

Analysis of Proximate and Indirect Determinant of Fertility in Lokoja Kogi State

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Abstract

Fertility behaviour is conditioned by both biological and social factors. This study analysed the proximate and indirect determinants of fertility in Lokoja metropolis of Kogi State, Nigeria, by identifying the demographic and socio-economic characteristics of households in the study area, identifying the characteristics of family planning methods, assessing the use and effects of contraceptives and evaluating the influence of socio-demographic factors on fertility. The purposive sampling method was used during the survey; the data for this study were obtained from the administration of structured questionnaire to 288 households in four residential neighbourhoods of the study area. The results of the analysis revealed that age at first delivery, child spacing and parity, number of wives, sex preferences, and the use of contraceptives underlined the fertility level of a household. Furthermore, the study found that husbands' approval, religion, and tradition played a vital role in the use of contraceptives, and that the utilisation of health care services, although another crucial determinant of fertility rate, depended on neighbourhood characteristics which varied from one area to another. Thus, the study recommended, among others, better approach to family planning education and increased accessibility to health care services.

Keywords: Sex, Preference, Maternal health, Equality, Child Preference, Male and Female

1. INTRODUCTION

Fertility is a trending topic of interest in both developed and developing regions of the world (World Bank, 2019). Fertility is the most direct means of increasing (or decreasing the world's population, global and international organisations regard it as both an advantage and a threat (Olaniyan, 2016). Issues of fertility have drawn the interest of governments and organisations all over the world. One of the reasons for this is that with the right approach, being able to control fertility in a region has many advantages (Shcherbakova, 2019). In an ideal situation, fertility control is tantamount to population control, meaning that governments would be able to decide the number of individuals in a locality, and also the number of resources available to them (Colleran and Snopkowski, 2018). Besides effective resource allocation, knowing the factors that affect fertility would help governments reproduce the effects of fertility control somewhere else, and even ensure sustainable development without having to sacrifice implement ineffective policies (Dribe and Scalone, 2014). In other words, widespread poverty would become a thing of the past. Unfortunately, this is not the case in Nigeria.

One of the main problems of fertility in Nigeria is resource and amenities allocation, as is the case in other developing regions of the world, Nigeria governments still labour to ensure the availability and proper use of basic infrastructure, social services, access to welfare and livelihood opportunities, etc. (Odimegwu and Adewoyin, 2020). Furthermore, because Nigeria has a high fertility rate, the country experiences almost perpetual depletion of its natural resources, economic regression, unequal income distribution, poverty (with its attendant problems such as hunger, crime, violence, prostitution, etc.), and even reduced life expectancy (Alaba et al., 2017; Adebowale et al., 2019a). None of these contribute or led to the envisioned sustainable development of Nigeria, meaning that a high fertility rate is a clear and trending disadvantage and burden (Odior and Alenoghena, 2018). As the unease that comes with very high or very low fertility is global, different measures and policies have been formulated and put in place the United Nations' Sustainable Development Goals (SDGs) is the most recent global example (Starbird et al., 2016; Wietzke, 2020). Goals 1, 3 and 5, especially, highlight the significance of "childbearing behaviour" and frequency, which are directly related to population growth (Olowolafe, 2020). In

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other words, knowing and controlling the factors that influence fertility (and by extension, population growth), would help nations throw off the burdens of fertility rates that are too high or too low.

Nigerian governments have also adopted the SDGs with the expectation that global intervention and supervision would help to moderate the effects of fertility. But the fertility level in Nigeria remains high after more than 5 years, and is even getting higher in rural regions and among the uneducated (Adebowale et al., 2020; Olowolafe, 2020). If this continues, the SDG vision will move further and further from the reach of Nigeria, and the implications of this (widespread poverty, rampant hunger, low standards of living and quality of life, eventual exhaustion of natural resources, etc.) are not acceptable. Viable solutions to fertility control (e.g., family planning and contraceptive usage) have mostly been neglected or ignored (Adedini et al., 2018). This has generally been attributed to lack of knowledge and awareness (Ndayizigiye et al., 2017). However, other researchers have noted that fertility characteristics vary across the political regions and States of Nigeria, and so the problem of high fertility can only be solved systematically (Chicoyo, 2016; Alaba et al., 2017). To this effect, while more and more researchers are tackling questions directly related to these social deficiencies and the overall economic growth, only a handful have attempted to and successfully linked any of these challenges to demographics, sexual behaviour, reproductive health, and contraceptive use in Nigeria (Odimegwu and Adewoyin, 2020; Wietzke, 2020). There is therefore a gap in knowledge; very few studies have researched the influence of socio-cultural factors in Kogi State, and even fewer have done so in Lokoja, the State capital.

