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DOI: https://doi.org/10.64388/ire1725249

Socio-Economic Determinants of Contraception: Analysis of Education and Income among Women of Reproductive Age Living in Wukari Metropolis, Taraba State

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Abstract- ***This study examined how income and level of education determine the use of modern contraception among women of reproductive age (15-49 years) within Wukari metropolis, Taraba State, Nigeria. Despite national efforts to promote family planning, modern contraceptive use remains persistently low in northern Nigeria, with many women relying on traditional methods or using nothing at all, contributing to high fertility rates and risk the health of women during childbirth especially when exceeding five children per woman and rapid population growth that strains health facilities, schools, and other social services.. The study employed a survey design. A sample of 365 women was randomly selected from six wards, using a structured questionnaire,. Data were analysed using descriptive statistics, chi-square tests, and binary logistic regression. The study found a modern contraceptive prevalence rate of 14.2%, while 62.7% of women used no contraceptive method at all. Fear of side effects and future delay of pregnancy concerns (24.9%) and husband opposition (21.4%) were the most frequently cited barriers to use. Education was the strongest predictor of contraceptive use, with women who had tertiary education being 3.4 times more likely to use modern contraceptives than those with no formal education (p = 0.003). Income was also significant, as women earning 30,000 naira or more monthly were 2.7 times more likely to use contraceptives than lower-income women (p = 0.002). The study concludes that low contraceptive use in Wukari Local Government Area is driven by fear of infertility, husband opposition, poverty, and weak health systems, and recommends community-based education programmes, male engagement strategies, service decentralisation, supply chain strengthening, transport voucher schemes, and investment in girls' education to increase contraceptive uptake and manage population growth.***

Index Terms- ***Contraception, Determinants, Education, Women***

I. INTRODUCTION

Globally, the use of modern contraception among women of childbearing age is an important aspect of reproductive health because it has the potential to improve maternal and child health outcomes, reduce poverty, and promote gender equality (Li & Rimon, 2018). Contraception is widely recognised as a critical component for sustainable development (Li & Rimon, 2018). By reducing unintended pregnancies, family planning programmes enhance maternal and child health, it also reduce the economic burden on households and communities (Cleland et al., 2012). Therefore, effective contraceptive use serves as a key mechanism for achieving national and global development goals, particularly in regions characterised by high fertility rates and rapid population growth (Cleland et al., 2012).

Despite their benefits, however, the use of modern contraception remains low in many developing countries, including Nigeria. In Nigeria, successive demographic and health surveys show only a modest improvement in the use of modern contraception (National Population Commission & ICF, 2019; Abubakar et al., 2024).

The use of contraception is seen globally as a great public health intervention and its acceptance is rising; however, this is not the case in many African countries (Ogboghodo et al., 2017).contraception use has been placed among the cost-effective and feasible interventions with immediate and long-term benefits for individuals, families, and the nation at large (Ogboghodo et al., 2017). Contraception is not just about limiting family size and spacing of births; it is about promoting and maintaining the well-being of the mother, child, and that of the family as a whole. Evidence around the world has shown that increased uptake of contraception directly leads to reductions in levels of hunger and poverty.

In Nigeria, awareness of contraception among women of reproductive age is relatively high despite comparatively low levels of contraceptive use. In a study of women aged 15–49 years in Kebbi and Sokoto States, 82.4% were aware of at least one contraceptive method, while 43.8% reported current use of a modern method (Adefalu et al., 2018).

Nigeria is the most populous country in Africa. The United Nations 2024 population projections place

Nigeria's population at about 233 million in 2024 and project approximately 374 million by 2054, with continued growth thereafter (United Nations Department of Economic and Social Affairs, Population Division, 2024).

The United Nations projects continued population growth in Nigeria under its medium-variant scenario, with the country's population expected to remain among the world's largest through the second half of the century (United Nations Department of Economic and Social Affairs, Population Division, 2024).

Rapid population growth can increase the scale of investments required for food security, healthcare, education, and other essential services (United Nations Department of Economic and Social Affairs, Population Division, 2024). Moreover, the 2018 Nigeria Demographic and Health Survey reported a high total fertility rate, underscoring the importance of effective family planning interventions (National Population Commission & ICF, 2019).

