Fertility Behaviour in a Rural Nigerian Community: Determinants and Implications

Itimitang Wilson Etukudo[1] and Ben Victor Effiong[2*]

[1]*Department of Political Science and Sociology, Western Delta University Oghara, Delta State, P.M.B. 10, Oghara, Nigeria.*
[2]*Department of Sociology and Anthropology, University of Uyo, Uyo, Akwa Ibom State, Nigeria.*

Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Original Research Article

ABSTRACT

This study was carried out in Jesse kingdom in Ethiope West Local Government Area of Delta State, Nigeria, to find out the fertility level in the area, its determinants and the implications for the people of the area. Data used in the study were collected from a representative sample of 1030 women mainly in the age group of 15-19 years. Using the multiple regression, the study examined the changes in fertility level due to variation in such factors as level of education, types of occupation, religion/culture and age at first marriage. The findings indicate high fertility levels for the study area. Early marriage, social values placed on children and child bearing, marriage pattern, low use of contraception, low level of education and labour force participation, infant and child mortality as well as political consideration were found to have influenced the fertility behavior in the study area. The socio-economic implications of high fertility in the study area are discussed. Also, the strategies for addressing the issue of high fertility in the study area are suggested.

_____

Corresponding author: E-mail: vikeben4reality2007@yahoo.com;

1. INTRODUCTION

One of the most serious problems facing many developing countries is the rapid and uncontrollable increase in their population. This is attributed to bearing of many children by women especially in the rural areas because of lack of education and awareness, poverty, marriage at early ages. Consequently, their family sizes increase and population grows rapidly [1]. Although there have been a modest decline in fertility rates over the last decade in most these Countries, the average growth rate during these period was above 2.5 percent. Nigeria is the most populous country in Africa. Presently, she has a population of more than 167 million people with annual growth rate of 3.2 per cent. The Country's total fertility rate (TFR) is 5.5. Additionally, the country has relatively high levels of infant mortality (69 infant deaths per 1,000 live births) and maternal mortality (576 maternal deaths per 100,000 live births) [2,3].

In Nigeria, over the past three decades, numerous studies have been conducted to assess the levels, trends, differentials and determinants of fertility. The conclusions are that Nigeria has been characterized by high fertility rate with marked regional differentials [2], and that these are conditioned by biological, social and economic factors [4].

It should be noted that population growth, social and economic development are irrevocably interconnected and are critical to the achievement of sustainable development in any society. Since the population of the country (Nigeria) is tied to her fertility level, the sustained high levels of fertility as observed for the country and the resultant rapid population growth constitute a serious threat to the socio-economic wellbeing and living standard of the citizens. Some of the deleterious social and economic consequences include among many others poor income and investment, poverty, hunger, malnutrition, high rates of infant and maternal morbidity and mortality, unemployment, poor health and quality of education, inequality among the various strata in the society and poor living conditions [5,6,7].

Fertility rate is still high in Nigeria. Indeed, one would have expected that government's population policy would address the population problem squarely, but unfortunately the population situation remains alarming. Robust and rigorous regime of research has to be conducted to first of all provide information on the exact cause and effect relationship or association of variables with fertility [8] especially in the rural areas of Nigeria where fertility level is still very high.

In many rural areas of Nigeria, much is not known about the causal factors associated with fertility (number of children a woman has). A careful look at some of the studies indicates that their authors use official data to show the nature and trend of fertility of their study areas. Methodologically, because of the unreliable nature of official data, findings emanating from these studies always face the problem of validity. In this paper, sophisticated and statistically sound methods are used to identify and analyse the potential factors associated with fertility behaviour in the study area. Understanding these factors will help policy makers to keep the rate low in order to improve the social, economic and the health conditions of the people.

1.1 Theoretical Consideration

The economic theory of fertility [9,10,11,12] is among the best known and most controversial theories of fertility in developing countries. By this theory, households are viewed as rational entities maximizing their utility or well-being subject to various constraints. Again, children are viewed as similar to household consumer goods, and parents desire the optimal combination of children and other goods. The number of surviving children couples would have thus depends on certain constraint as time and income, the relative preference for children compared with other goods (or tastes for children) and the relative cost of children verses other goods [13,14,15].

Because the economic theory of fertility has assumptions that are urban based, and western industrialized countries do not conform to Africa reality, [16] put forth the "wealth – flow theory". [16] argues that the inter-generational transfer of wealth, which he assumes is usually from children to parents, is a major determinant of high fertility. This theory addresses the rural nature of most African households and argues that in a predominantly subsistence agricultural (rural) economies such as prevail in most sub-Saharan African countries, large families

constitute family assets [14]. However, some studies have shown that wealth flow have little effect on childbearing. This is because the costs of taking care of children by parents are beginning to outweigh material benefits to an extent of influencing or reducing desired fertility [17].

