

ST/ESA/SER.N/46-47

Department of Economic and Social Affairs
Population Division

Population Bulletin
of the United Nations

Prospects for Fertility Decline
in High Fertility Countries

Special Issue Nos. 46/47 2002



United Nations New York, 2007

PROSPECTS FOR FERTILITY DECLINE IN NIGERIA: COMPARATIVE ANALYSIS OF THE 1990 AND 1999 NIGERIA DEMOGRAPHIC AND HEALTH SURVEY DATA

*Muyiwa Oladosu**

A. INTRODUCTION

Nigeria's population is one of the fastest growing in the world and was ranked the tenth largest in 2000. The population is currently estimated between 111 million and 115 million (National Population Commission, 2000; United Nations, 1999). The annual rate of natural increase is estimated to be between 2.6 and 2.9 per cent (National Population Commission, 2000; United Nations, 2001). Nigeria has the growth potential to become the fifth largest country in terms of population size (at some 303 million) by 2050 (United States Bureau of Census, 2001). Although recent statistics suggest signs of a decline in fertility (National Population Commission, 2000; United Nations, 2001), this decline is at best slow if not uncertain (Caldwell, Orbuloye and Caldwell, 1992).

Rapid population growth is of concern to the Government of Nigeria, international organizations and non-governmental organizations. The prosperity of the 1970s and early 1980s gave way to gloom and despair in the 1990s. In response, the Nigerian Government inaugurated the national population policy in 1998 to stem the adverse effects that the high population growth rate was having on national development and welfare (Federal Ministry of Health, 1988). Key points of the policy are to improve standards of living; to prevent premature deaths among high risk groups; to reduce birth rates through voluntary fertility regulation methods; and to promote an even urban-rural population distribution. At its inauguration the population policy was internationally commended as comprehensive and multisectoral, but its implementation has been inconsistent and not well coordinated (National Population Commission, 2000).

Decision makers, researchers and other concerned groups are interested in learning (1) whether fertility will consistently decrease in Nigeria; and (2) what factors are necessary to make the transition to low fertility. Those two topics are the subject of the present paper, which also outlines the theoretical arguments on fertility decline. The paper describes trends in the indicators of fertility since the 1960s. Data from the Nigeria Demographic and Health Survey (NDHS) of 1990 and that of 1999 are used to examine the prospects of a future fertility decline. Three fertility indicators (use of contraception, percentage of women who gave birth during the five years preceding the surveys and desired

*Population Services International, Washington, D.C., United States of America.

between 1990 and 1999, then it can be concluded that the prospects for future fertility decline are bright.

The survey data sets collected information from nationally representative samples of women, using similar sampling designs in the 1990 and 1999 rounds. Questions on the comparability of the two data sets were addressed in the 1999 Survey (National Population Commission, 2000), which examined similarities and inconsistencies in the age and sex distribution, completeness of information on births and deaths and the proximate determinants of fertility. The report concluded that, although the 1999 Survey somewhat underestimated current births, it is comparable with the 1990 Survey for periods in the past.

B. THEORETICAL ARGUMENTS

1. *Sociocultural considerations*

The link between the belief in life after death, or ancestral descent, and fertility is well documented in the literature (Caldwell and Caldwell, 1987). This belief, entrenched in traditional religion, is part of the psyche of many Nigerians. It is unknown to what extent westernization has changed this belief. Disproportional gender relations favouring males are another aspect of the cultural system that is said to promote high fertility in Nigeria. Recently, much attention has been paid to the role that men play in reproduction and family planning. Evidence suggests that men in most societies in Nigeria (and elsewhere in sub-Saharan Africa) are often pronatalists who use their power to ensure their own reproductive goals, to the detriment of women.

