Cultural determinants of fertility behaviour in Nigeria

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Abstract
The study examined the influence of cultural variables, namely age of entering into marriage, belief systems and sex preference on fertility behaviour among women in Nigeria. Preference theory was adopted as a framework for explaining fertility behaviour. The study used mixed method design. A sample of 614 participants were selected for the study. Qualitative and quantitative research instruments were used for data collection. Retrieved data were analysed using statistical package for social sciences (SPSS version 20.0). Results revealed that there is a significant relationship between belief systems, age of entry into marriage, sex preference and fertility behaviour among women. Based on these, it was recommended among others that younger women should always consult registered gynaecologists to help them regulate and control child-birthing. Laws should be enacted that encourage marriages between 25-35 years. It was also

recommended that religious and traditional clerics should discuss and enlighten their members on fertility behaviour.

Keywords: Age, fertility behaviour, religion, sex preference

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Introduction

Nigeria, with its rich cultural tapestry, is characterized by a multitude of ethnicities, languages, and traditions. Fertility behaviour is deeply embedded in this cultural mosaic, and understanding the cultural determinants is essential for comprehending population dynamics. Historically, Nigeria's fertility patterns were molded by indigenous cultural practices, traditional kinship systems, and economic structures. The impact of colonialism, which introduced new cultural elements, and subsequent societal transformations will be explored (Caldwell 1997; Johnson-Hanks 2006).

Religious beliefs, predominantly Islam and Christianity, play a significant role in shaping fertility behaviour. Different religious doctrines have distinct views on contraception, family planning, and the importance of procreation, influencing reproductive choices (Bankole et al. 2009; Ezeh et al. 2009). According to Cleland et al. (2006) and Feyisetan and Bankole (2002), socio-cultural factors, including gender roles, family structures, and societal expectations, contribute to fertility decisions. The influence of education, media, and urbanisation on altering cultural norms has also impact on fertility. Traditional practices like polygamy and early marriages persist in certain communities, impacting fertility behaviour. Also, cultural perceptions of health, illness, and healthcare-seeking behavior intersect with fertility decisions. In views of Adedini et al. (2015) and Ibisomi (2008), traditional medicine, mistrust of modern healthcare facilities, and cultural attitudes towards reproductive health services contribute to the overall fertility landscape

Age is a great influence in fertility levels. In some communities, especially in highly developed countries, couples in their late 30s and 40s are still attempting first pregnancy due to high level of delay in starting a family. However, in African countries (example Nigeria), women as young as 14 years have given birth or are in marital unions and at the risk of pregnancy and childbirth (Ushie 2009). Age at marriage is a proximate or intermediate determinant of fertility. However, when to start family or age at marriage is determined by socioeconomic variables such as educational demands, career, law, suitable suitors, and economic backgrounds

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(Davis & Blake 1956). This study is set to bridge this gap by examining the effects of cultural variables on fertility behaviour in Cross River South Senatorial District, Nigeria. Thus, the general objective of the study is to examine the influence of cultural factors on fertility behaviour among women in Cross River South Senatorial District, Nigeria. The study specifically seeks to:

(i) Examine the influence of belief system on fertility behaviour among women in Cross River South Senatorial District, Nigeria.
(ii) Determine the effect of sex preference on fertility behaviour among women in Cross River South Senatorial District, Nigeria.
(iii) Assess the impact of age of entry into marriage on fertility behaviour among women in Cross River South Senatorial District, Nigeria.

Study Area

The study was conducted in Cross River South Senatorial District, Nigeria. The Senatorial District is one of the three Senatorial Districts in Cross River State. It has an area of 4,444 square kilometres, located between latitudes 4.32^0 and 5.53^0 North and longitude 7.25^0 and 8.25^0 East (United Nations High Commission for Refugees, 2019). It covers an area of about 63 per cent of the total landmass of the state. The senatorial district is situated within the tropics and shares boundary with the Republic of Cameroon in the East; Yakurr Local Government Area in the North, Calabar Sea in the South, and in the south-west by AkwaIbom State, and the north-west by Ebonyi State. Southern Senatorial District comprises of seven (7) local government areas, i.e. Akamkpa, Akpabuyo, Biase, Bakassi, Calabar Municipality, Calabar South and Odukpani. The serene and vast, beautiful landmass is predominantly a rural settlement enclave. According to Bassey (2014), its undulating landscape is simply unique, with the seemingly endless greenery and verdant grassland suggesting a rural environment created by nature.

The celebrations of cultural festivals in the locality serve as relative sources of employment generation or the creation of wealth for the people. They have also become remarkable tools for cultural renewal and the socio-economic development of the people. Although Southern Senatorial District is mainly rural, community cohesion and religious life of the people account mainly for their high moral standards and conducts to preserve the societal norms. To the people, culture is the defining nexus, which holds the communities together. Material wealth is not essential to them as responsible parenthood, and good name achieved through displaying good moral conduct and the observance of the community normative codes and participation considered by many locals as the path to self–actualisation, self-fulfilment and good citizenship. Inhabitants of Southern Senatorial District are majorly Christian and Muslim, though African

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Traditional Religions is also practised in this area by few individuals. These sociocultural characteristics of the people of the Cross River South Senatorial District have significant effect on their fertility behaviour, this forms the rationale behind this study in the area.