Noting other aspects of the Africa household, [18] have suggested the "transactions framework" which places the locus of reproductive decision-making at the individual rather than at the household level. The framework explicitly incorporates the concepts of spousal separateness. It is not an uncommon phenomenon in African societies with polygamous household, for husbands and wives to belong to the same household but to operate separate incomes and have distinct economic responsibilities and interests with regards to child bearing and issues of resource allocation in general and the relative cost of children versus other goods [13,14,15].

1.2 The Study Area

The study was undertaken in Jesse, a community situated about 5 kilometers from Oghara, the Headquarters of Ethiope West Local Government Area, Delta State, Nigeria. It has a population of over 70,000 people spread across the 35 villages that make up the community. The kingdom shares boundaries with Ethiope Local Government Area in the North, Sapele local Government Area in the South, in the East by Okpe local government Area and in the West by Oriomhon Local government Area of Edo State. The people of the area are mainly Urhobos and majority of them are polygamous and subsistent farmers. The area lacks modern healthcare facilities and majority of the people in the area patronize informal healthcare providers.

2. MATERIALS AND METHODS

The design adopted in this study was the survey design because it allowed the researcher to use a representative sample of the study population to make inference about the whole population. Data for this study were mainly collected from women who were in the reproductive age group (15-49 years). The simple random sampling technique was used in selecting the villages and households from which the respondents were drawn and interviewed. Out of the 35 villages in the kingdom, 10 were randomly selected, and from each, 103 respondents were selected.

These ten villages provided the 1030 respondents used in this study. The equality in terms of sample size from these villages was because of the homogeneous nature of the population of the study area and the fact that the villages were almost equal in size and population.

Ten trained field assistants who were indigenes of Jesse community conducted the interview. A structured interview schedule was used in collecting information from the respondents. The interview schedule contained questions on the socio - demographic characteristics, and fertility history of the respondents (women) interviewed. Simple percentages and mean were used in analyzing the data.

In order to explain the background information affecting decision making as regards fertility behavior of the study women, a multiple regression analysis was used to ascertain the determinants of fertility behaviour (the number of children the women have). [8,15,19,20,21,22, 23,24] have identified the factors that influence fertility behaviour. These include occupation, age at first marriage, education, religion and culture, family size preference, age of respondents, utilization of family planning services, access to family planning information and number of children living among others.

Rising from the above, the factors considered in the study were identified and a multiple regression equation formed thus:

$$Y_1 = a + b_1x_1 + b_2x_2 + b_3x_3 \ldots b_nx_n + e$$

Where

X_1 = Income; X_2 = Level of education; X_3 = Access to family planning; X_4 = Types of occupation; X_5 = Economic status; X_6 = Religion/culture; X_7 = Number of children living; X_8 = Age at first marriage; X_9 = Age of respondent, X_{10} = Use of family planning information.

In this analysis, the dependent variable is the fertility level while the independent variables are the various factors. The variables were carefully selected taking into consideration, the peculiarity of the study area as well as the background information as factors that are likely to affect the fertility behavior (as measured in terms of number of children they have), in this community where most people are 'slaves' to culture.

2.1 Fertility Trends in Nigeria

A critical review of fertility trends in Nigeria shows that fertility has been relatively high in Nigeria for several years. The 1965/66 National Rural Demographic Sample Survey gave a crude birth rate of 50 per 1,000 persons and an average completed family size of 5.6 children. Estimates of total fertility rate (TFR) for the years 1965, 1970, 1971-73 and 1975 were 6.6, 6.5, 7.3 and 7.0 respectively [4]. The high fertility rates reported for these years may be explained partly by the dramatic rise in revenue from oil export which led to a sharp increase in food import as well as increase in workers' salaries which subsequently encouraged people to have many children [25].

A comparison of the outcome of the 2007 Sentinel Survey with past Surveys and Censuses (see Table 1) shows a consistent decline in total fertility rate from 6.3 per woman in the 1981/82 National Fertility Survey (NFS) to 5.6 in the 2007 Sentinel Survey. Between the 1981/1982 National Fertility Survey (NFS) and 1990 National Demographic Health Survey (NDHS), total fertility rate declined by 0.3. It also dropped to 5.9 in the1991 census, 5.7 in the 2003 National Demographic Health Survey (NDHS) which is the same as that reported in the 2008 Nigeria Demographic Health Survey (NDHS), 5.6 in the 2007 Sentinel Survey, and 5.5 as reported in [26] Nigeria Demographic Health Survey (NDHS). The observed decline from the eighties may be attributed to the introduction of population control issues and socio-economic policies by policy makers which engendered people to have few children.

