Socio Economic Determinants of Fertility in Delta State of Nigeria (B. A. Ugbonoh and Escha O.E.)

SOCIO ECONOMIC DETERMINANTS OF FERTILITY IN DELTA STATE OF NIGERIA
A CASE STUDY OF OWA-ABBI TOWN
By
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ABSTRACT

Unprecedented population growth is widely believed to be a major impediment to contemporary efforts to alleviate the poverty of billions of people in third world countries, Nigeria inclusive. However, the population ethics literature identifies three critical gaps and these include: the effectiveness of family planning programs, the socio-economic determinants of fertility and the inter-personal or community determinants of fertility. The socio-economic determinants of fertility in OWA-Abibi town of Delta State of Nigeria, is the focus of this paper.

Socioeconomic studies such as this, may be critical in developing effective population policies because they identify elements of people’s lives such as education, work, income, that appear to exercise important influences on child bearing decisions and behaviors. The data collected was analyzed using the multiple regression statistical technique to measure the relationship between fertility and the socio-economic and demographic determinants of fertility in the study area.

Key word: Fertility - Nigeria, Socio-Economic determinant

INTRODUCTION

Fertility indicates the product or output of production, rather than the ability to have children. Accordingly fertility refers to livebirths only. However, demographically observed fertility or infertility is the result of a well-defined number of both biological and behavioural factors, which serve to mediate the influence of culture, society, economic conditions living standards and other similar background determinants. Bourgaults (1976) showed that in any population the actual level of fertility achieved by a woman is influenced by seven intermediate variables, or proximate determinants; marriage, contraception, induced abortion, lactational infecundability, fecundability, spontaneous intrauterine mortality and sterility. These variables together constitute a complete set of proximate determinants through which socio-economic and cultural factors affect fertility (Bourgault and Potter 1983).
The proximate determinants of fertility are the factors through which and only through which, the social and economic environment can influence individual procreation. Together these factors constrain fertility and explain why women do not have the maximum possible number of children, which would be about 35 if they reproduced continuously from about the age of 18, to about the age of 45, having a birth every nine months.

In addition, socioeconomic studies may be crucial in developing effective population policies because they identify elements of peoples' lives such as education, work, income, that not only appear to exercise important influences on childbearing decisions and behavior, but which can at least theoretically be opened by public policies of national governments. (Beissinger, 1964) Deriving from the above, Blaise (1965) offers evidence that female employment outside the home often leads to a desire for small families and hence that such employment offers a promising policy vehicle for encouraging fertility reductions in third world countries such as Nigeria. In addition, Cochrane (1979), focusing on the relationship between education and fertility particularly in third world countries, concludes that policies directed towards increasing educational levels in developing countries would probably lead to fertility declines in a variety of circumstances. It has been observed that policies to redistribute income and wealth also provide promising vehicles to major fertility reductions.

Furthermore, the community in which the individual lives also plays a dominant role in fertility and childbearing decisions. It has been noted that the reproductive decisions and behaviors of individuals are, to an important degree molded by powerful pressures emanating from extended family members and other members of the immediate community in which individuals live. With few opportunities for individual economic advance and security, the extended family encourages frequent childbearing, partly by portraying and in some instances by virtually requiring a sharing of children that diffuses the burden and responsibilities of childcare. Pronatalist norms also are reinforced through positive and negative sanctions that take many forms including teasing, scolding and derision. It is against this background that the paper examines the socioeconomic determinants of fertility of Owa-Abbi town in Delta State of Nigeria.

THE STUDY AREA

Owa-Abbi town in Delta State of Nigeria is the study area of the paper Owa-Abbi lies between latitude 5°55'S N and 5°52'S N and longitude 6°8' E and 6°11'E. Owa-Abbi is bounded in the North by Umukwa, in the South by Obomho, in the East by Ebesti and in the West by Obiannbe (Figure 1).