Literature review

Alazbih, Kaya, Mengistu, and Gelaye, (2021) assessed factors responsible for fertility decline and reproductive behaviours of women aged 15– 49 years between 2008 and 2014 in Dabat Demographic and Health Surveillance Site, Northwest Ethiopia. Cross-sectional censuses were carried out in a Dabat Health and Demographic Surveillance System (HDSS) site in 2008 and 2014. Data for 4,775 and 10,807 women of reproductive age in 2008 and 2014 were used for the analysis. A Poisson regression model was employed to assess the trends of determinants of fertility, and multivariate decomposition analysis was applied to evaluate observed changes in fertility using data from two consecutive cross-sectional censuses of DabatHDSS. The study indicated that the overall reduction in fertility was attributed to both changing characteristics of women and their reproductive behaviour. Major contributors to the changes in fertility were postponing women's first marriage to a later age and changes in the proportion of currently married women over the study period.

More so, Okyere, Aboagye, Ahinkorah et al. (2022) examine the association between high-risk fertility behaviour and childhood anaemia in sub-Saharan Africa. The study was conducted using cross-sectional data from mothers with children under age 5 (n=64 512) from 28 sub-Saharan African countries. Multilevel logistic regression models were fitted to examine the association between high-risk fertility behaviour and childhood anaemia. The results were presented using adjusted odds ratios (aORs) with 95% confidence interval (CI). The percentage of children with anaemia in the 28 countries was 66.7%. It was also found that mothers at age more than 34 at delivery and short birth interval had significant associations with childhood anaemia. Children of mothers whose most recent delivery occurred after 34 years were less likely to be anaemic compared with those whose most recent delivery occurred before age 34 (aOR=0.89; 95% CI 0.83 to 0.95). Again, it was discovered that children born to mothers with short birth intervals were more likely to be anaemic, compared with those with long birth intervals (aOR=1.08; 95% CI 1.01 to 1.16).

Atama, Ebimgbo, Uzoma, Iwuagwu and Asadu (2021) surveyed the influence of socio-economic status of women on their fertility outcome in Benue State, North-Central, Nigeria. Data from 1,049 childbearing women were collected using questionnaires. The data were analyzed using logistic regression and chi-square statistics. Significant relationship exists between belief system, education,

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income, occupation, age, marital status and fertility outcome at $p < .05$. To achieve global health development and be amongst the best performers in global quality of life measures, women's empowerment programs are encouraged to enhance their autonomy in decision making with reference to reproduction.

Schnabel (2021) explored a new fertility determinant: societal belief system. Using country-level data from multiple sources (n = 181) and multilevel data from 58 countries in the World Values Survey (n = 83,301), the author documents a strong negative relationship between societal belief system and both country-level fertility rates and individual-level fertility behaviour. Belief system, even in small amounts, is associated with population stagnation or even decline absent substantial immigration, whereas highly religious countries have higher fertility rates that promote population growth. This country-level pattern was driven by more than aggregate lower fertility of secular individuals. In fact, societal secularism is a better predictor of highly religious individuals' fertility behaviour than that of secular individuals and this pattern is largely a function of cultural values related to gender, reproduction and autonomy in secular societies.

Chaudhuri (2021) investigated the desire for sons and excess fertility: a household-level analysis of parity progression in India. Data from India's 2017–2019 National Family Health Survey were used to examine several hypotheses regarding the association between sex composition of children and parity progression among Parous women aged 35–49. Descriptive analyses and multivariate logistic regression analysis that controlled for possible confounders were performed separately by parity. Results showed that women with more sons than daughters were generally less likely than those with more daughters than sons to continue childbearing; parity progression driven by the desire for sons accounted for 7% of births. At any given parity, the last-born child of women who had stopped childbearing was more likely to be a son than a daughter (sex ratios, 133–157). In multivariate analyses, women without any sons were more likely than women without any daughters to continue childbearing at parities 1–4 (odds ratios, 1.4–4.5). At most or all parties, continued childbearing was positively associated with having had a child who died, and negatively associated with levels of women's education and media exposure and with household wealth. The study concluded that the desire for sons appears to be a significant motivation for parity progression.

Theoretical framework

This study adopts the preference theory.The Preference Theory is attributed to the work of Catherine Hakim's titled "Preference Theory" (Hakim, 2000; Hakim, 2003). It is a sociological theory, which aims to explain the changes that women have experienced in contemporary societies regarding two main lifecycle patterns:

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fertility and employment. Key tenets of the preference theory by Catherine Hakim are:

A. Choice and Preference: At the core of Hakim's theory is the idea that individuals make choices based on their preferences. She argues that individuals have diverse preferences for work and family roles, and these preferences can be grouped into three main categories: home-centered, adaptive, and work-centered.

B. Preference Flexibility: Hakim acknowledges that preferences can change over time and in response to individual life circumstances, such as the presence of children, career opportunities, or economic needs. She argues that public policies and societal norms should respect and accommodate these diverse preferences rather than trying to enforce a one-size-fits-all approach.

The theory is relevant to this study because Hakim's theory suggests that individuals have different preferences for combining work and family life. In Nigeria, women's economic independence and employment opportunities significantly impact fertility choices. Women who have access to better job prospects and can balance their work and family life more effectively may choose to have fewer children, as they might prioritize their careers.

Nigerian culture is often characterized by traditional gender roles, which may influence fertility behaviour. Hakim's theory emphasizes the importance of understanding individual preferences for these roles. Some women may adhere to traditional roles, while others may seek more egalitarian partnerships, which can, in turn, affect fertility decisions. Preference theory also emphasizes the significance of work-related policies and practices. In Nigeria, policies related to maternity leave and flexible work arrangements can play a role in fertility choices. Access to maternity leave and support for working mothers can influence family planning decisions. Cultural norms and social pressures within Nigeria can be powerful determinants of fertility choices. These norms may encourage larger families and influence individuals to conform to societal expectations. Understanding how these cultural factors interact with individual preferences is essential.