Across West Africa, unmet reproductive health needs remain substantial and are shaped by access, socioeconomic conditions, and other individual and health-system factors (Ayanore et al., 2016).

Taraba State, including communities in its southern and central areas, has contextual factors that can influence contraceptive behaviour. Evidence from Zing Local Government Area in Taraba State identifies partner-related and socioeconomic barriers to modern contraceptive use (Francis & Ahmed, 2022).

Wukari Local Government Area experiences growing population and high dependency ratios and increase maternal and child health which place increasing pressure on the ill-equipped health and social services. Moreover, traditional pronatalist values remain deeply rooted, with families preferring large household sizes, and education and income remain low among women due to the masculine nature of the town it also shape decisions regarding family planning. Additionally, insecurity, limited health infrastructure, and poor access to reproductive health services further exacerbate the challenges of contraceptive adoption. Taken together, these combined factors create a context in which understanding the socioeconomic determinants of contraceptive use like education and income level as it effect the population growth is critical, making Wukari Local Government Area an appropriate focus for this study.

II. LITERATURE REVIEW

In the context of contraceptive use, social determinants encompass a wide range of factors that influence whether women adopt, continue, or discontinue the use of contraceptive methods. These include educational attainment, income and economic status, gender relations and power dynamics, cultural norms and values, religious beliefs and institutional positions, marital status and household structure, access to health services and quality of care, community norms and social networks, and policy and legal frameworks.

Educational attainment influences health literacy, access to information, cognitive skills for processing health messages, and empowerment to make independent decisions. Educated women are better equipped to understand contraceptive methods, their benefits, and potential side effects, and are more likely to navigate health systems effectively (Osili & Long, 2008; Abubakar et al., 2024).

Income and economic status can influence women's ability to afford transportation to health facilities, obtain contraceptives when they are not freely available, and absorb the opportunity costs of seeking services. Evidence from urban Africa shows persistent socioeconomic differences in contraceptive use, demonstrating the importance of economic conditions in access to family planning (Ezeh et al., 2022).

A. Contraceptive Prevalence in Taraba State

At the state level, Taraba State faces challenges in family planning uptake. Francis and Ahmed (2022) examined factors limiting modern contraceptive use among women aged 15–49 years in Zing Local Government Area, Taraba State. Their study used a cross-sectional survey and examined individual and sociocultural factors associated with contraceptive use. The findings highlighted partner-related, socioeconomic, and sociocultural barriers to modern contraceptive uptake.

Recent evidence on Nigerian women indicates that contraceptive use is influenced by socio-demographic, cultural, economic, and health-service factors. A systematic review of quantitative studies in Nigeria found that education, socioeconomic conditions, cultural beliefs, partner-related factors, and access to services are among the factors associated with modern contraceptive use (Ayo-Bello & Quinn-Walker, 2025).

B. Educational Level and Modern Contraceptive Use among Women of Reproductive Age

Educational level is one of the strongest predictors of modern contraceptive use. Women with at least a secondary education are significantly more likely to adopt family planning due to better health literacy, greater autonomy, and higher earning power to access reproductive healthcare (Abubakar et al., 2024; Osili & Long, 2008). The relationship between education and contraceptive use operates through multiple

pathways that have been extensively documented in demographic and health research.

Economic Empowerment

Higher education translates to better employment opportunities, higher income, and economic independence. Economic empowerment enables women to make autonomous decisions regarding their reproductive health, including visiting clinics and purchasing contraceptives when not freely available (Ashraf et al., 2014). Women with higher income can afford transportation to health facilities, pay for contraceptives when stockouts occur at public facilities, and absorb the opportunity costs of time spent seeking services.

Economic status influences access to contraceptive services because women with greater economic resources may be better able to afford transportation, service-related costs, and other indirect costs of seeking care. Evidence from African settings indicates persistent socioeconomic inequalities in contraceptive use (Ezeh et al., 2022).

Empirical Evidence from Nigeria

Francis and Ahmed (2022) found that modern contraceptive use in Zing Local Government Area was influenced by socioeconomic and sociocultural factors. Their findings reinforce the importance of addressing barriers such as partner opposition, poverty, and social norms when designing family planning interventions in Taraba State.

