FACTORS INFLUENCING FERTILITY IN AN URBAN AREA: A CASE STUDY OF BENIN METROPOLIS

Dr. Monday Ohi Asikhia

Abstract

This paper examines the factors influencing human fertility in Benin City. The purpose of the study is to investigate the nature of population growth in Benin metropolis, the relationship between the various determinants of fertility and how they impact on the total population. It is hypothesized that fertility is not a function of age, education, age at marriage, length of breast feeding, and child spacing; that there is no significant relationship between fertility and total years of schooling. The results of these hypotheses show positive relationships between fertility and age, education, age at marriage, child spacing interval, and length of breast feeding. Given that the targets of the Nigeria population policy are to achieve a reduction in the population growth rate by 2015, and increase the availability of modern contraceptives among others, it was found that this can only be achieved if the determinants of fertility are closely monitored.

One of the major problems in the developing countries of the world is their rapidly growing population which undermines development in these countries. Rapid population growth is a product of high fertility. Fertility is the actual number of live births that occurs in a population. It is measured as the frequency of births in a population or the number of births per woman or couple during the child-bearing period of the woman, (Barclay, 1958). There are many factors that influence the fertility rate of any society. Among them are income, education, culture, religion, race and ethnicity, occupation, urbanization and sex preference. Other factors as pointed out by Davis and Blake (1956) are age at entry into sexual union, permanent celibacy, time between unions, voluntary abstinence, involuntary abstinence and coital frequency. Breastfeeding, contraception, abortion, etc. also play significant roles. All these factors tend to regulate the fertility of a population either positively or negatively.

This study has become imperative because efforts made towards development have not yielded the much needed results because of high fertility rates in developing countries of the world. The National Population Commission (NPC) (2008) reported that the total fertility rate in Nigeria is 5.7. Many believe that unless the transition to lower levels of fertility in sub-Saharan Africa is speeded up, Africa's development effort cannot succeed. Although in the developing countries, fertility has declined about one-third since the 1960s but more than 120 million women in these countries however not using contraceptives. Fertility remains high in sub-Saharan Africa but has declined by 26% in Botswana, 22% in Kenya and 18% in Zimbabwe. Such declines could signal the start of a sustained transition to lower fertility (Population Reports, 1992). Unless this transition towards lower level of fertility is sustained in sub-Saharan Africa, rapid population growth will jeopardize Africa's development efforts and its prospects for full integration into the world economy (The Guardian, 2008).

According to the 2006 provincial census figures, Nigeria's population of 140,003, 542 comprises 71,709,859 males (51.22%) and 68.293,683 females (48.78%). Benin City, our study area has a total of 1,085,676 persons. The figures also show that the national population growth rate is 3.2 percent. Based on this growth, Nigeria's population is expected to double at least in the next 25 years. With a real gross domestic product of $58.4 billion and a population of 140,003,542, Nigeria is one of the four largest economies in Africa and by far, the most populous country on the continent. Despite its rich human and resource endowment, Nigeria's GDP per capita is only about $752 and poverty is widespread, with more than 54% of the population living on less than one dollar a day.

Statement of the Research Problem

The socio-economic status of any society cannot be enhanced if the fertility rate is not controlled. This is because; any effort made towards development cannot be realized because fertility is one of the major determinants of population growth which has severe implications for development. The research questions that need to be answered in this research work are:

1. What are the various determinants of fertility?
2. What is the relationship between the determinants and population growth?

Objectives of the Study

The objectives of this paper are to:

1. investigate the determinants of fertility.
2. examine the relationship among the various determinants of fertility and how they impact on the total population and
3. make appropriate recommendations for the control of fertility.

Methodology of Study

A total of 500 questionnaires were administered in the 3 Local Government Areas of Benin Metropolis. The data generated were subjected to statistical analysis such as regression, correlation analysis etc.

Study Area

Benin City is the capital of Edo State in Nigeria. The city is geographically located within Latitudes $6^{o}14'$N and $6^{o}21'$N of the equator and Longitudes $5^{o}35'$E and $5^{o}44'$E of the Greenwich Meridian. It covers a landmass of about 321.7km2 in the built up area. It stands on a piece of slightly elevated flatland of about 80 meters above sea level.

The history of Benin dates back to the 12^{th} century when it was the headquarters of the Benin Kingdom, the seat of Portugese foreign mission, the centre of slave trade and focus of international commerce (Sada, 1976). From a population of 53,753 in 1952, it rose to 100,694 in 1963, 249,437 in 1972, 314, 219 in 1976, 425,000 in 1981, 780, 976 in 1991, and 1,085676 in 2006 (National Population Commission, 2006).

This population trend shows that there is a rapid population growth over time in the study area. The population is not evenly distributed within the area. The lowest densities are to be found in the west and southwest where there are large forest reserves, while the greatest concentration is in the eastern borders of the region.

