval over the years and as at 2018, the median birth interval was 30.9 months. Birth interval among women aged 15 -19 was 26.9 months while the median interval for older women aged 40 – 45 was 37.3 months having ten months longer than the former (15 -19 years).

Summarily, the median birth interval from 1981/82

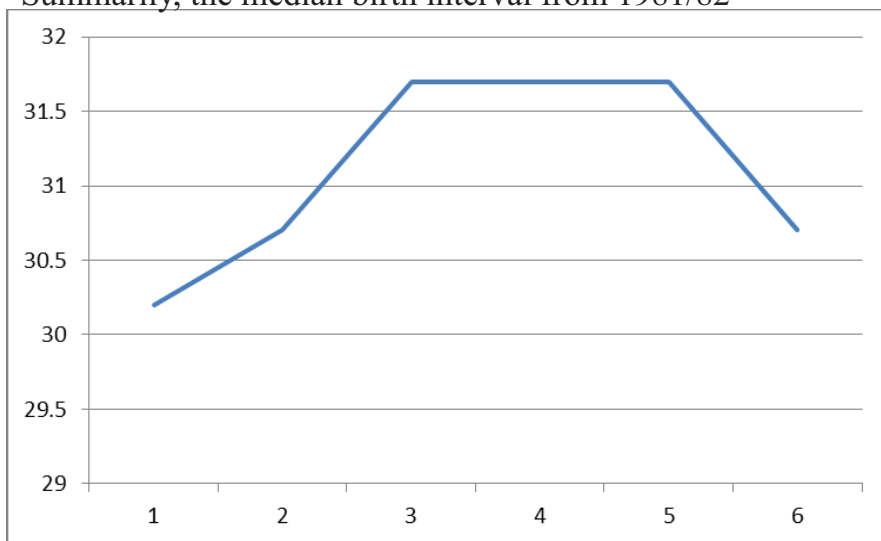


Figure 5: Population Trends in Nigeria

Source: Authors Compilation

iii. Age at first birth

Age at first birth is defined as the age at which childbearing begins. It has very serious demographic consequences for childbearing, fertility rate and the health of the mother and the child. Postponement of first births increases the age at marriage and this has contributed markedly to overall fertility decline (NDHS, 1999). Between 1981/82-1990, 50 percent of all mothers in Nigeria became mothers before the age of 20, of which 10 to 12 percent gave birth before age 15 and 21 to 28 percent gave birth between age 15 and 17.

This pattern can also be seen by 1999 as the median age at first birth was 20. There had also been no alteration in the median age at first birth between older and younger women.

By 2003, the median age at first birth was 20.3 years for women aged 25-29 whereas it was less than 19 years among women 35 years and over. Women who gave birth before age 15 and 18 showed some postponement of first births by younger cohort of mothers. Only 3 percent of women 15-19 years had given birth by 15 compared with at least 5 percent of those ages 30 and over (NDHS, 2003). The median age for first birth according to the NDHS (2008) indicates that it was 20.4 years for women aged 25-49 in Nigeria. Median age at first birth had increased from 19.8 years for women aged 45-49 to 20.9 years for women aged 25-29 (NDHS, 2008).

Over 9 percent of women aged 25-49 have given birth by 15-47 percent have become mothers by 20. If the proportions of women who gave birth at age 15 was compared across age groups, it provides another way to view trends in age at first birth. Whereas 3 percent of women aged 15-19 gave birth by age 15, the corresponding proportion for women aged 45-49 is 9 percent. It can be deduced that age at first childbirth has been increasing slowly (NDHS, 2008).

The age at first birth by 2018 remained unchanged as the median age at first birth among women of age 25-49 in 20.4 years. It meant that half of women age 25-49 gave birth for the first time before age 21. Seventy five percent of women had given first by age 25 years (NDHS, 2018).

Determinants of Fertility Transition in Nigeria

Several factors account for the fertility situation in Nigeria. Scholars have severally posited that exposure to the risk of childbearing through first marriage is the most important proximate determinant of Nigerian fertility. Subsequent to marriage, fertility is determined mainly by breastfeeding and post antenatal sexual abstinence (Ugal, 2022).

Furthermore, the total fertility rate (TFR) is determined by a female's age when she had her first child, educational opportunities for females, access to family planning and government acts and policies that affect childbearing. Broadly speaking, the determinant of fertility in Nigeria have been categorized into demographic factors (age at first marriage, age at first birth, age at first sexual intercourse, use of contraceptive, proportion of women never entering sexual unions, amount of reproductive period spent after or between unions when unions are broken through divorce, separation, or desertion) and when unions are broken by death of husband as well as the impact of child and infant mortality.

The second factor is the socio-economic and cultural issues. These are residence (Urban or Rural), level of educational opportunities for females, female labour participation, household wealth, religion and ethnicity as well as the overall levels of social development (Bongaorts, 2008, Shapiro & Gebreselasic, 2008; Garenne, 2008). Favourable socio-economic and cultural practices are also keeping national fertility average at a high level. It has been noted that the high fertility regime in the northern Nigeria is accounted for by the Koranic inheritance doctrine, Ethnicity and Religion were also found to be significant social and cultural determinants of reproductive behaviour and fertility outcomes particularly in some parts of northern Nigeria (Izughara, Ezeh, Ibisomi & Mberu, 2009; Reed & Mberu, 2014).

Other factors noted are socio-economic and cultural practices keeping fertility high in the northern Nigeria are religion that keep women in marriage, promoting polygamy creating confusion on issues pertaining to the expectation surrounding spousal communication on reproductive decision. Furthermore, Hausa Fulani and Kanuri women living in the northern region are majorly Muslims who live in squalor and poor households with low level of education opposed to family planning and marry early and consequently give birth early and to relatively larger

number of children. All these contribute to enhancing high fertility rate.

i. Demographic factors in fertility

(i) Age at first marriage and first sexual intercourse.

The morphology of females just as males transit through stages and at each stage, there are implications for the activities the female undertakes including childbirth. A female who is still young and growing may not be ready to become pregnant or nurse babies and during this time, engagement in childbirth will be most dangerous and risky to the life of both mother and child. This is because since the young female (adolescent) is still growing requires certain nutritional intake to achieve proper and healthy growth. Sharing this with a fetus will endanger both the adolescent and the unborn child (Gina & Dilek, 2017). It was following from here that the World Health Organization (WHO, 2019) reported that around 295,000 women died during pregnancy and childbirth in 2017. Over fifty percent of their deaths occur among the age group that are predominantly adolescents who are often not only prepared biologically but also socially and structurally for childbirth. Besides, those who survive continue giving birth for a longer time than those who began later. It is for those who continue long into adulthood that have contributed to the persistently high fertility rate in Nigeria with very marginal alteration of about 0.2 children per women observed at the national level between 2008 and 2013 and 2018, NDHS, 2008; 2013; 2018; Ugal 2020).

