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Age at First Marriage and Fertility Behaviour in Northern Nigeria: Evidence from the 2021 Multiple Cluster Indicator Survey (MCIS)

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Abstract

Despite measures put in place by the Nigerian government in controlling the high population growth rate witnessed in the country, population growth rate still remains high due to population momentum coupled with low age at first marriage of mothers being one of the most contributory factors. Reproductive health conditions of women in the Northern region of Nigeria is very poor due to low age at first marriage thereby leading to high fertility behaviour in terms of children ever born (CEB) in the region. This study made use of cross-sectional study design of secondary data extracted from the 2021 multiple cluster indicator survey (MCIS) on selected socio-demographic variables of children ever born (CEB) and age at first marriage in the region in examining the association and relationship between age at first marriage of mothers and fertility behaviour in terms of children ever born (CEB) in the region. Findings revealed that age at first marriage of mothers is associated with children ever born (CEB) in northern Nigeria with: $\chi^2 = 117.163$, $p=0.000$; $\chi^2 = 46.703$, $p=0.000$ and $\chi^2 = 52.795$, $p=0.000$ for north central, north east and north western region respectively at 0.05 level of significance. Multivariate analysis also revealed relationship between educational level of mothers and fertility behaviour in the region with: $\text{Prob}>F = 0.0000$, $R^2 = 0.045$ at 5% level of significance. It was concluded that there is need for the Nigerian government to enforce the minimum age at marriage of 18 years recommended by the 1988 national population policy in northern Nigeria as this will help in reducing early marriage in the region. The government also need to address issues relating to women empowerment as this will go a long way in improving women autonomy in terms of financial autonomy there by reducing the tendency of girls been forced to early marriage because of financial benefits.

Keywords: age at marriage, behaviour, fertility, north, Nigeria



Introduction

Despite measures put in place by the Nigerian government in controlling the high population growth rate witnessed in the country, population growth rate still remains high due to population momentum coupled with low age at first marriage of mothers being one of the most contributory factors; National Population Commission (NPC, 2023). In sub-Sahara Africa countries such as Nigeria, population explosion and high fertility rates due to low age at first marriage have been a serious concern to individuals, societies and governments coupled with the fact that the country has been experiencing high fertility over the last five decades (Solanke, 2022). Child and early marriage is a phenomenon that is very paramount in most societies in Nigeria most especially in the northern region. Early marriage is a socio-cultural norm not only peculiar to Nigeria alone but to other sub-Saharan African countries. This has the implication of leading to early entry into reproduction thereby leading to high fertility in terms of children ever born. Early marriage due to low level of education of women has been one of the major factors responsible for high fertility level witnessed in sub-Sahara Africa countries including Nigeria (Michael *et al.*, 2025). Countries which have population policies and sustained family planning programmes have the potential of achieving socio-economic progress and in turn, improvement in general well-being of the populace (Kemi, 2021). There is a positive relationship between age at first marriage, religion, place of residence and fertility level in Northern Nigeria. Access to reproductive health care facilities of women in northern Nigeria has been hindered due poverty in terms of lack of money, distance to health care services and permission of the male partner (Lawal *et al.*, 2024).

Age at First Marriage and Fertility Behaviour in Nigeria

Early marriage is still very paramount in most societies in Nigeria most especially in the northern region. This is a socio-cultural norm not peculiar to Nigeria alone but in other sub-Saharan African countries. This has the implication of leading to early entry into reproduction and increasing high fertility in terms of children ever born. Age of entry into reproduction is used in the context of early marriage, so that the earlier the marriage of every couple (either male or female), the longer the reproductive life span of such couples, thereby leading to increased fertility. Regionally, early marriage is mostly associated with the Northern part of Nigeria and this is one of the factors that explain the high fertility rate in the Northern part of the country when compared to other regions such as the south western part of Nigeria. Early marriage in the Northern part of Nigeria can also be attributed to the low education status of women, high importance attached to childbearing and having families, cultural practices of early giving the girl child in marriage and religious believes attributed to early marriage most especially the Islamic importance of giving the girl child in hands to her husband for marriage (Irit *et al.*, 2024; Ismaila *et al.*, 2023).