Conceptual Framework

Fertility is the most crucial demographic variable in population dynamics. It is defined as the actual number of live births that occurs in a population. We may define live birth as one in which the child breaths soon after delivery. Birthrate is a measure of the frequency of live-births to a woman. Fertility is invariably measured with particular reference to women because they actually produce the babies.

Fertility is composed of two parts, biological and social. The biological component refers to the capacity to reproduce which is obviously a necessary condition for parenthood. The physical ability or physiological capacity to produce children is usually called fecundity. A fecund person can produce children; an infecund (sterile) person cannot. Fertility describes reproductive performance that is the actual birth of children rather than the mere capacity to do so. Fecundity for most people varies according to age. Among women, it tends to increase from menarche (the onset of menstruation which usually occurs in the early teens), peaks in the twenties and then declines to menopause (the end of menstruation) [Onokerhoraye, 1993]. Male fecundity increases from puberty to young adulthood, and then generally declines but men are generally fecund to a much older age than are women. Although most people are fecund, the decision to give birth by fecund persons and the number of children born is largely related to the social environment of the people concerned.

The Malthusian Theory of Population Growth

Malthus theory of population growth can be broken down into three major parts.

1. Causes of population growth,
2. Consequences of population growth, and
3. Avoiding the consequences of population growth (Weeks, 1978).

The crux of Malthus argument is that population tends to grow more rapidly than does food supply. Malthus's only acceptable means of preventing a birth was to exercise what he called moral restraint which implied delaying marriage until a man feels capable to support a viable family.

Demographic Transition Theory

The demographic transition theory describes the population growth of the world or more correctly, European demographic trend in the last few centuries in terms of its components. This theory is known as having three main stages as follows:

1. A period of high fertility and high mortality
2 A stage of declining mortality and high or medium fertility.
3. A final stage of low fertility and low mortality.

Population growth has slowed in North African countries like Egypt and Tunisia. On the average, women in sub-Saharan Africa have more children than women elsewhere. Globally the average woman had 2.6 children, while in sub-Saharan Africa, she had 5.3 children (which is down from 6.7 children in 1950), the world's highest. Worldwide, 62 per cent of married women of child bearing age use contraceptives, but in Africa, the figure is about 28 per cent. Sub-Saharan Africa also has the world's most youthful population and would stay this way for decades. By 2050, the African continent is expected to have 349 million youths, or 29 per cent of the world's total, a sharp rise from the nine per cent of the world's youth in 1950 (The Guardian, 2009).

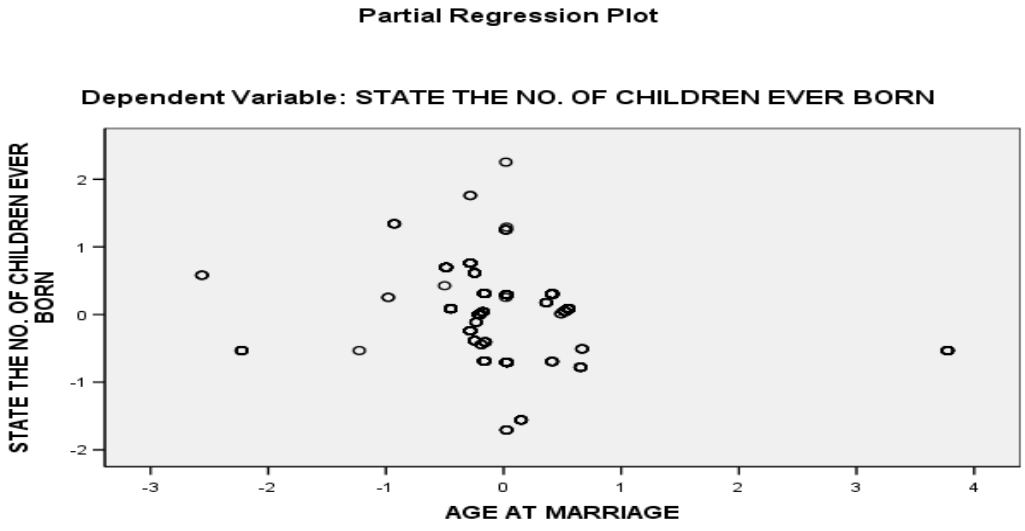
The Presentation of Data and Analysis

Determinants of Fertility

The determinants of fertility are those factors or elements that influence the fertility level of any society either positively or negatively. They can be socio-economic or environmental factors. Among them are education, religion, income, race and ethnicity, culture, sex preferences, age at entry into sexual union, coital frequency, breast feeding, sterilization, abortion, family planning etc.