The age at which a female enters into marriage and initiates sexual intercourse plays a very dominant role in this regards. The NDHS have indicated that the median age at first birth across the country shows only a marginal disparities between the northern and southern regions ranging from 17.9 years in the northwest to 23.7 years in the southwest (NDHS, 2018). Early marriages and initiation of sexual activities is a common decimal in the north bringing with it teenage pregnancy and childbirth that has

continually subjected both the mother and the child to preventable health risks including for the mother - visico vaginal fistula and congenital conditions while the child is exposed to anemia, low birth weight and risk of death for both or lifelong disabilities.

Factors creating or influencing age at first marriage, birth and sexual intercourse are many but among them are - religion that often accept young marriageable age (early marriage), non-acceptance of family planning, belief in infinite childbirth etc. There are other factors influencing age at first marriage like cultural practices, physical and sexual maturation, prevention of pre-marital sexual engagement, unintended pregnancies, protection of family image and honour, education and schooling, dropping out from school, poverty or reduction of family burden (Obasanjo, Ahinkovah, Okyere, et al, 2022; Adamu, Yusuf, Tunau and Yahaya, 2019; Solanke, 2015; Adebowale, Fagbamigbe, Lawal et al, 2012, Omideye 1983). The listed factors have very crucial implications for fertility across the geopolitical zones of Nigeria. Comparatively, religion and cultural practices significantly changes the pattern of fertility in the north where most girls are exposed to early marriage and initiations of sexual intercourse and childbirth. While in the southern regions, there is a lower or slower fertility regime owing to later marriages and childbirth. Other issues or factors include high rate of teenage pregnancy, early motherhood in the north where teenagers of between 15-19years have started having children in both the northwest and northeast regions of Nigeria.

Age at first marriage is also crucial in determining the overall fertility performance of woman. This is because sexual activities are stable and obligatory in marital unions as compared to sexual activities outside wedlock. Even though sexual activities do not only occur in unions but are more frequent and stable among couples in marriage and consensual unions.

It follows therefore that a woman who enters a marital union at a younger age is likely going to experience earlier childbirth than one who enters later. It can be alluded therefore to the fact that since there is early marriage in the northern regions of Nigeria, it follows that they enter into marriages at younger ages that have implications for the number of children per woman manifesting in higher fertility rates in the north than in the south. Data from the NDHS 1999-2018 indicated that despite these general rates of a higher or earlier age at marriage in the north, there are however variations that can be noticed. For instance, there are States in the northwest that are experiencing similar fertility rates with States in the south e.g. States like – Kaduna, Kano and Sokoto in the northwest have been witnessing a declining fertility rate just as that found in the southern states. The second category is States that have continued to witness increased fertility rates including Jigawa, Zamfara and Kastina.

Meanwhile, States like Adamawa, Bauchi, Borno, Gombe and Yobe are experiencing decreasing fertility among the States in the northwest while States like Taraba State are witnessing increasing fertility. The decline observed in most states in the north can be said to be associated with factors ranging from increasing educational opportunities to girls, spreading formal education that have affected the age at marriage.

(ii) Marital status and proportion married

The number of women getting married and that are not in union are great determinants of fertility in most parts of the world including Nigeria. The degree or rate of nuptiality plays a very significant role in determining rate of childbirth (fertility). In Nigeria, a cursory look at the pattern of nuptiality indicated that more women get married in the north than in the southern regions. For instance, 1991 and 2006 Census of Nigeria, there were more ever married women in the northern regions than in the south. The females in the northwest zone had about 72 percent of its

population (ten years and above) in the ever-married category, south-south has 49 percent in same category. The south-south also had only about half of its population never-married as against 28 percent in the northwest zone.

Within each of the zones, marital status composition is not uniform. A singulate mean age at first marriage showed wide disparities among the States. Even States in the same zones witnessed quite wide disparities. There is however an indication that all the States in Nigeria have witness increases in the mean age at first marriage for females in 2006. The target of achieving 18 years minimum age at first marriage as stated in the National Population Policy has not been achieved in about eleven states and all are found in the northern region. This is the factor responsible for the different patterns of fertility in northern and southern Nigeria.

Scholars opined that marriage is the second most important factor in determining declining fertility transitions, especially where child bearing is confined within marriage. The proportion of women married is declining in Nigeria and polygynous unions are also not very fashionable hence the living arrangement has changed. This change does not favour many children as a result of less frequency of coitus. There is also an increasing contraceptive knowledge and use. According to feyisetan & Bankole (1994) over seven percent of all women and six percent of currently married women were using contraception by 1990. By 1999 contraceptive use had almost doubled. In the preceding NDHS, there have been indications that contraceptive knowledge and use have increased substantially and by the latest NDHS over fifteen percent of all women are using one form of contraception or another. Furthermore, the expansion in the provision of family planning services is expected to increase access to family planning services. The fertility – based delivery is being complemented by the community based distribution programme in order to reach more people. the participation of non –

governmental organizations in providing sensitization, education, counseling and delivery of services have increased in recent times having a multiplier effect on access and use. The integration of family planning with the maternal and child health services under the primary health care system offers more opportunities to reach potential clients. With the increasing participation of males in family planning, a major barrier to contraceptive adoption would have been overcome (Feyisetan et al 1998; Bankole et al 1999; Makinwa – Adeusoye & Feyisetan 1994).

These factors have contributed immensely to the expansion and increase in the adoption of contraception that invariably reduce number of child birth. The intensification of these factors will help in enhancing the rapid spread of contraceptive knowledge and adoption. The transition from 6 percent of use of any method in 1999 to 15.1 percent in 2013 is instructive. Analysis on knowledge of fertility period and need for family planning services indicates that over the years there has been increments in the general knowledge about fertility period, but there has been no corresponding improvement in the need for family planning services. This indicates that there is serious unmet need for family planning services, following from the unmet need, a majority of women though may desire to delay or postponed or space another child, they do not have the means of doing this since they remain sexually active through the cycle, the tendency of always being pregnant is therefore very high. This should be sustained. The knowledge of the fertile period is crucially related to fertility behavior of the members of society. This is the case as the present study indicated that the knowledge of the fertile period is increasing. If the tempo is sustained it is hoped that there will be a greater improvement in knowledge and a reduction in fertility.