2. *Economic considerations*

The framework proposed by Easterlin and Crimmins (1985) is often used to explain fertility levels in developing countries. Unlike other theories on population that draw solely from economics, this framework is strengthened by its combination of the demand concept from economics and the supply concept on population from sociology (Macunovich, 2000). The argument is that declining infant mortality leads to an excess supply of children, thus decreasing the demand for children and motivating fertility regulation. This is relevant in Nigeria because infant mortality and other indicators of socio-economic development have made little progress since the late 1980s. Caldwell's (1982) wealth flow theory of the expected social and economic returns to parents from their investment in children seems close to the current economic realities in Nigeria. The high cost of schooling, dwindling financial support from the Government and increasing unemployment, especially of university graduates, may have created the context for the reversal of the wealth flow (National Research Council, 1993; Makinwa-Adebusoye and Feyisetan, 1994).

Political turmoil and economic crises are said to lead to low aspirations and crisis-led fertility transition (Lesthaeghe, 1989; National Research Council, 1993). In some countries, war has led to famine, nutritional deficiencies, psychological stress and a lack of motivation by the population to reproduce (Lindstrom and Berhanu, 1999). Nigeria's recent political turmoil appears to have led to anxiety and uncertainty about the future; a long tradition of poor resource management has led to increased hardship. The relevance of crisis-led fertility transition in Nigeria was vividly articulated by the National Research Council (1993), which argued that the introduction of the structural adjustment programme (SAP) made Nigerians reconsider the cost of raising children as a component of their cost of living.

4. *Cohort and social change*

The factors affecting social change vary across cohorts (Macunovich, 2000). Each birth cohort has unique features based on the changing context of education, peer socialization, linguistic dynamics and historical experience. Experience may be a combination of political, economic and cultural factors, some of which were presented above. Cohort identity is evident in the Nigerian social organizations traditionally marked by rites of passage and the initiation into adulthood (Lesthaeghe, 1989). The civil war, the economic boom of the 1970s and subsequent bust since the 1980s, the military interregnums and the continued process of westernization may be important factors affecting cohort identity and may have implications for future fertility. The present paper borrows from the cohort and social change approach in examining changes in fertility indicators and their determinants across age groups with the objective of providing insight on future fertility in Nigeria.

C. PAST AND PRESENT DEMOGRAPHIC TRENDS

A review of trends in some indicators of fertility suggests a gradual decline in the last few years. National statistics suggest declines in the total fertility rate, from 6.3 children per woman in the early 1980s to 5.9 in 1991, 5.4 in 1994 and 5.2 in 1999 (National Population Commission, 2000). Using the data from the 1990 Demographic and Health Survey, Makinwa-Adebusoye and Feyisetan (1994) provided evidence that fertility decline started around 1986. The authors examined, among other things, factors influencing women's fertility, contraceptive use and reproductive preferences, concluding that the economic crisis that started in the early 1980s and the postponement of births, mostly by high parity women (those who had four or more children), explained the observed fertility decline. If the observed trends are real, are trends in factors influencing fertility telling the same story?

Trends in the indicators of knowledge and attitudes that influence fertility are examined below. The analysis controls for residence, level of education, religion and work location. The results (table 1) show that the proportion of women with knowledge of any method of contraception and knowledge of

tive use, fertility levels and desire for more children, are presented in tables 2 and 3.

1. *Use of contraception*

The findings in table 2 show a significant positive trend in the use of any method of contraception between 1990 and 1999. Married women of all ages were about twice as likely to use contraceptives in 1999 than in 1990. The effect of age at first marriage on use of contraception is not as expected. Women who delay getting married are expected to have higher levels of contraceptive use, since later marriage—a proximate determinant of fertility (Bongaarts, 1978)—suggests the intention not to have children at early ages. However, the results show that women who first married after 25 years of age are around half as likely to use contraceptives as their counterparts who married before 20 years (among women currently aged 25-29 and 30-34 at the time of the survey). In each age group except 25 to 29 years, urban women are significantly more likely to use a method of contraception than rural women. Education is largely associated with contraceptive use, at least among women aged 25 or over. Women who have some primary education, and especially some secondary level schooling, are more likely to use a method of contraception than those not educated. Moreover, religion appears to remain a strong influence as women who are Roman Catholic or Protestant are generally found more likely to use contraception than those who are Muslim.

