TYPE OF EMPLOYMENT AND FERTILITY IN NIGERIA

BY OLAIDE O. OJONIYI

ABSTRACT

Background: *Nigeria is the largest country in sub-Saharan Africa with a Total Fertility Rate of 5.6 children per woman. The issue of rapid population growth in Nigeria is of great concern given its effects on infrastructures, resources and job due to the changing needs of its people.*

Methods: *This study used data from the 2013 Nigeria Demographic and Health Survey. The analysis is restricted to women between ages 20-49 years (31,128), both bivariate and multivariate analyses was carried out to examine the relationship between type of employment and fertility, and the differences in the fertility in women across employment types in Nigeria. A negative binomial regression model was used to test the relationship between the numbers of children ever born and the type of employment of women in Nigeria.*

Results: *The results revealed that there is a relationship between type of employment and fertility in Nigeria and there is a significant difference in the fertility of women in these employment types (p<0.05). The unemployed women have fewer number of children compared to those who are employed. Women in informal jobs have more children than those in formal jobs. For instance women who work occasional have 0.10 higher number of children ever born compared with the unemployed while women who work all-year have 0.09 higher Ceb when other variables were controlled for.*

Conclusion: *Most Nigerian women are in jobs that allows for harmony with reproductive responsibilities. The policy implications of this study may include encouraging more participation of women in formal jobs.*

KEYWORDS fertility, employment type, women, birth rate, TFR, Nigeria

1. INTRODUCTION

There has been a great decline in the world's fertility since the 1950s from 5 children per woman in 1950-1955 to 2.5 children per woman in 2005-2010 although the level and rate of change in fertility varies among countries and areas (UNFPA, 2012). The considerable decline is in Asia and Latin America and especially the Carribean where the total fertility rate fell from 5.9 in 1955 to 2.3 in 2010 whereas Africa witnessed a slow decline during this period from 6.6 per woman in1955 to 4.9 per woman in 2010.

The world's total fertility rate has been projected to decrease to 2.2 children per woman by 2045-2050 and 2.0 per woman by (UNDESA, 2012). In 2013, the global average number of children per woman was 2.5. This rate varies across the continents of the world: Africa has the highest fertility rate (4.7), Asia (2.2), Europe (1.6), Latin America and Caribbean (2.2), North America (1.8) and Oceania 2.4 (PRB, 2014). For more than two decades Northern America, Europe and many other developed countries have had below-replacement fertility (UNDESA, 2013).

Forty-five out of sixty-six high fertility countries in the world are in Sub-Saharan Africa, and among these, fertility is highest in Eastern Africa, Middle Africa and Western Africa where total fertility is above five children per woman (UNDESA, 2014).The region is the only place in the world where fertility decline has been slow and late (Malmberg, 2008; Madhavan, 2014). The high fertility rate in addition with the decline in mortality is the cause for the rapid population growth in the region.

Nigeria is the largest country in sub-Saharan Africa with a population estimate of 140 million in the last census (NBS, 2013). Currently Nigeria has a total fertility rate of 5.6 births per woman (PRB, 2014).The Nigeria population growth rate has increased to 3.0%. According to Population reference bureau in 2014, the Nigerian population is projected to reach 258 million in 2030.

1.1. STATEMENT OF THE PROBLEM

By 2050, the global population is expected to grow from the current 7.2 billion people to 9.7 billion. This growth will be concentrated in the world's less developed countries especially Africa (WFR, 2014). Sub-Saharan Africa has the fastest growing urbanization in the world and its changing urban dynamics are important for understanding future changes in food production, availability and consumption (Zuberi et al.,

2011). Despite the increasing urbanization trends in the region, growth rates among rural populations in the region are not expected to decline until 2045 (IFAD, 2011).

The population of west Africa is growing at an annual rate of 2.6% and is expected to quadruple in size by the end of the century, the projected increase of one billion people on the region's current population of 320 million is an obstacle to development and makes it difficult to be optimistic about the future of the demographic and socio-economic conditions of the region (Bongaart, 2013). According to world urbanization predictions in 2011, between 2030 and 2050 there will be an addition of another 1.3 billion people to the global urban population. With a total addition of 121 million people, Nigeria will be the second major contributor next to India. 43.5% of the Nigerian people in year 2000 live in urban areas and it is predicted that the urban population will increase to 65% by 2020, given an annual urban population growth of 5.5% (Agboola et.al, 2009).

The Nigerian population increased from 159.3 million in 2010 to 164.4 million in 2011. In 2013 it was estimated at 174 million people (NBS, 2013).The issue of rapid population is of great concern given insufficient resources in Nigeria. According to 2014 World Bank report, 46% of the Nigerian population are poor and only 48% have access to electricity. About 60-70% of Nigerian urban dwellers live in slums (Akunnaya et.al, 2014).Two thirds of the population don't have access to adequate sanitation, 68% have no access to a toilet and 63.2 million of the population don't have access to safe water (Water Aid 2013).The rate of unemployment in Nigeria rose from 21.1% in 2010 to 23.9% in 2011 (NPC, 2013). The labour force increased by 2.1 million to 67,256,090 people with just 51,224,115 persons employed leaving 16,074,205 people without job (NBS, 2013). The growth rate which is greatly influenced by fertility is a factor in determining how great a burden would be imposed on the country by the changing needs of its people for infrastructure, resources and job. The quality of the population in terms of jobs education, medical care and ratio of policemen to citizens among others are affected (Ushie, 2009). Strongly constructed and accurate studies have to be carried out to provide information on the precise influence and relationships of variables with fertility to help in formulating policies that will curb the problem of rapid population in Nigeria.