Fertility decline is observed to occur in varying degrees among the sub-population groups. Table 2 shows a description of the total fertility rates for women age 15-49 years in the 1981/82 Nigeria Fertility Survey (NFS), the 1990 Nigeria Demographic and Health Survey (NDHS), the 2007 and 2008 Nigeria Demographic Health Surveys (NDHS), the 2008 Sentinel Survey and the 2013 Nigeria Demographic Health Survey (NDHS).

When examined by region, it is noted that the decline is clearly evident only in the southern regions (southeast, south-south and southwest) (see Table 2). That the decline is more evident in the South than the North may be due to the fact that the pace of changes in the factors that elicit the decline or people's reactions to their impacts

is more favorable to fertility decline in the former than in the latter [4,25].

According to [27,28] the outset of fertility decline coincided with the period of economic downturn in Nigeria characterized by high unemployment rates, difficulties in meeting educational aspirations for ones' children as a result of an increase in the share of education costs that are borne by parents, devaluation of the currency which led to rising costs of essential goods, and partial withdrawal of subsidies from petroleum products, health and other social services. They concluded that economic crises at the personal and societal levels must have contributed to the decision to postpone or stop child bearing. In his study of the Yoruba in Southwest Nigeria, [29] also alludes to the economic difficulties as the main factor underlying the decline in fertility.

Table 1. Trends in fertility rates from 1981-2013

Survey	Year	Rates (TFR)
NFS	1981/82	6.3
NDHS	1990	6.0
Census	1991	5.9
NDHS	2003	5.7
Sentinel survey	2008	5.6
NDHS	2008	5.7
NDHS	2013	5.5

Sources: (1) Nigeria Demographic and Health Survey (1990), Lagos Federal Office of Statistics/Macro International Maryland, U.S.A, (2) Sentinel Survey of the National Population Programme: Baseline Report, 2007 National Population Commission, Abuja, Nigeria, 2009, (3) Nigeria Demographic Health Survey (2013)

3. RESULTS

Table 3 shows that more than one-half of the respondents were aged 15-29, and one-third was aged 30-39 while almost 10 per cent were aged 40-49 years. Among the respondents, 32.2 per cent reported having no formal education, 36 per cent of the respondents have primary education and 24.per cent and 7.6 per cent of the respondents attended secondary and tertiary institutions respectively. The table also reveals that almost 92.4 per cent of the respondents were petty traders, farmers and permanent housewives while the remaining 7.6 per cent were engaged in paid jobs outside their homes. More than two-thirds of the respondents were Christians, and the remainder belongs to African Traditional Religion. With regard to the number of

Table 2. Total fertility rates, percentage of women age 15-49 currently pregnant and mean number of children born to women age 15-49 from 1981-2013

Background characteristics	Total fertility rate NFS 1981/82	Means number of children born to women age 15-49 NFS 1981/82	Total fertility rate NDHS 1990	Means number of children born to women age 15-49 NDHS 1990	Total fertility rate sentinel survey 2007	Percentage of women age 15-49 curently pregnant sentinel survey 2007	Total Fertility Rate NDHS 2008	Percentage of women age 15-49 currently pregnant NDHS 2008	Mean number of children born to women age 150-49 NDHS 2008	Total fertility rate NDHS 2013	Percentage of women age 15-49 currently pregnant NDHS 2013	Mean number of children born to women age 15-49 NDHS 2013
Residence												
Urban	5.8	4.8	5.0	6.0	5.1	8.6	4.7	9.0	5.7	4.7	9.5	5.6
Rural	6.0	5.6	6.3	6.6	5.8	10.2	6.3	11.3	6.9	6.2	14.0	6.8
Zone												
North Central	-	-	-	-	5.1	10.9	5.4	10.4	6.4	5.3	11.7	5.8
North East	6.0	4.3	6.5	5.8	6.7	11.1	7.2	12.6	7.5	6.3	13.9	7.1
North West	6.4	4.5	6.6	6.2	8.0	10.5	7.3	13.5	7.7	6.7	16.1	7.6
South East	5.7	6.5	5.6	7.0	4.4	8.3	4.8	8.8	5.8	4.7	7.9	5.7
South South	-	-	-	-	3.6	8.2	4.7	8.5	6.2	4.3	8.6	5.4
South West	6.3	5.3	5.5	6.8	4.1	7.9	4.5	8.2	5.0	4.6	9.0	4.8