(iii) Contraceptive Use

Another factor in the determination of fertility rate in Nigeria is the use of modern contraceptive. It is one of the most effective ways of planning pregnancy and avoiding unintended pregnancy. It is one of the best methods of ensuring that a desired family size is achieved and the spacing of pregnancy and childbirth is attained. Its use however has been very slow in Nigeria. In fact according to the NDHS 2018, the use of any modern method of contraception move from four percent in 1999 to 12 percent in 2018 (28 years in between).

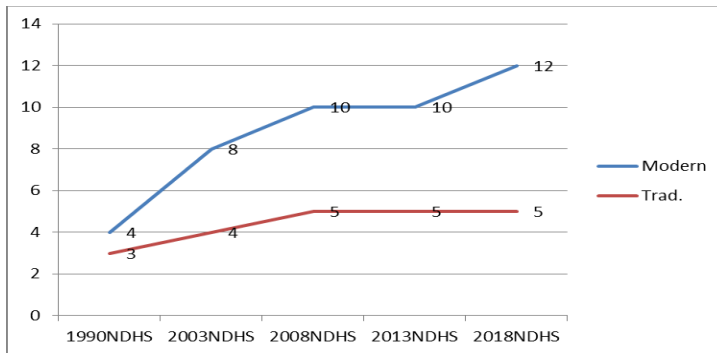
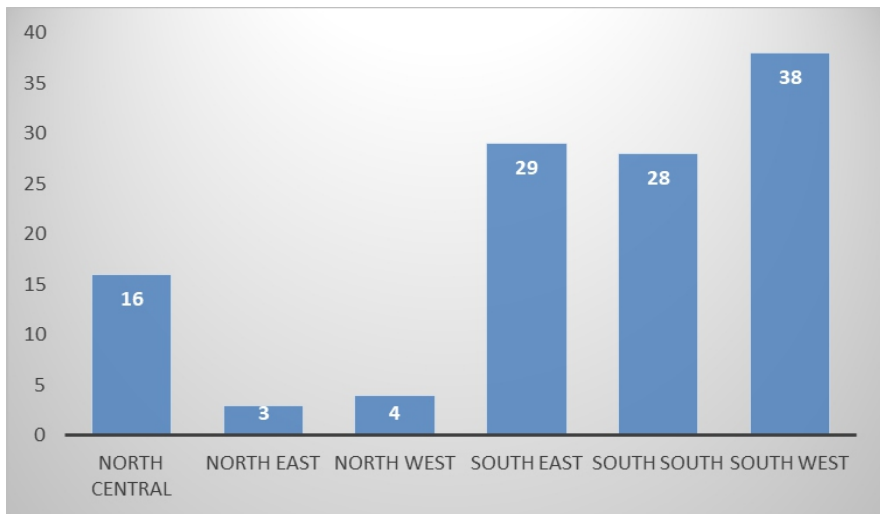


Figure 6: Trends of modern and traditional contraceptive use from 1990 – 2018
Source: Authors compilation

Ugal & Ushie (2013) maintained that among the factors affecting the use of contraception in Nigeria is culture. This is because sexual behaviour in all human societies is embedded in a complex web of shared ideas, moral rules and regulations. These rules and regulation have obvious association and obscure symbols that are part of their complex behavioural pattern. It varies from one culture to another, from one stage of development to another as well as from one period of history to another (Ugal & Ushie, 2013).



The contraceptive information and services offered to single women in most developing countries is comprised by stigma attached to pre-marital sex (Ozumba et al 2005 in Ugal & Ushie, 2013). Oye-Adeniran et al 2004 in Ugal & Ushie, 2003) indicated that a large number of Nigeria women experience unwanted, unintended or mistimed pregnancies and births. According to a 1997 survey of women in south-western Nigeria, at least 27 percent of women had ever been pregnant when they did not want to be. In another study conducted in south-western and northern Nigeria in the mid-1990s, 20% of women reported ever having experienced an unwanted pregnancy (Okonofua et al 1999).

Unintended pregnancies pose significant public health risks. One consequence of unwanted pregnancy is induced abortion. In 1990s the abortion rate in Nigeria was estimated at 25 per 1000 women. At this rate, approximately 160,000 abortions would have occurred by 2006.

According to the NDHS (2018), knowledge of modern contraception methods was higher among sexually active unmarried women (98 percent) than currently married women (94 percent) with the former knowing about 9 methods on average

and the latter knowing about 7 methods. The most commonly known modern methods among currently married women are injectable (88 percent) and pill (87 percent) followed by implants (78 percent), male condoms (77 percent) and lactation amenorrhea (58 percent) seventy-two percent of currently married women are aware of a traditional method of contraception. The contraceptive prevalence rate was 17 percent among currently married women of age 15 – 49. Most currently married women using contraceptive are using one method (12 percent) while 5 percent use a tradition method. Thirty-seven percent of sexually active unmarried women use a contraceptive method, with 28 percent using a modern method and 9 percent using a traditional method.

The trend for contraceptive use among currently married women increased from 15 percent in 2013 to 17 percent in 2018. Use of any modern method of contraception also increased from 10 percent to 12 percent. There has been a noticeable rise in the use of implants since 2008 from 0 percent to 3 percent in 2018. Modern contraceptive use is higher among currently married women with 3-4 living children (15 percent) than among those with 1-2 living children (11 percent). More so, use of any contraceptive method is higher among currently married women in urban areas (26 percent) than among those in rural (10 percent). The use of modern contraception ranged from 2 percent in Yobe and Sokoto States to 29 percent in Lagos. The portion of currently married women using modern contraceptives method is higher among those with more than a secondary education (23 percent) than among those with no education (4 percent). It also increases with increasing household wealth from 4 percent and those in the lowest wealth quintile to 22 percent among those in the highest quintile.

The low patronage of contraceptives in the northern part of the country is contributing immensely to its high fertility. Also the variation noticed at different regions can be attributed to the

differentials in contraceptive use. One of the most important factors affecting the utilization of contraceptive in Nigeria is decision-making. This is because women mostly rely on their husbands for decisions on contraceptive use (Abanibe, 1994; Adewuyi & Ogunjimigbe, 2003; Izugbara & Ezeh, 2010). The most affected are women from the northern region who are largely affected by their religion and culture of silence. Religion (Islam) does not support the use of contraceptives and with a high proportion of Muslim in the north; fertility is higher following this non-utilization of contraceptives.