Ajayi and Ezegbe (2020) reported that educated women in Ussa Local Government Area, Benue State, were 2.8 times more likely to use modern contraceptives than uneducated women. Higher education was associated with greater knowledge of contraceptive methods, more positive attitudes toward family planning, and greater ability to overcome barriers such as fear of side effects and partner opposition.

Ayo-Bello and Quinn-Walker (2025) reviewed quantitative evidence on factors associated with modern contraceptive use among Nigerian women. Their review identified socioeconomic, cultural, demographic, and health-service factors as important influences on contraceptive uptake and highlighted the continuing importance of education and access to services.

C. Income Level and Modern Contraceptive Use among Women of Reproductive Age

Economic status influences access to contraceptive services because women with greater economic resources may be better able to afford transportation, service-related costs, and other indirect costs of seeking care. Evidence from African settings indicates persistent socioeconomic inequalities in contraceptive use (Ezeh et al., 2022).

Economic Barriers

Poverty creates multiple barriers to contraceptive access. Low-income women face challenges including inability to afford transportation to health facilities, inability to pay user fees or informal charges, inability to purchase contraceptives when public facilities experience stockouts, and inability to take time away from income-generating activities to seek services. These barriers are particularly significant in rural areas where health facilities are distant and public transport is limited.

Economic resources are therefore an important consideration in contraceptive access, particularly where distance, service costs, and other barriers affect poorer women (Ezeh et al., 2022).

D. Theoretical Framework

This study adopts Structuration Theory as the theoretical anchor. These frameworks provide a comprehensive lens for examining the social determinants of modern contraceptive use and its relationship to population growth and women's health in Wukari Local Government Area, Taraba State.

Structuration Theory

Structuration Theory, developed by Anthony Giddens (1984), provides a powerful framework for understanding how women's contraceptive decisions are shaped by the interplay between individual agency and social structures. This theory posits that social structures, including cultural norms, institutional arrangements, and power relations, are both the medium and outcome of human action (Giddens, 1984). Social structures enable and constrain individual behaviour, while individuals reproduce or transform structures through their actions.

The theory is particularly valuable for this study because it illuminates several key dynamics of contraceptive behaviour in Wukari Local Government Area.

Application to the Study

In the context of this study, Structuration Theory provides a framework for understanding the low contraceptive uptake of 14.2% modern contraceptive prevalence rate as a product of the interaction between structural constraints and individual agency. Women's decisions about contraceptive use are shaped by cultural norms, gender relations, and health system structures, but women also exercise agency by making choices, negotiating with partners, and seeking information. The theory predicts that interventions that address both structural constraints, by improving access, reducing cost, and engaging men, and

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DOI: https://doi.org/10.64388/ire1725249

individual agency, by providing information, empowering women, and fostering communication, have the greatest potential to increase contraceptive uptake.

III. METHODOLOGY

A. Research Design

This study employed a survey design, which allows the researcher to collect data from a representative sample of the target population at a single point in time, capturing the current state of contraceptive use and its determinants.

B. Study Area

Wukari Local Government Area is located in the southern part of Taraba State, North-Eastern Nigeria. It serves as the headquarters of the Taraba South Senatorial District and is situated approximately 180 kilometres from Jalingo, the state capital. The area spans approximately 547 square kilometres and comprises ten administrative wards: Avyi, Hospital, Puje, Rafin Kada, Bantaje, Chonku, and four others. The local government area shares boundaries with Ibi Local Government Area to the north, Donga Local Government Area to the east, and Benue State to the south and west.

C. Population of the Study

The population of this study consists of all women of reproductive age, defined as females aged 15 to 49 years, resident in Wukari Local Government Area. According to the National Population Commission (2022), Wukari Local Government Area has an estimated population of 374,800 persons.

D. Sampling and Sample Size Determination

The study adopted a multi-stage sampling technique to select a representative sample from the study population. The sampled population was made up of women within the age bracket of 15 to 49 years drawn from households within the study area across selected council wards.