Sources: (1) 1981/82 Nigeria Fertility Survey (NFS), Federal Office of Statistics, Lagos.
(2) Nigeria Demographic and Health Survey (1990), Lagos. Federal Office of Statistics/Macro International Maryland, U.S.A.
(3) Sentinel Survey of the National Population Programme: Baseline Report, 2007 National Population Commission, Abuja, Nigeria, 2009.
(4) Nigeria Demographic Health Survey (2013)

living children, 5.3 per cent of the respondents claimed to be childless; almost 24 per cent had between one and three children; 20.3 per cent had between four and five children while about one-half of the respondents had six children and above (see Table 3).

3.1 Fertility Levels

This section presents information on the measures of current and completed fertility for the women focused in the study.

3.2 Current Fertility Levels

These were measured by the age-specific fertility rate (ASFRs) and total fertility rate (TFR). These two measures are useful in understanding the age pattern of fertility of the women interviewed.

Table 4 presents the reported age-specific fertility rates (ASFRs) of the women aged 15-49. It shows that the ASFRs tend to rise with age from 150 for age group 15-19, and peaking at 278 for age group 25-29. The age-specific fertility rates were calculated by identifying live births that occurred among the women in the last 12 months period preceding the study. As shown in the table, ASFRs were high for women aged 25-29, 30-34 and 35-39 (278, 255, and 245 respectively). These age groups have much higher ASFR than the age group, 20-24 (163, that is near to the ASFR of the age group, 15-19). The ASFR was considerably low for women 40-49 who were approaching the end of their reproductive periods. These indicate that the most fertile period for women interviewed was age 25-39. The Table (Table 4) also shows a TFR of 7.0 as computed from the age-specific fertility rates. This serves as an indicator of average completed fertility for the women who began childbearing in the three decades preceding the study [30].

3.3 Children Ever Born (CEB)

Information on the number of children reflected the accumulative of births over a woman's entire reproductive period (parity) and as fertility indicator; it is useful for observing how average family size varies across age groups. On the other hand, the mean number of children ever born gives information on completed fertility for women age 15-49 years. It shows the expected pattern of fertility of women if the same birth behavior persists over a period of time.

Table 5 shows both the total number of children ever born and the mean number of children ever born for women in all age groups. As observed in the table, the mean number of children ever born is 4.4. As one would expect the mean number of children ever born for the different age groups increases by age and peaked in the age group 45-49. A careful study of Table 5 shows that almost 12 per cent of the women aged 15-19 years have given birth to at least two children which indicates early child bearing in the study area. The mean number of children of 7.4 for women aged 45-49 years is similar to the total fertility rate of 7.0; thus, it can be said that fertility is stable overtime in the study area.

Table 3. Socio-demographic characteristics of the respondents

Background characteristics	No	Percentage
Age		
15-19	120	11.2
20-24	276	26.8
25-29	261	20.0
30-34	212	20.6
35-39	102	9.9
40-44	64	6.2
45-49	40	3.9
Total	1030	100.0
Education		
None	333	32.3
Primary	371	36.0
Secondary	248	24.1
Tertiary	78	7.6
Total	1030	100.0
Occupation		
Teaching	20	2.0
White collar job	22	2.1
Business	36	3.5
Home keeping	202	19.6
Petty trading	158	15.3
Farming	592	57.9
Total	1030	100.0
Religion		
Protestant	784	76.1
Catholic	84	8.2
Africa traditional religion	162	15.7
Total	1030	100.0
No living children		
None	55	5.3
1	71	6.9
2-3	182	17.7
4-5	209	20.3
6-7	501	48.6
8+	12	1.2
Total	**1030**	**100.0**

Source: Field work, 2013

Table 4. Age-specific fertility rates (ASFRs) of the respondents

Age group	No. of women	Total no. of births	Average no. of births	Age-specific fertility rates per 1000	Relative age-specific fertility rates
15-19	120	18	0.15	150	11
20-24	276	45	0.163	163	12
25-29	216	60	0.278	278	21
30-34	212	54	0.255	255	19
35-39	102	25	0.245	245	18
40-44	64	9	0.141	141	10
45-49	40	5	0.125	125	9
Total	1030	216	1.357	1357	100.0
TFR			7.0		

Source: Field work, 2013

Table 5. Mean number of children ever born (CEB) by age group

Age group	No. of women	Total no. of CEB	Mean no. of CEB
15-19	120	279	2.3
20-24	276	689	2.5
25-29	216	987	4.6
30-34	212	1203	5.7
35-39	102	673	6.6
40-44	64	452	7.1
45-49	40	297	7.4
Total	**1030**	**4580**	**4.4**

Source: Field work, 2013

4. FACTORS AFFECTING FERTILITY BEHAVIOUR OF THE STUDY POPULATION

To explain possible reasons for the high fertility level among the study population, eight variables were identified as noted earlier. In the multiple regression analysis, the dependent variable is the fertility level, while the independent variables are the various factors. However, in all the cases, four variables were found to be significant at the specified tolerance level of 0.05 entry into the model. These are: X_2 (level of education), X_4 (types of occupation), X_6 (religion/ culture), and X_8 (age at first marriage).