There are two major roads that run parallel to each other; these roads are the old Sapele/Agbor Road and the New Sapele/Agbor Road. The distance between these roads stretches from about 400 meters. The expanding settlement in the study area are growing Southward. On this part of the town, there is a great expanse of land, which the people use for various agricultural practices, these are also modern buildings.
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individual
women do not
at 35 if they
having a
young effective
as education,
child-bearing
public policies
Blake (1965)
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- the vehicle for
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- fertility
- towards
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- members of
- opportunities for
- ages frequent
- sharing
- sexist norms
- forms including
- or examines the
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METHODOLOGY

The data for the study was obtained from two major sources: via primary and secondary sources. The primary source includes the administration of 900 questionnaires in Onew-Abbii town based on the constraint of time and cost. The stratified random sampling technique was used where the town was divided into ten (10) zones based on existing quarters. Questionnaires were then administered in each zone. The questionnaires covered both the demographic and socio-economic determinants of fertility such as age, age-at-marriage, education, income, employment, religion, number of children born, spacing of births, infant mortality and the use of contraception to mention but a few. The secondary data sources included data from textbooks, and journals. Trained female field-assistants were used in the administration of the questionnaire in the study area.

The data was analyzed with the Multiple Regression Statistical Technique based on the formula:

\[ Y = a + b_1 x_1 + b_2 x_2 \]

Where \( Y \) = the dependent variable measured as the number of children ever born (CEB).

\( x_1 \) = the independent variables measured as the demographic and socio-economic determinants of fertility.

The dependent and independent variables are processed below:

- \( Y \) = Children Ever Born (CEB)
- \( X_1 \) = Age of respondents
- \( X_2 \) = Age-at-marriage
- \( X_3 \) = Marital status (married/unmarried)
- \( X_4 \) = Occupation (formal/informal)
- \( X_5 \) = Religion (Traditional/Islam/Christianity)
- \( X_6 \) = Education (Primary, Secondary, Polytechnic, University)
- \( X_7 \) = Types of marriage (monogamy/Polygamy)
- \( X_8 \) = Number of dead children (infant mortality)
- \( X_9 \) = Average income
- \( X_10 \) = Use of contraception
- \( X_11 \) = Child spacing in months
DISCUSSION

The mean values for the selected variables and their standard deviations are presented in Table 1.

Table 1. Mean and Standard Deviation Values for Variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>MEAN</th>
<th>STANDARD DEVIATION</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>3.5467</td>
<td>3.6660</td>
<td>300</td>
</tr>
<tr>
<td>X1</td>
<td>30.1467</td>
<td>10.2946</td>
<td>300</td>
</tr>
<tr>
<td>X2</td>
<td>14.9923</td>
<td>10.9324</td>
<td>300</td>
</tr>
<tr>
<td>X3</td>
<td>70.090</td>
<td>45.950</td>
<td>300</td>
</tr>
<tr>
<td>X4</td>
<td>2.3933</td>
<td>1.2822</td>
<td>300</td>
</tr>
<tr>
<td>X5</td>
<td>2.6933</td>
<td>1.5310</td>
<td>300</td>
</tr>
<tr>
<td>X6</td>
<td>2.0900</td>
<td>1.3416</td>
<td>300</td>
</tr>
<tr>
<td>X7</td>
<td>82.67</td>
<td>6.361</td>
<td>300</td>
</tr>
<tr>
<td>X8</td>
<td>51.07</td>
<td>1.1837</td>
<td>300</td>
</tr>
<tr>
<td>X9</td>
<td>1.7033</td>
<td>1.2955</td>
<td>300</td>
</tr>
<tr>
<td>X10</td>
<td>92.67</td>
<td>3.198</td>
<td>300</td>
</tr>
<tr>
<td>X11</td>
<td>1.3406</td>
<td>1.4600</td>
<td>300</td>
</tr>
</tbody>
</table>

Source: [Referee 2013]

The mean number of children ever born in the study area is 3.5 while the average age of the respondents is 30.1 years. However, the mean age-at-marriage, which is an important variable affecting fertility performance, is 14.9 years. The low age-at-marriage also explains the rather high fertility of 3.5, while child spacing is 1.34 years. It has been observed that the birth interval is an important determinant of fertility in Nigeria (Adewuyi and Isugo-Abanihe, 1990).