Other determinants having a positive effect on the use of contraception are spousal communication and respondent or husband's approval of family planning. Women's employment exercises some influence, at least among younger women, as those under age 30 who work away from home are more likely to use a method of contraception than those not working. The findings of the effect of household material possessions as an indicator of socio-economic status were not consistent; only women in the youngest and oldest age groups (younger than 25, and 35 or older) who had a greater number of material possessions were more likely to use a method of contraception.

2. *Births in the last five years*

After controlling for other factors, there was little difference in women's likelihood of having given birth in the five-year period preceding the 1990 Survey as compared with the 1999 Survey, except for the oldest age group (35 or older), which experienced a significant decline. The effect of age at first marriage on reported recent fertility differed by age group. While younger women (currently aged under 25) who first married at age 20 or later were less likely to have given birth in the last five years as compared with those who married as teens (age 19 or younger), the opposite was true for women in the age groups 30 years and over. This suggests a marital duration effect. Among younger women, those who married early had a longer period of exposure to conception than those who married later. Among older women, those who mar-

...the survey.

The findings in table 2 suggest differences in recent fertility by work employment status, but the differences vary by age group. Older women (35 years or older) who worked, either at home or away, were significantly more likely to have given birth in the last five years; curiously, the reverse was seen for younger women (under 25 years). The role of religion was appreciable as compared with the trend seen for contraceptive use, with Roman Catholic women in two age groups (25-29 and 35 or over) less likely to have had births in the last five years. The effects of knowledge of methods of contraception, husband's approval of family planning and spousal discussion of family planning on recent fertility were generally in the expected direction. However, the degree of the effect varied across age groups.

3. *Desire for children*

The findings reveal that younger married women (under 25 years) in the 1999 Survey were about one and a half times as likely to want the same (or greater) number of children as their spouses, as compared with those in the 1990 Survey; women in the middle of their reproductive years (25-29 and 30-34 years) were about 1.3 times as likely (table 3). This suggests that younger women were more likely to prefer smaller family sizes. Older women who first married between the ages of 20 and 24 were more likely to want the same (or greater) number of children as their husbands, as compared with their counterparts who married in adolescence. Women working away from home were more likely than women not working to have the same desired number of children as their husbands. Compared to women with no more than one material possession, women aged 25 years and above who had more material possessions had a desired family size similar to that of their husbands.

Education, religion, type of marriage, attitudes toward family planning and spousal discussion of family planning all had effects on the likelihood of women wanting the same number of children as their husbands or on husbands wanting fewer, with the effects being significant across age groups. Women in the youngest age group whose husbands approved of family planning were 1.6 times more likely to desire the same number of children as their husbands, as compared with those whose husbands disapproved. However, this trend was reversed for women in the oldest age group.

The findings further reveal that women across all age groups were consistently less than half (0.4 times) as likely to say they did not know their husband's desire for children in 1999 as in 1990. In general, women seem to have moved from a lack of information or interest about their partner's reproductive goals to some knowledge—either perceived (through non-verbal communications) or through discussion—in the later survey period. Knowledge about a partner's reproductive goals may lead to discussion about a potential discrepancy between partners. Discussion may be helpful in terms of contraceptive use (women's use without the husband's consent).

TABLE 2. RELATIVE ODDS FROM THE LOGISTIC REGRESSION MODELS ASSESSING EFFECTS ON USE OF CONTRACEPTION AND RECENT FERTILITY AMONG CURRENTLY MARRIED WOMEN,^a BY AGE GROUP, NIGERIA, 1990 AND 1999 DEMOGRAPHIC AND HEALTH SURVEYS^b