Thus, this study attempts to analyse the influence of proximate and indirect determinants of fertility in Lokoja Local Government Area of Kogi State, Nigeria.

2. Conceptual Framework

Diffusion Theory of Fertility

Diffusion theory is an independent concept that is used to describe the rate at which something becomes known among a people, community or region (Casterline, 2001; Colleran and Snopkowski, 2018; Olowolafe, 2020). It is also defined as the method through which new ideas, concepts and/or behaviours are spread from place to place and person to person (Retherford and Palmore, 1983; Mutwiri, 2019).

Jung et al. (2019) listed three possible steps through which diffusion theory affects the practice of family planning and contraception, and ultimately, fertility, migration or socialisation, which allows people who are knowledgeable about or already practicing family planning or contraception to spread the idea wherever they go; adaptation, which ensures that unaware people adapt to or adopt the “dominant fertility behaviour at the destination environment”; and selection, which maintains that people with a preference for fewer children are likely to migrate to urban areas, and people with a preference for many children are inclined to relocate to/reside where the costs of upbringing are lower and family sizes are generally larger. In all three scenarios, information and awareness plays the central role.

Furthermore, the diffusion theory has been used to explain the fertility differences between rural and urban areas, the educated and the non-educated, the wealthy and the poor, etc. (Kirk, 1996; Lutz et al., 2006; Adebowale et al., 2020; Olowolafe, 2020). Thus, diffusion theory is the idea behind the regional variation, meaning that regions that share boundaries almost always have similar fertility characteristics because of influence and diffusion (Bongaarts and Watkins, 1996; Cleland and Wilson, 1996; Lutz, 2017). Thus, because of the social interactions between/among neighbouring regions, even rural areas are influenced until similar patterns of fertility are noticeable (Casterline, 2001; Jung et al., 2019). This makes it easier to understand and manage the population characteristics, distribution and growth of such regions (Mutwiri, 2019; Saikia et al., 2019; Odimegwu and Adewoyin, 2020). Considerations for Fertility Differentials

Using what has been described as the Hawthorne effect, researchers have developed a framework for ‘explaining human fertility’ which includes economic, cultural and technological factors (Adebowale et al., 2017). This framework includes three factors: the manner and pace at which people bear children (parity), deliberate attempts to control this pace (contraception), and every component that influences parity and contraception (Casterline, 2010; Shapiro and Hinde, 2017).

3. Study Area

Location and Extent

Lokoja is a city in North-Central Nigeria, and the capital of Kogi State (See Figure 3.1). Situated between latitudes 7°45'27.56"N and 7°51'04.34"N of the Equator, and longitudes 6°41'55.64"E and 6°45'36.58"E of the Greenwich

Meridian, the city has an area of about 3,180km², and is a Local Government Area in Kogi state (Atomode and Majekodunmi, 2016).

There are ten (10) independent wards in Lokoja, with residential neighbourhoods (Adetunji et al., 2015). Some of these neighbourhoods are Ganaja, Lokongoma, Felele, Adankolo, and Zango (See Figure 3.2).