Age at Marriage and Number of Children Ever Born

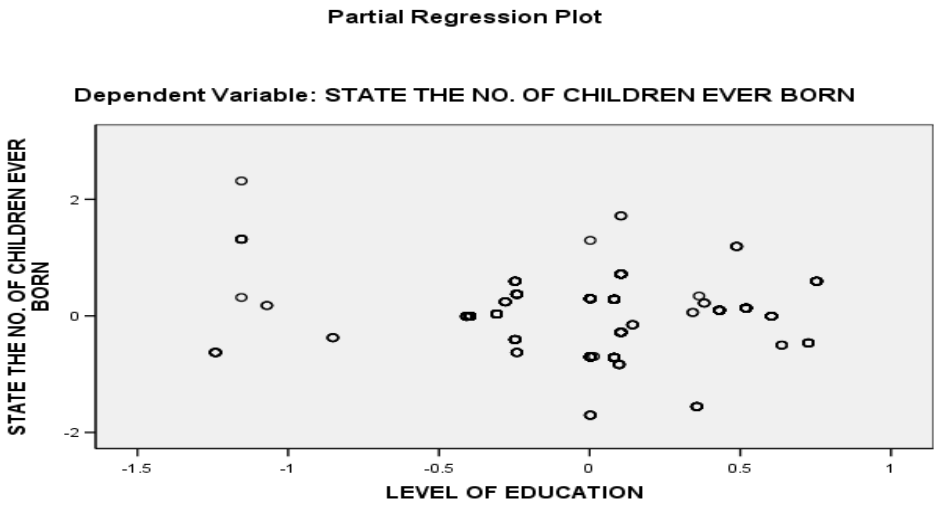
Fig. 1: Age at Marriage and Number of Children Ever Born



The partial regression plot in Figure 1 shows that there is a relationship between age at marriage and the number of children ever born. It shows the tendency for fertility to increase due to early marriage and hence, for total population to increase as a result of this. This is because 50.2% of our respondents married at less than 15 years of age followed by 44.8% that married between 15 – 24 years. Also 42.6% of the respondent had between 3-4 children.

Level of Education and Number of Children Ever Born

Fig. 2: Level of Education and Number of Children Ever Born



Educational attainment is perhaps the most important characteristic of household members. Many phenomena such as reproductive behaviour, age at marriage, use of contraceptives, and children's health are related to the education of household members. Education therefore has a strong impact on fertility. Our data show that the higher the level of education, the lower the fertility rate. Low level education is not likely to have a significant impact on fertility reduction. The general expectation is that as educational attainment increases, fertility rate declines as shown in Fig. 2.

Length of Breast Feeding, Child Spacing Interval and Number of children Ever Born

Fig. 3: The Relationship between Child Spacing Interval and Number of Children Ever Born

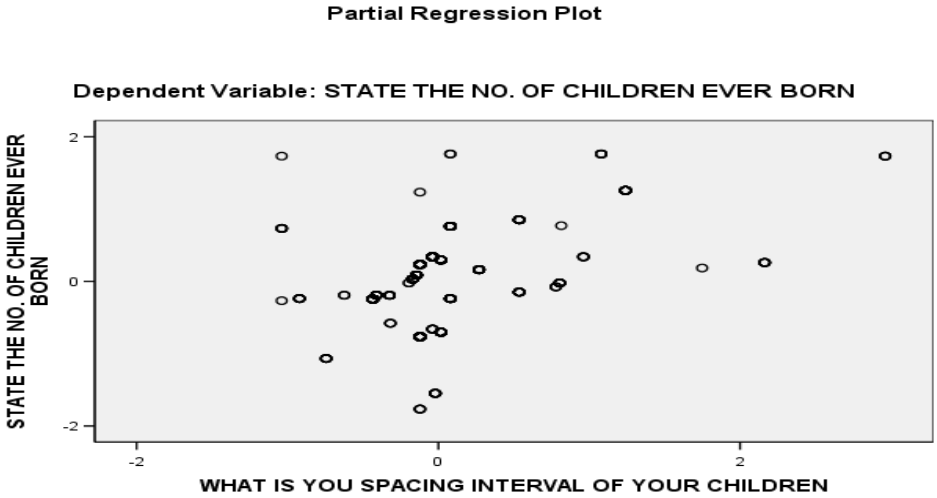
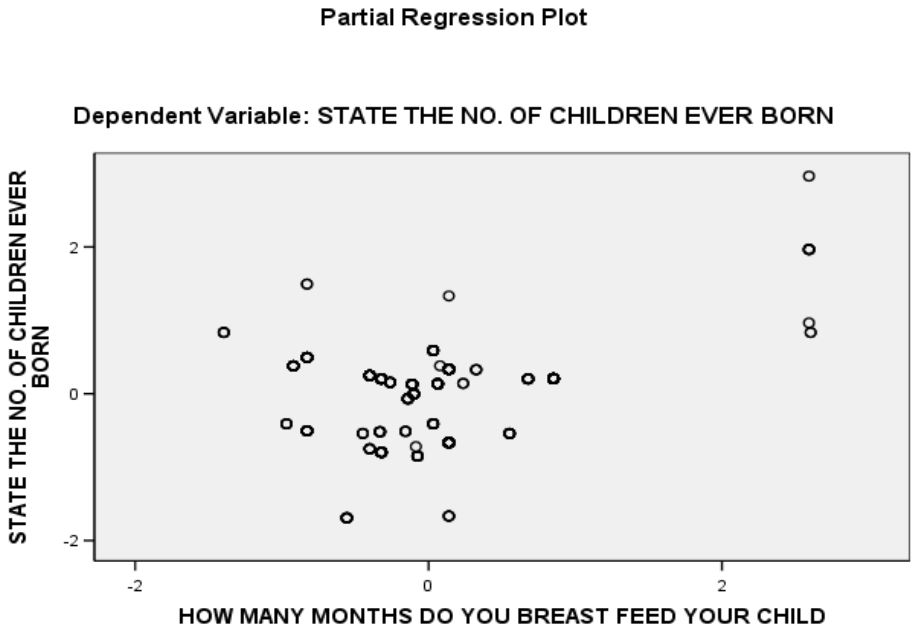


