

Socio-Demographic Factors, Agents of Modernity, Employment Status & Fertility Behavior of Women in Marital Union in South-West Region of Nigeria

Abstract

This paper examines key factors influencing fertility behavior of women in marital union in the south-west region of Nigeria with a view to reducing fertility in this region of the country. The key dependent variables are (1) preference for another child, and (2) number of living children. A total of 3784 women aged 15-49 in marital union were extracted from the 2013 Nigeria Demographic and Health Survey (NDHS) nationally representative data. Results showed that the odds of non-preference for another child increased significantly by 2.23 times (P-value = .000) per unit increase in respondent's age, and varied significantly by state of residence. The odds of non-preference for another child significantly increased 1.05 times per unit increase (P-value = .000) in husband's age, and it increased by 1.37 times (P-value = .024) for respondents who had cable TV compared to those who do not have. The odds of non-preference for another child decreased to .37 times (P-value = .046) for respondents working compared to those not working, and it increased 21.34 times (P-value = .017) for respondents who earned only cash for work compared to those not working. On number of living children, the odds of having at most two children decreased to .45 times (P-value = .000) with each unit increase in respondent's age, it increased 2.9 times (P-value = .000) for respondents with higher education compared to the uneducated reference category. The odds of having at most two children increased 2.01 times (P-value = .035) for the richest wealth status compared to the poorest/poorer, decreased significantly to .97 times (P-value = .000) for each unit increase in husband's age. The odds of having at most two children decreased significantly to .56 times (P-value = .008) for respondents with primary school education compared to the uneducated, and it decreased significantly to .48 times (P-value = .001) for respondents who had TV compared to those who do not have. Policies and programming need to factor these findings into strategies and actions that can lead to further reduction in the current high fertility in the region.

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Keywords: Socio-Demographic, Agents of Modernity, Employment Status, Fertility Behavior, Fertility Preference, Number of Living Children, Marital Union.

Introduction

Increasingly, world bodies like the World Health Organization (WHO), the United Nations Organization (UNO), and the United Nations Population Fund (UNFPA), the World Bank, and government of nations have sponsored or conducted studies on the causes, nature, and direction of population growth in different parts of the world. These studies have tried to unravel the cause(s) of high fertility in certain areas of the world compared to others. Fertility behavior in this study is of two dimensions, the number of living children per woman, and preference to have another child at the time of survey. This definition surmises the fertility profile of a woman at the time of data collection. In many parts of the world varied factors explain fertility behavior.

The factors influencing fertility behavior is classified broadly into social, cultural, demographic, economic, environmental and historical.

The factors influencing fertility behavior and global population issues are sometimes divergent or opposing depending on contextual diversity. It is universally agreed that population figure is crucial for development planning, and questions on how this plays out in a country's development are context specific. Pertinent questions in this study are; (1) what are the relationships and changing dynamics between background factors of a population and women's employment situation? (2) How do background factors influence fertility behavior? And (3) what are the relationships between women employment indicators and fertility behavior? These questions are even more crucial when considered at the regional level where paucity of empirical evidence is the norm. A detailed understanding of fertility behavior will go a long way in fostering understanding of measures to stem population growth in our communities and societies.

Literature Review

The literature on population studies have devoted significant attention to fertility behavior as it relates with population growth. Odu, Jadunda, and Parakoy (1970) in a study on *Reproductive Behaviour and Determinants of Fertility Among men in a semi urban Nigerian community* found that multiplicity of factors are responsible for fertility behavior in parts of Nigeria. The study found that men of Ganumo prefer large family size. The study showed that the more educated the men, the lower the family size, and Moslems preferred larger families than Christians.

In a study in India by Perianayam, Arokiasung (2002) titled *Gender Preference, Contraceptive use and fertility in India* Regional and Development, found that fertility is high and that discrimination against women and a choice for son are normal in northern India. The preference for the girl child, use of contraception is very strong in the West, closely followed by northern and north central regions while it is low in the south. The study revealed that, increase in women's education and preference for sons were inversely related. In similar article by Ejembi, Ladi, Dahiru and Aliyu (2015) on *Contextual Factors Influencing Modern Contraceptive Use* in Nigeria, it was found that the use of contraception was low in Nigeria. Among other factors, the study showed that some of the influencing factors of low contraceptive use include level of female autonomy, level of female education, and access to health facilities in the community. Also, the study showed that Islam and its acceptance of polygyny was negatively related to the low use of contraceptives thus, enabling fertility to foster.

Marriage to two or more wives was a common custom found in most traditional societies of Southern Nigeria though it has become less common in contemporary situations. The value for children in their large number is seen to help increase the immortality of the family (Fadipe, 1970). Preference for a male child is acknowledged a major source of high fertility in most parts of Africa (Isiugo-Abanihe, 2003). This explains why a woman could have up to twelve children in search of male children. Anecdotal evidence in the eastern part of Nigeria, among the Igbos, showed that a woman is encouraged to have up to 12 children after which a she-goat will be slaughtered to celebrate the woman. Widespread rejection and disapproval of permanent methods

of contraception is partly due to the allegory that “no one knows tomorrow”. According to Isiugo-Abanihe (1998) in justifying a large family size in Zaria, northern Nigeria, findings from Focus Group Discussions (FGD), suggest repeated reference to having large family size to increase chances of producing a ‘Head of State’ OR ‘President’ or otherwise important personality.