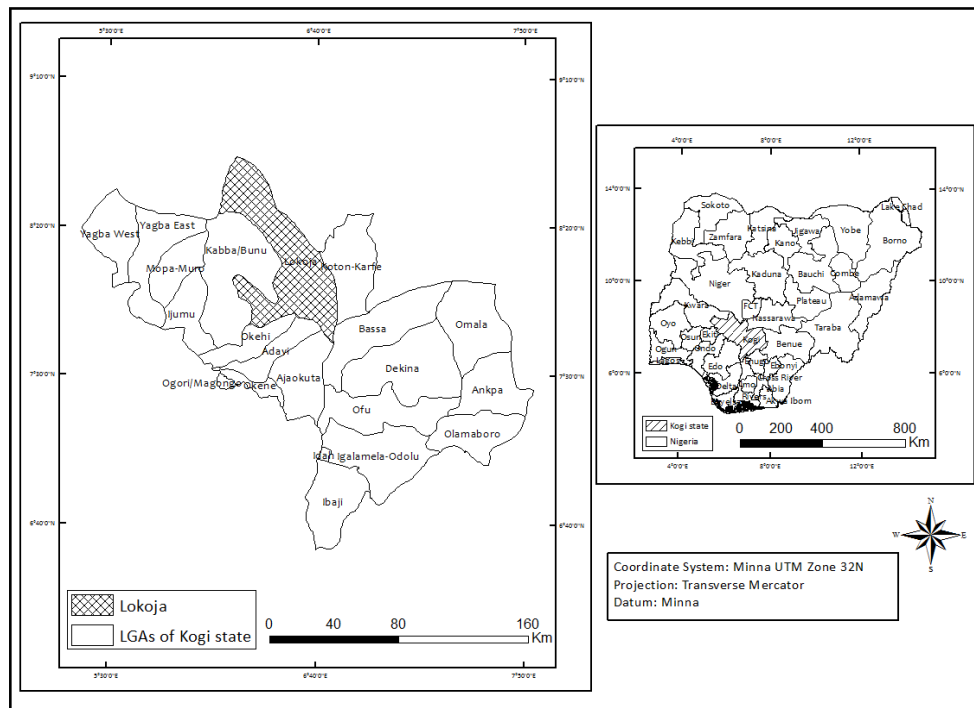


Figure 3.1: Local Government Areas of Kogi State
Source: MyriadSTEM (2021)

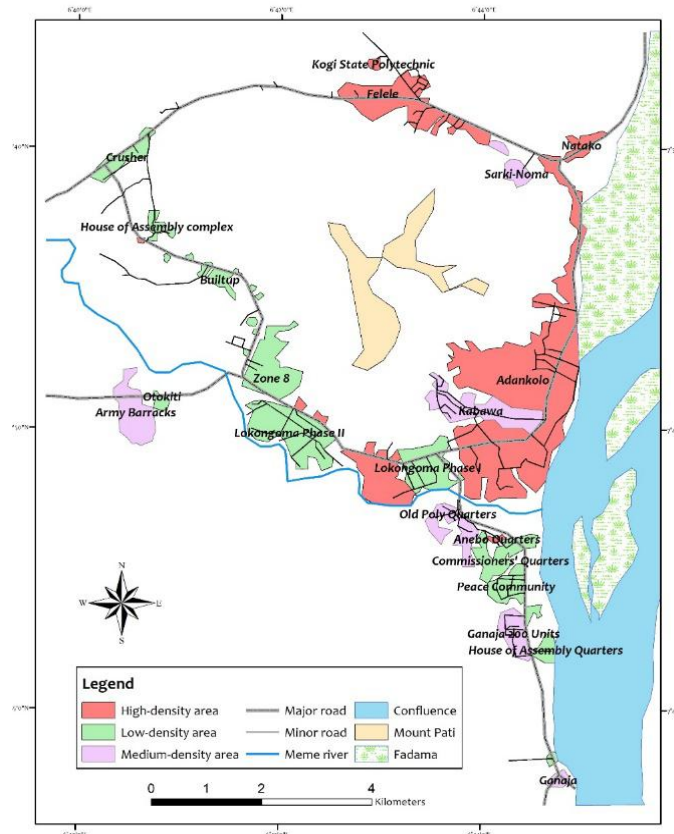


Figure 3.2: Residential Areas of Lokoja
Source: MyriadSTEM (2021)

3.1 Methodology

3.1.1 Sample Frame, Design and Sample Size

The sample frame for this study consisted of all fertile women in Lokoja metropolis, particularly those who are between 18 years old and 45 years, and have borne one or more children.