The sample size for this study was determined using the Cochran formula for infinite populations, as the exact population of women of reproductive age in Wukari Local Government Area was not known with precision. The formula is:

$$n_0 = \frac{Z^2 P(1-P)}{e^2} \quad (1)$$

Where n_0 represents the desired sample size, Z represents the standard normal deviate at 95% confidence level which is 1.96, P represents the estimated proportion of the population with the characteristic of interest which was set at 0.5 to account for maximum variability, and e represents the margin of error which was set at 0.05 for 5% precision.

Substituting the values:

Confidence Level = 95% → Z = 1.96

Margin of Error = 5% → e = 0.05

Estimated Proportion = 0.5

$$n_0 = \frac{(1.96)^2 \times 0.5 \times (1-0.5)}{(0.05)^2} = \frac{3.8416 \times 0.25}{0.0025} = \frac{0.9604}{0.0025} = 384.16 \approx 384 \quad (2)$$

E. Validity of Research Instruments

The instruments were submitted to the research supervisor and two experts in demography and reproductive health from the Department of Sociology, Federal University Wukari, for review. Based on their feedback, the instruments were revised and refined to ensure clarity, relevance, and comprehensiveness.

Face validity was ensured by having two community health workers review the instruments for cultural appropriateness and understandability. Modifications were made to ensure that the instruments were culturally appropriate and would be well-received by respondents. Technical terms were replaced with more accessible language, and sensitive questions were reworded to minimise discomfort.

F. Reliability of Research Instruments

A pilot test was conducted with 50 women of reproductive age in Ibi Local Government Area, which shares similar characteristics with Wukari but is not part of the main study. The questionnaire was administered to the same 50 respondents on two occasions, two weeks apart. The Pearson Product Moment Correlation Coefficient was used to assess stability. A coefficient of 0.75 and above was considered acceptable. The correlation coefficient for the pilot test was 0.82, indicating good stability.

Internal consistency was assessed using Cronbach's Alpha. A Cronbach's Alpha value of 0.70 or higher was considered acceptable. The Cronbach's Alpha values were 0.84 for Section D on determinants of contraceptive use and 0.79 for Section E on perception of population growth, indicating good internal consistency.

Feedback from the pilot test was used to make final adjustments to the questionnaire. Unclear items were reworded, inadequate response options were expanded, and instructions were clarified.

G. Methods of Data Analysis

Quantitative data were analysed using SPSS version 27. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarise socio-demographic characteristics,

contraceptive prevalence, knowledge and awareness, reasons for use and non-use, and perceptions of determinants. Results were presented in tables.

Inferential statistics were employed to test the research hypotheses. The Chi-square test of independence was used to assess associations between categorical independent variables and contraceptive use. A p-value of less than 0.05 was considered statistically significant.

Binary logistic regression was conducted to identify independent predictors of modern contraceptive use. The dependent variable was coded as 1 for modern contraceptive users and 0 for non-users. All socio-demographic variables were entered simultaneously. Odds ratios and 95% confidence intervals were reported. The Hosmer-Lemeshow goodness-of-fit test was used to assess model fit.

H. Ethical Considerations

Ethical approval was obtained from the Taraba State Ministry of Health Research Ethics Committee with approval number TSMH/REC/2026/004 (see Appendix). The study complied with the principles of the Helsinki Declaration and the Nigerian National Code of Health Research Ethics.

Permission was secured from the Taraba State Ministry of Health, Wukari Local Government Council, and traditional rulers and village heads of the selected communities. Letters of introduction from the Department of Sociology, Federal University Wukari, were presented to all relevant authorities.

Informed consent was obtained from all respondents before participation. The consent process involved explaining the purpose of the study, describing the procedures, explaining potential risks and benefits, informing respondents that participation was voluntary and they could withdraw at any time, and obtaining verbal or written consent depending on literacy level.