1.2. RESEARCH QUESTIONS
i.   Is there a relationship between type of employment and fertility?
ii. Is there any difference in the fertility of women who are unemployed, self-employed and those who are employed by others?

1.3. OBJECTIVE OF THE STUDY

The aim is to examine the relationship between the type of employment and fertility of women in Nigeria.

1.4. SPECIFIC OBJECTIVES

  i.   To establish the level of fertility in Nigeria.
 ii.   To examine the relationship between type of employment and fertility.

1.5. JUSTIFICATION OF THE STUDY

One of the specific goals of the 2004 National policy on population for sustainable development in Nigeria "is to achieve a balance between the rate of population growth, available resources and the social and economic development of the country, progress towards a complete demographic transition to reasonable birth rates and low death rates" (NIPPSS, 2008).

Reduced births always lead to fewer risky pregnancies such as those of very young or old mothers, those at high parity and of women with closely-spaced pregnancies (Bongaarts et al, 2012). Also it has good effects on child health as it is often associated with increasing birth interval which in turn increases child survival (Rustein et al, 2014).

Improved women's participation in labour force played a key part in the historic reduction in fertility that characterized the demographic change that occurred in Europe and the United States from the 17th century to the early 20th century (Guinane, 2011). Employment opportunity for a woman increases the cost of child bearing; this has reduced fertility in marital unions (Wanamaker, 2010). The decline in the world's fertility and rise in female labour force participation in the past century may have been the true singular cause of demographic transition (Soares et. al, 2008).

Research findings in developed countries has suggested that women who are formally employed have a lower fertility, however the findings in least developed countries show different results in different settings (Epc, 2008) particularly in sub-Saharan Africa, it has been indicated that no connection should exist between employment status and fertility because of inadequate wage employment, extended family networking, cheap domestic labour and socio-cultural norms of gender roles (Beguy, 2009)

4

.Therefore, Nigeria is a typical country to study the interaction of women's employment status and fertility given the country's level of development, population size and growth rate.

2.0   LITERATURE REVIEW

Several studies on fertility have been conducted in Nigeria and they have examined a wide range of subjects including trends, patterns, causes, adolescent reproductive health, and contraception among others (Ibisomi, 2008).

Biological and social factors have been identified as the two primary variables that explain fertility. Biological factors are influenced by genes while social factors are affected by culture and economic conditions and these explain why complete fertility differs among regions (Ushie, 2009). In this section findings from several relevant studies on fertility will be reviewed.

EMPLOYMENT

Studies have shown that female participation in labour force may affect their fertility behaviour. For example, a study by Van den broeck and Maertens in Senegal revealed a significant effect of female wage employment on the fertility rate and the reduction in the number of children ranged from 0.22 to 0.36.

In support of this is another study in China which reveals a reduction in the total number of children ever born by 0.50 among employed married women as compared to the unemployed women (Fang et.al, 2012). Also, in a comparative analysis of fertility differentials in Togo and Senegal, while wage employment is impactful on women's reproductive life in Togo, working does not seem to hinder fertility in Senegal (Benguy, 2009).

Many researchers in the 1980s associated the extreme drop in fertility experienced by all industrialized countries with an increase in female labour force participation. Beckers in Schellenkens 2007 said high cost of motherhood particularly for high skilled-women is the reason for the falling tendency to have children in the of labour market attachments.

Many studies have been done on women's employment status and fertility, but in most cases employment was put to use as a dichotomous construct - whether women are employed or unemployed. These may not reflect the true relationship between employment and fertility because it fails to take into cognizant the

differences in employment and how these differences can affect fertility. This study seeks to address this area overlooked by previous studies on this theme.

EDUCATION

Nelson Ejiro in his study, education as correlate of fertility rate among families in Southern Nigeria using 6,973 women who have been married for at least fifteen years to ensure that they have completed or almost complete child bearing found that education is inversely related to fertility both in rural and urban areas. The average fertility of a rural woman with no education was found to be 6.0 children while her counterpart who is educated (at least 15 years education) have 3.9 children. The average fertility of women in urban centres with no formal education was 5.9 children and the women in urban centre with at least 15 years of education had a fertility rate of 3.9 children.

The result of a cross-sectional survey in Osun state Nigeria by Oyefara 2012 revealed a mean CEB of 4.47 among women who had no education, 3.22 mean CEB among those with primary education and 2.68 mean CEB among women with higher education.

Ngyende (2008) in her study in Western Uganda from the analysis of UDHS 2001-2002 women dataset also observed an inverse relationship between education and fertility. The mean number of children ever born by women with no formal education was 4.29, women with primary education has mean CEB of 3.00, women with secondary education has mean CEB of 1.57 and women with higher education has mean CEB of 1.75.

The educational level of women varies widely among countries and it affects fertility through delayed marriage. Educated women are more likely to delay marriage because they spend a long time in getting education and are likely to have fewer number of children than those who spend less or no time at all (Barber et al,2002). Women with more education usually have their first sexual experience later (WPB, 2001). In many less developed countries women with no formal education have about twice as many as do women with ten or more years of schooling (UN, 2013).