Agbo et al. (2020) is one of the most recent studies on fertility in Nigeria. Because the study population was not known, the study used the Cochran (1963) formula for sample size determination:

$$n = \frac{Z^2 pq}{e^2} \quad (2)$$

Where, n is sample size,

Z is the value for area under the normal curve,

p is the estimated proportion of the desired population,

q is $1-p$, and

e is the level of precision (or sampling error) (Cochran, 1963).

Assuming the Lokoja population is equally divided as 50% male and 50% female, the proportion of fertile women (target population) was assumed to be 25% (0.25). Therefore, $p = 0.25$, and $q = 1 - 0.25 = 0.75$.

Thus,

$$n = \frac{1.96^2(0.25 \times 0.75)}{0.05} = \frac{3.8416 \times 0.1875}{0.0025} = \frac{0.7203}{0.0025} = 288.12 \sim 288$$

Thus, a sample size of 288 was drawn from the total population of Lokoja residents. Furthermore, purposive sampling was the adopted sampling technique for selecting respondents. This is because the target households are very specific and include those with women who have given birth to one child or more.

3.1.2 Instrument of Data Collection and Data Analysis

A well-structured questionnaire was used to obtain information on: socio-cultural factors of women in the study area; characteristics of family planning methods; fertility characteristics of the study area in comparison with the national demographic and health survey; and the influence of socio-demographic factors on fertility.

All the responses obtained from the questionnaire survey were presented in tables and charts, using frequencies and simple percentages. In addition, different tests of difference analysis were used in resolving the study's research objectives. The responses obtained via the distributed questionnaires were coded and scored for statistical data analysis. This coding/scoring was carried out with the aid of Microsoft Excel, and Statistical Package for Social Sciences (SPSS) was used for the actual data analysis.

The analytical method used for the Likert (5-scale) responses is the weighted mean analysis, which weighs the average number of responses to each question to build a summative index. This index was then adopted as the general response to that query/question.

For the resolution of the hypotheses, different statistical tests were employed. Two null hypotheses were stated for this study: that there is no significant difference in the family planning methods used in Lokoja; and that socio-cultural factors do not significantly affect fertility. Chi-square test of difference was used to resolve the first hypothesis; and multilevel binary logistic regression was used to resolve the second hypothesis. Chi-square and binary logistic regression were chosen for this study because recent studies with similar (Agbo et al., 2020; Ahinkorah, 2020; Olowolafe, 2020).

The decision rule for the results of the hypothesis testing is as follows: the null hypothesis (H_0) is rejected when the estimated p -value is less than the chosen significance level (0.05). However, when the p -value is greater than 0.05, H_0 must not be rejected.

The decision rule for the results of the weighted mean analysis (for Likert responses) is presented in Table 3.1.

Table 3.1: Decision rule for Weighted Mean results

<i>Weighted mean</i>	<i>Decision</i>		
Less than or equal to 0.3	Strongly disagree	Not important	Very low
0.3 – 0.5	Disagree	Less important	Low
0.5 – 0.7	Agree	Important	High
0.7 – 1	Strongly agree	Very important	Very high

Source: Laerd Statistics (2018).

4. Result

4.1 Factors Affecting Fertility in Study Area

4.1.1 Age at First Birth and Parity

Studies regarding the factors that affect fertility are likely the most common in fertility research. Compared to others like patterns and trends of fertility, child spacing and parity, etc., the factors that affect fertility occupy a dominant position in studies about the number of children in a home, community or region. From the findings of studies such as Adzugbele et al. (2020), Odimegwu and Adewoyin (2020), Adedini et al. (2018), it is evident that household characteristics play a more significant role than they appear to. In the case of age at first pregnancy, for example, Adzugbele et al. (2020) argues that women who conceive and give birth within the first 25 years of their lives are more likely to give birth to more children than those who give birth after clocking 25 years. The argument of Adzugbele et al. (2020) has to do with time and suggests that a woman who gives birth early enough has more time to repeat this compared to one who does not. Chicoyo (2016) disagrees completely and instead notes that early birth (before 16 years, at least) has significant effects on the human body (i.e., that of the mother) and might cause lasting damages that are not immediately obvious until a later conception.