Available data on the use of modern contraceptive reveal that women from the south are gradually shifting from the tradition of natural fertility to a controlled fertility regime (Isiugo-Abanihe, 2012). Evidently, the increasing popularity of the nuclear family system and less emphasis on the extended family has further assisted to weaken its influence on the reproductive behaviour in the southern region of Nigeria. The Nigeria Demographic and Health Survey (NDHS) statistics established that Total Fertility Rate (TFR) in the southwest has been consistently lower than that of the National average. The TFR for southwest was 4.5 in 2000, 4.1 in 2004, 4.5 in 2008, and 4.6 in 2013 while the national figures have been consistently over 5 in the same period (NDHS, 2000, 2004, 2008, and 2013).

Mass education especially among women is proven in the literature to enable fertility decline in developing countries (Caldwell, 1980). With increased educational attainment, more couples in the south tend to exhibit independence in mate selection and have greater independence in fertility behavior (Feyisetan and Bankole, 1991), and reproductive decision-making (Isiugo-Abanihe, 2003). The potential for more independence in reproductive decision-making is positive throughout Nigeria and will be more rapid in the south because of higher maternal levels of education, more upward mobility of women in addition to more male cooperation in the use of contraceptives (Isiugo-Abanihe, 1998; 2003). South-west region the focus of this study, has over the years demonstrated absorption of key indicators of fertility decline such as educational attainment, female labour force participation, and decline in polygyny among others.

Evidence from the NDHS over the years showed consistent increase in proportion of women in the south-west with more than secondary education, and the median number of years of schooling has gradually appreciated as well. The 2000 NDHS report showed that 6.5% of women in the south-west reported more than secondary education, and this increased to 11% in 2004, 16.2% and 17.4% in 2009 and 2014 reports respectively (NDHS, 2000, 2004, 2008, and 2014). Increase in school attendance among women especially in the secondary and higher-level categories may have contributed to increase in median number of years spent in school and increase in age at first birth (Das Gupta, 2013). The NDHS reports showed that median number of years of schooling for women in the region increased from 5.3 in 2000 to 8.9 in 2004, 10 and 11 years in 2009, and 2014 respectively. Likewise, median age at first birth, an indicator of entry into reproductive years, appreciated over the same period from 21.1 years in 2000 to 22.7 years in 2014, an increase of at least 1.6 years.

Education can be more impactful on fertility behavior when both men and women especially couples acquire it (Bankole, 1995). Evidence from NDHS on men’s educational attainment over the same period 2000 to 2014 suggest similar trend like that of women. Percentage of men in the south-west region with more than secondary education increased from 9.6% in NDHS 2000 report to 14.9% in 2004, 21.2% in 2009, and slightly declined to 19.6% in 2014, while median

number of years of schooling increased from 5.8 years in 2000 to 11.2 years in 2014 (NDHS, 2000, 2004, 2009, and 2014).

A key component of this paper is the influence of agents of modernity, which are vehicles through which change in a person's perceptions, and behaviour may occur. This paper examined the relationships between fertility behaviour and agents of modernity mainly electricity, radio, television, and telephone. Electricity is an agent of modernity that connotes civilization and a means to modern technology and information (Silvast and Virtanen, 2014). Television another agent of modernity is a veritable platform for ideological change (Zhuk, 2014). It can be a means for influencing the social fabric of a people from traditional to modern society, especially among the younger generation (Chua, 2012). Another tool of modernity with explosive tendency in Africa is the mobile phone that has greatly changed the way people communicate, relate and social networking in general (Kyem and LeMaire, 2006; Kyem, 2012).

Another key factor with evidence suggesting mixed influence on fertility behavior is women's employment status. In Nigeria, some evidence showed positive influence of women's employment on fertility behavior, and others suggested negative or negligible influence (Baridam, 1996; Wusu, 2012; Adebisi and Onifade, 2014). Proportion of women in the south-west who reported involvement in work in the last 12 months before the survey was 2% in 2000, 69.8% in 2004, 71.3% and 74.8% in 2009 and 2014 respectively. With respect to polygyny another key determinant of fertility, it is important to note that this has been on the increase in the south-west Nigeria suggesting that polygyny, a proximate determinant of fertility, is declining in the region. In the 2000 NDHS, 34.6% of married women reported having co-wives, it was 29.4% in 2004, and 26.1% and 23.8% in 2008 and 2013 respectively (NDHS, 2000, 2004, 2009, and 2014).

Data & Methods

The study employed the 2013 Nigeria Demographic and Health Survey (NDHS) national data with representation from 36 states of Nigeria and the Federal Capital Territory (FCT). The purpose of the NDHS survey was to provide information on population and health indicators that help to strengthen development planning efforts in Nigeria. The 2013 NDHS employed stratified 3-staged cluster design with sampling and data collection conducted at the State, Local Government Authority (LGA), and Locality, and Enumeration Area (EA). Of the 39,902 women aged 15-49 in the households, 38,945 (98%) were successfully interviewed. This study includes 3784 women aged 15-49 in marital union in the south-west region of Nigeria. This sub-group are either married or living with a man at the time of survey.