Education may improve an individual's knowledge of and ability to process information regarding fertility options and healthy pregnancy behaviour (Carr et al, 2006). Formal education gives access to information that broadens the women's horizon. With access to information, the educated woman is more likely to know of and practice modern contraception to lengthen birth intervals or stop child bearing when the desired number is attained. Also formal education socializes a person into new behaviour pattern like the rejection

of traditional practices that hinders the application of scientific knowledge. It generally improves the standard of living of women and exposes them to better facilities and nutritional practices that reduce infant mortality, thus offsetting the need to have many children it is one of the avenue through which the change from natural to deliberate fertility takes place (Caldwell, 1982; Kardasa, 1986).

Education prepares women with the necessary skills that ensure their qualification for engagement in high-paying jobs in the modern sectors of the economy which motivate them to desire fewer children of higher quality (Bollen et al., 2001; Barden-O' fallen, 2005).

The educated are dedicated to ensuring that their children are educated which involves substantial cost' the cost component of putting a child through means a reversal flow of wealth from parent to child (Caldwell, 1982). With each additional child, the household expenditure becomes greater. Therefore to attain higher standard of education for children, there is need to tradeoff quantity for quality as a result the educated women would more likely control their fertility.

PLACE OF RESIDENCE

An independent sample t-test on data of adolescent mothers in Osun state Nigeria showed that there is a significant difference in the parities of rural and urban adolescent mothers with an average fertility differential of 0.48 (Oyefara, 2012). In rural areas children contribute to agricultural production whereas this benefit of children to parent either does not exist or is reduced in urban areas especially in large cities (Quetelu, 1998). There are better opportunities for education especially higher education in the urban areas and this contributes to raising the net cost of a child to urban parent which makes them to trade quantity for quality.

In India the total number of children ever born by women in the rural area in1999 was 3.07 while that of women in urban area was 2.27 (Tripathy et al., 2004).

In western Uganda using 2001-2002 UDHS dataset, the mean CEB of women in urban area was 2.90 while that of women in rural area was 3.29 at the time of the study. Also in a comparative study on fertility differentials among Nepali women using 2006 Nepali DHS data, higher mean CEB was among women in rural area (3.1) while women in the urban area had a mean CEB of 2.5 (Adhikari, 2010).

Fertility level is higher in the rural areas than in the urban areas. Urban areas are associated with higher levels of income, higher levels of education and better access to mass media (Westoff et al, 2011). Contraceptive use among women in urban areas is thrice that of women in rural areas (NDHS, 2008).

Another explanation for this difference is that women in urban areas tend to be more educated and participate more in formal labour market than women in rural areas.

RELIGION

Fertility difference has been reported between Christians, Muslims and Traditionists for example Tawiah in 1984 found that compared to all religions in Ghana, Muslim women have the lowest fertility while the Christian women have the higher. This difference was suggested by the author to be as a result of strict adherence to postpartum abstinence and prolonged breastfeeding among Muslim women. In contrast, higher mean CEB was recorded for Muslim women in Nepali compared to other religion affiliations, from the analysis of the 2006 Nepali DHS dataset, Muslim women had 3.52 mean CEB, Hindu women had 3.03 mean CEB and other religion had 2.97 mean CEB (Adhikari, 2010). In another study in Bangladesh, using logistic regression the analysis show that Muslim women are 1.53 times more likely to have more than two children than non- Muslim women (Hague et al, 2015).

In western Uganda, Ngyende (2008) observed difference in the mean number of children ever born to women with different religion affiliation. The mean number of children ever born to Catholic women was 2.93, Protestant women had 3.21, and Muslim women had 2.93 and others 3.45. Irrespective of the religion with the highest CEB in the world these findings point to the fact that fertility is different among religion groups.

Fertility and births pattern vary by religion groups as a result of the different doctrines concerning birth controls some denomination like the Catholics, Mormons and Baptist maintain strong doctrinal positions against the use of contraceptive and other artificial means of controlling fertility, or promote large families in a way (Chamie, 1981; Coale, 1986). Religion affects fertility behaviour largely through contraceptive practice.

AGE

The ordinal logistic regression in a comparative study carried out by Fagbamigbe et al 2014 in Nigeria and Ghana showed that women age 35-44 years are 33% less likely to report high fertility than those who are 44 years and above. Similar to this is the report of a trend analysis in Namibia which revealed that on the average the total number of children ever born increases by age of women (Indogo et. al, 2012).

Current age is a determinant of fertility because all other factors been equal older women have been exposed to the risk of conception longer than younger women hence parities of older women should be higher than

the parities of younger women in the reproductive age group. For example in 2006, Nepali women in age group 40-49 had a mean CEB of 4.96,women in age group 25-39 had 3.22 CEB, and women in age group 15-54 had 1.15 CEB (Adhikali, 2010).Also Oyefara in 2012 found a positive relationship between age of women and fertility level in Osun state Nigeria.

REGION

These differences appear to be related to women's status in their respective societies. For instance among the Kanuri and Hausa people of northern Nigeria, women status is very lower compared to Yoruba and Ibo societies (Makinwa et al., 1997). Major ethnic groups in southern Nigeria having experienced greater exposure to cultural and scientific innovations from the western world are more likely to control their births, ethnic groups of northern Nigeria on the contrary are expected to be much more traditional with regard to child bearing as a result of little or lack of exposure to western world.