Drawing from both sides of the argument, it is evident that there is a significant variation among the respondents of the study regarding their different ages at first birth (Table 4.6). 25% reported themselves as being between the ages of 20 and 24 years when they conceived for the first time, 21.1% reported this age-range as being 25 to 29 years, 20.8% reported 30 to 34 years, whereas the remaining 33.1% did not respond (because they are men). From this distribution, scholars like Adzugbele et al. (2020) would consider the first 25% as having a higher fertility rate compared to the rest, whereas Chicoyo (2016) would disagree.

Regarding child spacing and parity, Shcherbakova (2019) insists that the human biological framework is the main determinant. However, as Agbo et al. (2020) explained, the human biological is only a framework for fertility itself (i.e., whether or not a woman can conceive), not spacing. The latter, the study noted, is the result of choices which are informed by information from culture/traditional or formal education. Thus, it could be argued that the distribution of respondents by child spacing in (Table 4.6) is the outcome of the respondents' decisions to have a certain number of children and space the gap at regular or irregular intervals. As the Table shows, 14.4% of the respondents give birth every 2 years, 36.3% do so every 3 years, 22.2% do so every 4 years, and the remaining 27.1% are irregular in their conception.

Going by these results from Table 4.6, the majority of the female residents of Lokoja interviewed for this study got pregnant early enough which may or may not have had a significant effect on their potentials to have more children over time. However, by the results from the analysis of child spacing and parity, the majority conceive and birth their children every 3 years, meaning that over a decade, the typical household welcomes three children, and increases the average household size to 5 individuals. This corroborates the results in Table 4.5.

Table 4.7: Distribution of respondents by age at first pregnancy and child spacing

Age at first pregnancy	Frequency	Percent (%)
20-24	71	25.0
25-29	60	21.1
30-34	59	20.8
No response	94	33.1
Total	284	100.0
Spacing/Parity	Frequency	Percent (%)
Every 2 years	41	14.4
Every 3 years	103	36.3
Every 4 years	63	22.2
Irregular	77	27.1
Total	284	100.0

Source: Field Survey, 2021

4.1.1 Number of Wives and Children, and Sex Preferences

An equally intriguing factor of fertility noted by many scholars is the number of wives in a household. The logic is that the more wives are in a household, the more the number of children within that household, and vice versa (Obong, 2003; Ushie, 2009; Adebowale, 2019; Ibeji et al., 2020). From the results presented in Table 4.7, the majority of respondents (the 24.3% who are men) have only one wife. This is a reasonable finding considering that the majority of respondents are adherents of the Christian faith which implicitly approves one wife to one man and vice versa. For the remaining 6.7% and 1.1% who have 2 and 3 wives respectively, these can be rationalised as the respondents reported in Table 4.2 as adhering to Islam and African religion and worship.

The arguments of Ibeji et al. (2020), Adebowale (2019) and the others who argue and support a direct and corresponding relationship between number of wives and children can be upheld by the results of Table 4.7: 25.7% of the respondents have as low as a single child, whereas 2.8% have as high as 7 children—with an average of 2 children per household (from the 28.5% majority). Considering the notion put forward by Shcherbakova (2019) that the average household in modern-day Africa has 2 to 4 children, the results of Table 4.7 are within the realm of plausibility. Furthermore, the fact that some households are comprised of 2 to 3 wives suggests the possibility of each wife giving birth to at least 2 children to have 6 to 7 children, with exceptions.