Hakim's theory highlights the importance of education in shaping preferences. In the context of fertility behaviour in Nigeria, access to education and awareness about family planning and reproductive health can empower individuals to make more informed choices, potentially leading to smaller family sizes. Religion also plays a significant role in Nigerian society and can influence fertility choices. Different religious beliefs may encourage or discourage family planning, making it an essential factor to consider when applying preference theory to fertility behaviour.

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In summary, Catherine Hakim's preference theory provides a valuable framework for understanding fertility behaviour in Nigeria, particularly in the context of cultural determinants. By analyzing individual preferences, economic independence, traditional gender roles, and the influence of policies, norms, and religion, researchers and policymakers can gain insights into the factors shaping fertility choices in this diverse and culturally rich nation.

Methodology

The study adopted the cross-sectional survey research design. This design was useful for describing the relationship between cultural factors and fertility behaviour among women in Southern Cross River State, Nigeria. The study population comprised of women of childbearing age that resides in Cross River South Senatorial District, Nigeria. The population of women in Cross River South Senatorial District stands at 579,105 (National Population Census, 2006). A sample size of 600 was used for this study. The 600 sample size was derived using the survey monkey sample size determinant technique at 95 per cent confidence level and a margin of error of 5%. The survey monkey is a sample calculator that helps determine the actual sample size for a study that is proportionate with population of a study (Rosenbaum & Lidz, 2019). This sample included 14 respondents for qualitative data and 600 respondents for the quantitative data collection.

A multistage sampling technique was applied in the sample selection for this study. Southern Senatorial District was divided into seven clusters according to the seven (7) Local Government Areas that make up the Senatorial District. From the seven clusters, the simple random sampling technique was used in selecting four clusters, that is, four local government areas. Justifiably, the researchers decided on four local government areas because it is an even number and can complement the sample size used. Using the simple random sampling technique, the seven local government areas were written in a piece of paper, wrapped and put into a bowl, the wrapped papers were shuffled and four of the papers were selected. This process gave equal opportunity to each of the clusters to be selected. The four selected clusters were Calabar South, Akpabuyo, Odukpani and Calabar Municipality. Finally, the systematic sampling technique was adopted in selecting 25 women from each of the selected street or community.

The 14 discussants, who are believed to be knowledgeable in the object of the study were selected by the village heads using sampling purposive procedure. Accordingly, the 14 discussants were spread across all the seven (7) local

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government areas. That is, two discussants from each area. This further amplifies the researcher's aim to cover all areas of the study. The variables that guided our selection include age, marital status, social status and educational qualification.

Data was gathered using a well-structured questionnaire and Key Informant Interview schedule. The questionnaire contained "closed-ended questions divided into three sections, with each section focusing on a specific segment of the study". The questionnaire was designed by the researcher with substantial input from two relevant experts. The questionnaire was designed in a modified-Likert scale format of Agreed (A), Strongly Agreed (SA), Disagreed (D) and Strongly Disagreed (SD). Section A of the questionnaire focuses on collecting information on the respondent's demography. Section B and C consists of items on a modified-Likert scale designed to measure the variables under study. Each item requires the respondents to indicate their response. More so, the qualitative instrument (key informant interview guide) was also used to elicit qualitative responses from key informant respondents.

All established ethical standards governing research were observed in this study, including obtaining informed consent, explicit authorization for audio or video recording, voluntary involvement, participants' freedom to withdraw, and cultural sensitivity. The Ethical Committee of the University of Calabar granted the necessary approval for the study to obtained information on 15-19 years old participants from Research and Statistics Unit, Public Health Office in the Ministry Health, Cross River State, Nigeria.

Results and discussion findings

Table 1 presents the socio-demographic distribution of sampled respondents. Demographic distribution on age showed that 30 (5.0%) were between 15 to 19 years, 75 (12.5%) were between 20 to 24 years, 127 (21.2%) were between 25 to 29 years, 233 (38.8%) were between 30 to 34 years, 106 (17.7%) were between 35 to 39 years, 21 (3.5%) were between 40 to 44 years, and 8 (1.3%) were between 45 to 49 years. This report therefore showed that majority of the respondents were at their peak reproductive age (25-39 years).

Marital status distribution showed that only 33 (5.5%) were single, 337 (56.2%) were married (monogamous) and 108 (18.0%) married (polygamous), 40 (6.7%) were cohabiting, 26 (4.3%) were divorced, 44 (7.3%) were separated, while 12 (2.0%) were widowed. Educational status of respondents revealed that 41 (6.8%) has primary education, 43 (7.2) had junior school education and 94 (15.7%) had senior school education, however, 139 (23.2%) had NCE/OND education, 29 (4.8%) obtained and attained Teacher Training College (TTC), 217 (36.2%) had HND/B.SC/BA/B.Ed education, and 37 (6.2%) had M.Sc/Ph.D education.

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The distribution of the respondents by religion indicated that 479 (79.8%) women were Christians, 31 (9.5%) were African traditional religionists, 31 (5.2%) were Muslims, while 14 (2.3%) were atheists. Distribution based on occupation discovered that 33 women (5.5%) were students, 337 (56.2%) were civil/public servants, 120 (20.0%) were SMEs operators, 66 (11.0%) had private business firms, however, 44 (7.3%) were unemployed. Distribution based on family size was categorised into two: large and small families. Computing for family size, respondents who indicated 1 – 3 children were considered small families while those having more than 3 children were considered large families. Thus, 350 (58.3%) had large families while 250 (41.7%) had small families.