THEORETICAL FRAMEWORK

Characteristics hypothesis theory 1971 developed by Goldscheider was used to study fertility differentials among groups- racial or religious and it takes the stance that the group association with family differential is not real and that fertility differentials are due to the socio-economic and demographic characteristics of the group (Carlson et al, 2011). The theory hypothesizes that high contraceptive usage is related to high socio-economic characteristics and that people of similar characteristics have similar reproductive patterns of fertility and contraceptive use. In summary it implies that no significant behavioural differences persist after controlling for socio-economic factors known to be important in determining fertility behaviour (Schellenkens, 2007). This approach was used to explain "Fertility Differentials among US Jews in the Twentieth Century" by Goldsheider himself (Derosas et al, 2006) it was also used by Carson et al 2011 to explain social class and changing Fertility in an Unequal America. As applied to my study, this theory holds that I will expect my independent variables, socio-economic and demographic characteristics to explain fertility because differences in behaviour among groups are determined by the different social and economic characteristics (Schellenkens, 2007).

2.1   HYPOTHESES
  i.   There is no relationship between type of employment and fertility.
 ii.   There is no difference in the fertility of respondents who are unemployed, employee and those who are self- employed.

3.0   METHODOLOGY

The data for this study comes from the 2013 Nigeria Demographic and Health Survey dataset. The 2013 NDHS is the fifth of its kind taking place in the country since 1990 but the fourth DHS survey to be carried out in Nigeria by the National population commission the body responsible for the collection, collation, analysis and dissemination of population census and survey data at all levels that contribute to policy formulation and population activity coordination in the country. The survey was designed to provide current information on background characteristics and detailed information on demographic and health subjects pertaining to men and women age 15-49 in randomly selected households across Nigeria (2013 NDHS REPORT). In total 39902 women age 15-49 were identified as eligible but 38948 eligible women were interviewed. This study used 31128 women aged 20 to 49 years with and without children.

3.1   DATA PROCESSING AND STATISTICAL ANALYSIS

In this study, weights were applied to the data to correct for sampling error and to make the sample a good representative of the entire population. With this weighting procedure, the eligible respondents were 31,128 women age 20-49.The statistical package STATA version 12 was used for statistical analysis. Three levels of analysis – Univariate, Bivariate and multivariate analyses was employed in this study to show the proportions, associations and to control intervening variables which are possible predictors of the outcome. Univariate analysis was employed to describe the outcome variable and the predictors. Bivariate descriptive analysis was used to describe the distribution of the outcome variable by each of the predictors. Also, bivariate analysis was done to get the unadjusted coefficient for each of the variables in the study. To control for other predictors aside the predictor of interest a multivariate analysis was carried out using Poisson model (negative binomial regression). For objective 1, kruscall wallis test was used to examine if there is a statistically significant relationship between type of employment and fertility. Second objective, was examined using Negative binomial regression model because the data for number of children ever born is over dispersed even after adding the covariates in the model.

Model Equation

$$\text{Log } (Y) = \beta^0 + \beta^1 x^1 + \beta^2 x^2 \dots$$

Y is the number of children ever born

β is the coefficient

X's are the covariates in the model

3.2   MEASUREMENT OF VARIABLES

The outcome variable in this study is fertility of the respondents measured by the total number of children ever born as a count variable.

The independent variable of interest which is the type of employment was characterized across three dimensions; compensation type, employer and frequency of work (Adapted from Caceres-Delpiano, 2012). Each dimension represented by a variable has the category 'unemployed'.

Table 1: Study variables

VARIABLES	CAREGORIES
FERTILITY	NUMBER OF CHILDREN EVER BORN
COMPENSATION TYPE	UNEMPLOYED
	NOT PAID
	INKIND PARTIALLY OR FULLY
	CASH ONLY
EMPLOYER	UNEMPLOYED
	EMPLOYED BY OTHERS
	SELF-EMPLOYED
FREQUENCY OF WORK	UNEMPLOYED
	OCCASIONALLY/SEASONALLY
	ALL YEAR
AGE	20-24,…, 40-49
PLACE OF RESIDENCE	URBAN
	RURAL
HIGHEST EDUCATIONAL LEVEL	NONE
	PRIMARY
	SECONDARY
	TERTIARY
RELIGION	CHRISTIANITY
	ISLAM
	OTHERS
REGION	NORTH CENTRAL
	NORTH EAST
	NORTH WEST
	SOUTH SOUTH
	SOUTH EAST
	SOUTH WEST