Correlates	Current use of any method of contraception, by age group				Had birth(s) in the last five years, by age group			
	<25	25-29	30-34	35+	<25	25-29	30-34	35+
Survey year								
1990 (r) ^c								
1999	2.1***	1.9***	2.1***	2.5***	1.2	0.8	0.9	0.7**
Age at first marriage								
Less than 20 (r)								
20-24	0.8	0.8	0.8	1.0	0.5***	1.1	1.8***	1.4**
25+	..	0.4**	0.6*	0.8	..	0.3***	1.3	2.0**
Residence								
Rural (r)								
Urban	1.8**	1.2	1.9***	1.5**	0.9	0.8	0.9	0.7**
Level of education								
No education (r)								
Primary	0.7	1.7*	1.3	1.9***	1.0	1.4	1.5*	1.0
Secondary or higher	1.5	3.0***	1.9*	2.7***	0.7*	0.7	0.7	0.9
Religion								
Islam (r)								
Protestantism/others	1.8*	1.6*	1.4	1.4*	1.0	0.9	0.8	1.0
Catholicism	1.8*	2.0**	2.2***	1.9***	0.9	0.5***	0.9	0.8*
Type of marriage								
Polygamous (r)								
Monogamous	1.0	1.0	1.2	1.2	0.9	1.1	1.1	1.1
Location of work								
Not working (r)								
At home	1.0	1.7*	1.2	1.5*	1.6***	0.9	1.0	0.8**
Away	1.9**	1.8**	1.2	1.4	1.7***	1.1	0.9	0.6**
Material possessions								
At most one (r)								
Two or three	1.0	0.9	1.1	1.3*	0.9	1.1	0.9	1.1
Four or higher	1.9*	1.1	1.5	1.6**	1.3	1.2	0.6*	0.8*
Heard FP message on radio ^d								
No (r)								
Yes	1.0	1.2	1.3	1.2	1.0	0.8	1.0	0.9
Knows a modern method								
No (r)								
Yes	..	..	..	..	1.7***	1.2	1.6**	1.6**
Respondent's attitude re FP								
Disapproves (r)								
Approves	1.5	2.1**	1.7*	1.9***	1.3	1.0	1.2	0.8*
Does not know	0.4*	0.7	0.5*	0.8	0.8	1.2	1.3*	1.1
Husband's attitude re FP								
Disapproves (r)								
Approves	3.7***	2.8***	3.6***	4.7***	1.1	1.7***	1.9***	1.3*
Does not know	0.9	2.6*	1.3	1.6	1.1	1.4	1.2	1.2
Discussed FP with husband								
No (r)								
Yes	3.5***	2.2***	2.9***	2.7***	1.2	1.6**	1.2	1.5***

Sources: Nigeria Demographic and Health Survey (1990 and 1999).

^a"Married women" includes those in formal marriages as well as consensual unions with a partner.

^bAnalysis based on combined 1990 and 1999 NDHS data sets.

^c(r)=reference category, *** p<0.001, ** p<0.01 and * p<0.05

^dFP=family planning

TABLE 3. RELATIVE ODDS FROM THE LOGISTIC REGRESSION MODELS ASSESSING EFFECTS ON SPOUSAL AGREEMENT IN DESIRED NUMBER OF CHILDREN AMONG CURRENTLY MARRIED WOMEN,^a BY AGE GROUP, NIGERIA, 1990 AND 1999 DEMOGRAPHIC AND HEALTH SURVEYS^b