Personal Attributes

Despite the influence of demographic factors on fertility rates in Nigeria, there are also other factors that may influence fertility. These factors could be socio-demographic or socio-economic, cultural, household status etc. The interaction of those factors can determine the number of children a woman will be willing to have.

i. Education

United Nations (1987) maintained that education was a crucial factor influencing the pattern in which women bear children. This was why there is an intense and compelling rationale for focusing on increased investment on education and elimination of institutional and cultural barriers to women; schooling policies aimed at promoting development and reducing fertility. All the NDHS (1990-2018) indicated that there was reduction in total fertility rates with increasing level of education. Women with more than secondary education had a TFR of 2.9, compared with women with no education who have a total fertility of 7.3. Education increases the receptivity of awareness of contraceptive use to control fertility.

Regionally, decline in fertility in Nigeria was most rapid in the southwest and lowest in the northwest and northeast. The number of women with at least secondary level education or higher is

more than that of the northern Nigeria and following from the above accounts for the steady decline in fertility in this region. The 2006 census also showed that the southern zones are having higher proportion of women attending school that have completed one or the other level of education for all age groups.

Furthermore, the 1991 and 2006 Censuses indicated that the northwest was the least in literacy level while the southeast was the most. This is especially conspicuous when the age groups of ten years and above are taken into consideration. The NDHS (2018) corroborated this assertion when it depicted the level of literacy as been higher in the southern parts of the country compared with the northern parts.

ii. Household type and size/marital union

Studies have shown that the type of household and its size can play a very crucial role in determining the fertility rate. The behaviour in a nuclear household will not be the same with that of the extended family household. It follows therefore that monogamous household will likely have fewer children compared with the polygamous households. This is because in a monogamous household, it is likely to have no contest for pregnancy as is the case in polygamous households.

Sergent and Cordell (2003) maintained that polygamy causes pregnancy rivalry among co-women. This position was also supported by findings from the 2008 and 2013 NDHS which indicated that polygamy was widespread among states in the north than the south and fertility has been identified to be higher in the north. It follows therefore that the 'multiple wives' in the north are engaged in a rivalry for pregnancy leading to higher fertility rates.

iii. Place and Type of residence

Place and type of residence is crucially linked to fertility. Studies have shown that women who live in urban areas are likely to have

fewer children compared with their counterparts who reside in the rural areas. This is because women in the urban areas have better exposure to education, participate in the formal labour market and will generally appreciate better the need for a smaller family size owing especially to their level of education. Connecting this to the country, it will be appreciated that the northern Nigeria that is predominately rural have a higher fertility rate compared to the south that is predominately urban with a few and declining fertility rate.

iv. Postpartum Abstinence

This is the period of voluntary sexual abstinence after pregnancy delivery and when combined with postpartum amenorrhea is the period of insusceptibility to pregnancy (National Population Commission (Nigeria) and ICF International, 2014).

Most doctors recommend waiting 4–6 weeks to resume sexual intercourse after delivery. The body must heal from labour, especially following an intensive surgery, such as a cesarean birth. Kegel exercises can help a woman recover cervical strength and help reduce painful and uncomfortable sex after delivering an infant.

Globally, the period of postpartum abstinence is on the decrease but it has been met with increased prevalence of contraceptive use (World Health Organization, 2010). However, the contrary is the situation in developing countries. In Nigeria for instance, while the postpartum abstinence reduced overtime (Caldwell and Caldwell, 1981), low contraceptive use prevailed (National Population Commission (Nigeria) and ICF International, 2014; National Population Commission (Nigeria) and ICF International, 2009). The implication of his imbalanced transition is a short birth interval, and this might explain the relatively constant high fertility and maternal mortality the country has been experiencing for over a decade. The same inference can be made for the prevalent high under-five mortality in Nigeria, since short

birth interval does not only affects the health of a mother but also that of the child (Ball et al., 2014; Batyra, 2016; Chen et al., 2014; Zhang et al., 2017).

Studies conducted in the 1980s (Caldwell and Caldwell, 1981; van de Walle and van de Walle, 1989) showed that Nigeria and many other African countries had a postpartum abstinence period ranging from 12 to 15 months. A qualitative study (Mbekenga et al., 2013) explained the reason for such interval to be as a result of cultural beliefs that sperm can spoil the breast milk and thus affect the health of the child (van de Walle and van de Walle, 1991). However, studies (National Bureau of Statistics Tanzania and ICF - Macro, 2011; National Population Commission (Nigeria) and ICF International, 2014) have shown a reduced length of postpartum abstinence (3 months) in some African countries. This might partially explain the reason most African countries, Nigeria included, are experiencing a relatively constant high fertility for decades. This shorter length of postpartum abstinence could significantly reduce the positive influence which education, improved socio-economic status and increased female decision making power have on fertility.

As much as longer postpartum abstinence is desirable in a country with low contraceptive prevalence, the advent of HIV/AIDS and other STIs in countries like Nigeria decreases the need for its promotion. An earlier study in South West Nigeria reported that men resort to extramarital sex during wife postpartum abstinence period (Lawoyin and Larsen, 2002) which exposes men to STDs and by extension the wives. Then, is shorter postpartum abstinence preferable in order to protect the women from contracting STIs from her spouse but at the risk of having short birth intervals which are detrimental to her health and that of her child (Cleland et al., 1999).

Postpartum abstinence is one of the factors determining fertility, maternal and child mortality, meanwhile very few research works have been published with respect to postpartum abstinence in Nigeria in recent time except the few regional and relatively old

studies of postpartum abstinence (Sule-Odu et al., 2008; van de Walle and van de Walle, 1989). Caldwell's work on postpartum abstinence in Nigeria was done over 30 years ago and might not represent its current situation in the country. A good knowledge of the timings as well as an understanding of its prognostic factors will enable policymakers and other sexual and reproductive health stakeholders to make more informed decisions on family planning and contraception programme including reproductive health education to high-risk sub-populations in Nigeria.

v. Timing and Frequency of Sexual Intercourse

Most women have a 28-day menstrual cycle: this means there are 28 days between the start of one period and the start of the next period. Ovulation (when an egg is released from the ovary) occurs on day 14 of a 28-day cycle. Whether or not that egg gets fertilised by a sperm depends on the day(s) in the cycle in which intercourse occurs. The chance of getting pregnant is low at the beginning of the cycle and starts to increase from about day 8 onwards. Women are most likely to get pregnant if they have sex 2 days before they ovulate (i.e. on day 12 of 28-day cycle).