IV. DATA PRESENTATION AND ANALYSIS

Table 1: Questionnaire Administration and Retrieval

Ward	Distributed		Valid Retrieved Questionnaires	
Avyi	35		33	
Hospital	58		54	
Puje	66		62	
Rafin Kada	129		125	
Chonku	76		72	
Bantaje	20		19	
Total	384		365	

Source: Field Work, 2026

Response Rate Summary:

Total questionnaires distributed: 384

Valid Retrieved questionnaires: 365

Response Rate = (365 ÷ 384) × 100 = 95%

The response rate of 94.8% is considered excellent for survey research in rural Nigerian settings. This high response rate was achieved through community mobilisation with the support of traditional leaders, use of local languages (Hausa and Jukun) for non-literate respondents, house-to-house visits with repeated call-backs, and engagement of trained community health workers as field assistants. This high response rate enhances the representativeness of the findings and reduces the risk of non-response bias, thereby increasing the validity of the conclusions drawn from the data.

A. Socio-Demographic Characteristics of Respondents

This section presents the biodata and social characteristics of the 365 women of reproductive age who participated in the study. Understanding the socio-demographic profile of respondents is essential for contextualising the patterns of contraceptive use and identifying which subgroups are most disadvantaged in terms of family planning access.

Table 2: Age Distribution of Respondents

Age Group	Frequency	Percentage (%)
15 – 24 years	112	30.7
25 – 34 years	148	40.5
35 – 44 years	72	19.7
45 – 49 years	33	9.0
Total	365	100.0

Source: Field Work, 2026

The table shows that the majority of respondents (148, 40.5%) were aged 25-34 years, which represents the peak reproductive age group. This was followed by those aged 15-24 years (112, 30.7%). Respondents

aged 35-44 years were 72 (19.7%), while those aged 45-49 years were 33 (9.0%). The high proportion of younger women aged 15-34 years, who together constitute 260 respondents (71.2%), is significant as this group is most likely to need family planning services for birth spacing and fertility limitation. This age distribution is consistent with the reproductive age structure of the general population in Taraba State and suggests that the sample adequately captures women in their most reproductively active years. The predominance of younger women implies that interventions targeting this age group could have the greatest impact on fertility regulation and population growth management in Wukari LGA.

Table 3: Educational Level of Respondents

Educational Level	Frequency	Percentage (%)
No formal education	146	40.0
Primary/Quranic education	98	26.8
Secondary education	78	21.4
Tertiary education	43	11.8
Total	365	100.0

Source: Field Work, 2026

The educational profile of respondents shows significant disadvantage, with the largest group being women with no formal education (146, 40.0%). Those with primary or Quranic education numbered 98 (26.8%), while respondents with secondary education numbered 78 (21.4%). The smallest group was women with tertiary education (43, 11.8%). This means that two-thirds of the respondents (66.8%) had at most primary education or no formal education at all, while less than 12% had attained tertiary education. This high level of educational disadvantage is a critical factor influencing health-seeking behaviours, including contraceptive uptake, because education is known to enhance women's knowledge, autonomy, and ability to navigate health systems. The low educational attainment observed is consistent with the rural character of Wukari LGA and reflects broader patterns of gender disparity in educational access in northern Nigeria.

Table 4: Average Monthly Income of Respondents

Income Level	Frequency	Percentage (%)
Less than 30,000 Naira	287	78.6
30,000 Naira and above	78	21.4
Total	365	100.0

Source: Field Work, 2026

The majority of respondents (287, 78.6%) earned less than 30,000 Naira monthly, which is below the Nigerian minimum wage. Only 78 respondents (21.4%) earned 30,000 Naira or above per month. The high proportion of low-income women suggests that economic empowerment interventions may be necessary to improve family planning outcomes.

Table 5: Current Contraceptive Use Status

Contraceptive Use Status	Frequency	Percentage (%)
Yes, modern method	52	14.2
Yes, traditional method only	84	23.0
No, not using any method	229	62.7
Total	365	100.0

Source: Field Work, 2026

The data reveal that the modern contraceptive prevalence rate (mCPR) in Wukari LGA is only 14.2%, with only 52 respondents currently using a modern method such as pills, injectables, implants, intrauterine devices, condoms, or sterilisation. An additional 84 respondents (23.0%) reported using only traditional methods such as withdrawal, periodic abstinence, or herbs. The majority of respondents (229, 62.7%) were not using any contraceptive method at all. The fact that 62.7% use no method at all indicates that the majority of reproductively active women in Wukari are fully exposed to the risk of pregnancy, which contributes directly to the high fertility rates observed in the area.