3.3   VARIABLES UNDER STUDY

In the 2013 NDHS, a number of socio-economic and demographic variables are available but for this study,
apart from the variable of interest I considered few more explanatory variables namely current age, highest
educational level, religion, place of residence and marital status. Due to multicollinearity, the three variables
used in measuring type of employment were not put together in a model. They were tested separately with
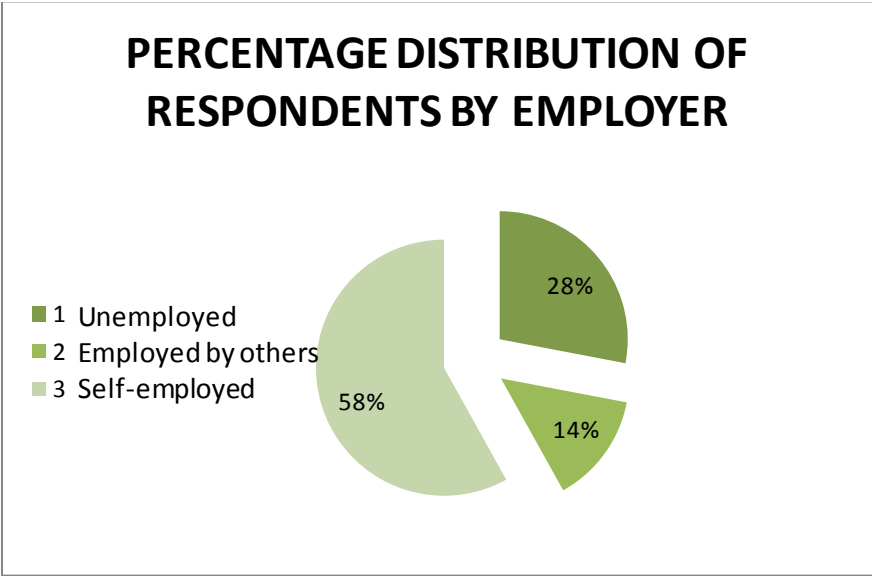fertility.

4.0   **RESULTS**

Figure 2: Percentage distribution of respondents by employer
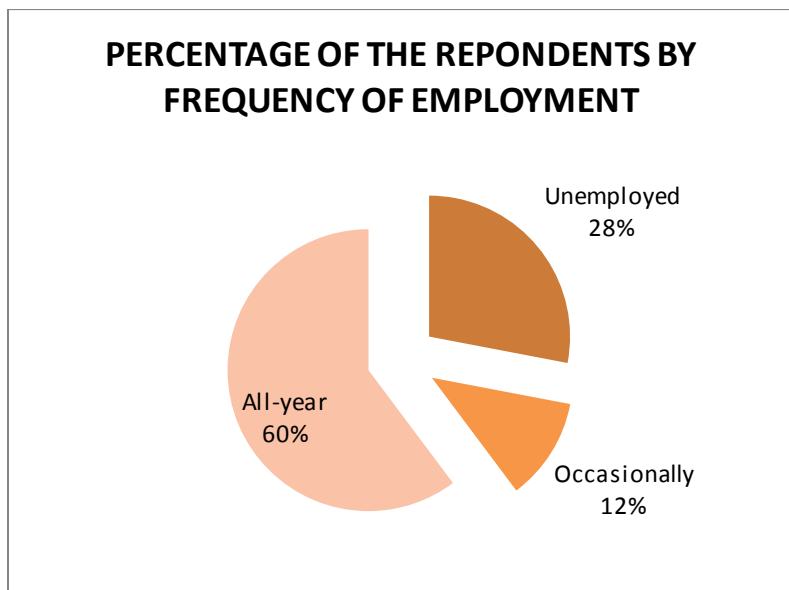

Most (60%) of the respondents work all year, 28% are unemployed and 12% works occasionally.

Figure 3: Percentage distribution of respondents by employer.

PERCENTAGE DISTRIBUTION OF RESPONDENTS BY EMPLOYER

- 1 Unemployed
- 2 Employed by others
- 3 Self-employed

28%
14%
58%

More than half (58%) of the respondents are self-employed.

Figure 4: Percentage distribution of the respondents by compensation type.

FREQUENCY DISTRIBUTION OF RESPONDENTS BY COMPENSATION TYPE

- 1 Unemployed
- 2 Not paid
- 3 Inkind
- 4 Cash only

28%
5%
8%
59%
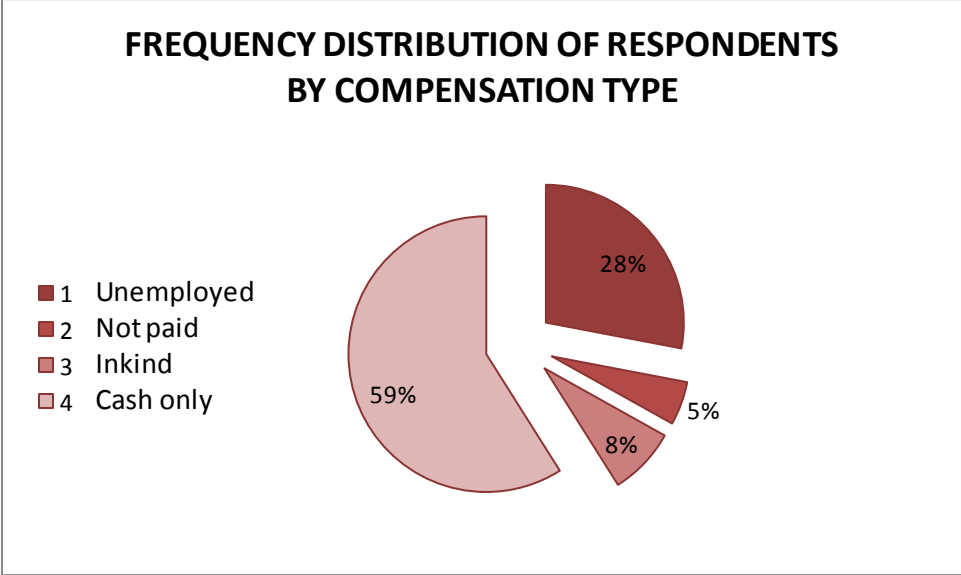
Most of the respondents are paid in cash only, 5% are in unpaid jobs and 8% are paid in-kind partially or fully.

TABLE 2 Frequency and percentage distribution of respondents' characteristics.