Once ovulation has occurred, the chance of getting pregnant decreases dramatically, sperm need to be present in the female genital tract prior to ovulation to maximise the chances of getting pregnant. The reason for this is that once ovulation has occurred, levels of the hormone progesterone increase and this causes cervical mucus to become thick and sticky which prevents sperm from being able to swim through it to get to the egg to fertilise.

Couples that have regular sex 2-3 times a week are most likely to get pregnant because this frequency ensures that a good volume of fresh sperm will be present in the female reproductive tract at the time of ovulation. If couples are only having sex once a week, the chance of getting pregnant is less because there will be less fresh sperm present in the female genital tract at the time of ovulation.

Implications of Fertility rate in Nigeria

High fertility has positive and negative implications. According to Ugal and Kwaghga (2023), the positive impact of high fertility include increased supply of labour, more sources of revenue for government through the various economic activities engaged in by the people as well as taxes collected on goods imported into the country. It also helps in provision of defence/protection for the family and community, ensures lineage continuation, provide more opportunities for members to develop themselves, enhances family stability, source of prestige and wealth, others include ensures division of labour, improved agricultural productivity etc. The negative impact include kidnapping, terrorism, insurgency, increased pressure on available resources, competition for available farmlands, source of conflict, breeds jealousy and hatred, causes family instability, increases economic burden etc. High fertility also has impact on economic growth, poverty and inequality, education, health, food, the environment, and international migration.

The negative influence of high fertility on the environment include pollution, pressure on land, deforestation, land/soil degradation, water scarcity, destruction of forest resources, loss of biodiversity, rising demand for energy, global warming and climate change among others.

Pollution is the release of unwanted substances into the environment in quantities that is harmful to living organisms. When such substances are inhaled or consumed by living organisms, it causes damage to internal organs which often result to chronic diseases or death. Pollution was pointed as one of the negative influence that increasing population has had on the environment. It was gathered that increasing population have added to number of farmers and the need to produce more food for subsistence and commercial purposes. The use of herbicides and pesticides has become a necessary option. Such chemicals are often flush into existing water bodies, thus, having

a double effect of polluting the air and water bodies especially surface water in the local government.

Also, the increasing number of people with corresponding number of vehicles, motorcycles (commonly called Okada) has released an unquantifiable fume into the environment, thus polluting the air. Unfortunately, more people has meant more farmers, with intense agricultural activities using chemicals, more vehicles and motorcycles, generators which have resulted to the release of more pollutants in the environment. Another negative influence of high fertility on the environment is high pressure on land. As earlier hinted, the basic occupation of the people is farming. It means that the higher the population, the higher the number of farmers. It also implies that the higher the farmer, the higher the pressure exerted on land which has not relatively increased overtime. Unfortunately, the higher the pressure exerted on available land, the faster it loses its value and productivity.

Water is one of the land resources that are necessary for human survival. This has made many to assert that “water is life”. If anything at all is to be scarce, it ought not to be water. In Nigeria, the high fertility in the area has mounted much pressure on the available water sources. These have been overused result to its scarcity. The situation has been compounded by pollution of some water bodies through farming, fishing and domestic activities. In every environment forest areas serves as habitat for medicinal plants, timber, fossil fuel, several species of animal and plant life. Forested areas also serve as a fertile and productive land for agricultural activities. Increasing population however leads to competition and pressure over land. In most cases, the alternative is to clear forested animals for other human activities. It is such actions that destroy most of the resources in the forest. The little forested areas that existed have been cleared. This has led to extinction of some animals and plant species within the area. One of the consequences of such action is the loss

of biodiversity which tempers with the ecosystem and threatens environmental sustainability.

High fertility is also associated with the rising demand for energy such as fossil fuel or fire wood. Rising demand for energy entails pressure on the available ones and by extension over utilization of such resources which is a threat to the environment. Such activities have resulted to the general crisis of global warming and eliminate change.

The question of whether or not high fertility leads to, or exacerbates, poverty and whether this in itself should be grounds for policy interventions ultimately revolves around the question of parental intentions with respect to childbearing. If parents perceive children as good in and of themselves and are willing to forego other forms of consumption for the sake of having a large number of children, most scholars would argue it is hard to make the case that they should be urged to have fewer of them. If, on the other hand, many of the children very poor parents are bearing are the result of unintended pregnancies, the case for public policies to assist them in having fewer would seem to be stronger.

From the remarkable series of surveys that began with the World Fertility Survey in the 1970s and continues to this day as the Demographic and Health Surveys programme, we know a great deal about fertility intentions in a large number of countries around the world, and the inescapable conclusion is that a significant proportion of births in developing countries are the result of unintended pregnancies. For example, an estimate by the Global Health Council in 2002 revealed that roughly one-quarter of the 1.2

billion pregnancies that occurred in the developing world between 1995 and 2000—some 300 million— were unintended (Daulaire et al. 2002). Since these estimates are the result of ex-post surveys of the women who had the pregnancies, many of whom may have changed their minds about the 'wantedness' of the pregnancies after they realized they were pregnant, it is quite likely that estimates of the number of unwanted pregnancies in fact understate reality. The ever rising numbers of abortions and of maternal deaths that result from abortion are additional evidence of the incidence of unwanted pregnancy around the world. It seems justified to conclude that the burden of evidence from micro-analysis is that high fertility reinforces poverty and makes an escape from poverty more difficult.

Conclusion/Recommendations

The onset of fertility transition is necessarily preceded by establishing social and institutional mechanisms that helps to drive the process. The mechanisms include social welfare schemes, scholarship, and accessible, affordable and quality education for all sexes, functional vital registration system and effective population policies. These mechanisms are lacking within Nigeria. It is important to first of all address these issues before expecting the onset of fertility transition in the area.

To achieve the expected and predicted level of fertility transition in Nigeria, the reproductive behaviour must be checked through culture based mechanisms using the natives. This will involve a conscious reawakening of the minds of the people on the future consequences of increasing fertility by educated natives, traditional leaders, youth organizations, women societies.