TABLE 1

Respondents' demographic data/socio-cultural variables

S/N	Demographic data	Options	Response rate	Percentage (%)
1	Age	15-19years	30	5.0
		20-24years	75	12.5
		25-29years	127	21.2
		30-34years	233	38.8
		35-39years	106	17.7
		40-44years	21	3.5
		45-49years	8	1.3
2	Marital status	Single	33	5.5
		Married (monogamous)	337	56.2
		Married (polygamous)	108	18.0
		Cohabitation	40	6.7
		Divorced	26	4.3
		Separated	44	7.3
		Widowed	12	2.0
3	Educational status	Primary school	41	6.8
		Junior secondary	43	7.2
		Senior secondary	94	15.7
		NCE/OND	139	23.2
		Teacher Training College (TTC)	29	4.8
		HND/B.SC/BA/B.Ed	217	36.2
		M.SC/Ph.D	37	6.2
4	Religion	Christianity	479	79.8
		Islam	57	9.5
		Traditional	31	5.2
		Other religion	14	2.3

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		No religion	19	3.2
5	Occupation	Student	33	5.5
		Civil servant/ public servant	337	56.2
		Business (SMEs)	120	20.0
		Private service	66	11.0
		Unemployed	44	7.3
6	Family size	Large	350	58.3
		Small	250	41.7

Table 2 shows the demographic distribution of the qualitative respondents interviewed. According to their demographic data collected, 2 (14.3%) were between 25-29 years, 4 (28.6%) were between 30-34 years, only 1 (7.1%) was between 35-39 years, 3 (21.4%) were between 40-44 years and 4 (28.6%) were between 45-49 years. 11 (75.6%) of the respondents were married, 2 (28.6%) were widowed while only 1 (7.1%) indicated separated. The data also showed that 4 (28.6%) had attained junior school, 2 (14.3%) had attained secondary school and 8 (57.1%) had attained higher institutions; 4 (28.6%) are employed workers, 6 (42.8%) are into businesses and 4 (28.6%) are unemployed.

TABLE 2

Demographic data/socio-cultural variables of qualitative respondents

S/N	Demographic data	Response rate	Percentage (%)	Total
1	**Age**			
	25-29years	2	14.3	14
	30-34years	4	28.6	
	35-39years	1	7.1	
	40-44years	3	21.4	
	45-49years	4	28.6	
2	**Marital status**			
	Married	11	75.6	14
	Divorced/Separated	1	7.1	

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	Widowed	2	14.3	
3	**Educational status**			
	Junior secondary	4	28.6	14
	Senior secondary	2	14.3	
	Higher learning	8	57.1	
4	**Social status**			
	Worker	4	28.6	14
	Business (SMEs)	6	42.8	
	Unemployed	4	28.6	

Test of hypotheses

Hypothesis one

There is no significant influence of age at entry into marriage on fertility behaviour among women. The independent variable in this hypothesis is age at entry into marriage (categorized into; 15-19years, 20-24years, 25-29years, 30-34years, 35-39years, 40-44years, 45-49years), while the dependent variable is fertility behaviour (measured continuously) among women in Cross River South Senatorial District, Nigeria. The hypothesis was analysed using One-way analysis of variance (ANOVA) and the result presented in Table 3, 4, and Fig. 1.

As shown in the table 3, the calculated F-value for age at entry into marriage and fertility behaviour ($F=10.759$; $df = 2,598$; $p < 0.05$), is significant at .05 Alpha level. Therefore, the null hypothesis was rejected. This implies that age at entry into marriage has significant influence on fertility behaviour among women in Cross River South Senatorial District, Nigeria. Since there was a significant influence of age at entry into marriage on fertility behaviour, a post hoc test was carried out using Least Significant Difference (LSD) post hoc method, and the result is presented in table 4. Results of post hoc test as presented in Table 4revealed that; fertility behaviour among women who were between 20-24years old when they entered into marriage significantly differ from fertility behaviour among women who were between 15-19year old when they entered into marriage ($MD = 4.93333^{*}; p < .05$).

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Fertility behaviour among women who were between 25-29years old when they entered into marriage significantly differ from fertility behaviour among women who were between 15-19years old when they entered into marriage (MD = 3.51286*; p <.05). Again, results revealed that there is a significant difference between fertility behaviour among women who were between 45-49years old when they entered into marriage and those who were between 15-19years old when they entered into marriage (MD = 10.10833*; p <.05). Fertility behaviour among women who were between 30-34years old when they entered into marriage significantly differ from fertility behaviour among women who were between 20-24years old when they entered into marriage (MD = -3.00687*; p <.05). Similarly, fertility behaviour among women who were between 35-39years old when they entered into marriage significantly differ from fertility behaviour among women who were between 20-24years old when they entered into marriage (MD = 7.08679*; p <.05).

Fertility behaviour among women who were between 40-44years old when they entered into marriage significantly differ from fertility behaviour among women who were between 20-24years old when they entered into marriage (MD = 7.58095*; p <.05). Fertility behaviour among women who were between 35-39years old when they entered into marriage significantly differ from fertility behaviour among women who were between 30-34years old when they entered into marriage (MD = 4.07993*; p <.05). Also, fertility behaviour among women who were between 40-44years old when they entered into marriage significantly differ from fertility behaviour among women who were between 30-34years old when they entered into marriage (MD = 4.57409*; p <.05). Fertility behaviour among women who were between 40-44years old when they entered into marriage significantly differ from fertility behaviour among women who were between 25-29years old when they entered into marriage (MD = 6.16048*; p <.05).

