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Christian-Muslim Disparity in Contraceptive Use in Nigeria

Background: Nigeria's consistently high fertility has been of interest to demographers and Nigerian policy makers for some time now, but one important factor that has yet to be seriously considered is the role religion plays in fertility decisions in Nigeria. This oversight is surprising given the important role religion plays in fertility decisions in many other countries and given the high level of importance religion plays in the lives of most Nigerians. Data from the 2008 Nigerian Demographic and Health Survey (NDHS), reported that 99.5% of the Nigerian population identifies with some form of organized religion. Of those, roughly half are Christian (Catholic and Protestant) (51.52%) and half are Muslim (46.28%). The question in Nigeria is not necessarily whether religious people have more children than non-religious people; there are too few non-religious people for a proper comparison group. Rather, the question is how fertility differs between adherents to the two most prominent religious groups—Christians and Muslims. Additionally, given the upsurge in Islamic Fundamentalism in the northern part of the country, an additional question of interest is whether the religious difference in current use of modern contraceptive use varies in the north compared to the south.

Objectives: To explore religious differences in current use of modern contraception and to see whether these differences vary by region. Research Question: Are there religious differences in contraceptive use in Nigeria and do these differences vary between the northern and southern parts of the country?

Methodology: To explore religious differences in current use of modern contraception, data from 2008 NDHS were used.[i] The 2008 DHS is a nationally representative survey that is conducted at the household level using a stratified two-stage cluster probability sample design. The DHS uses different weights for different sample selections to attain accurate population estimates; therefore, survey weights were used in this analysis. The survey population is Nigerian women ages 15-49 and the 2008 NDHS sample included 33,385 women ages 15-49.

The outcome of interest is current modern contraceptive use. In this analysis, current modern contraceptive use was compared to no use, current use of a traditional method or current use of a folkloric method. Traditional and folkloric methods were combined with no method because they are significantly less effective at preventing pregnancies than are modern contraceptive methods.[ii] So, in theory, use of modern contraceptive methods indicates a woman's actual ability to prevent pregnancies.

The key independent variable in this analysis is religion, which is defined as religious affiliation. Other independent variables included in this analysis were chosen based on prior literature.[iii,iv.v,vi] Control variables included age (cut at median age into >27 and ≤ 27), years of education (no education, primary education, secondary education, or higher education), wealth (based on wealth index categorized as poor, middle and rich), fertility

preferences (only fecund women included and categorized as want to have another, undecided, and want no more), type of place of residence (urban vs rural), and region (north vs south). Nigeria is made up of six different regions, but for this analysis region was recoded as north and south. North includes the northeast and northwest regions and south includes the southeast, south south, southwest, and north central regions. Categorization of north and south was determined based on prior knowledge of differences between the two areas.[vii,viii,ix] Fertility levels, political views, and type of Islam, indicated by presence of Sharia law, vary dramatically by this north/south distinction.

Relationships between current use of modern contraception and religious affiliation were explored using univariate and multivariate logistic regression to get crude and adjusted odds ratios. Additionally, based on prior knowledge of potential differences in types of religions practiced in north and south[x,xi,xii], an interaction term of religion and region was also explored. The Multiple Logistic Regression used Wald test to calculate standard errors and all significant relationships were determined at the two-sided alpha 0.05 level. Variance inflation factors (VIF) were used to check for collinearity, likelihood ratio tests were performed to test the significance of adding each independent variable to the model, and Hosmer-Lemeshow chi-squared test (H-L X^2) were used to test goodness-of fit for each model. Additionally, AIC criteria was used to determined best model fit for the data. Data were analyzed using STATA statistical software version 12.1.[1]

The overall DHS sample included 33,385 women. Of those, 90.6% reported using no, folkloric or traditional methods of contraception. In contrast, current modern contraceptive method use was reported by 9.4% of the women. Religious affiliation, of either Islam or Christianity, was claimed by 29,037 women, which makes up 87% of the DHS sample. Out of those who affiliate with either Islam or Christianity, 32,020 women were fecund. This analysis was limited to fecund women, as infecund women do not face the same decisions about whether to take contraception to postpone or limit future childbearing. In this sample and in the weighted population estimates, Christians and Muslims were significantly different when compared by each independent variable used in this analysis.