The relationship between the dependent variable, which is the mean number of Children Ever Born (CEB), and the independent variables such as the demographic and socio-economic determinants of fertility, is measured with the multiple regression analysis. Again, it has been observed in the literature that an assessment of the possible effects of age-at-marriage on fertility, encounters complications arising from the influence of other variables such as education, ethnicity, work status, etc., all of which are interconnected. In order to isolate the net effect of each of the interconnected variables upon fertility, regression is adopted.

The correlation coefficients between the dependent and independent variables are presented in Table 2 below.
Table 2 Correlation Coefficients for the Dependent and Independent Variables.

<table>
<thead>
<tr>
<th></th>
<th>Y</th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
<th>X7</th>
<th>X8</th>
<th>X9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1.00</td>
<td>0.53</td>
<td>0.44</td>
<td>0.63</td>
<td>0.72</td>
<td>0.37</td>
<td>-0.47</td>
<td>0.69</td>
<td>0.56</td>
</tr>
<tr>
<td>X1</td>
<td>-0.52</td>
<td>1.00</td>
<td>0.64</td>
<td>0.53</td>
<td>0.79</td>
<td>0.87</td>
<td>0.37</td>
<td>-0.49</td>
<td>0.67</td>
<td>0.57</td>
</tr>
<tr>
<td>X2</td>
<td>-0.42</td>
<td>0.64</td>
<td>1.00</td>
<td>0.69</td>
<td>0.77</td>
<td>0.34</td>
<td>0.03</td>
<td>-0.16</td>
<td>0.13</td>
<td>0.74</td>
</tr>
<tr>
<td>X3</td>
<td>0.43</td>
<td>0.56</td>
<td>0.74</td>
<td>1.00</td>
<td>0.94</td>
<td>0.33</td>
<td>0.03</td>
<td>-0.16</td>
<td>0.13</td>
<td>0.74</td>
</tr>
<tr>
<td>X4</td>
<td>-0.36</td>
<td>-0.46</td>
<td>-0.57</td>
<td>-0.44</td>
<td>1.00</td>
<td>0.94</td>
<td>0.33</td>
<td>0.03</td>
<td>-0.16</td>
<td>0.13</td>
</tr>
<tr>
<td>X5</td>
<td>-0.37</td>
<td>-0.23</td>
<td>-0.32</td>
<td>-0.22</td>
<td>0.22</td>
<td>1.00</td>
<td>0.94</td>
<td>0.33</td>
<td>0.03</td>
<td>-0.16</td>
</tr>
<tr>
<td>X6</td>
<td>-0.46</td>
<td>-0.33</td>
<td>-0.45</td>
<td>-0.32</td>
<td>0.22</td>
<td>0.22</td>
<td>1.00</td>
<td>0.94</td>
<td>0.33</td>
<td>0.03</td>
</tr>
<tr>
<td>X7</td>
<td>0.35</td>
<td>0.29</td>
<td>0.36</td>
<td>0.22</td>
<td>0.22</td>
<td>0.22</td>
<td>0.22</td>
<td>1.00</td>
<td>0.94</td>
<td>0.33</td>
</tr>
<tr>
<td>X8</td>
<td>0.56</td>
<td>0.45</td>
<td>0.55</td>
<td>0.45</td>
<td>0.55</td>
<td>0.45</td>
<td>0.55</td>
<td>0.45</td>
<td>1.00</td>
<td>0.94</td>
</tr>
<tr>
<td>X9</td>
<td>0.47</td>
<td>0.36</td>
<td>0.47</td>
<td>0.36</td>
<td>0.47</td>
<td>0.36</td>
<td>0.47</td>
<td>0.36</td>
<td>0.47</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Source: Fieldwork, 2003

\[ X_1 \] - Age of Respondents

Has a high positive correlation of 0.752 with the dependent variable of fertility. It has been observed that fertility generally tends to rise with increasing ages of women. Thus older women in the study area, tend to have higher fertility than their younger counterparts, since they have stayed longer in marriage.