Age at first marriage has implications on reproductive health conditions of mothers. Reproductive health conditions of women in the Northern region of Nigeria are among the poorest in the world (Olufunke *et al.*, 2020). The demand and utilisation of reproductive care facilities in the region has been low in the region ascribing the condition to lack of formal education by the women and predominance of Islamic religion. Furthermore, they ascribed the poor state of utilisation of health care services in the region to early marriage; that large proportion of couples are married in their teens and majority of them are neither socially nor economically empowered; most especially the women and that the husband is the sole decision maker in the household, thereby affecting the utilisation of health care services in the region and making women's health-seeking behaviour difficult (Solanke, 2022; Kemi, 2021).

There is a positive relationship between age at first marriage, religion, place of residence, age and fertility level in Northern Nigeria. Most of the institutional factors such as maternal health care services, family planning services and educational institutions are often hindered in the Northern Nigeria in terms of



access and utilisation. Access to these facilities may be hindered in terms of money, distance to health care services and permission of the male partner. There is a less incidence rate of children ever born for women aged 15-19 years when compared to the incidence rate of women that were less than 14 years. The relative risk being employed in high job category instead of moderate category will increase by 2.09 for those aged 15-19 years when compared with women that fall with the less than 14 years age category. Age at first marriage is significantly associated and related with fertility of women and empowerment (Lawal *et al.*, 2024; Solankeet *al.*, 2015).

Early marriage has contributed to the increase in population in Nigeria and the Nigerian population is projected to increase from 200 million in 2019 to 450 million in 2050 if the current rate of fertility is not checked. There is a minimal decline in mean children ever born between 2003 and 2018 across all maternal age groups except ages 20-24 years. There is a reducing but slow rate in fertility decline in the country with variations across the regions. In order to achieve downward change in fertility level in the country, policies that will be directed towards constricting spread of fertility across the regions such as discouraging child and early marriage need to be in place as matter of urgency (Tubosun *et al.*, 2023). Fertility intentions of young adults and age at first marriage have implications on gender relationships and family life styles in the society. Of the 268 respondents; majority of them which were male; 62.7 percent in the age range 21-25 years, their preferred age at marriage was 27 years. A greater proportion of the males; 64.3 percent desire to have more than 5 children. Socio-cultural factors, most especially patriarchal family system as a significant influence on timing of marriage, with many of the young adults desired to have more children. Information regarding fertility education, timings and family formation should be more targeted at adolescents and other young adults towards promoting better reproductive decision making (Taiwo *et al.*, 2020).

Early marriage has an influence on risky fertility behaviour most especially in vulnerable regions such as northern Nigeria. Multiple high-risk behaviours on fertility can indirectly or directly affect survival outcomes among under-five children in the society. Among women who had multiple high risk behaviours on fertility, under five mortality was more prevalent most especially among young adults that fall with less than 18 years age and short birth intervals of less than 24 months were reported to be prone to experiencing under five mortality. Children born to women that received post-natal care after delivery were more likely to survive under five mortality. This is also applicable to children born to women that have educated husbands. Strengthening of education systems and creating resilient reproductive health education programmes and policies for ever-married women for women that fall within the reproductive age is very necessary (Obasanjo *et al.*, 2023).

Theoretical Framework

The theoretical framework used for this study is the theory of planned behaviour for fertility. The theory of planned behaviour for fertility was first developed by a psychologist, Icek Ajzen in 1983. Other notable scholars or researchers that have contributed to this theory and applied this theory in studying fertility intentions or decisions are: John Casterline (a renowned scholar in demography interested in studying the application of this theory on fertility intentions in many contexts); Philip Morgan (a renowned sociologist interested in exploring the relationship between individual perceived behaviours and fertility intentions). The theory seeks to explain how subjective norms, personal or individual attitudes, behavioural control influence and subjective norms have the tendency of influencing individual behaviours and intentions; in this case, fertility behaviour in terms of bearing or having children.