VARIABLE	FREQUENCY (weighted)	PERCENTAGE
NUMBER OF CHILDREN EVER BORN		
Median	3	
AGE OF RESPONDENTS		
20-24	6757	22
25-29	7145	23
30-34	5467	17
35-39	4718	15
40-44	3620	12
45-49	3422	11
REGION		
NORTH CENTRAL	4418	14
NORTH EAST	4576	15
NORTH WEST	9448	30
SOUTH EAST	3582	12
SOUTH SOUTH	3909	13
SOUTH WEST	5194	17
HIGHEST EDUCATIONAL LEVEL		
NO EDUCATION	12559	40
PRIMARY EDUCATION	5781	19
SECONDARY EDUCATION	9356	30
TERTIARY EDUCATION	3432	11
PLACE OF RESIDENCE		
URBAN	13106	42
RURAL	18022	58
RELIGION		
CHRISTIANS	14613	47
ISLAMISTS	16057	52
OTHERS	458	1
MARITAL STATUS		
NEVER MARRIED	3818	12
EVER MARRIED	27310	88
TOTAL	**31128**	**100**

Note: median is used as the measure of central tendency because the data on number of children ever born is skewed.

INTERPRETATIONS

The average number of children ever born by to the respondents is three children. The majority of the respondents are in age group 25-29 and few are in age group 45-49. 30% of the respondents are from North west, 17% from south west and the least group are from south east.

Most of the respondents have no formal education, 30% studied up to secondary level and 11% have tertiary education. More than half (58%) of the respondents are rural dwellers while 42% are from urban centres. 52% of the women interviewed are Islamists, 47% are Christians.

Table 3: Number of children ever born by type of employment

VARIABLE	TOTAL NO OF CHILDREN EVER BORN (MEDIAN)
EMPLOYER (p-value=0.0001)	
UNEMPLOYED	2
EMPLOYED BY OTHERS	3
SELF EMPLOYED	4
COMPENSATION TYPE (p-value=0.0001)	
UNEMPLOYED	2
NOT PAID	4
IN KIND (PARTIALLY/FULLY)	4
CASH ONLY	4
FREQUENCY OF EMPLOYMENT (p-value=0.0001)	
UNEMPLOYED	2
OCCASIONALLY	4
ALL YEAR	4

Note: median is used as the measure of central tendency because the data on number of children ever born is skewed.

TABLE 4: Results (in percentages) of bivariate descriptive analysis for associations between the number of children ever born and the explanatory variables.

NUMBER OF CHILDREN EVER BORN		
	Median	p-value
AGE OF RESPONDENTS		
20-24	1	0.0001
25-29	3	
30-34	4	
35-39	5	
40-44	6	
45-49	7	
REGION		
NORTH CENTRAL	3	0.0001
NORTH EAST	4	
NORTH WEST	5	
SOUTH EAST	3	
SOUTH SOUTH	3	
SOUTH WEST	3	
HIGHEST EDUCATIONAL LEVEL		
NO EDUCATION	5	0.0001
PRIMARY	4	
SECONDARY	2	
TERTIARY	1	
PLACE OF RESIDENCE		
URBAN	3	0.0000
RURAL	4	
RELIGION		
CHRISTIANS	3	0.0001
ISLAMISTS	4	
OTHERS	4	
MARITAL STATUS		
NEVER MARRIED	0	0.0000
EVER MARRIED	4	

Note: median is used as the measure of central tendency because the data on number of children ever born is skewed.

From the output above, the average number of children ever born has significant positive association with age of the respondents. Respondents in age group 20-24 have just one child while their counterpart in age group 45-49 have seven.

Regions in the North have the highest number of children ever born (3,4,5) while regions in the south have the same number of children ever on the average.

Education as significant association number of children ever born (p-0.0001), the average number of children ever born decreases as the level of education increases.

Respondents in Rural areas have a higher number of children than their counterpart in Urban areas. Place of residence is statistically associated with number of children ever born.

Religion of respondents in Nigeria shows a statistically significant relationship with number of children ever born. The Christians have less number of children ever born compared to other religions.

TABLE 5: Results of bivariate and multivariate analysis for association between fertility and compensation type with other covariates.

VARIABLES/CATEGORY	UNADJUSTED COEFFICIENT	ADJUSTED COEFFICIENT
COMPENSATION TYPE		
Not employed $_{RC}$		
Not paid	0.3216*	0.0970*
In kind partially/fully	0.3777*	0.1185*
Cash only	0.3205*	0.0915*
AGE		
20-24$_{RC}$		
25-29	0.7785*	0.5736*
30-34	1.2117*	0.9294*
35-39	1.4898*	1.1662*
40-44	1.6172*	1.2558*
45-49	1.7340*	1.3558*
MARITAL STATUS		
Never married $_{RC}$		
Ever married	3.0671*	2.3368*
EDUCATION		
None $_{RC}$		
Primary school	-0.1140*	-0.0020
Secondary school	-0.6992*	-0.2134*
Tertiary	-1.0566*	-0.5290*
RESIDENCE		
Urban $_{RC}$		
Rural	0.3114*	0.0680*
RELIGION		
Christians $_{RC}$	0.3907*	0.0826*
Islamists	0.4351*	0.1004*
Others		
REGION		
North central $_{RC}$		
North east	0.3307*	0.1321*
North west	0.4280*	0.1715*
South east	-0.0267	0.0757*
South south	-0.0233	-0.0000
South west	-0.0717*	-0.0903*

Note: **unadjusted** *coefficient***s are** *fro***m bivariate analysis and adjusted** *coefficient***s are** *from multivariate analysis;* *** significant at p< 0.05;** $_{(RC)}$ **= reference category.**

According to table 5 the trends in overall number of children ever born is different for the categories of compensation type and it is statistically significant. In the unadjusted analysis the number of children ever born is 0.32 higher for women in unpaid jobs, 0.38 higher for women who are paid in kind partially or fully, and 0.32 higher for those who are paid in cash only compared to women who were unemployed at 0.05 level of significance.