In addition, age is one of the most important variables characterizing individual participants in the reproductive process and this is included in some form in almost all studies of fertility. At both the individual and societal levels, age is closely related to the proximate variables and plays an important role in fertility outcomes due to its association with menarche, marriage, widowhood, divorce and frequency of menstruation. Age is also related to social and economic variables, which may affect fertility such as income or dependence on children.

\[ X_5 \] Age-at-marriage/Duration of Marriage

Age at marriage/duration of marriage has a low positive correlation of 0.442 with fertility. The age-at-marriage is an important determinant of fertility at the individual level. The strong association between age-at-marriage and aggregate fertility measures, which has been supported by empirical research, suggests that age at marriage can be used as a policy tool to influence fertility. Most countries have legislated a minimum age at marriage, but in the developing countries like Nigeria, these laws are often not enforced. For example, several Sub-Saharan African Countries, which are currently formulating National policies, are including age-at-marriage as an important policy instrument. Recommendations for raising the age-at-marriage are being considered both to assist in reducing fertility and to help achieve other social and economic objectives (Furcolg and Degriff 1991).
variables:

\[ X_1 \quad X_2 \]

\[ 1 \quad 275 \quad 274 \]
\[ 2 \quad 203 \quad 421 \]
\[ 3 \quad 117 \quad 559 \]
\[ 4 \quad -208 \quad 582 \]
\[ 5 \quad -101 \quad 628 \]
\[ 6 \quad 341 \quad 282 \]
\[ 7 \quad -61 \quad 521 \]
\[ 8 \quad 195 \quad 369 \]
\[ 9 \quad -238 \quad 265 \]
\[ 10 \quad 270 \quad 572 \]
\[ 11 \quad 160 \quad 344 \]
\[ 12 \quad 244 \quad 1056 \]

Marital Status:

Has a high positive correlation of .662 with the study area. Thus, as more women go into marriage in the study area, so also will the fertility level FF one-Abbi town be increasing? Marital status is intended to represent exposure to sexual intercourse, Frequency of sexual intercourse, and contraceptive use.

In general, late age at marriage was associated with lower overall fertility. (Parsons and Degraff 1991). It has been observed that marital status is often used to define who is included in the sample for analysis of fertility with women who have never married or in some cases that are not currently married being excluded.

Occupation:

Has a low positive correlation of .372 with fertility. Increasing the participation of women in the labour force has been strongly advocated in the population and development literature and in policy as a means of reducing fertility and promoting socio-economic development. Potential causal linkages between work and fertility include the increased opportunity cost of women, time upon entering the labour force; the incompatibility of child-care and work; exposure to smaller family norms and different attitudes towards women’s roles, greater access to information particularly concerning family planning, delay in marriage and rejection in breast-feeding. However, empirical literature concerning the relationship between female labour force participation and fertility is not conclusive. In industrialized countries, a negative relationship is generally observed. In the developing world, results seem to vary greatly across countries and there appears to be little firm ground for generalization.

Religion:

Has a negative correlation with fertility. It correlation coefficient is -.337

Education:

Has a negative correlation of -.467. Thus the level of education of the women in the study area increases, their fertility level will decline.

Female educational attainment has received a great deal of attention in fertility research due to the relatively strong evidence of its importance and due to the feasibility of affecting education through government policy and action. However, the results of empirical research have fairly consistently indicated a negative relationship between education, level and fertility, but the strength and form of the relationship vary widely.

For example, fertility declines, with higher levels of education. This phenomenon is often attributed to a reduction of breastfeeding and post-partum abstinence with some education.

Education is an area in which government policy can have substantial influence. Improving education, both in terms of quality and quality is almost universally recognized as being important to social and economic development.