Localization and effectiveness of agricultural development programmes (USAID Market, International Fund for Agricultural Development/Federal Government Value Chain Development Programme (IFAD/FGN VCDP) will help to reduce the attention on children as the main source of farm labour. This is because, the provision of farming machines like tractors, harrowers, harvesters etc if used will substitute for manual human labour ensuring effective farming without necessarily relaying on women and children. Also related to the above is the upgrading of local markets by Local Government Authorities that will help to improve markets for local products of farmers thus enhancing their financial ability to adopt mechanized farming. Most importantly, the current trend in imported technology in modern farming practices in the area will itself checkmate the emphasis on manual human labour. Already the adoption and use of herbicides is on the increase among the people. This will however take a longer time.

Most causes of increasing fertility are deeply rooted in culture. It is thus necessary to revisit some of these cultural practices especially polygynous and early marriage systems. One is

careful not to fall into the temptation of condemning long standing traditions. However, it is important to act in conformity to existing realities. There is need to continuously promote girl child education. This will help to step up the literacy level of women in the society. Such action will provide conducive atmosphere for fertility transitions from high to lower levels.

Furthermore, family planning programmes must have a down-top approach in order for it to be effective. Birth is a conscious human action, thus, family planning programmes must center on those factors that favours high fertility.

Religious bodies need to understand the problems that affect human race in recent time and attempt to resolve it through their teachings rather than preaching in its favour. To ensure the realization of the long awaited fertility transition, the trend must be checked gradually until it reverses itself. Nigeria as a whole lacks the needed institutions (social welfare, pension services, and people oriented civil services, effective fertility regulation mechanisms) to externally, legally and forcefully enforce fertility laws that will help to achieve the desired fertility transition in the country. Nigerian government has not got a better alternative for her citizens that will substitute the benefits derived from adherence to prevailing cultural practices that will set a turning point in the fertility behavior which will help to lower the current level of fertility. As long as the status quo continues, achieving desired fertility levels will remain a policy issue in the country..

References

- Adamu, H.; Yusuf, A.; Tunau, K. & M. Yahaya (2019): Perception and Factors Influencing Early Marriage in a Semi-Urban Community of Sokoto State, North-West Nigeria. *Journal of International Dental and Medical Research* 3(5): pp.6-12
- Adebowale, S.A.; F.A. Fagbamigbe; T.O. Okareh & Lawal G. (2012): Survival analysis of timing of first marriage among women of reproductive age in Nigeria: regional differences. *African Journal of Reproductive Health*, 16(4): 95-107.
- Adewuyi, A. & Ogunjuyigbe O.(2003): The Role of Men in Family Planning: An Examination of Men's Knowledge and Attitude to Contraceptive Use among the Yorubas. *African Population Studies vol. 18 n°1/Etude de la population africaine vol.18 n° 1*
- Bankole, A. & Bamisaye, O. (1985). The Impact of Petroleum Production on the Political Economy of Food in Nigeria since Independence. AMAN Vol. 4 No. 2. PP 125-132.
- Bongaarts, J. (2008) *Fertility Transitions in Developing Countries: Progress or Stagnation?* Working Paper No. 7 2008, Population Council
- Bongaarts, J.(1990). The Proximate Determinants of Fertility in GTF Acsadi, G John-son-Acsadi, and RA Bulatao (eds.), Population Growth and Reproduction in sub-Saharan Africa: Technical Analysis of Fertility and its Consequences. Washington, D. C: The World Bank.
- Bonhuarts, J. & Hodgson, D. (2002). Fertility Trends on the Developing World, 1920-2020. In Fertility-Transition in the Developing Wold: Springer Briefs in Population Studies. Springer Chain:<https://doi.org/1007/978-3-031-11840>
- Caldwell, J. (1982) Theory of fertility decline. London, UK: Academic Press.

- Cohen, B. (1993). Fertility levels, Differential, and Trends: Demographic change in sub-Saharan African, AF Karen, HH Kenneth and GM Linda (eds.), Washington: Academy Press.
- Cohen, Ba. (1993). "*Fertility Levels, Differentials, and Trends.*" In Karen A. Foote, Kenneth H. Hill, and Linda G. Martin (eds.), *Demographic Change in Sub-Saharan Africa*, pp. 8-67. Washington, DC: National Academy Press.
- Davis, J., Vvankandondera, J., Luchters, S. *et al.* (2016): Male involvement in reproductive, maternal and child health: a qualitative study of policymaker and practitioner perspectives in the Pacific. *Reproductive Health*, Vol. 13, No.81.
- DHS -7 (2023). Tabulation Plan; API Link, STATcompiler line.
- Ejemi C.L, T. Dahiru, A. Aliyu, *Contextual Factors Influencing Modern Contraceptive Use in Nigeria*. ICF International Rockville, Maryland, USA September 2015.
- Federal Government of Nigeria (FGN, 2004) National Policy on Population for Sustainable Development.
- Federal Office of Statistics, Lagos (1968). Rural Demographic Sample Survey, 1965/66: Lagos.
- Feyisetan, B.J. (2000): "*Spousal communication and contraceptive use among the Yoruba of Nigeria.*" *Population Research and Policy Review* 19: 29-45, 2000. Kluwer Academic Publishers. Printed in the Netherlands, Policy Research Division, Population Council, New York, USA.
- Ginar, N; Dilek, M. (2017). Aspects of Adolescent Pregnancy on Health of Baby: *Open Journal of Population and National Care*. 2(1) 12-33.
- Ikechebelu JI, Eleje GU, Ibadin K, Joe-Ikechebelu NN, Nwaefulu K, Okwelogu SI.(2016) Outcome of *in vitro* fertilization procedure at a private fertility center in Nnewi, South-East Nigeria. *Afr J Infertil Assist Concept*;1:2-5.
- Imo, K. C., Okoronkwo, E. & Nkoji, V. (2014). The role of socioeconomic factors in fertility of Umuahia Women in

