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## Effects of Women's bargaining over Reproductive Health on Fertility Behaviour: Evidence from Farm Households in Southwest, Nigeria

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Article history: Received 24 April 2024, Reviewed 13 June 2024, Accepted for publication 21 June 2024

### Abstract

**Background:** The central component to the achievement of reproductive well-being is the decision-making power of women regarding reproductive health when it comes to the issue of fertility. Building on the intra-household bargaining framework, this study investigates women's bargaining power over reproductive health decisions on fertility behavior.

**Method:** Using a multistage sampling procedure, the study sample was restricted to 248 married couples with women aged 15-49 years who expressed numerical desires for number of children. Spouses were interviewed separately, and individually. Women's bargaining power regarding reproductive health and rights was measured using principal component analysis. Fertility behavior was captured by excess fertility. The logit regression model was used to capture the effects of women's bargaining power over reproductive health on excess fertility.

**Result:** It was found that women desired fewer number of children than the actual number of children that they would have. The mean score of women's bargaining power over reproductive health was 0.33. Women who reside in rural communities have a low level of bargaining power over their reproductive health. Women who married at a young age are more likely to have excess fertility than their older counterparts.

**Conclusion:** Women with high participation in reproductive health decision-making are more likely to desire a smaller number of children than their actual children. The development of national policies and programs aimed at substantially decreasing the fertility rate in Nigeria should focus on increasing women's decision-making power over reproductive health and rights.

**Keywords:** Age, decision-making, fertility, married women, rural, Southwest, Nigeria



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### How to cite this article:

Adekunle CP, Oyekale TO, Kao P. Effects of Women's bargaining over Reproductive Health on Fertility Behaviour: Evidence from Farm Households in Southwest, Nigeria. The Nigerian Health Journal 2024; 24(2):1299-1310.  
<https://doi.org/10.60787/tnhj.v24i2.821>



## Introduction

As the new development agenda in 2030, the United Nations Sustainable Development Goals replaced the Millennium Development Goals in 2015. Initially, sexual and reproductive health were excluded from the Millennium Development Goals. However, they were added following advocacy by women's health activists.<sup>1</sup> However, Sustainable Development Goals are a welcome development as an opportunity to realize the expansive women's health agenda emerging from the United Nations (UN) Conferences of the 1990s.<sup>1</sup>

The Sustainable Development Goal (SDG) indicator 5.6.1, focuses on the proportion of women, between reproductive ages 15-49 years who make their own informed decisions regarding sexual relations, contraceptive use, and reproductive health care.<sup>2</sup> These reproductive decisions are targeted at gender equality and universal access to sexual and reproductive health and rights. By the measure of indicator 5.6.1, women who make their own decisions in all three of these areas i.e. seeking reproductive health care for themselves, contraceptive use, and consensual sexual relations are considered as being empowered to exercise their reproductive rights.<sup>2</sup>

Autonomy is a person's capacity to self-govern and act independently, responsibly, and with conviction.<sup>3</sup> In this case, the person's capacity refers to a woman's ability to exercise sexual and reproductive health and rights (SRHR). Various autonomy theories have been developed, understood, and applied in different ways in practice under the influence of laws, politics, philosophy, and religious precepts.<sup>3</sup> As per the bioethical principle, the capacity of a person's autonomy and right to direct their own life needs to be respected.<sup>4</sup> Women's autonomy on SRHR enables them to decide whether or not to participate in a sexual relationship with their husband or partner, their ability to decide on the use of contraception, and their rights to make independent decisions to seek and access sexual and reproductive health services.<sup>5-8</sup> Women's autonomy is critical for the social, economic, and sustainable development of any country. Given this, the sustainable development goal (SDG) emphasises gender equality. Hence, SDG increases their reproductive control, attitudes, and ability to negotiate for safer sex.<sup>9</sup>

The debate and research on women's decision-making in general and in sexual and reproductive health, in particular, have largely been genderised over the years within power relations with men playing influential roles in women's decision-making. Women are often disempowered in relationships due to their economic,

political, and sociocultural status, and are unlikely to protect themselves from gender-based violence, and unwanted sexual intercourse, resulting in sexual and reproductive health problems.<sup>10</sup> This indicates that gender inequalities exacerbate a difference in sexual and reproductive health well-being and ill health, and sometimes life and death under the condition of poverty.<sup>11</sup>