Fertility behaviour among women who were between 45-49years old when they entered into marriage significantly differ from fertility behaviour among women who were between 25-29years old when they entered into marriage (MD = 6.59547*; p <.05). Fertility behaviour among women who were between 45-49years old when they entered into marriage significantly differ from fertility behaviour among women who were between 30-34years old when they entered into marriage (MD = 8.18187*; p <.05). Fertility behaviour among women who were between 35-39years old when they entered into marriage significantly differ from fertility behaviour among women who were between 25-29years old when they entered into marriage (MD = 5.66632*; p <.05). Fertility behaviour among women who were between 45-49years old when they entered into marriage significantly differ from fertility behaviour among women who were between 35-39years old when they entered into marriage (MD = 12.26179*; p <.05). Fertility behaviour among women who were between 40-44years old when they entered into

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marriage significantly differ from fertility behaviour among women who were between 20-24years old when they entered into marriage (MD = 7.58095*; p <.05). Fertility behaviour among women who were between 45-49years old when they entered into marriage significantly differ from fertility behaviour among women who were between 40-44years old when they entered into marriage (MD = 12.75595*; p <.05). While the result was so, there was no statistically significant difference between the other groups.

TABLE 3
Summary of ANOVA result: Age at entry into marriage and fertility behaviour among women

VARIABLE	N	Mean	Std. Deviation
15-19years	30	17.7333	7.75457
20-24years	75	12.8000	8.16883
25-29years	127	14.2205	7.77145
30-34years	233	15.8069	8.10127
35-39years	106	19.8868	6.55573
40-44years	21	20.3810	6.69684
45-49years	8	7.6250	6.43512
Total	600	15.9633	8.07428

SOURCES OF VARIANCE	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3833.722	2	638.954	10.759	.000
Within Groups	35217.471	598	59.389		
Total	39051.193	600			

*Significant at .05

TABLE 4
LSD post hoc test for significance of mean

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(I) AGE AT ENTRY INTO MARRIAGE	(J) AGE AT ENTRY INTO MARRIAGE	Mean Difference (I-J)	Std. Error	Sig.
15-19years	20-24years	4.93333*	1.66477	.003
	25-29years	3.51286*	1.56437	.025
	30-34years	1.92647	1.49483	.198
	35-39years	-2.15346	1.59370	.177
	40-44years	-2.64762	2.19264	.228
	45-49years	10.10833*	3.06646	.001
20-24years	15-19years	-4.93333*	1.66477	.003
	25-29years	-1.42047	1.12226	.206
	30-34years	-3.00687*	1.02310	.003
	35-39years	-7.08679*	1.16281	.000
	40-44years	-7.58095*	1.90260	.000
	45-49years	5.17500	2.86626	.072
25-29years	15-19years	-3.51286*	1.56437	.025
	20-24years	1.42047	1.12226	.206
	30-34years	-1.58639	.85001	.062
	35-39years	-5.66632*	1.01385	.000
	40-44years	-6.16048*	1.81539	.001
	45-49years	6.59547*	2.80913	.019
30-34years	15-19years	-1.92647	1.49483	.198
	20-24years	3.00687*	1.02310	.003

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	25-29years	1.58639	.85001	.062
	35-39years	-4.07993*	.90286	.000
	40-44years	-4.57409*	1.75582	.009
	45-49years	8.18187*	2.77100	.003
35-39years	15-19years	2.15346	1.59370	.177
	20-24years	7.08679*	1.16281	.000
	25-29years	5.66632*	1.01385	.000
	30-34years	4.07993*	.90286	.000
	40-44years	-.49416	1.84073	.788
	45-49years	12.26179*	2.82557	.000
40-44years	15-19years	2.64762	2.19264	.228
	20-24years	7.58095*	1.90260	.000
	25-29years	6.16048*	1.81539	.001
	30-34years	4.57409*	1.75582	.009
	35-39years	.49416	1.84073	.788
	45-49years	12.75595*	3.20181	.000
45-49years	15-19years	-10.10833*	3.06646	.001
	20-24years	-5.17500	2.86626	.072
	25-29years	-6.59547*	2.80913	.019
	30-34years	-8.18187*	2.77100	.003
	35-39years	-12.26179*	2.82557	.000

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	40-44years	-12.75595*	3.20181	.000