The dependent variables in this study are indicative of fertility behavior i.e. number of living children, and reported fertility preference at the time of survey. The independent variables are grouped into three; (1) woman's socio-demographic characteristics, (2) husband/partner's socio-demographic characteristics, (3) agents of modernity, and (4) employment factors. Socio-demographic characteristics are respondent's personal identity with respect to age, state of residence, usual place of residence (urban vs. rural), level of education, religion, and wealth status. Other socio-demographic characteristics include number of respondent's siblings, and birth order of respondent. Husband's socio-demographic characteristics employed in this study are age, education, and type of work. Employment factors examined are work status, type of

work, and reported earnings from work. While agents of modernity included in the study are availability of; electricity, radio, television (TV), cable TV, telephone, mobile phone, and cumulative index of modernity which tallies number of agents of modernity in household. Frequency of exposure to agents of modernity were measured using radio and TV.

RESULTS OF DATA ANALYSES

UNIVARIATE RESULTS

(Table 1 about here)

The majority of women in marital union in the study were aged 30 and older (68%), urban resident (71%), had secondary or higher education (64%), were Christians (67%), and of the richer/richest wealth quintiles (78%). Respondents were fairly, evenly spread across the six states in the south-west region of Nigeria. Lagos state had the largest (24.2%), followed by Oyo (17.8%), Osun (16.1%), Ondo (13.7%), Ekiti (13.7%), and Ogun (12.9%). Most respondent reported working at the time of survey (90%), with the majority in technical/services profession (71%), and they earned cash for their labour (83%).

The majority of respondents were from large families with three or more siblings (90%), and were either second child or of a lower birth order (79%). The majority of respondents reported that their husband/partner were aged 35 years or older (75%), have at least secondary education (70%), and were involved in either agricultural or manual labour (57%). The majority of respondent had electricity (80%), radio (80%), and TV (76%), while 14% had cable TV. Only a small fraction had telephone (1.5%), and most had a mobile phone (93%). About 41% of respondents had at most two children, and 38% preferred not to have another child.

BIVARIATE RESULTS

(Table 2 about here)

Table 2 shows the bivariate results on the association between the dependent variables preference for another child, and number of living children and independent variables socio-demographic, agents of modernity, and employment factors. Respondents not favorable to having another child varied significantly by age (P-value = 0.000), state of residence (P-value = 0.000), education (P-value = 0.000), and religion (P-value = 0.005). In addition, respondents not favorable to have another child varied significantly by wealth quintile (P-value = 0.001), birth order of respondent (P-value = 0.035), husband's age (P-value = 0.000), and husband's education (P-value = 0.000). There was significant relationship between non-preference for another child and electricity (P-value = 0.015), radio (P-value = 0.007), cumulative index of modernity (P-value = 0.000), and frequency listened to radio (P-value = 0.000).

Respondent's employment factors are the intervening variables examined in this study. Results in Table 2 show that respondent that were not favorable to having another child varied significantly across work status (P-value = 0.000), type of work (P-value = 0.000), and earnings from work (P-value = 0.000).

Results in Table 2 show that respondents who had at most two children varied significantly by age (P-value = 0.000), state of residence (P-value = 0.001), residence (P-value = 0.000), education (P-value = 0.000), and wealth status (p-value = 0.000). Other socio-demographic factors that are significantly associated with number of living children include respondent's birth order (P-value = 0.019), husband's age (P-value = 0.000), husband's education (P-value = 0.000), and husband's type of work (P-value = 0.000).

Employment factors significantly associated with number of living children are work status (P-value = 0.000), type of work (P-value = 0.000), and earnings from work (P-value = 0.000). In addition, agents of modernity significantly associated with number of living children are electricity (P-value = 0.000), TV (P-value = 0.001), Cable TV (P-value = 0.000), telephone (P-value = 0.029), and cumulative index of modernity (P-value = 0.000). Number of living children was significantly associated with frequency listened to radio (P-value = 0.030) and frequency watched TV (P-value = 0.000).

MULTIVARIATE RESULTS

Relationships between Employment and Background Factors:

(Table 3 about here)

Table 3 shows the results of multivariate analysis using logistics regression to examine the relationships between the intermediate dependent variables i.e. employment factors and socio-demographic factors. The intermediate dependent variables are work status, type of work, and earnings from work. The results in Table 3 suggest that of the three measures, work status is the best-fitted model with -2 Log Likelihood of 1873.87 and explained variance of 23% (bottom panel of Table 3). The next best fitted was earnings from work with -2 Log Likelihood of 2846.22 and explained variance of 18%, and type of work is the least with a -2 Log Likelihood of 4570.01 and explained variance of only 9%. It is important to note that each measure of employment produced different causal relationships with the socio-demographic factors examined in this study. The reference category in the logistics regression outputs of Table 3 has a reference value of 1, and values more than 1 are interpreted as increased odds while values less than 1 are decreased odds.