B. Relationship between Educational Level and Contraceptive Use (Objective ii)

The second objective of this study was to determine the relationship between educational level and modern contraceptive use among women of reproductive age in Wukari Local Government Area.

Table 6: Educational Level by Modern Contraceptive Use

Educational Level	Using Modern Contraceptive	Not Using Modern Contraceptive	Total	Percentage Using
No formal education	12	134	146	8.2
Primary/Quranic	16	82	98	16.3
Secondary	14	64	78	17.9

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DOI: https://doi.org/10.64388/ire1725249

Educational Level	Using Modern Contraceptive	Not Using Modern Contraceptive	Total	Percentage Using
Tertiary	10	33	43	23.3
Total	52	313	365	14.2

Source: Field Work, 2026

The data show a clear positive gradient between educational level and modern contraceptive use. Among women with no formal education, only 12 out of 146 respondents (8.2%) used modern contraceptives. For women with primary or Quranic education, 16 out of 98 respondents (16.3%) used modern contraceptives, which is double the rate of those with no education. Among women with secondary education, 14 out of 78 respondents (17.9%) used modern contraceptives. The highest rate was observed among women with tertiary education, where 10 out of 43 respondents (23.3%) used modern contraceptives, which is nearly three times higher than the rate among women with no formal education. This progressive increase in contraceptive use with each level of education demonstrates that education is a powerful determinant of reproductive health behaviour. Education likely influences contraceptive use through multiple pathways: educated women have better knowledge of contraceptive methods and their benefits, greater literacy to read health messages and instructions, higher self-efficacy and confidence to make independent decisions, better communication skills to negotiate with husbands, and greater access to information through media and social networks. The very low rate of use (8.2%) among women with no formal education indicates that this group should be prioritised for targeted interventions, including pictorial-based health education, community health worker visits, and audio messages for non-literate populations.

Table 7: Educational Level by Knowledge of Contraceptive Methods

Educational Level	Knows at least one modern method (%)	Knows three or more methods (%)
No formal education	68.5	22.6
Primary/Quranic	85.7	38.8
Secondary	92.3	55.1
Tertiary	97.7	72.1

Source: Field Work, 2026

The data demonstrate that higher educational level is strongly associated with greater knowledge of contraceptive methods. Among women with no formal education, 68.5% knew at least one modern method, but only 22.6% knew three or more methods. Among women with tertiary education, 97.7% knew at least one modern method, and 72.1% knew three or more methods. This means that while even women with no education have moderate awareness of at least one method (68.5%), their knowledge is shallow, with only about one in five having comprehensive knowledge of multiple methods that would allow them to make informed choices. In contrast, nearly three-quarters of tertiary-educated women have knowledge of three or more methods, enabling them to select methods that best suit their health needs, reproductive intentions, and personal preferences. This knowledge gradient explains in part why better-educated women have higher contraceptive use rates: they are aware of a wider range of options, understand the relative effectiveness of different methods, and are better equipped to manage side effects or switch methods if needed.

C. Influence of Income on Contraceptive Use

The fifth objective of this study was to determine how income affects the use of modern contraceptives among women of reproductive age in Wukari Local Government Area, Taraba State.

Table 8: Income Level by Modern Contraceptive Use

Income Level	Using Modern Contraceptive	Not Using	Total	Percentage Using
Less than 30,000 Naira	33	254	287	11.5
30,000 Naira and above	19	59	78	24.4
Total	52	313	365	14.2

Source: Field Work, 2026

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The data show a substantial difference in contraceptive use by income level. Among women earning less than 30,000 Naira monthly, only 33 out of 287 respondents (11.5%) used modern contraceptives. In contrast, among women earning 30,000 Naira or more monthly, 19 out of 78 respondents (24.4%) used modern contraceptives. This means that higher-income women were more than twice as likely to use modern contraceptives compared to lower-income women. This suggests that economic empowerment interventions, including cash transfer programmes, microfinance initiatives, and the removal of all user fees associated with family planning, may be necessary to achieve equitable access to contraception.

D. Test of Hypotheses

This section presents the statistical testing of the four research hypotheses formulated for this study. The chi-square test of independence was used to test the association between each independent variable and modern contraceptive use.