Fig. 4: The Relationship between Length of Breast Feeding Number of Children Ever Born



The data show that the longer the length of breast feeding and child spacing interval, the lower the fertility rate. Prolonged breast feeding is one of the traditional practices that serve as a means of contraception and this tends to reduce the fertility rate in the study area.

Family Planning, Knowledge and Use of Contraceptive

Family planning and knowledge of contraceptive methods are key variables of fertility regulation. Acquiring knowledge about fertility control is an important step towards gaining access to and then using a suitable contraceptive method in a timely and effective manner. A large proportion of the respondents believe in family planning. They also have knowledge of contraceptives but about 71.6% do not use such contraceptives. The obvious implication of this is high fertility rate.

Table 1: Use of Contraceptives

Do You Use Contraception?

Response	Frequency	Percent
Yes	129	25.8
No	358	71.6
No response	13	2.6
Total	500	100.0

Source: Field Survey.

Test of Hypothesis

1. Ho: fertility is not a function of income, education, age at marriage, age, length of breast feeding and child spacing interval.

H1: fertility is a function of income, education, age at marriage, age, length of breast feeding and child spacing interval.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.957(a)	.915	.915	.630

a Predictors: (Constant), child spacing interval, level of education, level of income, age at marriage, length of breast feeding.

Anova(B)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2120.032	5	424.006	1069.937	.000(a)
	Residual	195.768	494	.396		
	Total	2315.800	499			

a. Predictors: (Constant), child spacing interval, level of education, level of income, age at marriage, length of breast feeding.
b. dependent variable: Number of children ever born

In this ANOVA result, the significant value comparing the groups is <0.5, we therefore, reject the null hypothesis and accept the alternative hypothesis that fertility is a function of such determinants as age, income, education, age at marriage, length of breast feeding and child spacing interval.

2. Ho: There is no significant relationship between fertility rate and total years of schooling
Hi: There is a significant relationship between fertility rate and total years of schooling

Correlation

		State the no. of children ever born	Total years of schooling
State the no. of children ever born	Pearson correlation	1	.897(**)
	sig. (2-tailed)		.000
	N	500	500
Total years of schooling	Pearson correlation	.897(**)	1
	Sig. (2-tailed)	.000	
	N	500	500

** Correlation is significant at the 0.01 level (2-tailed).
In testing this hypothesis, our result (0.897) shows that there is a high positive correlation between fertility and total years of schooling. We therefore reject the null hypothesis and accept the alternative.

Findings

1. This study showed that fertility has a positive relationship with the level of education, age, age at marriage, length of breast feeding and child spacing interval. All these factors combine to affect and regulate fertility level.
2. There is also a significant relationship between fertility and total years of schooling, i.e., the higher the total years of schooling, the lower the fertility rate.

Conclusion

To achieve sustainable development especially in developing countries where population growth is increasing, there is the need to control fertility. One of the ways of controlling fertility is by controlling the determinants. This study has established some of these determinants as age, age at marriage, length of breastfeeding, child spacing interval, level of education and income.

The study has show also that fertility is high in the study area and it could pose serious strains on economic development. It is recommended that public education on the effect of fertility on development be encouraged through the mass media and appropriate health officials.

Given that the targets of the Nigeria population policy are to achieve a reduction in the population growth rate by 2015 and increase the availability of modern contraceptives among others, it was found that this can only be achieved if the determinants of fertility are closely monitored.

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