In Table 3 Model I established significant relationships between work status (not working vs. working), and the independent variables age, state of residence, education, and husband's type of work. Findings showed that the odds of working increased with age by 1.92 times (P-value = .000). Evidence showed that work status varied significantly by state of residence. The odds that respondents in Lagos state worked decreased to 0.33 times (P-value = .000) compared to their counterparts in Oyo state, and for Ekiti, and Ondo states the odds decreased to 0.33, 0.45 times (P-values = .000 and .002), respectively. On education, the odds that respondents who had secondary education worked increased by 1.75 times (P-value = .041) compared to their counterparts who had no education. The odds of working was 2.22 times (P-value = .049) for respondent's husband in agricultural work compared to those whose husband were not working/others. The odds of working decreased to 0.49 times (P-value = 0.039) for respondents

who had electricity, and it decreased to 0.61 times (P-value = 0.005) for those had cable TV compared to those who did not have.

Results in Model II of Table 3 show that the second intermediate dependent variable, type of work (formal work vs. else) had significant causal relationship with respondent's state of residence, education, religion, and husband's age, and type of work. The odds that respondents in Lagos state reported formal work decreased to 0.71 times (P-value = .008) compared to their counterpart in Oyo state, and for those in Ondo state it decreased to 0.69 times as well (P-value = .007). The odds that respondents who had higher education had formal work increased by 2.93 times (P-value = .000) compared to those uneducated. The odds that Christians reported formal work increased to 1.56 times (P-value = .000) compared to their Muslim/traditional counterparts. Results show that with unit increase in husband's age, the odds of respondents engaging in formal work decreased to 0.98 times (P-value = .007). Findings showed that the odds that respondents engaged in formal work increased by 2.62 times (P-value = .002) for those whose husbands were involved in agricultural work compared to their counterparts in the reference category. Likewise, the odds increased by 1.97 times (P-value = .025) for those whose husbands engaged in skilled/unskilled manual work compared to those whose husbands were not working/others.

Model III in Table 3 presents results on earnings from work (cash only vs. else) the third intermediate dependent variable of this study. Findings show that earning from work is significantly and causally related to respondent's age, state of residence, and husband's type of work. With increase in age, the odds of receiving cash from work increased to 1.51 times (P-value = .000). The odds that Ogun state respondents received cash from work decreased to 0.32 times (P-value = .000) compared to their counterparts in Oyo state, and for respondents in Lagos, Ekiti and Ondo states the odds decreased to 0.40, 0.52 and 0.40 times (P-values = .000, .000, .002, and .000) respectively compared to the reference category. The odds that respondents whose husbands worked in technical/service sector received cash from work increased by 2.39 times (P-value = .005) compared to those whose husbands did not work/others. For those whose husbands engaged in agricultural, and skilled/unskilled manual labour the odds of earning cash for work increased by 2.09 and 3.71 times (P-values = .025, and .000) respectively compared to the reference category. The odds of earning cash for work decreased to .62 times (P-value = .002) for respondents who had cable TV compared to those who did not.

(Table 4 about here)

Relationships between Fertility Behavior & Background Factors

Table 4 presents results on the relationships between fertility behavior (measured by fertility preference, and number of living children), and socio-demographic factors. The fertility behavior variable, preference for another child (preference for another child vs. no preference for another child) was an attempt to distinguish between respondents whose responses suggest potential fertility reduction and those whose responses do not. While number of living children, (three or more vs. at most two) was to distinguish between respondents within replacement level fertility at the time of survey and those over replacement level. The aim of using these two measures of fertility is to provide more insightful information on how to reduce the high fertility in the south-

west region of Nigeria. Model IV of Table 4 is the best fit for the dependent variable fertility preference having -2 Log likelihood of 3181.93 and explained variance of 48%, and Model V is the best fit for the dependent variable, number of living children with -2 Log likelihood of 3308.55 and explained variance of 47%. In this study, reference point for interpreting the odds ratio values is 1, thus values more than or above 1 is interpreted as increased odds while values less than 1 is decreased odds.

Findings in Model IV showed that fertility preference had significant relationship with age, state of residence, husband's age, and has cable TV. The findings showed that the odds of respondent non-preference for another child increased with unit increase in age by 2.25 times (P-value = .000). The odds of non-preference for another child varied significantly by state. The odds that respondents in Ogun state preferred not to have another child decreased to 0.68 times (P-value = .029) compared to their counterparts in Oyo state, and it increased to 1.46, and 1.48 times (P-values = .022, and .030) for those in Osun and Ekiti states respectively compared to the reference category. Results showed that the odds of not preferring another child increased by 1.05 times (P-value = .000) with unit increase in husband's age. The odds of not preferring to have another child increased to 1.37 times (P-value = .024) for respondents who had cable TV compared to those who had none. The odds of non-preference for another child decreased to 0.37 times (P-value = .046) for respondents who worked compared to those who did not, and the odds increased by 21.24 times (P-values = .018 and .017) for respondents who earned cash or kind, or only cash respectively compared to their counterparts who did not work.