Childbearing has been considered an essential event in the life cycle of a woman, especially across the span of her reproductive life.<sup>12</sup> Pregnancy and childbirth often comes with life-changing experiences both in physical and psychosocial dimensions and are mostly associated with intense emotional rewards as well as strains.<sup>12</sup> Due to the intense physical and emotional strains that can occur during this period in a woman's life, women are encouraged to take necessary preparations (taking healthy diet, managing stress, controlling body weight and finances) to safeguard themselves from adverse birth outcomes such as preterm births and low birth weight<sup>13-14</sup> Despite these expectations, globally, a lot of women remain unaware of the advantages of a planned pregnancy<sup>15</sup>, and often end up with pregnancies that are unintended, mostly occurring in sub-Saharan Africa.<sup>16-17</sup> Some of the major reasons behind unintended pregnancy are the lack of proper family planning methods and unclear fertility goals.<sup>12</sup>

The desire for a large family size has been seen as a hindrance to the achievement of fertility decline in Sub-Saharan Africa.<sup>13</sup> The fertility rate in Sub-Saharan Africa exceeds five children per woman.<sup>13</sup> While the fertility rate in 2016 was 4.8 in Sub-Saharan Africa, it was in the Arab world, South Asia, Latin America, the Caribbean, and the European Union estimated as 3.3; 2.5; 2.1; and 1.6 respectively.<sup>14</sup> The fertility trend in Sub-Saharan Africa shows a decline compared to other world regions.<sup>15</sup>

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The 2018 Demographic Health Survey released by the Nigerian National Population Commission in collaboration with the Federal Ministry of Health in May

2019, shows that indicating Nigeria's total fertility rate (TFR), dropped from 5.7 in 2014 to 5.5 births per women in 2013 and, 5.59 in 2015, 5.46 in 2017 to 5.3 births per woman in the 2018.<sup>21</sup>

Nigeria's total fertility rate (TFR) of 5.5 children per woman in 2013 falls roughly in the middle of the group of West African countries where data are available (Benin, Burkina Faso, Ghana, Guinea, Liberia, Mali, Niger, Nigeria, and Senegal). TFRs for the region range from 4.0 in Ghana to 7.6 in Niger.<sup>22</sup> The TFR remains above the average TFR for sub-Saharan Africa (SSA), the less-developed regions (LDRs), and the more-developed regions (MDRs). In SSA, the current TFR is about 5.4, which is significantly higher than in the LDRs (2.7).<sup>23</sup> Both of these regions have shown declines from their peaks of over 6 children per woman in the 1950s. The MDRs, as is well established, are well below replacement level (2.1) at only 1.66 children per woman as of 2010. Nigeria's current TFR of 5.5 is lower than it was in 1990 (6.3), 2003 (5.7), and 2008 (5.7). According to the DHS reports for the past three surveys, the TFR stalled at 5.7 between 2003 and 2008, and only marginally declined to 5.5 by 2013 (only 0.2 fewer children per woman).<sup>22</sup> However, the 5.35 births per woman value recorded in 2019 were 1.26% lower than the value recorded in 2018. The rate (5.42) reported in 2018 was 1.19% lower when compared with the value reported in 2017.<sup>24</sup> According to Population Reference Bureau<sup>24</sup>, the rate of fertility in Nigeria has remained at 5.4 births per woman, a value which is higher than the sub-Saharan Africa fertility rate of 5.2 births per woman and the 2.8 births per woman recorded across the world. This rate is much higher in rural areas, and this relates to the value placed on children as an asset in agricultural production, physical, and security purposes and most importantly a social symbol.<sup>25</sup>

The preference for the size of the family is a "silent norm" that guides the number of children married couples are expected to have.<sup>26</sup> A woman's family size is her total fertility capacity.<sup>27</sup> This is because it is the number of children that a woman has at end of her childbearing years. However, a difference exists between the number of children a woman has and the number desired to have.<sup>28</sup>

Since spousal fertility goals may diverge, the reproductive decision-making process has a crucial effect on actual fertility behavior. Decision-making on fertility is influenced by who occupies the leadership position in the control and allocation of both families' reproductive, and economic resources. Understanding individuals, above all women's decision-making as regards their reproductive health, and identifying the

factors which influence reproductive negotiation process between husband and wife are necessary to formulate policies aimed at creating a conducive environment to improve women's reproductive health, general well-being and their decision-making power.<sup>28</sup> There is, therefore, the need to obtain detailed information on how demands for children are negotiated between spouses and how women's decision-making on their reproductive health influence fertility behaviour in the rural community. The study, therefore, examined the effects of women's intra-household bargaining power over reproductive and economic activities on fertility behaviour among farm households in Ogun State, Nigeria.