- Abia State, Nigeria: *International Journal of Development and Management Review* 9 (1) 227-247.
- International Labour Organization ILO (2021). ILOSTAT database Data retrieved 5th May, 2023.
- Isiugo-Abanihe U.C (1994) *Nuptiality patterns, sexual activity and fertility in Nigeria*. Calverton, Maryland, Macro International, 1994 Dec 32 p. (DHS Working Papers No. 16).
- Izugbara C, Ezeh A, Ibisomi L, & Mberu BU (2009) Change and Continuity in Reproductive Norms and Behaviour: A Northern Nigeria Study. Nairobi: African Population and Health Research Center.
- Izugbara CO & Ezeh AC. (2010) Women and High Fertility in Islamic Northern Nigeria. *Studies in Family Planning*. 2010;41(3):193-204. 24. Jejeebhoy SJ. Convergence and D.
- James G. (2010) *Socio-cultural Context of Adolescents' Motivation for Marriage and Childbearing in North-Western Nigeria: A Qualitative Approach*, *Current Research Journal of Social Sciences* 2(5): 269-275, 2010
- Kwaghga A.L (2023) Postpartum practices and fertility levels in Benue State, Nigeria. *An unpublished Thesis, Department of Sociology, Federal University of Lafia, Nasarawa State, Nigeria*.
- Kwaghga A.L. (2019). The effects of cultural practices on fertility behaviour in Guma Local Government Area. *An unpublished M.Sc Dissertation, Department of Sociology, Benue State University*.
- Mturi, A. J. (1989) Infant and child mortality and its effects on fertility in Kenya. Unpublished (M.S. thesis), Cairo Demographic Centre.
- National Population Commission (2006): *Population and Housing Census of the Federal Republic of Nigeria, National and State Population and Housing Tables, Priority Tables Volume 1*.
- National Population Commission (2015) Nigeria Education

Data Survey (NEDS) 2015, Abuja, Nigeria.

- National Population Commission (NPC) Nigeria and ICF (1999) Nigeria Demographic Health Survey 1989: Abuja; Nigeria and Rockville, Maryland, USA: NPC&HF.
- National Population Commission (NPC) Nigeria and ICF (2003): Nigeria Demographic Health Survey 1989: Abuja; Nigeria and Rockville, Maryland, USA: NPC&HF.
- National Population Commission (NPC) Nigeria and ICF (2008): Nigeria Demographic Health Survey 1989: Abuja; Nigeria and Rockville, Maryland, USA: NPC&HF.
- National Population Commission (NPC) Nigeria and ICF (2013): Nigeria Demographic Health Survey 1989: Abuja; Nigeria and Rockville, Maryland, USA: NPC&HF.
- National Population Commission (NPC) Nigeria and ICF (2018): Nigeria Demographic Health Survey 1989: Abuja; Nigeria and Rockville, Maryland, USA: NPC&HF.
- National Population Commission (NPC) Nigeria and ICF 1990: Nigeria Demographic Health Survey 1989: Abuja; Nigeria and Rockville, Maryland, USA: NPC&HF.
- Obasanjo, A.B.; Ahinkorah, B.O.; Okyere, J.; Seidu, A. and O.S. Olagunju (2022): A multilevel analysis of prevalence and factors associated with female child marriage in Nigeria using the 2018 Nigeria Demographic and Health Survey data. *BMC Women's Health* volume 22, No. 158.
- Omideyi, A.K. (1983): Age at Marriage and Marital Fertility in Eastern Nigeria. *Genus*, Vol. 39, No. 1/4, pp. 141-154.
- Osazuwa, P. & Ugal, D.B. (2018). A comparative study of fertility preferences of Nigerian female migrants and non-migrants in Benin City, Nigeria. *African Population Studies*, 32(2) **ISSN: 2308-7854**.
- Oyefara J.K (2012) *Age at First Birth and Fertility*

Differentials among Women in Osun State, Nigeria.

European Scientific Journal July edition vol. 8, No.16

Population Reference Bureau (PRB) (2017). Population Data Sheet with a Special Focus on Youth. [Http://www.worldpopulation.org-515/2023..](http://www.worldpopulation.org-515/2023..)

Reed H. E and Mberu B. U (2011) Understanding Subgroup Fertility Differentials in Nigeria US National Library of Medicine.

Sargent C and Cordell D (2003) *Polygamy, disrupted reproduction, and the state: Malian Migrants in Paris, France. Soc Sci Med; 56 (9): 1961-72*

Shapiro, D. & Hinde, A (2017). On the Pace of Fertility Decline in Sub-Saharan Africa: Demographic Research: 37: 1327-38.

Shapiro, D. and Gebreselassie, T. (2008) Fertility Transition in Sub-Saharan Africa: Falling and Stalling, African Population Studies 23(1): 3–23.

Solanke, B.L. (2015): Marriage Age, Fertility Behavior, and Women's Empowerment in Nigeria. *Sage Open*, October-December, 2015: 1 - 9 .
<https://doi.org/10.1177/2158244015617989>

Tsui, Amy (2015). *Contraceptive Preferences and Practices*. Presentation to the Committee on Population Workshop on Recent Trends in Fertility in Sub Saharan Africa, June 15 – 16, National Academy of Sciences, Washington, DC.

Ugal D. B. (2015) Socio-economic Background and Women Empowerment in Cross River State, Nigeria: Implications for Maternal Health, Using Data from the NDHS 2008. *Sociology and Anthropology* 3(11): 591-597, 2015. DOI: 10.13189/sa.2015.031103 ISSN: 2334-6187.

Ugal D.B & Kwaghga A.L (2023) Basic Demography. Kency Printing Press, Makurdi.

Ugal, D. & Ayade, F. (2021). Factors influencing utilization of contraceptives among unmarried students of Nasarawa

State Polytechnic, Lafia. *Fulafia Journal of Social Sciences*. 4(2) 13–32. ISSN: 2579–0641.

- Ugal, D. & Osazuwa, P. (2022). Nigerian international migrants: A qualitative discourse on fertility preferences and outcomes. *African Journal of Reproductive Health*. 26(10) 83–93. DOI: 10.29063/ajrh2022/v26i10.10.
- Ugal, D. B. & Flora Undiyundeye (2015) Prevalence and Pattern of Adolescent Sexual activities in Nigeria: Implications for Unmet need for Contraceptive Use. *International Journal of Management and Applied Science*, 1(5) 12 – 16: ISSN 2394-7926.
- Ugal, D. B. (2018). Has fertility trends changed in Nigeria since 1999? *Fulafia Journal of Sociological Studies* 2(1) 21 – 25. ISSN: 2630–7189.
- Ugal, D.B & Ushie, BA (2013) Contraceptive Use among women in Ogoja and Obudu LGAs of Cross River State, Nigeria. *Africa Population Studies*. 27(2) Pp 129 – 139. ISSN: 2308-7854.
- UN (1999). Levels and Trends of Fertility throughout the World, 1950-1979: New York.
- United Nations (2013) World Population Prospects: The 2012 Revision. Population Division of the Department of Economic and Social Affairs New York.
- United Nations (2018). Department of Economic & Social Affairs, Population Division. World Urbanization Prospects. The 2018 Revision. Online Edition.
- United Nations (2019). Department of Economic & Social Affairs, Population Division. World Population Prospects. The 2019 Revision Special Agreements Online Edition.
- United Nations (2019): World Population Prospects: The 2019 Revision. Worldometer (www. Worldometers.info). Accessed 12/02/2022.
- United Nations (2023). Department of Economic & Social Affairs, Population Division. World Contraception United Nations.
- United Nations (2023). Use 2021 Nigeria Fertility Rate – 1950-