With respect to the dependent variable number of living children, results show that the odds of having at most two living children decreased by age. The odds of having at most two children at the time of survey decreased to 0.45 times (P-value = .000) for unit increase in respondent's age. The odds of having at most two living children increased with level of education. The odds of having at most two children increased by 2.90 times (P-value = .000) for respondent with higher level of education compared to the uneducated. Results showed that the odds of reporting more number of living children decreased significantly from lower to higher wealth status. The odds that respondent in the richest wealth status had at most two children increased by 2.09 times (P-value = .035) compared to their poorest/poorer counterparts. The odds of having at most two children decreased significantly with husband's age. The odds that respondents had at most two children decreased to 0.97 times (P-value = .000) with unit increase in age of husband. Results show that number of living children decreased significantly with lower level of husbands' education. The odds decreased to 0.56 times (P-value = .008) for respondents whose husband had primary education compared to those whose husbands were uneducated. With respect to agents of modernity, the odds that respondents had at most two children decreased to 0.48 times (P-value = .001) for those who had TV compared to their counterparts who had none.

DISCUSSION

This study focused on fertility behavior in the south-west region of Nigeria where current fertility is among the lowest, and lower than the national average (NDHS, 2013). The aim is to examine the relationships between socio-demographic factors, agents of modernity, employment factors, and fertility behavior of women aged 15-49 in a marital union i.e. those married/living

with their partner in the region with a view to shedding more insight on strategies to enable rapid fertility decline in the region.

With respect to the relationships between employment and socio-demographic factors, three measures of employment i.e. work status, type of work, and earnings from work were examined. Findings showed that the odds of working varied significantly by state of residence, and it increased with increase in respondent's age, level of education, husband's type of work, and decreased with respect to electricity and cable TV. In terms of the relationships between type of work and independent variables, results show that the odds of been engaged in formal work varied by state of residence, and it increased by level of education, religion, and husbands type of work, and decreased by husband's age. On earnings from work, the third measure of employment, findings establish that odds of receiving earnings i.e. cash from work varied significantly by state of residence, and it increased by age, type of husband's work, and decreased by cable TV.

The evidence from thus study attest to the important of socio-demographic factors such as age, education, religion, state of residence and husband's type of work in policies geared to promote or increase female labour force participation in the south-west region of Nigeria. Consideration of these key socio-demographic characteristics will help increase women labour force participation which will most likely contribute to bring further fertility decline, and empower women in households to better improve the quality of life in the region.

The full models on the relationships considered in this study explained considerable variations (over 45%) in the dynamics between fertility behavior and predictors suggesting that the significant independent variables are important for policy formulations geared to reduce fertility in the south-west of Nigeria. Respondents' age, state of residence, wealth status, husband's age, and earnings from work had direct effects on fertility behavior and the direction of effects were consistent both in the reduced (not shown) and full models. The odds of non-preference for another child varied by state of residence, and it increased by respondent's age, availability of cable TV, earnings from work, and husband's age. Results showed that the odds of having at most two children akin to replacement level fertility in most developed countries (Reinis, 1992), was positively related with level of education, and wealth status, and negatively related with respondent's and husband's age, and availability of TV.

A key insight from these results suggest that there are significant variations in non-preference for another child, and number of living children within the region of study and this should be considered in designing policies to influence fertility behavior in the region. Literature on the relationships between fertility behavior and female labour force participation in Nigeria are mixed with some suggesting positive relationships while other suggest negative (Bardam, 1996; Wusu, 2012; and Adebisi and Onifade, 2014). The reason for the mixed results may be partly due to the type of measurement used for employment. Only earnings from work of the three employment measurement used in this study had significant relationships with fertility behavior in the full models that included all predictors. This study suggests that for employment to have the desired effect of reducing fertility as it has in other context, it must be remunerated at least in cash or at least kind. This reasoning is plausible when juxtaposed with the opportunity cost of taking care of children vis-à-vis going to work for pay.

Availability of TV or cable TV in household were the two agents of modernity significantly related to fertility behavior. Availability of cable TV in household had positive effects on non-preference for another child, while availability of TV had negative effects on having small number of children. These results are indicative of the need for policies and programs to increase the use and effectiveness of these agents of modernity i.e. TV, cable TV, radio, and telephone as vehicles for massive social and behavior change (Chua, 2012; Zhuk, 2014) in the south-west region of Nigeria.

CONCLUSIONS

This study showed that husbands' socio-demographic factors especially age, primary level education, and type of work, are important in the dynamics of relationships and discussions about women's fertility behavior (Bankole, 1995), and should be factored into policy formulations for more effective and impactful results. As women of the south-west region are gradually moving from natural to controlled fertility (Isiugo-Abanihe, 2012) education, wealth status, and engagement in cash-paid employment will be critical deciding factors especially in situations where economic realities of the time are getting more and more unfriendly. In order to have maximum impact of programs, there is the need to disaggregate strategies by state of residence, level of education, religion, and wealth status to enable customized, tailored targeting to promote smaller family norms, and reduce fertility rate to replacement level in the region.

Significant vehicles with potentials for changing behavior revealed in this study are the TV and cable TV. Alongside TV and cable TV, it may be necessary to in addition, explore effective use of radio and telephone as alternative channels in campaign towards promoting small family size norms and increase use of contraceptives in the south-west region of Nigeria.