The multiple regressions in Table 6 suggest several findings. First, X_2 (level of education) appeared to be the best predictor of factors affecting fertility behaviour in our study area with a correlation of 0.75 and r^2 of 0.5645. This indicates that about 56.4 of its variance were associated with the variation in fertility behaviour of the women studied. The level of education related positively to the number of children parents have; as education offers better understanding among the people. It was observed that more educated women had better access to information on sexuality, sexual behaviour, responsible parenthood and the importance of child spacing.

Types of occupation denoted by X_4 also appeared to be very important with a joint correlation of 0.89 and r^2 of 0.7708. This suggests that about 77.08% of the joint variance in fertility behaviour among the women studied were explained by the two variables. About 20.63 per cent additional explanation was offered by X_4, (types of occupation) with a correlation of co-efficient of 0.14. It should be noted that as women are employed in occupations that are not compatible with bearing and rearing of many children, fertility gets lower. In societies where women want to earn income and be economically independent, the propensity to give birth to many children is drastically reduce.

Religion and culture (X_6) was also positively related to the fertility levels in the study of area with a joint correlation of 0.94 and r^2 of 0.8213. This indicates that about 2.13% variance of the three variables were jointly associated with difference in the fertility levels of the women studied. Religion and culture however added a more 5% to the two earlier variables that is level of education of the people as well as types of education. Religion is a very strong "pull factor" that affects fertility behaviour of rural women. The level of individual's family involvement in their religion determines the number of children they have.

Table 6. Factors affecting fertility behaviour of the study population

List of variables	Parameter estimates	Standard error	R	R^2	Percentage of contribution
Intercept	9.4211	3.432			
X_2	0.4637	0.0815	0.75	0.5645	56.45
X_4	0.6421	0.1403	0.89	0.7708	77.08
X_6	1.0561	0.5121	0.94	0.8213	82.13
X_8	1.0731	0.6324	0.97	0.8741	87.41

Age at first marriage (X_8) was also found to be positively related to the fertility levels in the study area or among the women studied with a joint correlation of 0.97 and r^2 of 0.8741. This indicates that about 87.41 per cent variance of the four variables was jointly associated with difference in fertility levels among women studied. Age at first marriage added a very small percentage (3%) to the three earlier variables: level of education, types of occupation and religion/culture. This indicates that most of the women who entered into marriage at early age had more children. Another factor may be the inhibiting effect of age at marriage on fertility. Early marriage exposes women to longer childbearing and consequently more births.

The four variables accounted for about 87.4 1 per cent of the variance in fertility levels among the study population, while the remaining five variables are not significant in determining differences in the fertility behaviour of the women studies in Jesse Kingdom. Their co-efficient were too low to offer any meaningful explanation of their varied pattern. These four variables (factors) were closely related to what should be called the culture of the people. Our regression equation could thus be written as:

$$Y = 9.421 + 0.4639x_2 + 0.6421x_4 + 1.0561x_6 + 1.0731x_8$$
$$(R_2 = 0.87, SE = 3.43)$$

This means that the more educated a woman is, the less the number of children she will have. On the other hand a woman who is engaged in a paid job outside her home is most likely to give birth to few children. Also the more a woman is associated with religion and culture, the more the possibility of giving birth to many children. Finally a woman who marries at younger age tends to give birth to many children.

5. DISCUSSION

The findings of this study reveal that education, occupation, religion and culture, and age at first marriage are the determinants of fertility behaviour in the study area. Concerning the relationship between education and fertility, [8,31,32,33] aver that education is widely held to be a key determinant of fertility behaviour. First, female schooling may lower fertility by increasing the opportunity cost of child bearing and rearing among education women [34,35]. Secondly, female schooling may lower fertility through improvements in child health and reduced rates of child mortality [12,36,37]. Again, female education may affect fertility through a more effective use of contraception [1,38,39] or by increasing female autonomy and bargaining power in fertility decisions [40,41]. The [42] indicates that women with more education usually have smaller, healthier families, and have their first sexual experience later. In many less developed countries, women with no schooling have about twice as many children as do women with ten or more years of schooling' [15]. In the same vein, [43] have noted that women in the poorest households and with lower education and lower income have the highest fertility. [44] noted that fertility rates among women in Southern Nigeria tend to decline with the level of education attained. Women without any formal education had an average fertility rate of 6.0 children; those with higher education (at least 15years education) had 3.9 children [44].