### Method

The study was conducted in Ogun State, Southwest, Nigeria. With the multistage sampling technique, a cross-section of 320 farm households was sampled. Stage one was a random selection of four (4) blocks (Ilewo, Olorunda, Ilugun, and Opeji) out of the six (6) blocks in Abeokuta agricultural zone. Stage two was a random selection of four (4) cells from each block making a total of sixteen blocks and in the last stage, twenty (20) farm households in each of the selected cells were randomly selected targeting 320 farm households. This study was based on rural farm households and specifically based on women aged 15-49 years in the household where there is both spouse and head, excluding households where there is no spouse, as well as female-headed households. Also, women without children and any woman that did not provide information on the numerical desired number of children were excluded from this study. It is important to note that out of the 320 sampled households, 248 women with spouses that provided complete information were used for this study.

This study analysed women's decision-making over reproductive health employing principal component analysis and its effects on fertility behavior using the Logit regression model. Reproductive health bargaining power was assessed across ten (10) domains of decision making such as when to have children, use, and method of family planning. Following Sariyev et al.,<sup>29</sup> principal component analysis was used to generate a bargaining power index captured by the key reproductive decision domains within a household. Women's bargaining power was measured using ten (10) questions based on pre-existing studies which were frequently used components of the decision-making power of women regarding reproductive health and rights and adapted according to local contexts. This study is limited to the following reproductive health decision-making domains:

- i. Owns healthcare
- ii. Readiness to conceive (when to have children)
- iii. The birth interval between each child (spacing between births)
- iv. Sexual intercourse timing
- v. Child(ren) place of birth
- vi. Family planning Use
- vii. Family planning methods
- viii. Use of antenatal care services
- ix. Children health care
- x. Number of children

The conceptual framework used to analysed the association between women’s decision-making over reproductive health and fertility. According to the framework, there are many dimensions of a woman’s decision-making: socio-cultural dimension includes educational attainment and access to information, economic dimension entails access to paid work and ownership of house and land, and familial dimension which encompasses age and participation in all important household decisions.<sup>11,30,31</sup> Generally, a woman’s access to information, control of resources, and participation in decision-making change fertility preferences.<sup>32</sup> Schooling and exposure to media can help to empower women <sup>32</sup> and affect positively ideal family size.<sup>33</sup> Moreover, culture, religious beliefs, and gender relations play a critical role in household decisions about reproduction and hence overall fertility levels.<sup>33</sup> Furthermore, social norms, household wealth, spouse’s educational level and professional status, and place of residence affect fertility preferences. To determine the factors influencing women's bargaining over reproductive health, Tobit regression was used. The Tobit<sup>34</sup> are a family of statistical regression models that describe the relationship between a censored (or truncated, in an even broader sense of this family) continuous dependent variable  $y_i$  and a vector of independent variables  $x_i$ . The model was originally proposed by James Tobin (1958) to model nonnegative continuous variables with several observations taking value 0. The Tobit regression model is specified as follows:

$$Y_i = \beta_0 + \beta_1 X_i + \dots + \beta_n X_n + \epsilon_i \quad (1)$$

Where ‘ $Y_i$ ’ is the women’s bargaining power over reproduction health. The explanatory variables in the estimations were that of the household, women and their spouses such as residence, quality of spousal relations, type of marriage, age, educational level, marriage type, wealth status constructed from women’s ownership of a variety of household items, and religion.

The outcome variable in this study is fertility behavior captured by excess fertility. Two fertility measures were captured for this study, and these were the number of children ever born and desired family size. Fertility is the actual reproductive performance of a couple. This was measured using children ever born and desired family size. Children Ever Born is the totality of children a woman has had (born alive) as of the time of the interview, while Desired Family Size is the totality of children a woman (couple) would like to have by the end of her reproductive or child-bearing age. Hence, Children Ever Born captured the actual fertility, while Desired Family Size captured the expected or planned fertility. Dieudonné *et al.*<sup>35</sup> defined excess fertility as the difference between the actual and expected number of children. The concept of excess fertility is achieved when actual fertility exceeds desired fertility. Actual fertility as the number of living, not ever born, children a woman had at the moment of the interview while desired fertility ideal or the preferred number of children.<sup>36</sup>

Logistic regression is a supervised machine learning algorithm that accomplishes binary classification tasks by predicting the probability of an outcome, event, or observation. The model delivers a binary or dichotomous outcome limited to two possible outcomes: yes/no, 0/1, or true/false. Because the outcome variable is binary value, therefore, the Logit regression model was used to determine the effects of women’s bargaining power over reproductive health on fertility behavior. As dependent variable (fertility behavior) was captured by a categorical variable i.e., having excess fertility or not. Excess fertility was modeled as a function of various socioeconomic variables and women’s bargaining power over reproductive health. The logistic regression model is specified as follows:

$$\ln(P) = \ln\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1 X_i + \dots + \beta_n X_n + \epsilon_i \quad (2)$$