Table 1: Percentage frequency distribution of women in marital union by socio-demographic factors, agents of modernity, employment factors, and fertility behavior in south-west region of Nigeria

Variables	Total N = 3784	(in %)	Variables	Total N = 3784	(in %)		Total N = 3784	(in %)
SOCIO- DEMOGRAPHIC FACTORS			HUSBAND'S SOCIO- DEMOGRAPHIC FACTORS			Household has Telephone		
Age groups			Husband's Age in Group			No	3711	98.5
24 or less	434	11.5	34 or younger	959	25.3	Yes	57	1.5
25-29	784	20.7	35-49	1966	52.0	Has mobile phone		
30-34	803	21.2	50 or older	859	22.7	No	279	7.4
35-39	743	19.6	Husband's Education			Yes	3466	92.6
40+	1020	27.0	No education	386	10.2	Cumulative Index of Modernity		
State			Primary	765	20.2	None	138	3.6
Oyo	674	17.8	Secondary	1729	45.8	One item	226	6.0
Ogun	490	12.9	Higher	899	23.8	Two item	417	11.0
Lagos	917	24.2	Husband's Type of Work			Three or more	3003	79.4
Osun	611	16.1	Not working/others	62	1.6	FREQUENCY OF EXPOSURE TO AGENTS OF MODERNITY		
Ekiti	518	13.7	Technical/services	1570	41.6	Frequency listened to radio		
Ondo	574	15.2	Agricultural	806	21.4	Not at all	522	13.8
Residence			Skilled/unskilled manual	1333	35.3	Less than once a week	918	24.3
Rural	1082	28.6	EMPLOYMENT FACTORS			At least once a week	2341	61.9
Urban	2702	71.4	Work status			Frequency watched TV		
Education			Not working	377	10.0	Not at all	604	16.0
No education	440	11.6	Working	3398	90.0	Less than once a week	869	23.0
Primary	918	24.3	Type of work			At least once a week	2309	61.1
Secondary	1751	46.3	Not working/others	363	9.6	FERTILITY BEHAVIOUR		
Higher	675	17.8	Technical/services	2687	71.1	No of Living Children		
Religion			Agricultural	335	8.9	Three or more	2253	59.5
Islam/traditional	1267	33.5	Skilled/unskilled manual	394	10.4	At most two	1531	40.5
Christianity	2510	66.5	Earnings from work			Preference for Another Child		
Wealth Index			Not working	364	9.6	Have another child	2345	62.1
Poorest/poorer	347	9.2	Cash or kind	285	7.5	Not have to another child	1429	37.9
Middle	480	12.7	Cash only	3135	82.8			
Richer	1145	30.3	AGENTS OF MODERNITY					
Richest	1812	47.9	Household has Electricity					
No of Siblings of Respondent			No	742	19.6			
2 or less	395	10.4	Yes	3038	80.4			
3-5	1873	49.5	Household has Radio					
6 or more	1513	40.0	No	768	20.3			
Birth Order of Respondent			Yes	3015	79.7			
First child	778	21.0	Household has TV					
Second or third child	1434	38.7	No	894	23.6			
Fourth child or higher	1490	40.2	Yes	2888	76.4			
			Household has Cable TV					
			No	3238	85.8			
			Yes	538	14.2			

Table 2: Showing bivariate relationships between indicators of fertility behavior and socio-demographic factors, agents of modernity, and employment factors among women in marital union in south-west region of Nigeria

Variables	Not favorable to have another child (%)	At most two or living children (%)	Variables	Not favorable to have another child (%)	At most two living children (%)
Total (N)	3784	3784	Total (N)	3784	3784
SOCIO-DEMOGRAPHIC FACTORS			No of Siblings of Respondent		
Age groups			2 or less	38.0	42.3
24 or less	1.2	93.3	3-5	37.9	41.8
25-29	9.3	64.4	6 or more	37.8	38.4
30-34	25.7	41.0	P-value	0.998	0.105
35-39	48.8	21.9	Birth Order of Respondent		
40+	77.1	12.6	First child	39.0	38.4
P-value	0.000	0.000	Second or third child	39.8	38.7
State			Forth child or higher	35.3	43.2
Oyo	34.6	37.8	P-value	0.035	0.019
Ogun	33.3	38.8	HUSBAND'S SOCIO-DEMOGRAPHIC FACTORS		
Lagos	36.8	46.5	Husband's Age		
Osun	44.0	39.6	34 or younger	6.0	65.6
Ekiti	44.3	40.9	35-49	37.9	31.0
Ondo	35.0	35.9	50 or older	73.6	11.6
P-value	0.000	0.001	P-value	0.000	0.000
Residence			Husband's Education		
Rural	36.4	33.8	No education	44.2	24.4
Urban	38.5	43.1	Primary	46.0	22.7
P-value	0.226	0.000	Secondary	34.6	37.4
Education			Higher	34.6	46.8
No education	39.5	30.0	P-value	0.000	0.000
Primary	44.4	24.1	Husband's Type of Work		
Secondary	36.2	43.8	Not working/others	30.6	56.5
Higher	32.2	60.9	Technical/services	37.9	39.5
P-value	0.000	0.000	Agricultural	41.2	25.1
Religion			Skilled/unskilled manual	36.3	35.6
Islam/traditional	34.8	38.7	P-value	0.090	0.000
Christianity	39.5	41.3			
P-value	0.005	0.118			
Wealth Index					
Poorest/poorer	28.8	32.6			
Middle	41.5	31.2			
Richer	39.8	36.7			
Richest	37.4	46.8			
P-value	0.001	0.000			