Controlling for other predictors in the model , the number of children ever born is 0.10 higher for women who are in unpaid jobs, 0.12 higher for those who are paid in kind partially or fully, and 0.09 higher for women who are paid in cash only compared to the unemployed women at 0.05 level of significance

As expected, age is significant and when other predictors were not controlled the analysis show that the expected number of children ever born increases across the age groups this pattern remains the same after adjusting for other variables in the model. Age group 20-24 has the least number of children ever born while age group 45-49 has the highest.

Marital status shows a significant association with number of children ever born at 0.05 level of significance. Women who are at one time married have 3.07 more children than those who are not married.

For education the number of children ever born is 0.11 lower for women with primary education, 0.70 lower for women with secondary education, and 1.06 lower for women with tertiary education all compared to women with no education. Adjusting for other variables in the model, the number of children ever born is 0.00 lower for women with primary education though not significant, 0.21 lower for women with secondary education, and 0.53 lower for women with tertiary education all compared to women with no education.

Place of residence has a statistically significant relationship with number of children ever born. Women in rural areas have higher number of children ever born (0.31 and 0.07 higher respectively) compared to women in urban areas when and when no other variables are controlled for.

The number of children ever born is 0.39 higher for Muslim women and 0.44 higher for other religion compared to Christian women. When other predictors were controlled for the expected number of children ever born was 0.08 higher for Islamists, and 0.10 higher for other religion compared to the Christians at 0.05 level of significance.

The expected number of children ever born is 0.33 higher for women in the north east, 0.42 higher for women in north west and 0.03 lower for women in south east, 0.02 lower for women in south south, 0.07 lower for women in south west compared to women in north central. Adjusting for other predictors, the number of children ever born was 0.13 higher for women in the north east, 0.17 higher for women in north west and 0.07 higher for women in south east, and 0.09 lower for south west all compared to women in the north central.

TABLE 6: Results of bivariate and multivariate analysis for association between fertility and employer with other covariates.

VARIABLES/CATEGORY	UNADJUSTED COEFFICIENT	ADJUSTED COEFFICIENT
EMPLOYER		
Not employed $_{RC}$		
Employed by others	0.0375*	0.0841*
Self-employed	0.3869*	0.0860*
AGE		
20-24$_{RC}$		
25-29	0.7785*	0.5720*
30-34	1.2117*	0.9329*
35-39	1.4898*	1.1580*
40-44	1.6172*	1.2691*
45-49	1.7340*	1.3580*
MARITAL STATUS		
Never married $_{RC}$		
Ever married	3.0671	2.2107
EDUCATION		
None $_{RC}$		
Primary school	-0.1140*	-0.0113
Secondary school	-0.6992*	-0.2089*
Tertiary	-1.0566*	-0.5219*
RESIDENCE		
Urban $_{RC}$		
Rural	0.3114*	0.0671*
RELIGION		
Christians $_{RC}$		
Islamists	0.3907*	0.0828*
Others	0.4351*	0.0866*
REGION		
North central $_{RC}$		
North east	0.3307*	0.1773*
North west	0.4280*	0.1978*
South east	-0.0267	0.0897*
South south	-0.0233	0.0594*
South west	-0.0717*	-0.0559

Note: **unadjusted** *coefficient*s **are** *from* **bivariate analysis and adjusted** *coefficient*s **are** *from multivariate analysis;* *** significant at p< 0.05;** $_{(RC)}$ **= reference category.**

From the table 6 above, variable 'employer' is statistically associated with number of children ever born. In the unadjusted analysis, the number of children ever born is 0.04 higher for women who are employed by others and 0.39 higher for women who are self –employed compared to the unemployed women at $p<0.05$. Adjusting for other variables, the number of children ever born is 0.08 higher for women who are employed by others and 0.09 higher for those who are self-employed compared to those who are unemployed.

TABLE 7: Results of bivariate and multivariate analysis for association between fertility and frequency of employment with other covariates.

VARIABLES/CATEGORY	UNADJUSTED COEFFICIENT	ADJUSTED COEFFICIENT
FREQUENCY OF EMPLOYMENT		
Not employed $_{RC}$		
Occasional	0.3874*	0.1031*
All year	0.3139*	0.0924*
AGE		
20-24$_{RC}$		
25-29	0.7785*	0.5734*
30-34	1.2117*	0.9294*
35-39	1.4898*	1.1662*
40-44	1.6172*	1.2558*
45-49	1.7340*	1.3556*
MARITAL STATUS		
Never married $_{RC}$		
Ever married	3.0671*	2.3373*
EDUCATION		
None $_{RC}$		
Primary school	-0.1140*	-0.0021
Secondary school	-0.6992*	-0.2144*
Tertiary	-1.0566*	-0.5308*
RESIDENCE		
Urban $_{RC}$		
Rural	0.3114*	0.0685*
RELIGION		
Christians $_{RC}$		
Islamists	0.3907*	0.0819*
Others	0.4351*	0.1019*
REGION		
North central $_{RC}$		
North east	0.3307*	0.1321*
North west	0.4280*	0.1715*
South east	-0.0267	0.0757*
South south	-0.0233	-0.0000
South west	-0.0717*	-0.0903*