Although the relationship between women's work and fertility is complex, it is however, indisputable that occupations that require higher education or those that are incompatible with childbearing and child care are likely to influence women's fertility behaviour [15]; another factor is the female working hours [45]. [46] argued that as labour force participation increases, fertility gets lower. This is because women are interested in carriers rather than childbearing and rearing. An economic inference is that opportunity to earn higher wages and be economically self-sufficient reduces the propensity to produce children [47].

Studies [5,7,23,40,48,49,50,51] identify the joy of having children in the family, the fear of

premature death, the culture of polygamy, the desire for male child for lineage continuity and economic benefit of children, as being among the factors sustaining high fertility in the rural areas of development countries. Other factors are early marriage, the low level of women's education and contraception [6,52,53,54].

Fertility behaviour is more likely to be predicted on family status and considerations for the preservation of lineage and respect for ancestors. According to traditional beliefs embedded in African Traditional Religion, ancestors are reincarnated through additional births. In the same belief, Caldwell and Caldwell (1987) cited in [15] submit that the persistence of high fertility in Sub-Saharan Africa lies largely in a religious belief system and an accompanying social structure that have accorded both spiritual and economic rewards to high marital fertility. However, high fertility in Nigeria is attributed to the African traditional and religious values as well as the Christian and Islamic doctrines which do not accept the use of contraceptives as family planning mechanism [44].

It is indisputable fact that early marriage exposes women to longer childbearing and consequently in the number of births. Age at marriage is determined by socio-economic variables such as educational demands, career, law, suitable suitors and economic background [8,55,56]. The fertility inhibiting effect of age at marriage is significant in African Countries [8,14]. According to [57] African Countries are characterized by low age at marriage and high marital fertility. In general, marriage at the younger ages, tend to result in higher fertility.

6. CONCLUSION

The study reveals that fertility level is high in the study area. Level of education, occupation, religion and culture; and age at first marriage are factors affecting fertility behavior in the study area. High fertility in the study area may have serious implications. At the family level, parents with many children may not afford for their children good education, adequate healthcare services and clothes. As a result of high fertility, mothers and children can be exposed to pregnancy-related deaths and disabilities especially pregnancies after fourth birth. High fertility can also jeopardize the food resources and nutritional wellbeing of the people in the study area. Large family means increased number of mouths to be fed, and for an area where people experience high level of poverty coupled with the soaring food prices, this means that members (especially children) in large families feeding from one pot are likely to be undernourished because of the poor quality of the food they eat. This leads to malnutrition, infections and retarded mental and physiological growth of the children.

Another implication of high fertility in the study area is that couples with large families are unable to provide for their families basic home amenities and material possessions necessary for a comfortable life. This is because they spend a greater percentage of their income in providing food for members of their families. It was observed that in the study area, the quality of houses is very poor, almost 80 per cent of the people depend on open wells as their sources of water and that the traditional pit toilet system is common in the area. In the study area, there is high level of poverty among the people.