Method

This study made use of a cross-sectional study design of secondary data extracted from the 2021 multiple cluster indicator survey (MCIS). The multiple cluster indicator survey (MCIS) provided the quantitative data for the study. The target population for the study was women that are currently married that fall

within the reproductive age (15-49) years that are residing in Northern Nigeria. The estimate of the targeted women from the 2021 multiple cluster indicator survey (MCIS 2021) was 13,150 women. By sub-regions in the North, the North Central had 3,413, North East had 3,195 while the North West was made up of 6,542 sampled women to be analysed. Analysis was conducted on maternal age and fertility behaviour in terms of children ever born (CEB) at univariate, bivariate and multivariate levels. The diagram bellow presents the geographical location of the Northern region in Nigeria

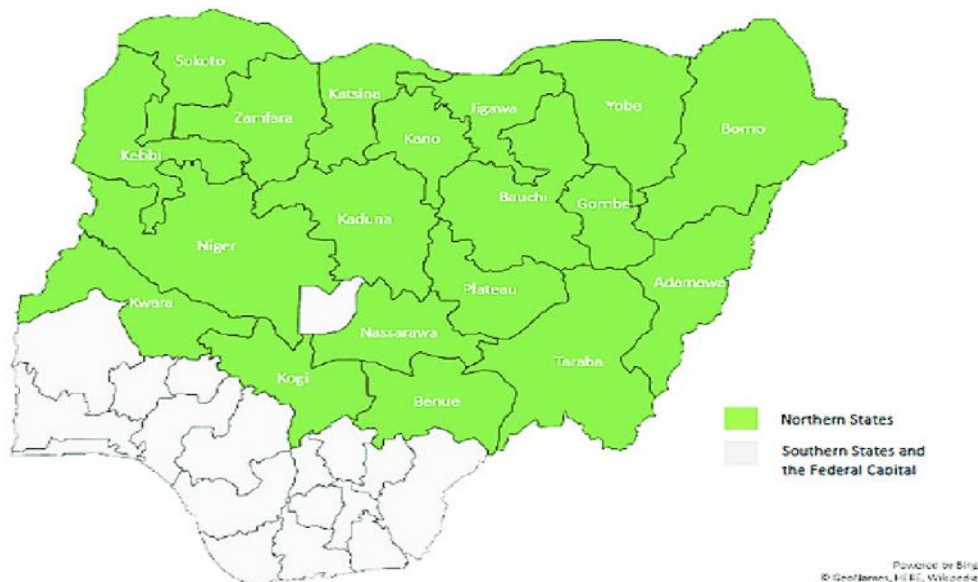


Fig 2.1: Geographical Representation of Northern Nigeria

Findings

This section presented the results of analysis runned at the univariate, bivariate and multivariate level on age at first marriage and fertility behaviour of women in terms of children ever born (CEB) in northern Nigeria. The following paragraphs below presented the results:

Percent Distribution of Age at First Marriage across the Northern Region of Nigeria

This section presents the percent distribution of age at first marriage of mothers of sampled women resident in Northern Nigeria across sub-geopolitical zones of north-central, north-east and north-west respectively

Table 3.1: Frequency Distribution of Age at First Marriage across the Northern Region

Variables	Regions					
	North Central (N = 3,413)		North East (N = 3,195)		North West (N = 6,542)	
Age at First Marriage	Frequency	Percent	Frequency	Percent	Frequency	Percent
Below 18 years	1,355	39.70	2,118	66.31	4,493	68.67
18-24 years	1,582	46.35	895	28.01	1,719	26.28
25+	476	13.95	182	5.68	330	5.04

Source: MCIS 2021



From Table 3.1, women that fall within the age category of 18-24 years had the highest percentage with 46.35 percent in north central Nigeria while age at first marriage 25 years and above has the lowest with 13.95 percent. This implies that early marriage is still pervasive in north central part of the country even though it slight below average and relatively low when compared to other sub-regions: north east and north western part of the country. This may probable be due to the fact that the north central part of the country is housing the Federal Capital Territory (Abuja) coupled with the fact that this region is closer to the southern part of the country. For the north east, age at first marriage below 18 years recorded the highest percentage with 66.31 percent while age at first marriage at 25 years and above recorded the lowest percentage with 5.68 percent. This is also consistent with the north west with age at first marriage for women below 18 years having the highest percentage with 68.67 percent while women above 25 years having the lowest age at first marriage with 5.04 percent. This implies that the issue of early marriage is worse in the north east and north western part of the country respectively.