Types of Marriage:

Basically two types of marriage are engaged in by women in the study area. These are either polygyny or monogamy. Most undereducated families are polygynous.
while their educated counterparts are monogamous. However, fertility in the study area seems to increase with increasing number of marriages either polygamous or monogamous with a correlation coefficient of 0.603.

$X_7$ Number of Dead Children/Infant Mortality

Increasing infant mortality tends to influence the increase in the fertility level of women in Owo-Abibi. This is based on the need to replace dead infants. Infant and child mortality are hypothesized to affect fertility through biological and behavioral mechanisms. The actual or anticipated death of children may motivate parents to achieve higher fertility in order to offset these real or potential losses. Thus, the death of an infant may also have the important biological effect of shortening the interval to the subsequent birth by reducing the mother's lactation. Empirical studies at the household level suggests that high infant and child mortality is one factor supporting high levels of fertility.

$X_8$ Income

Annual income had a correlation of 0.487 with fertility. Thus, fertility tends to increase with income. It has been observed that income is among the most widely studied of the variables put forth as important determinants of fertility behavior. At the aggregate level, a negative relationship between income and fertility might be expected. However, if the analysis is restricted to the developing countries, income and fertility are sometimes positively related.

$X_{10}$ Use of Contraception

The use of contraception is among determinants of fertility. The correlation between fertility and the use of contraception in the study area is $r = -0.76$. This implies a negative correlation with increasing use of family planning, leading to a reduction in fertility levels in the study area.

Contraception is obviously central to the issue of fertility regulation. Some form of contraception or abortion must be practiced if sexually active couples are to reduce their fertility below its natural level. Contraception includes traditional and modern birth control methods of varying ease of use, effectiveness, and accessibility as well as sterilization and deliberate abortion. However, the use of contraception is often found to be negatively associated with past fertility. In addition, not only does the use of contraception affect fertility but past fertility experiences and desires for future children may influence the decision of women or not to use contraception. Thus, government programmes, policies and legislation, which promote and support the use of contraception, can have important influences on fertility (Parore and Desmar 1991; Ugochukwu 1994).

$X_{11}$ Child spacing had a correlation of $r = 0.74$ with fertility. Child spacing has been observed to influence fertility levels. Closely spaced children usually result in higher fertility levels. Deriving from the above, the $R$-value of the correlation between the dependent and the independent variables is 0.815, indicating a high relationship, shown in Table 3 below.
CONCLUSION

The study examined the demographic and socio-economic determinants of fertility in the study area. The multiple regression analysis was used to measure the relationship between fertility and the socio-economic and demographic determinants of fertility such as age, age-at-marriage, marital status, occupation, religion, education, types of marriage number of dead children, types of marriage number of contraception and spacing of children. A high R-value of 0.15 was recorded implying that 81% of the fertility level in the study area is accounted for by the demographic and socio-economic determinants of fertility mentioned above.

REFERENCES


Blaker, J., (1965) "Demographic sciences and the direction of population policy". In M.C. shops and J.C. Ridley (eds.), Public health and population change. University of Pittsburgh Press, Pittsburg.


Table 3. Change Statistics

<table>
<thead>
<tr>
<th>Model</th>
<th>R-Square</th>
<th>Change</th>
<th>F Change</th>
<th>df1</th>
<th>df2</th>
<th>Sig F Change</th>
<th>Durbin Watson</th>
</tr>
</thead>
<tbody>
<tr>
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<td>114.978</td>
<td>11</td>
<td>288</td>
<td>.000</td>
<td>1.931</td>
<td></td>
</tr>
</tbody>
</table>

a. Prediction (Dependent) X1, X2, X3, X4, X5, X6, X7, X8, X9, X10, X11, X12
b. Dependent Variable Y

The correlation This implies a reduction in population. Some couples are too traditional and accessibility as asption is often does the use of future children use, government set the use of 2 Degraaf 1991; scing have been made in higher between the onship, shown in