Results: In the simple relationship between religion and contraceptive use, the odds of current contraceptive use are 3.76 times higher for Christians than for Muslims (95% CI: 3.43-4.12; $p \leq .001$). However, this difference declined 66% when taking the other variables into account. When considering education level, age, type of residence, region, and desire for more children, the odds of current contraceptive use for Christians are 1.29 higher than Muslims (95% CI: 1.15-1.44; $p \leq .001$).

Multivariate logistic regression using an interaction term for religion and region revealed that differences between Christian and Muslim odds of contraceptive use vary by region. In the southern region, the difference in odds of modern contraceptive use is extremely small in the unadjusted model, conducted for comparison purposes, (OR: 1.39; 95% CI: 1.184-1.622; $p \leq .001$) and non-existent in the adjusted model (OR: 1.04; 95% CI: 0.900-1.205; $p \leq .314$). However, in the north, the unadjusted model of religion and contraceptive use estimates an odds ratio of 6.488 (95% CI: 4.794-8.78; $p \leq .001$). When controlling for other important factors, the odds ratio of contraceptive use by religion remains high and significant, at 3.77 (95% CI: 2.763-5.154; $p \leq .001$). So, in the north, holding the other variables in the model constant, Christians have 280% higher odds of

current contraceptive use than Muslims. The table below presents results of unadjusted and adjusted logistic regression stratified by northern and southern Nigeria.

Conclusion: An understanding of how religion influences fertility has been by and large missing from literature on fertility in Nigeria despite the fact that this relationship has been extensively explored and proven significant in numerous other countries and in the sub-Saharan region of Africa generally. This analysis adds to literature on religion and fertility as well as literature on fertility in Nigeria, by revealing dramatic differences in odds of current use of a modern contraceptive method between Christians and Muslims in Nigeria. And, most interestingly, differences in current modern contraceptive use between religions vary by region. These findings suggest that, in the Northern part of the country, there is a disparity between Nigerian Christians and Muslims in effectively preventing pregnancies. The reason for the north/south difference in disparity cannot be fully determined from this analysis. Potential explanations range from the influence of Islamic fundamentalism in the north to a disparity in access to contraceptive services. More research is necessary to determine the underlying cause of the difference. Regardless, understanding how religious groups in Nigeria relate to modern contraceptive methods will help cater family planning policies and programs to the people who need and want them. This information would be a valuable asset to the Nigerian government, which has made it a goal to reduce unwanted pregnancies throughout the country as a way to lower the overall fertility rate.

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Odds Ratios of Current Modern Contraceptive Use for Northern and Southern Nigeria, 2008

	North		South	
	Unadjusted	Adjusted	Unadjusted	Adjusted
Sample				
Unweighted	13,045	12,319	15,992	15,503
Unweighted	118,957	112,985	169,895	165,457
Religion (Referent Muslim)	6.488***	3.774***	1.39***	1.040
Christian	0.998	0.598	0.081	0.08
	(4.794-8.780)	(2.763-5.154)	(1.184-1.622)	(.900-1.205)
Education (Referent None)				
Primary		1.611**		2.094***
		0.32		0.27
		(1.097-2.366)		(1.630-2.691)
Secondary		1.846***		2.662***
		0.43		0.33
		(1.166-2.923)		(2.050-3.352)
Higher		2.681***		4.196***
		0.77		0.59
		(1.520-4.728)		(3.192-5.517)
Age (Referent 27 or younger)				
Older than 27		1.217		1.07
		0.21		0.07
		(.867-1.708)		(.941-1.215)
Type of Residence (Referent Rural)				
Urban		1.168		1.218***
		0.23		0.09
		(.800-1.706)		(1.058-1.402)
Wealth Index (Referent Rich)				
Middle		0.533***		0.644***
		0.08		0.05
		(.390-.729)		(.550-.753)
Poor		0.306***		0.514***
		0.07		0.06
		(.197-.474)		(.411-.643)
Desire For Children (Referent Want More)				
No More Children		2.063***		1.936***
		0.38		0.14
		(1.435-2.968)		(1.685-2.224)
Undecided		1.058		0.86
		0.2		0.09
		(.731-1.531)		(.706-1.052)
Constant	0.0202***	0.0232***	0.14***	0.0647***
	0.002	0.00543	0.011	0.01
	(.017-.024)	(.015-.037)	(.122-.156)	(.049-.085)

Estimate ***p<0.01, **p<0.05, *p<0.1
Standard Error
(95% Confidence Interval)

Source: 2008 Nigeria Demographic Health Survey