Association between Age at First Marriage and Children Ever Born in Northern Region

This section presents the association between age at first marriage of mothers of sampled women resident in Northern Nigeria and children ever born (CEB) across sub-geopolitical zones of north-central, north-east and north-west respectively

Table 3.2 Association between Individual Factors and Children Ever Born Across Northern Region

	North Central			North East			North West		
Individual Factors	Children Ever Born			Children Ever Born			Children Ever Born		
Age at First Marriage	Low (N = 1,087)	Mode rate (N = 629)	High (N = 1,697)	Low (N = 795)	Moderate (N = 480)	High (N = 1,920)	Low (N = 1,555)	Moderate (N = 798)	High (N = 4,189)
Below 18 years	346 (31.79)	224 (35.63)	785 (46.28)	501 (63.02)	299 (62.47)	1,317 (68.63)	975 (62.67)	530 (66.44)	2,988 (71.33)
18-24 years	538 (49.46)	303 (48.15)	741 (43.69)	242 (30.38)	132 (27.5)	521 (27.15)	511 (32.83)	234 (29.29)	975 (23.28)
25+	204 (18.75)	102 (16.22)	170 (10.03)	52 (6.59)	48 (10.03)	81 (4.22)	70 (4.51)	34 (4.27)	226 (5.39)
Statistics	$\chi^2 = 117.163, p=0.000$			$\chi^2 = 46.703, p=0.000$			$\chi^2 = 52.795, p=0.000$		

Source: MCIS 2021

From Table 3.2, the cross-tabulation of age at first marriage with children ever born in north central part of Nigeria revealed statistics: $\chi^2=117,163$, $p=0.000$. with the 0.05 level of significance, since $p<0.05$, this implies that age at first marriage is significantly associated with children ever born in north central part of Nigeria. The statistics for north east revealed: $\chi^2=46,703$, $p=0.000$. with $p<0.05$, this implies that the age at first marriage is significantly associated with children ever born in north eastern part of Nigeria. For north western part of the country, with statistics: $\chi^2=52,795$, $p=0.000$; since $p<0.05$, this implies that age at first marriage has a positive role in influencing or determining fertility behaviour in terms of children ever born in northern Nigeria. This is due to the fact that majority of the sampled women in northern Nigeria experience early marriage below 18 years, most especially in north east and north western part of



Nigeria. This will have a consequence of expanding the reproductive life span; that is, early entry into reproduction thereby leading to high fertility behaviour in terms of children ever born in the region.

Multivariate Analysis between Children Ever Born (CEB) and Age at First Marriage in Northern Nigeria

This section presents the relationship between maternal age of mothers of sampled women resident in Northern Nigeria and children ever born (CEB) in Northern Nigeria

Table 3.3 Relationship between Age at First Marriage and Children Ever Born across Northern Nigeria

Source	SS	DF	MS	
Model	40.4944509	3	13.4981503	Number of Obs = 3,088
Residual	866.663256	3,084	.281019214	F(3, 3084) = 48.03
Total	907.157707	3,087	.293863851	Prob> F = 0.0000
				R. Squared = 0.0446
				Root MSE = .53011

CEB	Coefficient	Std.error	T	P>/t /	[95% Conf. Interval]	
Age at First Marriage	-.1056629	.0090551	-11.67	0.000	-.1234175	-0.0879084
-Cons	2.30322	.0551977	41.67	0.000	2.192094	2.40855

Source: MCIS 2021

It can be inferred from statistics above that age at first marriage of women has influence on fertility behaviour with $p>/t = 0.000$. The longer the age at first marriage of women, the delay the age of entry into reproduction of women thereby reducing the reproductive life span of women; hence, reducing the fertility behaviour of the concerned women. The northern part of the country is featured with early marriage which can be much attributed to their customs or traditional believes on girl child education. This has led to high fertility behaviour in the northern part of Nigeria when compared to the south. The individual factor that was captured in this model was age at first marriage of women that fall within the reproductive age 15-49 years in northern Nigeria and children ever born (CEB). The first multivariate model; linear regression presented the relation and influence of age at first marriage on children ever born. Thereafter the multinomial regression model was presented. From Table 3.3, the linear regression between children ever born (CEB) and age at first marriage revealed a significant positive relationship between children ever born (CEB) and age at first marriage at 5% level of significance with $\text{Prob}>F = 0.0000$, $R. \text{Squared} = 0.045$.