It was observed that, many youths engage themselves in undignified jobs and women do hard, daily paid jobs exclusively meant for men. Finally, high fertility leads to expansion of pupils and increased in the number of teachers in primary schools in the study area. These place serious burden on the local government council, since it is her responsibility to pay teachers' salaries and maintain facilities in these schools. It was observed that most of the primary schools in the area lack basic facilities that can guarantee quantitative and qualitative output. In view of the above; it is strongly recommended that local and religious leaders, the mass media should be extensively used to highlight the benefits of small family size and family planning in the rural areas. A strong education programme for women especially the adolescent girls about their healthcare, sexual behavior, reproductive lives, hygiene, age of marriage and small family norm should be enhanced in our rural areas. Family planning should be made accessible in the rural areas. Young girls should be encouraged to aspire to achieve a higher level of education. This is necessary because education as a measure of socio-economic status affects the demand and supply of children, changes women's tastes against children through the breakdown of pronatalistic attitudes, increases employment and labor forces participation by women which encourages family planning, utilization and consequently fertility reduction especially when the jobs are not compatible with mothering.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Asaduzzaman M, Khan HR. Identifying potential factors of childbearing in Bangladesh. Asian Social Science. 2009; 5(3):147-154.
2. National Population Commission. Nigeria Demographic and Health Survey, Abuja, Nigeria; 2009.
3. National Population Commission. Nigeria Demographic and Health Survey, Abuja, Nigeria; 2006.
4. Feyisetan BJ, Bankole A. Fertility transition in Nigeria: Trends and prospect. Journal of Population and Social Studies. 2002; 11(1):506-527.
5. Enoh COE. Population growth and quality of life in Nigeria. Journal of Social Science and Public Policy. 2000;3(1):98-105.
6. Okarafor CN. Large families: Causes and consequences and cure. Owerri, Nigeria: Spring Field Publishers; 2001.
7. Obasi OO. Factors influencing the desire for many children in selected rural communities in Imo State of Nigeria. International Journal of Social and Policy Issues. 2011;8(1):99-18.
8. Ushie MA Olumodeji EO Ahah F Agba A Ogaboh M. Socio- cultural and economic determinants of fertility differential n rural and urban Cross River State, Nigeria. Journal of Geography and Regional Planning. 2011;4(7):383-39.
9. Becker GS. An economic analysis of fertility. In: Demographic economic change countries. Universities-National Bureau Conference Series 11. Princeton: Princeton University Press; I960.
10. Easterlin RA. Towards a socio economic theory of fertility: A survey of recent research on economic factors in American fertility. In: Behrman SJ, et al. (eds). Fertility and family and family planning: a world view. Ann Arbor: University of Michigan Press; 1969.
11. Easterlin RA. An economic framework for fertility analysis. Studies in Family Planning. 1975;6(3):54-63.
12. Schultz TP. Women's changing participation in labour force: A world Perspective; 1994.
13. Isiugo- Abanihe UC. Fertility differentials in Nigeria: An examination of demand, supply and control. Journal of the Nigerian Anthropological and Sociological Association. 1999;2(3):38-60.
14. Makinwa-Adebusoye P. Socio-cultural factors affecting fertility in sub- Saharan Africa. Population Division. Department of Economic and Social Affairs, United Nations Secretariat. New York; 2001. Available:www.un.org/esa/population/publi cations/prospectsdecline/makinwa.pdf
15. Okon MI. Analysis of urban- rural fertility differentials in Akwa Ibom State. Ph.D. Dissertation, University of Uyo, Nigeria; 2007.
16. Caldwell JC. The economic rationality of high fertility: An investigation illustrated with Nigeria survey data. Population and Development Review. 1977;31(1):5-7.
17. Makinwa-Adebusoye PK. Changes in the costs and benefits of children to their parents in the onset of fertility transition in Sub-Saharan Africa. Therese Locoh and Veronique Hertrich eds., IUSSP, Ordina Editions. 1994;175-192.
18. Fapohunda ER Todaro MP. Family structure and demand for children in Southern Nigeria. Population and Development Review. 1988;14(4):571-594.
19. Makinwa-Adebusoye PK Ebigbola J. Socio-cultural factors affecting fertility and family planning in Nigeria. In Federal Republic of Nigeria: implementing the national policy on population. Sectoral Report. Vol. II Annexes, World Bank, Western Africa Department, Population and Human Resources Operations Division. Annex B. 1992;41-86.
20. Bernhardt EA. Fertility and occupation. European Sociological Review. 1993;9(1): 25-42
21. Tawiah EO. Factors affecting contraceptive use in Ghana. Journal of Biosocial Science. 1997;29:141-149.
22. Odimegwu CO. Family planning attitudes and use in Nigeria: A factor analysis. International Family Planning Perspective. 1999;5(2):86-91.
23. Etukudo IW. Family levels and child sex preferences in Nigeria: A recent observation from Akwa Ibom State of South-Eastern Nigeria. International Journal of Social Sciences. 2000;2(1):103-118.
24. Asaduzzaman M, Ullah MS. Desire for more children in identifying potential

factors of childbearing in Bangladesh: Evidence from BDHS 1999-2000. Social Science Review, The Dhaka University Studies. 2003;Part-D:149-159.

25. Bankole A, Bamisaya OA. The impact of petroleum production on the political economy of food in Nigeria since independence. AMAN. 1985;4(2):125-132.

26. National Population Commission. Nigeria demographic and health survey, Abuja, Nigeria; 2013.

27. Makinwa – Adebusoye PK, Feyisetan BJ. The quantum and tempo of fertility in Nigeria. In Macro International Inc. Fertility trends and determinants in six African Countries. DHS Regional Analysis Workshop for Anglophone Africa. 1994; 41-86.