Note: **unadjusted** *coefficient*s are *fro*m **bivariate analysis and adjusted** *coefficient*s are *from multivariate analysis;* *** significant at p< 0.05;** $_{(RC)}$ = **reference category.**

Table 7 shows that the frequency of employment is statistically significant with number of children ever born. The number of children ever born is 0.39 higher for who works occasionally and it is 0.31 higher for those who work all year compared to those who are unemployed. Controlling for other variables, the number of children ever born is 0.10 higher for seasonal workers and 0.09 higher for women who work all year compared to those who are unemployed.

5.0   DISCUSSION

Negative binomial regression is used in this analysis. Negative binomial regression is a Poisson model that can fit a model of occurrences (count) of an event that is overdispersed in this case the number of children ever born. This study found that there is a relationship between type of employment and fertility and differences exist in the fertility of women in different types of employment. The most interesting finding is that unemployed Nigerian women had fewer children than the employed as opposed to what was found in China by Fang et al 2012 where female employment reduces the number of children ever born by 0.50. It could be that the unemployed women in Nigeria perceive children as expense, thus motivating them to have fewer children since they don't have a means of income and there is no grant from the government to take care of them. Women in unpaid jobs and those who are paid in-kind partially or fully which are generally associated with informality have more children than those who are paid in cash only. This may be because these women have control over their time as found in Togo a neighbouring country by Benguy (2009). This is also applicable to women who worked occasionally. Seasonal or occasional workers are in the informal sector they have more time to themselves because they don't work all year, thus they have time for child rearing.

The findings also revealed that women who were self-employed have more children than those who are employed by others which is more associated with formality. This finding is similar to another study in Nigeria where a pooled data from 1990-2008 revealed that women who were self-employed were more likely to have more children than those who were employees (Wusu, 2012).it could be that there is a higher demand on the time of those who are employed by others (i.e. formally employed) and also they have access to modern contraceptive therefore, their desire for small family size will be achieved. In Nigeria self-employment is characterized by informal jobs. Most of the self- employed women in Nigeria run unregulated businesses such as trading, farming, tailoring, hairdressing etc. From the dataset used for this study it was found that just few (2%) of these women who claimed to be self-employed are professionals. Majority of them are into sales, agriculture and manual jobs. This explains why the self-employed women in

Nigeria have more children than those who are employees because with these types of job they have more time to themselves.

The usual explanation for differentials in fertility is differential socio-economic characteristics (Carson et.al, 2011). In this study even after controlling for other variables geographic region remained significant with the exception of south east region. This agrees with the findings of Bbaale et al (2011) in Uganda where a significant difference was found in the number of children ever born by region. There is higher number of children ever born in the Northern region compared to the southern region although there is some variation within the northern and southern region. This difference is really marked in the early childbearing years (Ibisomi, 2008).

Similar to this place of residence, the findings from this study reveals that place of residence is significantly associated with number of children ever born and women in rural areas have a higher number of children compared to their counterpart in the urban areas. This is line with Ejiro's findings in Southern Nigeria. This may be because the age of entry into union and educational level in rural areas is lower (Ushie et al, 2011). Also cultural practices and social institutions are well established in the rural areas and fertility rate and family values changes due to urbanization (Ekane, 2013).

Current age as observed in many studies is positively related to the total number of children ever born as a result of completed fertility. Women in older ages have more children than younger women probably because they have completed their fertility while the young ones are just starting as at the time of the survey. The total number of children ever born increases by age (Indigo et.al, 2012)

Fertility also varied significantly by religious group, the Muslim women have more children than any other religious groups in the study though the difference is minimal after controlling for other variables in the model. This result is similar to Haque et. al 2015 findings in Bangladesh where Muslim families are 1.53 times more likely to have more than two children than non-Muslim families as a result of son preference, and from the expectation of male child, the number of children is being increased (Haque et.al, 2015).

Highest level of education has remained a strong determinant of fertility. This study therefore reinforces the findings of several previous studies concerning the relationship between women's level of education and fertility. The coefficients for education were highly significant for secondary and tertiary levels. For primary level, number of children ever born is not significantly different from that of no education.

4.1   STUDY LIMITATION

The data is secondary and as such the shortcomings of outcome of such data cannot be completely ruled out from this study. Primary data is collected with a specific idea in mind usually to answer a research question or just meet certain objectives. Distance to place of work which is an important indicator of the type of employment is not reported in the dataset.

4.2   CONCLUSION.

The result of the study has shown that women who in informal jobs have higher number of children compare to their counterpart who are formally employed. It was also revealed form the descriptive analysis that most of Nigerian women are doing jobs that allows harmony with reproductive responsibilities. Education and place of residence also influences fertility. On the basis of these key findings, it can be concluded that to reduce fertility, the government should take necessary steps to encourage increased higher education rate among women, to increase employment rate for women in the formal sector and to sensitize rural dwellers on the benefits of having fewer children. Future studies should address women's autonomy and their household characteristics, with view of informing policy on issues relating to fertility decision.

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