Table 4.8: Distribution of respondents by number of wives and children

Number of wives	Frequency	Percent (%)
1	69	24.3
2	19	6.7
3	3	1.1
No response	193	68.0

Total	284	100.0
Number of children	Frequency	Percent (%)
1	73	25.7
2	81	28.5
3	52	18.3
4	28	9.9
5	16	5.6
6	11	3.9
7	8	2.8
No response	15	5.3
Total	284	100.0

Source: Field Survey, 2021

Shcherbakova (2019) is one of the handful of studies that attempt to give a rationale for the distribution of children by sex in a household. The study emphasised that the sexes of children are yet to be determined by medical science or any other science, for that matter, but is still dependent on biology. From the distribution of respondents presented in Table 4.8, therefore, it is evident that there is no clear pattern in the sexes of the children in the households. For example, the majority of respondents (44.7%) have only one female child and only one male child (32.4%). This result corroborates Table 4.7 that the average number of children per household among the respondents is 2. Moreover, the Table shows interesting cases: a single household (0.4%) that has 6 female children and 4 households (1.4%) that have 6 male children. Of course, from the results from Table 4.7, it is obvious that these cannot be the same household since the most children any household is reported to have is 7. Nevertheless, this also corroborates the earlier Table 4.5 of accommodation (and number of rooms). These findings consequently support the arguments of Olowolafe (2020) and Adebowale et al. (2017) on how accommodation options, number of wives and children, and household sizes are woven into one another.

Table 4.9: Distribution of respondents by number of daughters and sons

Number of daughters	Frequency	Percent (%)
0	62	21.8
1	127	44.7
2	58	20.4
3	14	4.9
4	5	1.8
5	2	0.7
6	1	0.4
No response	15	5.3
Total	284	100.0
Number of sons	Frequency	Percent (%)
0	73	25.7
1	92	32.4
2	50	17.6
3	35	12.3
4	12	4.2
5	3	1.1
6	4	1.4
No response	15	5.3
Total	284	100.0

Source: Field Survey, 2021

One factor that Adzugbele et al. (2020), Adebowale et al. (2019a), and Adedini et al. (2018), among others have noted regarding fertility, child spacing and parity to be especially unique to Nigeria and many sub-Saharan countries is sex preference. In many households within these regions, couples (and even single parents) prefer one sex to another. The typical preference in Nigeria, according to Agbo et al. (2020) and Adebowale et al. (2019b), is male children over female children, and this is founded on the need to preserve names and lineages—something female children rarely do. Chicoyo (2016), on the other hand, argues that this is not often the case because female children are theorised to take better care of their parents in the latter's old age and help their mothers with domestic work as adolescents and teenagers.

These are the same reasons given by the respondents of this study: that male children bear the name and lineage of the family, but female children are more likely to help their mothers in daily chores and care for their parents later on. Thus, the majority (46.1%) of respondents (which is mostly composed of mothers) prefer female children to male children, while only 24.3% prefer male children to female children. The opinion of this majority is obviously biased towards female children who can help them now and care for them later on, and not male children who will 'only' bear the family name and focus on their own immediate families when grown up. In other words, the arguments of Chicoyo (2016) are more valid for this study.

Regarding what the respondents will do upon giving birth to only female children, Table 4.9 shows that the majority of female respondents (36.6%) would accept it as God's will and stop bearing children, whereas 12.7% will continue to bear children until they give birth to a male child. It is obvious that these measures are predicated on the fact that male children are generally preferred to female children, and although the majority of respondents for this study want daughters more than they want sons, the influence of the Nigerian society is more significant.

Table 4.10: Distribution of respondents by sex preferences and measures if only daughters

Sex preferences	Frequency	Percent (%)
Boys to girls	69	24.3
Girls to boys	131	46.1
No preference	47	16.5
No response	37	13.0
Total	284	100.0
Measures if only daughters	Frequency	Percent (%)
Continue to bear more children	36	12.7
Accept as God's will and stop bearing children	104	36.6
Husband will not accept me	21	7.4
Husband will marry another wife	29	10.2
No response	94	33.1
Total	284	100.0