*. The mean difference is significant at the 0.05 level

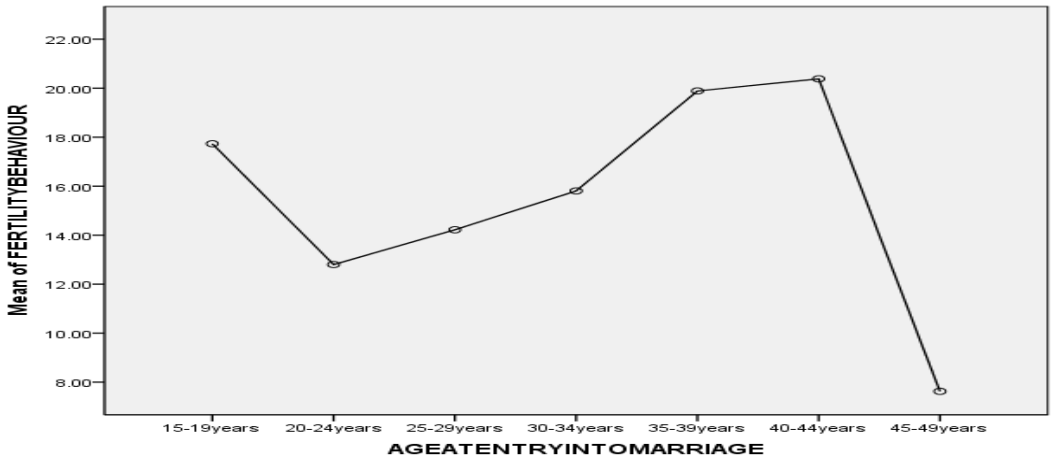

Figure 1: Mean plot for age of entry into marriage and fertility behaviour.

In an interview session conducted with the selected participants (women of reproductive ages) in Cross River South Senatorial District, Nigeria, when asked whether "at what age do you consider appropriate to enter into childbearing?" The responses were as follows:

> For me, it is more appropriate for childbirth to begin at 20 years. The reason is that, the woman or rather young woman will be psychologically prepared. Childbirth does not only involve the process of having sex and conception, it also has to do with the woman being psychologically stable to go through childbirth. I personally got married at 30 years which is still at a young good age. However, being married and going through conception at an older age say 40 – 45 years is still possible but such woman needs to put in more care to be safe. Though they say the older the better, to me the older the harder when it comes to conception (**KII, Akpabuyo, 2022**).

Probing: Do women who marry at a younger age have more children than women married at an older age?

> What do I say about this…? Biologically, the woman produces fertilised egg every month which means that they can conceive as far as they are healthy enough to carry through conception. However, from 15 years, which the girl child starts maturing, childbearing begins. If a young lady at that age starts producing, before she gets to 40 she might have actively given birth to more than ten children.

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> When you talk about whether they marry young or old is a matter of destiny. The fact remains that when they start engaging in sexual acts, pregnancy is inevitable. Except they are not fertile to accept pregnancy, which is when a woman reaches menopause or she has some underlining fertility problem (**KII, Akpabuyo, 2022**).

Another respondent when asked: Do young women want to give birth to more children than older women give birth? Averred that:

> It is very possible for a young woman to give birth to more children than older women want to. But in this generation, giving birth to more children is not encouraged. But we still find a lot of young girls especially from poor homes giving birth to children for several different men. To them, they only count the number of children they have for a particular man. I know a young lady that has given birth to seven children for five different men. Though she is mentally unstable which makes her an easy prey for men to lure into sex. There is a likelihood that she will still get pregnant because she is still fertile (**KII, Biase 2022**).

It also agrees with Singh and Maheshwari (2014) who examined how socioeconomic and demographic variables affect age at first marriage and reproductive behaviour in women. The study found that increasing the age at first marriage of teenagers by one year delays the age at first birth by 0.780 years and reduces the total parity per woman at the end of the reproductive period by 0.288. Women's fecundity dramatically increases with age upon first marriage, but temporary sterility diminishes. The finding is also consistent with the findings of Solanke (2015) who found that age at first marriage affects fertility and empowerment in women.

Hypotheses two

There is no significant influence of belief system on fertility behaviour among women in Cross River South Senatorial District, Nigeria. The independent variable in this hypothesis is belief system (categorized into; Christianity, Islam, traditional, other religion, no religion), while the dependent variable is fertility behaviour (measured continuously) among women in Cross River South Senatorial District, Nigeria. One way Analysis of Variance (ANOVA) was used to analyse data and test the hypothesis at .05 Alpha level and the result is presented in table 5, 6 and fig. 2.

As shown in the table 5, the calculated F-value for belief system and fertility behaviour ($F= 6.234$; $df = 2,598$; $p < 0.05$), is significant. Therefore, the null

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hypothesis was rejected. This implies that belief system has significant influence on fertility behaviour among women in Cross River South Senatorial District, Nigeria. Since there was a significant influence of belief system on fertility behaviour, a post hoc test was carried out using Least Significant Difference (LSD) post hoc method, and the result is presented in table 6. Results of post hoc test as presented in table 6revealed that; fertility behaviour among women whose belief system is Islamic religion significantly differ from fertility behaviour among women whose belief system is Christian religion (MD = 2.09786*; p < .05).

Fertility behaviour among women whose belief system is other religion (No specified religion) significantly differ from fertility behaviour among women whose belief system is Christianity (MD = 6.35476*;p < .05). Similarly, results of post hoc test as presented in table 6 revealed that; fertility behaviour among women whose belief system is no religion at all significantly differ from fertility behaviour among women whose belief system is Christianity (MD = 6.81716*;p < .05). Similarly, results of post hoc test as presented in table 6revealed that; fertility behaviour among women whose belief system is no religion at all significantly differ from fertility behaviour among women whose belief system is Islam (MD = 4.71930*;p < .05). Also, results of post hoc test as presented in table 6revealed that; fertility behaviour among women whose belief system is no religion at all significantly differ from fertility behaviour among women whose belief system is traditional religion (MD = 4.65365*;p < .05). While the result was so, there was no statistically significant difference between the other groups.