28. Makinwa-Adebusoye PK, Feyisetan BJ. The quantum and tempo of fertility in Nigeria. In fertility trends and determinants in six African Countries, DHS Regional Analysis Workshop for Anglophone Africa, Macro International Inc. 1994;41-86.

29. Orubuloye IO. Fertility transition in Southwest Nigeria in the era of structural adjustment. Paper presented at The IUSSP Seminar on Reproductive change in Sub-Saharan Africa, Nairobi, Kenya, November, $2^{nd} – 4^{th}$; 1988.

30. National Population Commission. Sentinel Survey: Baseline report, 2007, Abuja, Nigeria; 2009.

31. Kraudal Q. A search for agricultural- level effects of education on fertility, using data from Zimbabwe in Domogr. Res. 2000;3:3. Available:www.demographic-research.Org

32. Barber JS, Pearce LD, Chaudhury I, Gurung S. Voluntary associations and fertility limited. Sociology. 2002;80(4): 1369-1401.

33. Leon A. The effect of education on fertility: evidence from compulsory schooling laws. University of Pittburgh Press; 2004.

34. Becker GA. Treatise on the family. Massachusetts: Harvard University Press; 1981.

35. Schultz TP. Economics of population reading. Addison Wesley, MA; 1981.

36. Schultz TW. New approaches to fertility. Journal of Political Economy, LXXXI, March-April; 1973.

37. Lam D Duryea S. Effects of schooling on fertility labour supply and investments in children, with evidence from Brazil. Journal of Human Resources. 1999;34(1):160-192.

38. Rosenzweig MR, Schultz TP. The demand and supply of births and its life-cycle consequences, American Economic Review. 1985;75(5):992-1015.

39. Rosenzweig MR, Schultz TP. Schooling, information and nonmarket productivity: contraceptive use and its effectiveness. International Economic Review. 1989;30 (2):457-477.

40. Mustapha CD Mohammed IZ. Male knowledge, attitudes, and family planning practices in Northern Nigeria. African Journal of Reproductive Health. 2006;10 (3):54-65.

41. Mason KO. The status of women: conceptual and methodological debates in demographic studies, sociological forum. 1986;1:284-300.

42. Population Reference Bureau. Abandoning female genital cutting: prevalence, attitudes, and efforts to end the practice. Population Reference Bureau, Washington, D. C; 2001.

43. Tinker A, Finn K, Epp JE. Improving women's health: issues and interventions. The World Bank, Washington, D.C; 2000.

44. Akpotu NE. Education as correlate of fertility among families in Southern Nigeria. The African Symposium: Online Journal of African Educational Research Network. 2005;5(2):5-15.

45. Susanne F, Sz Olah L. Female employment, working hours and childbearing intentions in Sweden in the early 2000s: A capability Perspective. Working Paper 2010. Stockholm Research Report in Demography. University of Stockholm; 2010.

46. Brewster KL Rindfuss RR. Fertility and women's employment in industrialization nations. Annual Review of Sociology. 2000;26:27-296.

47. National Population Commission. 1991 population census of the federal Republic of Nigeria- Analytical Report at the National level. Abuja, Nigeria; 1998.

48. Oyemade A, Ogunmuyiwa TA. Socio-cultural factors and fertility in a rural Nigerian community. Studies in Family Planning. 1981;12(3):109-111.

49. Ihejiamaizu EC, Okoro J, Obafemi FN. Summary of the survey on the cost and value of children in Cross River and Akwa Ibom States. Niser: Population Research fund Sponsored Project; 1997.

50. Etukudo IW. Family size preference and family planning practice in rural

communities. International Journal of Social Sciences. 1999;1(1):103-118.

51. Ihejiamaizu EC. High fertility: Implications for family health and socio-economic development of Cross River State of Nigeria. International Journal of Social Science and Public Policy. 2000;3(1):91-97.

52. National Research Council. Factors affecting contraceptive use in sub-Saharan Africa National Academic press, Washington D. C; 1993.

53. African Development Bank. African Development Report; 1992.

54. McCrary J, Royer H. The effect of female education on fertility and infant health: Evidence from school entry policies using exact date of birth. Working Paper 12329; 2006.
Available:http://www.nber.org/papers/w12329

55. Davis K, Blake J. Social structure and fertility: An analytical framework. Economic Development and Cultural Change. 1956; 4:211-235.

56. Bongaarts J. A framework for analyzing the proximate determinants of fertility. Population and Development Review. 1978;4(1):105-132.

57. Kpedekpo GMK. Essentials of demographic analysis for Africa. London: Heinemann; 1982.

_____