Table 2: Showing bivariate relationships between indicators of fertility behavior and socio-demographic factors, agents of modernity, and employment factors among women in marital union in south-west region of Nigeria (Continued)

Variables	Not favorable to have another child (%)	At most two or living children (%)	Variables	Not favorable to have another child (%)	At most two living children (%)
Total (N)	3784	3784	Total (N)	3784	3784
EMPLOYMENT FACTORS			Cumulative Index of Modernity		
Work status			None	22.5	42.8
Not working	15.9	67.9	One item	32.3	34.1
Working	40.4	37.3	Two item	40.4	32.1
P-value	0.000	0.000	Three or more	38.6	42.0
Type of work			P-value	0.000	0.000
Not working/others	15.5	68.9	FREQUENCY OF EXPOSURE TO AGENTS OF MODERNITY		
Technical/services	41.5	36.9	Frequency listened to radio		
Agricultural	42.1	27.8	Not at all	34.0	35.2
Skilled/unskilled manual	30.4	49.5	Less than once a week	33.3	40.8
P-value	0.000	0.000	At least once a week	40.5	41.5
Earnings from work			P-value	0.000	0.030
Not working	15.2	69.0	Frequency watched TV		
Cash or kind	33.8	39.3	Not at all	38.6	30.6
Cash only	40.8	34.3	Less than once a week	36.9	39.5
P-value	0.000	0.000	At least once a week	38.0	43.4
AGENTS OF MODERNITY			P-value	0.778	0.000
Household has Electricity					
No	34.0	33.7			
Yes	38.8	42.1			
P-value	0.015	0.000			
Household has Radio					
No	33.6	39.5			
Yes	38.9	40.7			
P-value	0.007	0.520			
Household has TV					
No	36.4	35.7			
Yes	38.3	42.0			
P-value	0.325	0.001			
Household has Cable TV					
No	37.7	39.1			
Yes	38.4	48.7			
P-value	0.759	0.000			
Household has Telephone					
No	38.0	40.1			
Yes	35.7	54.4			
P-value	0.732	0.029			
Has mobile phone					
No	33.3	38.7			
Yes	38.4	40.5			
P-value	0.096	0.569			

Table 3: Showing the odds of women in marital union in south-west region of Nigeria by employment status according to socio-demographic characteristics and agents of modernity

Variables	Work Status	Type of work	Earnings from work	Variables	Work status	Type of work	Earnings from work
	Model I	Model II	Model III		Model I (cont.)	Model II (cont.)	Model III (cont.)
BACKGROUND FACTORS				No of Siblings of Respondent			
Age (in single years)	1.92***	0.99	1.51***	2 or less (ref.)			
State				3-5	1.02	0.87	0.94
Oyo (ref.)				6 or more	0.90	0.88	0.92
Ogun	0.61	0.93	0.32***	Birth Order of Respondent			
Lagos	0.33***	0.71**	0.40***	1 st child (ref.)			
Osun	1.56	0.83	1.35	2 nd or 3 rd child	0.91	0.90	0.90
Ekiti	0.33***	0.98	0.52**	4 th child or higher	1.10	0.89	0.96
Ondo	0.45**	0.69**	0.40***	HUSBAND'S BACKGROUND FACTORS			
Residence				Husband's Age (in single years)			
Rural (ref.)					1.01	0.98**	1.00
Urban	0.87	0.87	1.23	Husband's Education			
Education				No education (ref.)			
No education (ref.)				Primary	1.17	1.04	1.27
Primary	1.64	1.07	1.05	Secondary	1.42	1.00	1.47
Secondary	1.75*	1.24	1.40	Higher	1.35	1.34	1.49
Higher	1.14	2.93***	1.33	Husband's Type of Work			
Religion				Not working/others (ref.)			
Islam/traditional (ref.)				Technical/services	1.21	1.51	2.39**
Christianity	0.84	1.56***	0.83	Agricultural	2.22*	2.62**	2.09*
Wealth Index				Skilled/unskilled manual	1.98	1.97*	3.71***
Poorest/poorer (ref.)							
Middle	1.16	0.96	0.73				
Richer	1.58	0.98	0.70				
Richest	1.97	1.07	0.83				

Table 3: Showing the odds of women in marital union in south-west region of Nigeria by employment status according to socio-demographic characteristics and agents of modernity (Continued)