TABLE 5

Summary of ANOVA results: belief system and fertility behaviour among women

VARIABLE	N	Mean	Std. Deviation
CHRISTIANITY	479	15.2881	8.06955
ISLAM	57	17.3860	7.02230
TRADITIONAL	31	17.4516	8.75534
OTHER RELIGION	14	21.6429	7.56111
NO RELIGION	19	22.1053	5.52665
Total	600	15.9633	8.07428

SOURCES OF VARIANCE	Sum of Squares	Df	Mean Square	F	Sig.

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VARIABLE			N	Mean	Std. Deviation
CHRISTIANITY			479	15.2881	8.06955
ISLAM			57	17.3860	7.02230
TRADITIONAL			31	17.4516	8.75534
OTHER RELIGION			14	21.6429	7.56111
NO RELIGION			19	22.1053	5.52665
Between Groups	1570.761	2	392.690	6.234	.000
Within Groups	37480.432	598	62.992		
Total	39051.193	600			

*Significant at .05

TABLE 6

LSD post hoc test for significance of mean

(I) BELIEF SYSTEM	(J) BELIEF SYSTEM	Mean Difference (I-J)	Std. Error	Sig.
CHRISTIANITY	ISLAM	-2.09786*	1.11204	.030
	TRADITIONAL	-2.16351	1.47089	.142
	OTHER RELIGION	-6.35476*	2.15197	.003
	NO RELIGION	-6.81716*	1.85658	.000
ISLAM	CHRISTIANITY	2.09786*	1.11204	.030
	TRADITIONAL	-.06565	1.77120	.970
	OTHER RELIGION	-4.25689	2.36740	.073
	NO RELIGION	-4.71930*	2.10250	.025
TRADITIONAL	CHRISTIANITY	2.16351	1.47089	.142

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	ISLAM	.06565	1.77120	.970
	OTHER RELIGION	-4.19124	2.55567	.102
	NO RELIGION	-4.65365*	2.31244	.045
OTHER RELIGION	CHRISTIANITY	6.35476*	2.15197	.003
	ISLAM	4.25689	2.36740	.073
	TRADITIONAL	4.19124	2.55567	.102
	NO RELIGION	-.46241	2.79550	.869
NO RELIGION	CHRISTIANITY	6.81716*	1.85658	.000
	ISLAM	4.71930*	2.10250	.025
	TRADITIONAL	4.65365*	2.31244	.045
	OTHER RELIGION	.46241	2.79550	.869

*. The mean difference is significant at the 0.05 level

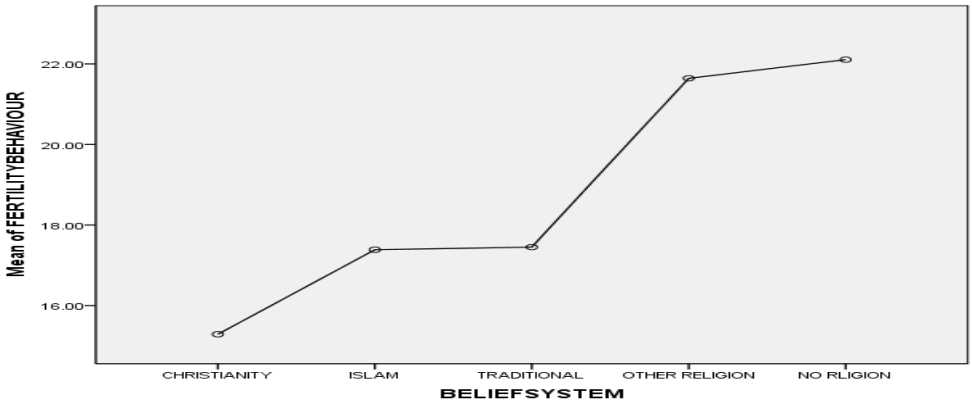

Figure 2: Mean plot of belief system and fertility behaviour among women

In an interview session conducted with the selected participants on what ideology do you have concerning contraceptive use (religious ideology, societal ideology, personal ideology)? The key in-depth participants has this to say:

> Personally, contraceptives are good for women, but you see, not everybody e dey work for. If I use contraceptive no mean say another person go fit use the same one I use. So, every woman has to understand what works best for them. So, on a personal note I prefer

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> to use contraceptives. But for religion and societal perception about contraceptive, that I wouldn't say much. My religion does not tell you not to use contraceptive neither will they detect when or who should use it. If you have a need for contraceptive why not consult your doctor after-all contraceptives are not produced in the church or in any religious setting. For societal perception, like I said, if you have a need for contraceptive, it is not the society need.
>
> On whether religion affects the number of children one should have? Another key in-depth interview say: No, my religion has nothing to do with the number of children one should have (**KII, Bakassi, 2022**).

Another respondent also agreed to the above by stating that:

> Contraceptive is an orthodox form of healthcare for women of reproductive age. Just like you take medicine to treat certain illnesses, that is how contraceptives work. It is a preventive method for pregnancy. Although, these days, even young girls that are not married use these contraceptives with the most common being the Postinor (morning after pills). So I personally don't have any contradiction whether to use contraceptives or not; it is your needs that determines it. For religion, contraceptive use has nothing to do with religion. If religion for instance stops women for using contraceptives, that means they should be ready to bear the consequences of providing welfare for more children that they should have. Rather, it is even encouraged among women groups and organisations. No, religion does not affect the number of children one should have (**KII, Bakassi, 2022**).

This finding agrees with Adedini, Babalola, Ibeawuchi, Omotoso, Akiode, and Odeku (2022) that parental beliefs influence fertility behaviour.