Source: Field Survey, 2021

4.1 Family Planning and Contraceptive Use

4.1.1 Family Planning Practice

Family planning and the use of contraceptives to control fertility is still a trending issue in both developed and developing nations of the world (Pomeranz, 2009; Singh and Darroch, 2012; World Bank, 2019; WHO, 2020). In the general sense, family planning is the most reliable method to manage (and restrain) the still-growing human population. With the geometric progression identified as characterising this population growth, and the arithmetic progression identified as characterising the production of food, any hesitation to directly control the number of births will lead to disasters, famine, explosion of crime, regression in regional and economic growth and development, and other catastrophes that Shapiro and Hinde (2017), Odior and Alenoghena (2018), and Hakizimana and Odjidja (2020) itemised as the consequences of not adhering to the principles and practice of family planning.

From the results presented in Table 4.10, only 64.4% of the respondents practice family planning in their households. It is interesting to note that even though 57.4% of the respondents have at least secondary-level educational qualifications (as shown in Table 4.3), 24.6% are not practicing family planning—and 11% do not even know anything about it. The respondents presented different justifications for their not practicing family planning. These include religion (3.5%), tradition and custom (2.5%), but mostly personal opinions (8.8%) and the opinion of husbands (9.9%). This is just as Ushie et al. (2011), Alaba et al. (2017) and Agbo et al. (2020), among others, reported about the adoption of family planning in Nigeria. Evidently, acceptance is coloured by personal opinions, and the dictates of religious and regional culture.

Table 4.11: Distribution of respondents by family planning practice

Family planning practice	Frequency	Percent (%)
Not practising	70	24.6
Practising	183	64.4
No knowledge	31	11.0
Total	284	100.0
Why not family planning	Frequency	Percent (%)
Religion does not permit	10	3.5
Husband does not permit	28	9.9
Tradition does not permit	7	2.5
Simply don't want to	25	8.8
No response	214	75.4
Total	284	100.0

Source: Field Survey, 2021

4.1.1 Family Planning Methods and Contraceptive Use

On a more definite note, Table 4.11 shows the distribution of respondents by their preferred family planning methods (which include the different methods of contraception). The table shows that 24.6% of the respondents use pills, 15.5% use condoms, 8.8% use the withdrawal method, 7.4% use herbs, 5.3% simply abstain from sexual activity, and one individual (0.4%) sterilised himself. However, 38% do not use any of the listed methods. Regarding this group that do not use contraception is included the 35.6% from Table 4.10 that either do not know anything about family planning or practice it. This means that 2.4% of the respondents somehow practice family planning without using any of the listed methods.

As Hakizimana and Odjidja (2020), Agbo et al. (2020) and several other studies explained, the variation of adopted contraceptive methods generally has to do with the different perceptions of individuals regarding these methods, as well as noted side-effects. Of course, some methods (e.g., male sterilisation) are only suitable for men, others (e.g., pills) are more suitable for women, while there are some (e.g., herbs) that are common to both sexes. Although studies (e.g., Ahinkorah (2020)) have noted the contrasts between modern and traditional methods, it is obvious from Table 4.11 that the respondents are more receptive of modern methods (such as pills, condoms and sterilisation) than traditional methods (like herbs).

Table 4.12: Distribution of respondents by family planning methods

Family planning method	Frequency	Percent (%)
None	108	38.0
Pill	70	24.6
Condom	44	15.5
Male sterilisation	1	0.4
Abstinence	15	5.3
Herbs	21	7.4

Withdrawal	25	8.8
Total	284	100.0

Source: Field Survey, 2021

4.2 Effect of Socio-Cultural Factors on Fertility

Lastly, the effect of socio-cultural factors on fertility was statistically tested for significance using binary logistic regression. The results (presented in Table 4.20) show that religious belief, education, occupation, and marital status have significant influences on fertility (represented by number of children) among the respondents. Among these, only education and occupation are significant at the 5% level of significant. Furthermore, among these, the influences of religious belief, occupation and marital status are positive. On the other hand, the influence of education on women fertility is negative, suggesting that the higher educational status a woman has, the lower the number of children she will be willing to conceive.