Correlates	Wants same number of children as husband/Husband wants fewer, by age group				Does not know husband's desire for children, by age group			
	<25	25-29	30-34	35+	<25	25-29	30-34	35+
Survey year								
1990 (r) ^c								
1999	1.5***	1.3*	1.3*	1.1	0.4***	0.4***	0.4***	0.4**
Age at first marriage								
Less than 20 (r)								
20-24	1.3	1.2	1.6***	1.2*	1.0	1.1	0.9	1.0
25+ .....	..	1.4	1.3	1.3	..	1.2	1.0	1.0
Residence								
Rural (r)								
Urban	1.1	1.0	1.0	1.1	1.1	1.2	0.9	1.1
Level of education								
No education (r)								
Primary	1.3	1.4*	1.1	1.3*	0.9	0.7	1.1	1.0
Secondary or higher	1.7***	1.8***	1.7**	1.6***	0.8	0.5**	0.8	0.6***
Religion								
Islam (r)								
Protestantism/others	1.5***	1.6***	1.5**	1.4**	0.9	0.8	0.6***	0.9
Catholicism	2.1***	1.5*	1.5*	1.6***	0.6***	0.8	0.6**	0.7*
Type of marriage								
Polygamous (r)								
Monogamous	1.3*	1.4***	1.7***	1.6***	1.2	1.1	0.9	1.0
Location of work								
Not working (r)								
At home	1.1	1.3	1.2	1.1	0.8*	0.8	0.8	0.7***
Away	1.3*	1.3	1.1	1.1	0.9	0.8	0.9	0.8*
Material possessions								
At most one (r)								
Two or three	1.1	1.2	1.3	1.2*	0.9	0.9	0.8	1.0
Four or higher	1.0	1.4*	1.1	1.4*	1.3	0.7*	0.8	1.0
Heard FP message on radio ^d								
No (r)								
Yes	1.2	1.3*	1.3	1.3*	0.8**	0.6***	0.8	0.8*
Knows a modern method								
No (r)								
Yes	1.1	1.1	1.1	1.2	0.7***	1.0	1.0	0.7***
Respondent's attitude re FP								
Disapproves (r)								
Approves	1.6***	2.3***	2.3***	2.8***	0.8	0.6***	0.8	0.8*
Does not know	0.5***	0.6***	0.5***	0.6***	3.9***	4.0***	5.3***	4.0***
Husband's attitude re FP								
Disapproves (r)								
Approves	1.5**	0.8	1.0	0.7**	0.7**	0.9	0.7*	0.8
Does not know	1.4	0.9	1.3	1.2	0.9	1.0	0.7	0.9
Discussed FP with husband								
No (r)								
Yes	1.6***	1.9***	1.3*	1.5***	..	..	..	..

Sources: Nigeria Demographic and Health Survey (1990 and 1999).

^a"Married women" includes those in formal marriages as well as consensual unions with a partner.

^bAnalysis based on combined 1990 and 1999 NDHS data sets.

^c(r) = reference category, *** p<0.001, ** p<0.01 and * p<0.05

^dFP = family planning

all ages who did not have any opinion about family planning were about four times more likely not to know their husband's desired family size when compared with those who disapproved of family planning. Women in the former category were likely to have unwanted births and high fertility since they were less likely to have reproductive goals or control over their fertility. Secondary education, work, exposure to family planning messages on the radio and knowledge of modern contraception all had an effect on reducing the likelihood of a woman's having no knowledge of her husband's desire for children, although the effects were not significant at all ages.

E. CONCLUSIONS

The above findings suggest that the prospects for fertility decline in Nigeria are bright. Use of contraceptives among married women increased between 1990 and 1999. Recent fertility, as measured by the proportion of women who had given birth in the five years before the survey, declined somewhat (at least among older women). More women think that they have the same reproductive goals as their husband. These are favourable indicators for future fertility decline. In addition, young women who worked away from home were found to be more likely to use contraception and to share their husband's desire for children. Finally, young women who delayed getting married were found less likely to have had recent births.

REFERENCES

- Bongaarts, John (1978). A framework for analyzing the proximate determinants of fertility. *Population and Development Review* (New York), vol. 4, No. 1.
- Caldwell, J. C. (1982). *Theory of Fertility Decline*. New York: Academic Press.
- Caldwell, J. C., and Pat Caldwell (1987). The cultural context of high fertility in sub-Saharan Africa. *Population and Development Review* (New York), vol. 13, No. 3.
- Caldwell, John C., I. O. Orubuioye and Pat Caldwell (1992). Fertility decline in Africa: A new type of transition? *Population and Development Review* (New York), vol. 8, No. 2.
- Easterlin, R. A., and E. M. Crimmins (1985). *The Fertility Revolution: A Supply-Demand Analysis*. Chicago: University of Chicago Press.
- Federal Ministry of Health (1988). *National Policy on Population for Development, Unity, Progress and Self-reliance*. Lagos: Federal Ministry of Health.
- Lesthaeghe, R. (1989). *Reproduction and Social Organization in Sub-Saharan Africa*. Berkeley, California: University of California Press.
- Lindstrom, P. David, and Betemariam Berhanu (1999). The impact of war, famine, and economic decline on marital fertility in Ethiopia. *Demography*, vol. 36, No. 2.
- Macunovich, J. Diane (2000). Relative cohort size: source of a unifying theory of global fertility transition? *Population and Development Review*, vol. 26, No. 20.
- Makinwa-Adebusoye, K. Paulina, and Bamikale J. Feyisetan (1994). The quantum and tempo of fertility in Nigeria. *DHS Regional Analysis Workshop for Anglophone Africa*. Columbia, Maryland: Macro International, Inc.