Hypotheses three

There is no significant difference in sex preference on fertility behaviour among women in Cross River South Senatorial District, Nigeria. Sex preference, which is the independent variable in this hypothesis is categorized in two groups (male and female), while the dependent variable is fertility behaviour. Independent t-test was used to test the hypothesis at 0.05 level of significance and the result is presented in Table 7. The results as presented in table 7 reveal that; fertility behaviour among women who prefer male children significantly differ from fertility behaviour among women who prefer female children, this is because the calculated t-value of (df = 598; = 3.765 < .05) is significant. Thus, the null hypothesis which states that; there is no significant difference in sex preference on fertility

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behaviour among women in Cross River South was rejected, while the alternate hypothesis is upheld. On average, results further revealed that fertility behaviour among women who prefer female children had a higher mean value (M = 16.1014, SD = 7.44168) which is an indication of a fertility behaviour with tendency to continue having children in search of females, than fertility behaviour among women who prefer male children (M = 15.8851; SD = 8.42008).

TABLE 7

Summary of independent t-test results: Sex preference and fertility behaviour among women

VARIABLE	Grouping	N	Mean	Std. Deviation	df	t	Sig
SEX PREFERENCE	MALE	383	15.8851	8.42008	598	3.765	.001
	FEMALE	217	16.1014	7.44168			

In an interview session conducted with the selected participants (women of reproductive ages) in Cross River South senatorial district, Nigeria, when asked "Is it preferable to have balanced sex for the number of children one should have?" and "In what way does a child sex influence spouse's decision to have more children?" The responses were as follows:

On the reasons for sex preference, one of the key in-depth interviewed participant has this to say:

> Yes, I prefer having balanced sex for the number of children I should have. For instance, if I have two female and two male children, I am rest assured that they will grow up without bias of who is loved best or who is not. This is a major challenge I have seen in most homes. My friend had four male children before she finally had a daughter. In the eyes of everyone, the female child is more pampered and showed more love than the others. It will make the other children feel inferior and grow up having low self-esteem (**KII, Calabar South, 2022**).

> Having children and determining their sex before they are born is not the will of man. Though, there are biological and scientific

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> explanations on how to have a particular sex when having children, this overtime have not been 100% effective. While it works for others, it still did not work for another. Yes, I would like and prefer having a balanced sex because it promotes unity and security. Probing: Can you please explain more. If I have two boys I should also have two girls that way they can protect each other, pray together and not feel inferior and intimidated (**KII, Calabar Municipality, 2022**).

Another respondent when asked: In what way does a child sex influence spouse's decision to have more children? Stated that:

> A child's gender has a lot of influence to determine whether to have more children or not. I am an Igbo woman, where in my community as a whole, male children holds more value than females. Though not too pronounced in the society, but every woman married to an Igbo man bears in mind to produce a male heir for her husband. If she has all female, without the husband's consent, she will want to get pregnant again just to have a male child. This often continues except otherwise (**KII, Akpabuyo, 2022**).

> Na God dey give pikinna.butsha, we be human being and for this our village if you no get man pikin you never start marriage. Your husband no go get respect, people around go call am woman man. So, as a woman na to pray make you born man pikin. God dey answer that kind prayer, so e no hard (**KII, Akamkpa, 2022**).

The result agrees with Pollard and Morgan (2022) who augured that if more equal opportunities for women and men result in parental gender indifference, one should expect to find little or no sex preferences for children in countries with a high level of equality between men and women, both in terms of institutionalized gender stratification and gender roles. A major demographic outcome of son preference is that the proportion of living sons in a family influences the probability that the parents will procreate further.

Conclusion

The study on cultural determinants of fertility behaviour in Cross River South senatorial district, Nigeria sheds light on the intricate relationship between cultural factors and reproductive choices within the Nigerian context. The findings underscore the significant influence of cultural norms, beliefs, and practices on fertility decisions among individuals and communities in the country.

The research highlights that cultural factors, such as religious beliefs, gender role, and societal expectations, play a pivotal role in shaping fertility

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preferences and behaviours. Understanding these cultural determinants is crucial for policymakers, healthcare professionals, and educators to design effective interventions and programs that respect and align with the cultural context.

Moreover, the study emphasizes the need for a nuanced and culturally sensitive approach to family planning initiatives in Nigeria. Implementing strategies that acknowledge and incorporate cultural values can enhance the acceptability and effectiveness of reproductive health programs. It is essential to engage local communities, religious leaders, and other influential figures in promoting awareness and education about family planning while respecting diverse cultural perspectives. While the study contributes valuable insights, it also underscores the complexity of the issue, urging for continued research and a holistic understanding of the interplay between culture and fertility behaviour. By addressing cultural determinants, Nigeria can develop more tailored and effective policies that support individuals and families in making informed and culturally sensitive reproductive choices. Ultimately, the findings of this study provide a foundation for fostering a collaborative and culturally aware approach to addressing fertility-related challenges in Nigeria.

Based on the outcome of this study, the following recommendations were made:(i) that younger women should always consult registered gynaecologists to help them regulate and control child-birthing. (ii) women are advised to discuss contraceptive options with their spouse to help them maintain good reproductive health irrespective of their age. (iii) laws should encourage marriages from 25-35 years by pledging a sum for every marriages registered within the ages of 18-35 years in Nigeria. The African society holds strong credence to religious and ethnic beliefs. From the findings of this study, women fertility behaviour is significantly related to their belief system. It is therefore recommended that religious and traditional clerics should discuss and preach on fertility behaviour in their various gatherings because this can gain insights into the factors shaping fertility choices in this diverse and culturally rich nation.

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