These findings fit the postulations and arguments of Olowolafe (2020), Hakizimana and Odjidja (2020), Adzugbele et al. (2020), Lutz (2017), and a few other recent studies. Even earlier have theorised that socio-cultural factors (which might be reclassified as internal factors) have a considerably significant influence over external factors (such as access to information, as in Table 4.19, and services, as in Table 4.17) regarding fertility. However, the associations are clearly defined: the association of education with fertility is inverse (or negative), meaning that households with more members that have tertiary educational qualifications, for example, will have fewer children compared to households that have members with less tertiary educational qualifications.

Regarding the negative association shown to exist between age at first birth and fertility, it is evident that it is Chicoyo (2016) (who argues that early births generally imply that a female of reproductive age would have less children in the future) and not Adzugbele et al. (2020) (who argues the opposite) that is correct regarding fertility among Lokoja households (see Section 4.2.1 for earlier arguments). The only other factor with a negative linear association is accommodation type, but this has been shown in section 4.1.5 (in agreement with the arguments of Adebowale et al. (2017)) to be more of an indication of fertility status and income characteristics rather than as a determinant for number of children.

Table 4.21: Result of hypothesis testing of the effect of socio-cultural factors on fertility

<i>Variables</i>	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>
Age	0.098	0.120	0.659	1	0.417
Religious belief	0.574	0.330	3.037	1	0.081**
Education	-0.325	0.151	4.641	1	0.031*
Ethnicity	0.168	0.194	0.745	1	0.388
Occupation	0.381	0.192	3.916	1	0.048*
Household size	0.057	0.271	0.044	1	0.835
Monthly income	0.234	0.200	1.369	1	0.242
Type of accommodation	-0.152	0.142	1.137	1	0.286
Marital status	0.201	0.114	3.133	1	0.077**
Age at first pregnancy	-0.276	0.249	1.233	1	0.267
Constant	-3.217	2.372	1.839	1	0.175

*Significant at 5% level of significance

**Significant at 10% level of significance

Source: Researcher's SPSS computation

5. Conclusion

The findings of this study reveal several notable facts regarding the factors that influence fertility levels among residents of Lokoja metropolis. Among the many, age at first birth, spacing and parity, number of wives and sex preferences, as well as traditional and religious values stand out. These factors ultimately determine whether a household in Lokoja metropolis has a high or fertility rate. To be sure, while socio-cultural factors appear to

directly bring about positive changes to household sizes, it is how they deter the use of family planning and contraception that ultimately leads to high fertility. Nevertheless, increased usage of modern contraceptive methods will remain largely ineffective when households shun available health care services. Moreover, there are several different local and international programmes that could help households make better decisions regarding spacing and parity, the use of modern contraception, etc., ultimately helping them maintain their household sizes and income.

5.1 Recommendations

Based on these findings, the following are recommended:

i. Increased range for awareness campaigns on fertility

The results of this study reinforce the need for better methods to enlighten households in Lokoja on the implications of high fertility or leaving fertility dynamics to chance. These campaigns must take into consideration the educational profile and marriage history of households in these areas to achieve maximum possible effects, especially the uptake of contraceptive methods.

ii. Personalised options for family planning education

This suggestion is based on the finding of this study that there are clear differences in the demographic and socio-economic characteristics of households. This implies that households have different perceptions and opinions regarding family planning and contraceptive use. Religion, for example, is a pivotal characteristic, and so is the authority of husbands in the household. Thus, taking these characteristics into account before promoting awareness campaigns will further help the adoption of family planning methods.

iii. Improved accessibility to health care centres services

Improving the accessibility of households to health care services will allow them to have a standby guide for questions and problems that are related to fertility. Antenatal care is a crucial aspect of this services, and its uptake among Lokoja households should help families make better decisions regarding the number of children in the house.

iv. More research

This study is by no means exhaustive as there are several other factors that can better manage fertility, boost the adoption of family planning methods and even their effectiveness for managing household sizes, income, child spacing, etc. Therefore, more research efforts on these factors and options should be encouraged and funded.

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