Variables	Work Status Model I	Type of work Model II	Earnings from work Model III		Work Status Model I	Type of work Model II	Earnings from work Model III
AGENTS OF MODERNITY				Cumulative Index of Modernity			
Household has Electricity				None (ref.)			
No (ref.)				One item	1.50	1.79	1.11
Yes	0.49*	1.04	1.04	Two item	2.79	1.32	1.65
				Three or more	2.79	1.38	1.86
Household has Radio				FREQUENCY OF EXPOSURE TO AGENTS OF MODERNITY			
No (ref.)				Frequency listened to radio			
Yes	0.87	0.95	0.99	Not at all (ref.)			
				Less than once a week	1.15	1.20	1.10
Household has TV				At least once a week	1.19	1.10	1.09
No (ref.)				Frequency watched TV			
Yes	1.24	0.99	1.12	Not at all (ref.)			
				Less than once a week	0.65	0.98	0.95
Household has Cable TV				At least once a week	0.72	0.92	1.10
No (ref.)							
Yes	0.61**	1.01	0.62**				
Household has Telephone							
No (ref.)							
Yes	1.71	1.12	1.34				
Has mobile phone							
No (ref.)							
Yes	1.19	1.00	0.99				

Ref. = reference category,

Significance level: * = 0.05, ** = 0.01, and *** = 0.001 levels of significance.

Model I (work status): Total N = 3784, -2 Log Likelihood = 1873.87, Nagelkerke R² = 0.23, (explained variance = 23%);

Model II (type of work): Total N = 3784, -2 Log Likelihood = 4570.01, Nagelkerke R² = 0.09 (explained variance = 9%)

Model III (earnings from work): Total N = 3784, -2 Log Likelihood = 2846.22, Nagelkerke R² = 0.18 (explained variance = 18%)

Table 4: Showing the odds of women in marital union aged 15-49 in south-west region of Nigeria by fertility preference, and number of living children according to socio-demographic factors, agent of modernity, and employment status

Variables	Fertility Preference	Number of Living Children	Variables	Fertility Preference	Number of Living Children
	Model IV	Model V		Model IV (Cont.)	Model V (Cont.)
SOCIO-DEMOGRAPHIC FACTORS					
Age groups (in single ages)	2.25***	0.45***	No of Siblings of Respondent 2 or less (ref.) 3-5 6 or more	1.28 1.26	0.78 0.71
State of Residence			Birth Order of Respondent 1 st child (ref.) 2 nd or 3 rd child 4 th child or higher	1.18 1.20	1.05 1.08
Oyo (ref.)			HUSBAND'S BACKGROUND FACTORS		
Ogun	0.68*	1.30	Husband's Age (in single years)	1.05***	0.97***
Lagos	0.96	1.20	Husband's Education		
Osun	1.46*	0.97	No education (ref.)		
Ekiti	1.48*	0.79	Primary	1.06	0.56**
Ondo	0.80	0.95	Secondary	1.00	0.78
Place of Residence			Higher	0.87	1.20
Rural (ref.)			Husband's Type of Work		
Urban	0.98	1.20	Not working/others (ref.)		
Highest Educational Level			Technical/services	1.53	0.57
No education (ref.)			Agricultural	1.48	0.56
Primary	1.17	0.73	Skilled/unskilled manual	1.72	0.49
Secondary	1.05	1.27			
Higher	0.70	2.90***			
Religion of Respondent					
Islam/traditional (ref.)					
Christianity	1.11	1.20			
Wealth Index					
Poorest/poorer (ref.)					
Middle	1.45	1.35			
Richer	1.66	1.54			
Richest	1.66	2.09*			

Table 4: Showing the odds of women in marital union aged 15-49 in south-west region of Nigeria by fertility preference, and number of living children according to socio-demographic factors, agent of modernity, and employment status (Continued)

Variables	Fertility Preference Model IV	Number of Living Children Model V	Variables	Fertility Preference Model IV (Cont.)	Number of Living Children Model V (Cont.)
AGENTS OF MODERNITY					
Household has Electricity			Cumulative Index of Modernity		
No (ref.)			None (ref.)		
Yes	0.97	0.96	One item	1.42	1.49
			Two item	2.46	1.44
			Three or more	2.47	2.47
Household has Radio			FREQUENCY OF EXPOSURE TO AGENTS OF MODERNITY		
No (ref.)			Frequency listened to radio		
Yes	0.86	0.93	Not at all (ref.)		
			Less than once a week	0.78	1.19
			At least once a week	1.14	1.16
Household has TV			Frequency watched TV		
No (ref.)			Not at all (ref.)		
Yes	1.06	0.48***	Less than once a week	0.73	1.32
			At least once a week	0.76	1.27
Household has Cable TV			EMPLOYMENT FACTORS		
No (ref.)			Work status		
Yes	1.37*	0.78	Not working (ref.)		
			Working	0.37*	1.50
Household has Telephone			Type of work		
No (ref.)			Not working/others (ref.)		
Yes	0.77	1.31	Technical/services	0.18	0.49
			Agricultural	0.22	0.51
			Skilled/unskilled manual	0.17	0.71
Has mobile phone			Earnings from work		
No (ref.)			Not working (ref.)		
Yes	0.71	0.61	Cash or kind	21.24*	0.98
			Cash only	21.24*	0.85

Ref. = reference category,

Significance level: * = 0.05, ** = 0.01, and *** = 0.001 levels of significance.

Model IV (fertility preference): Total N = 3784, -2 Log Likelihood = 3181.93, Nagelkerke R² = 0.48, (explained variance = 48%);

Model V (no of living children): Total N = 3784, -2 Log Likelihood = 3308.55, Nagelkerke R² = 0.47 (explained variance = 47%)

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