2023. Gewara.
- United Nations (UN) (2019). World Population Prospects 2019: Data Booklet: United Nations Department of Economic Social Affairs, Population Division: New York.
- United Nations Department of Economic and Social Affairs Population Division (2015): World Fertility Patterns 2015-Data Booklet (ST/ESA/SER.A/370).
- Wakeyo, M. M., Kebira, J. Y, Dheresa, M. (2002). Short Birth Interval and its associated factors among multiparous women in Mieso agro-pastoralist district, Eastern Ethiopia: A community-based cross sectional study front glob women's health. 3: 801394.
- WHO (2019). Maternal Mortality: Geneva: WHO.
- Yusuf Ali, A. (1932) *Text, Transliteration and Meanings of the Glorious Qur'an*, Reprinted by Alkali Sharif Bala,

Kurmi Market, Kano - Nigeria.

CITATION FOR PROFESSOR DAVID B. UGAL

Professor David B. Ugal was born into a family of ten (10) to Mr and Mrs Cecilia Ugal on the 17th of May, 1974 in Igwo Village, Obudu Local Government Area of Cross River State. His late father Mr. Canice Ushieye Ugal was one of the pioneer school teachers in Igwo Community and held several positions in contribution to National, State and community development. He died on the 27th June 2013 and his mother Mrs. Cecilia Ukpowhoma Ugal Nee Ugbelishor is a peasant farmer and a petty trader. Professor David Ugal attended Government Primary School, Igwo where he passed as the best graduating pupil with a credit in the First School Leaving Certificate Examination (FSLC).

Thereafter, he proceeded to Government Secondary School, Obudu, HopeWaddell Training Institute, Calabar and Bedia Secondary Commercial School where he obtained the Senior School Certificate (SSC) as one of the best candidates that sat for the examination.

In October, 1995, he was admitted to the University of Calabar, Cross River State to study Sociology. Throughout the entire period of his stay in the school, he distinguished himself as the scholar of the department because he was the best student in all the levels. This culminated at his graduation as the best student in the department and the Faculty of Social Sciences in 1999. He also came out as the second best in the entire University and was given several convocation awards.

After this spectacular performance, Professor Ugal proceeded to the prestigious University of Ibadan where he bagged a Master of Science (MSc) degree in Sociology specializing in Demography/Population Studies. Also, he came out as one of the best students in 2005 and was given automatic admission to

proceed for his Doctor of Philosophy Degree that he obtained at record time of three academic sessions in 2010. Before proceeding to the University of Ibadan Professor Ugal was nominated as an attaché under the National Poverty Eradication Programme (NAPEP) and sent to the Federal College of Education Obudu in 2001 as a Lecturer at the Department of Social Studies. It was during this time that he enrolled for Postgraduate Studies.

At the expiration of the mandatory attachment period of two years, Professor Ugal was given part-time appointment as a Lecturer in same department and later employed as a tenure staff. Professor David Ugal also taught at the Department of Demography and Social Statistics, Joseph Ayo Babalola University, (JABU) Ikeja Arakeji, Osun State, Kwara University, Wukari, Taraba State. He was appointed a Senior Lecturer at the Federal University of Lafia, Nasarawa State on the 18th May, 2015 a day after his birthday in the Department of Sociology.

While working in these different institutions he held different positions. For instance, he was a Departmental and Faculty Examination Office at FCE Obudu, two times Head of Department of Demography and Social Statistics in 2009-2012, JABU. At assumption of duty at the Federal University of Lafia, he was appointed the Faculty of Social Sciences Representative to the University Senate, Faculty of Social Sciences Examination Officer, member of University Accreditation Committee, as well as member Senate Result Vetting Committee. In addition, he was appointed Acting Head, Department of Sociology between 2017–2020.

In 2018, he was promoted Associate Professor and was eventually appointed full chair in 2021.

Professor Ugal has, and is an editor/reviewer to several local and international journals and some of them are as follows

Reviewer: African Journal of Reproductive Health

Reviewer: British Journal of Education, Society and Behavioural Science

Associate Editor: Asian Journal of Agricultural Extension, Economics & Sociology.

Editor-in-Chief: FULafia Journal of Sociological Studies (FULJSSStudies)

Editor-in-Chief – FULafia Journal of Social Sciences. Federal University of Lafia.

He is also a member of several Professional Associations including:

- ✓ International Sociological Association (ISA)
- ✓ International Union for the Scientific Study of Population (IUSSP)
- ✓ African Union of Population Studies (AUPS)
- ✓ Nigerian Sociology and Anthropological Association (NSAA)
- ✓ Population Association of Nigerian (PAN)

Professor Ugal has published over 60 journal articles in local and international journals and has 6 published books to his credit. He has attended and presented papers in many conferences both within and outside the country and presented papers. He has successfully supervised and graduated eight doctoral candidate and over ten Master degree students. Professor Ugal is an statute researcher having won three research grants from the Tertiary Education Trust Fund (TETFUND).

He has been honoured by several clubs and organizations for selfless service to humanity-Catholic Youth Organization of Nigeria (CYON), Citadel Club of Obudu, Sociology Students (NSASA), Award of excellence by Social Studies Students FCE, Obudu. He is former Chairman of the Igwo Development Association (Home Branch) and President Igwo Development

Association (Worldwide), a position he held between 2013 and 2021.

His delights are in carrying out humanitarian activities and donating generously to the needy. He assists in community projects. He has held several positions in the church. He was President, CYON, Corpus Christi Parish, RCM Ipong and President, CYON Ogoja Diocese from 2005-2009 where he left indelible marks in the annals of these organizations.

Professor Ugal is happily married to Juliet Ugal and the marriage is blessed with four children – Canice, David-Bruno, Cecilia-Mavis and Christabel. He is a socialite, ever cheerful, approachable and a likeable person.

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