Hypothesis 1: Educational Level and Contraceptive Use

Null Hypothesis (H_0): Educational level has no significant relationship with the use of modern contraceptives among women of reproductive age in Wukari Local Government Area.

Alternative Hypothesis (H_1): Educational level has a significant relationship with the use of modern contraceptives among women of reproductive age in Wukari Local Government Area.

Table 9: Chi-Square Test for Education and Contraceptive Use

Test	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.847	3	0.005
Likelihood Ratio	13.421	3	0.004
Linear-by-Linear Association	11.876	1	0.001
N of Valid Cases	365		

Decision: Since the p-value (0.005) is less than the alpha level of 0.05, the null hypothesis sis rejected. Therefore, there is a statistically significant relationship between educational level and modern contraceptive use among women of reproductive age in Wukari Local Government Area.

Interpretation: The chi-square test confirms that education is a significant determinant of contraceptive behaviour. The linear-by-linear association (p=0.001) further indicates that there is a significant linear trend, meaning that as educational level increases, the likelihood of using modern contraceptives also increases. This finding supports the descriptive statistics presented earlier, where contraceptive prevalence rose progressively from 8.2% among women with no education to 23.3% among women with tertiary education.

Table 10: Chi-Square Test for Income and Contraceptive Use

Test	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.234	1	0.004
Continuity Correction	7.456	1	0.006
Likelihood Ratio	7.891	1	0.005
Fisher's Exact Test			0.005
Linear-by-Linear Association	8.212	1	0.004
N of Valid Cases	365		

Decision: Since the p-value (0.004) is less than the alpha level of 0.05, the null hypothesis is rejected. Therefore, income has a statistically significant influence on modern contraceptive use among women of reproductive age in Wukari Local Government Area.

Interpretation: The chi-square test confirms that income is a significant determinant of contraceptive use, with women earning 30,000 Naira or more per month being significantly more likely to use modern contraceptives than women earning less than 30,000 Naira. This finding is consistent with the descriptive statistics, where higher-income women had a contraceptive prevalence rate of 24.4% compared to 11.5% among low-income women. The significance of this relationship (p=0.004) is robust, as confirmed by multiple test statistics including Pearson Chi-Square, Likelihood Ratio, Fisher's Exact Test, and Linear-by-Linear Association.

E. Binary Logistic Regression Analysis

To further understand the combined and independent effects of multiple determinants, binary logistic regression was conducted with modern contraceptive use as the dependent variable (0 = non-user, 1 = user). All socio-demographic variables were entered simultaneously to identify which factors remain significant predictors after controlling for the effects of other variables.

V. DISCUSSION OF FINDINGS

VI. CONCLUSION

Education is the strongest socio-demographic determinant of contraceptive use in Wukari LGA. Women with tertiary education are three times more

likely to use modern contraceptives than women with no formal education. This finding underscores that investment in girls' education is not only a human capital imperative but also a reproductive health intervention with measurable impacts on fertility behaviour. Conversely, the high proportion of women with no formal education (40.0%) represents a population that is doubly disadvantaged: lacking both the cognitive skills to process health information and the social empowerment to make independent reproductive decisions.

Poverty is a fundamental barrier to contraceptive access. Women earning above 30,000 Naira monthly are nearly three times more likely to use modern contraceptives than those earning less. The fact that 65.8% of women cited inability to afford transport as a barrier confirms that even when contraceptives are nominally free, the associated costs of access place them out of reach for poor women. Economic empowerment of women is therefore a necessary complement to family planning service delivery.

VII. RECOMMENDATIONS

1) Invest in girls' education as a long-term strategy for fertility reduction.

Given that education is the strongest predictor of contraceptive use Taraba State Government should prioritise investments in girls' education at all levels.

1) Implementing re-entry policies that allow girls who become pregnant to return to school after.
2) Introduce transport voucher schemes and remove all user fees for family planning.

With 65.8% of women citing inability to afford transport as a barrier, and low-income women.

1) All user fees associated with family planning services, including consultation fees and charges for contraceptive commodities, should be removed at public health facilities. These costs should be covered through government budget allocations and donor funding.

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