The multinomial regression model is presented below:

Number of Obs = 3,088
 LR Chi2(12) = 240.49
 Prob>Chi2 = 0.0000
 Pseudo R2 = 0.0487

Log likelihood= -2350.4399

CEB	Coefficient	Std. error	Z	P>/Z/	[95% Conf.Interval]	
Age at First Marriage	.5389718	.0754917	7.14	0.000	.3910107	.6869328
-Cons	-2.261148	.5805513	-3.89	0.000	-3.399007	-1.123288

Source: MCIS 2021

From statistics above, age at first marriage has association with fertility behaviour in northern Nigeria in terms of children ever born (CEB) with $\text{Prob} > \chi^2 = 0.0000$ and can also influence children ever born (CEB). This implies that age at first marriage is still very low in northern Nigeria and has as led to high fertility behaviour witnessed in the region.

Discussion

Age at first marriage is very important determining factor of fertility behaviour not only in northern Nigeria but across the globe (Michael *et al.*, 2025). Findings from this study do not refute the theory of planned behaviour for fertility because age at first marriage is one of the individual factors that can determine fertility behaviour of women in terms of children ever born (CEB). The earlier the marriage of both the male and female gender, the earlier the commencement of child bearing and large reproductive life span except if such gender involved want to bear children out of wedlock which is not acceptable in most cultures in sub-Saharan Africa most especially in northern Nigeria in consideration. In northern Nigeria, due to religious and societal believes, early marriage is still well practiced and this has induced fertility behaviour in this region in terms of high number of children ever born. The early marriage in this region is also attributed to low level of education of both the girl and male child. Early marriage is also linked with the societal norm of handling the girl child to her husband and tender age. The nature of work in this region, which is agriculture does not believe in attaining higher degree before settling down for having family. Culture and societal norms in this region also valued large family size because of the nature of their work; which is agriculture, coupled with the fact that family structure in this region is patriarchal in nature with the male dominance in decision making and primary bread winner. This is evident in the low age at first marriage of women in various surveys conducted in the region.

Age at first marriage is twenty-four (24) years across the various sub-regions in northern Nigeria. For example, from the analysis conducted, women that fall within the age category of 18-24 years has the highest percentage with 46.35 percent in north central Nigeria while age at first marriage 25 years and above has the lowest with 13.95 percent. This implies that early marriage is still pervasive in north central part of the country even though it slight below average and relatively low when compared to other sub-regions: north east and north western part of the country. This may probable be due to the fact that the north central part of the country is housing the Federal Capital Territory (Abuja) coupled with the fact that this region is closer to the southern part of the country. For the north east, age at first marriage below 18 years recorded the highest percentage with 66.31 percent while age at first marriage at 25 years and above recorded the lowest percentage with 5.68 percent. This is also consistent with the north west with age at first marriage for women below 18 years having the highest percentage with 68.67 percent while women above 25 years having the lowest age at first marriage with 5.04 percent. This implies that the issue of early marriage is worse in the north east and north western part of the country respectively.

At the bivariate level, the cross-tabulation of age at first marriage with children ever born in north central part of Nigeria revealed statistics: $\chi^2 = 117,163$, $p = 0.000$. With the 0.05 level of significance, since $p < 0.05$, this implies that age at first marriage is significantly associated with children ever born in north central part of Nigeria. The statistics for north east revealed: $\chi^2 = 46,703$, $p = 0.000$. with $p < 0.05$, this implies that the age at first marriage is significantly associated with children ever born in north eastern part of Nigeria. For north western part of the country, with statistics: $\chi^2 = 52,795$, $p = 0.000$; since $p < 0.05$, this implies that age at first marriage has a positive role in influencing or determining fertility behaviour in terms of children ever born in northern Nigeria. This is due to the fact that majority of the sampled women in northern Nigeria experience early marriage below 18 years, most especially in north east and north western part of Nigeria. This will have a consequence of expanding the reproductive life span; that is, early entry into reproduction thereby leading to high fertility behaviour in terms of children ever born in northern part of Nigeria.



Conclusion and Recommendation

Form results, it is evident that early marriage has accounted for high fertility behaviour witnessed in Northern part of Nigeria. It is therefore recommended that government need to ensure adequate enforcement of the 18 years minimum wage has recommended by the 1988 national population policy. This will invariably go a long way in curbing early marriage and reducing high fertility behaviour witnessed in the northern region.

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