- _____, and Carvelton, Maryland: ORC/Macro.
 National Research Council (1993). *Factors Affecting Contraceptive Use in Sub-Saharan*
 Washington, D.C.: National Academy Press.
- United Nations (1999). *World Population Prospects: The 1998 Revision*, vol. I, *Comprehensive*
 Tables, vol. 1. E.99.XIII.9.
- _____. (2001). *World Population Prospects: The 2000 Revision highlights*. Unpublished
 ESA/P/WP.165.
- United States Bureau of the Census (2001). *International Data Base (IDB)*. Washington
 Available from <http://www.census.gov/ipc/www/idbnew.html> (accessed 8 June 2001).

ANNEX

RELATIVE ODDS FROM THE LOGISTIC REGRESSION MODELS ASSESSING EFFECTS ON CONTRACEPTIVE USE, RECENT FERTILITY AND DESIRE FOR CHILDREN AMONG CURRENTLY MARRIED WOMEN,^a ALL AGES COMBINED, NIGERIA, 1990 AND 1999 DEMOGRAPHIC AND HEALTH SURVEYS^b

Correlates	Current use of contraception	Had birth(s) in last five years	Shares family size desire/husband wants fewer	Does not know husband's desire for children
Survey year				
1990 (r)				
1999	2.3***	0.7***	1.3***	0.4***
Age at first marriage				
Less than 20 (r) ^c				
20-24	0.9	1.0	1.3***	1.0
25+	0.8	0.8	1.3*	1.0
Residence				
Rural (r)				
Urban	1.6***	0.8***	1.1	1.1
Level of education				
No education (r)				
Primary	1.3**	1.4***	1.3***	0.9
Secondary or higher	1.7***	1.2***	1.7***	0.7***
Religion				
Islam (r)				
Protestantism/others	1.6***	0.8***	1.5***	0.8***
Catholicism	2.1***	0.7***	1.7***	0.7***
Type of marriage				
Polygamous (r)				
Monogamous	1.0	1.1**	1.5***	1.0
Location of work				
Not working (r)				
At home	1.7***	0.9	1.2*	0.8***
Away	1.9***	0.8***	1.2**	0.8***
Material possessions				
At most one (r)				
Two or three	1.1	1.0	1.2***	0.9*
Four or higher	1.4**	0.8**	1.2*	0.9
Heard FP message on radio ^d				
No (r)				
Yes	1.2*	0.9	1.2***	0.8***
Knows a modern method				
No (r)				
Yes	1.2*	0.9	1.2***	0.8***
Respondent's attitude re FP				
Disapproves (r)				
Approves	1.8***	1.5***	1.1*	0.8***
Does not know	0.7**	1.0	2.2***	0.7***
Husband's attitude re FP				
Disapproves (r)				
Approves	3.7***	1.3***	0.5***	4.1***
Does not know	1.6*	1.2*	0.9	0.8***
Discussed FP with husband				
No (r)				
Yes	2.9***	1.3***	1.2*	0.9
			1.6***	..

Sources: Nigeria Demographic and Health Survey (1990 and 1999).

^a"Married women" includes those in formal marriages as well as consensual unions with a partner.

^bAnalysis based on combined 1990 and 1999 NDHS data sets.

^c(r)=reference category, *** p<0.001, ** p<0.01 and * p<0.05

^dFP=family planning