Where ‘ $P$ ’ is the probability of having excess fertility,  $X_i$  represents independent variables, and  $\beta_i$  was their estimated coefficients.  $\epsilon_i$  represents the error term. The independent variables include:

- $X_1$  = Residence (rural)
- $X_2$  = Women’s Age (years)
- $X_3$  = Women’s Age at first marriage (years)
- $X_4$  = Husband’s Religion (Christian=1)
- $X_5$  = Women’s Income (Naira/month)
- $X_6$  = Spousal-Parental Co-residence (1=Yes, 0=No)

$X_7$  = Women’s Years of schooling

$X_8$  = Men’s/ Spousal Years of schooling

$X_9$  = Women’s bargaining power (Decision-making index)

$X_{10}$  = Type of Marriage (Polygamous=1, otherwise =0)

United Nations Population Fund<sup>37</sup>, between 2000 and 2010, one-third of women in developing regions were child brides, implying that they married before their eighteenth birthday. Early age at marriage is the main driver of early childbearing, longer duration of childbearing which limits their prospects for schooling and future earnings.

**Results**

**Socio-economic characteristics of the respondents**

Table 1 the results of the socio-economic characteristics of the respondents. The respondents (71%) mainly reside in rural areas. Also, 55% (women) and 66% (men) fall within the age group of 20-29 and 30-39 respectively. The average age of women of childbearing age is 28 years. The mean of rural women’s first marriage age is 19 years while that of men was 24 years. This implies that women in the study area were initiated into sexual activity early. With 35.5% of the women being married before their eighteenth birthday, this reveals that child marriage is rampant in the study area. According to

The distribution of the respondent’s educational status reveals that 48% of women have no formal education while their men counterparts were 21%. This is in line with the observations of UNICEF<sup>38</sup> that significant differences in education between girls and boys. Mainly, farming households in the study area were Christian, however, there are more Christian women (52%) than Christian men (46%). Based on their marriage, they (54%) are polygamous. Women have lower access to land (13% and credit (9%) when compared to their men counterparts of 44% and 54% access to a major productive resource (land) and credit.

**Table 1:** Descriptive statistics of socioeconomic characteristics of the respondent

Characteristics	Women		Men	
	Frequency	Percent	Frequency	Percent
<b>Location</b>				
Urban	73	29.4	73	29.4
Rural	175	70.6	175	70.6
<b>Age</b>				
Less than 20	58	23.4	38	15.3
20-29	116	54.8	46	18.5
30-39	54	21.8	133	66.1
40-49	20	8.06	31	12.5
<b>Age at First Marriage</b>				
Less than 18	88	35.5	5	2.0
18 – 25	104	41.9	92	37.1
26 and above	56	22.6	151	60.9
<b>Level of Education</b>				
No Formal	120	48.4	51	20.6
Primary	82	33.2	130	52.4
Secondary	35	14.1	48	19.2
Tertiary	11	4.3	19	7.8
<b>Religion</b>				
Christianity	128	51.6	113	45.6
Islam	97	39.1	108	43.5
Others	23	9.3	27	10.9
<b>Type of Marriage</b>				
Monogamous	112	45.2	112	45.2
Polygamous	136	54.8	136	54.8
<b>Years in Marriage</b>				
≤ 5	26	10.5	12	4.8
6-10	67	27.0	42	16.9
10 – 15	102	41.1	130	52.4
≥ 16	53	21.4	64	25.8
<b>Mean</b>				

Characteristics	Women		Men	
	Frequency	Percent	Frequency	Percent
<b>Ownership of Land</b>	32	12.9	108	43.5
<b>Access to credit</b>	47	19.1	136	54.3
<b>Income</b>				
Less than N50,000	184	74.2	93	37.5
N51,000 - N100,000	49	19.6	111	44.8
N101,000 and above	15	6.2	44	17.7
<b>Mean</b>	N31,200		N66,000	
<b>Main Occupation</b>				
Farming	127	51.4	167	67.2
Artisan	40	16.3	20	8.1
Trading	33	13.2	56	22.4
Paid Employment	23	9.1	5	2.3
Not working	25	10.0		

Source: Field Survey, 2019

**Distribution of women’s reproductive health and fertility behaviour**

Table 2 shows described by sex, reproductive health, and fertility behavior of the respondents. It was shown that men at the time of the survey had more children than women. This shows possible co-wives existed. The mean number of children had by men was five which is more than their women counterparts with four (4). This result is in line with Westoff<sup>39</sup> who found that in 17 of

18 African countries, men desire and have more children than women do. The distribution of women’s desired fertility, when compared with actual fertility, is less implying that women’s preferred less number of children than the actual number of children that they would have. However, the reverse is the case with men. Men desired fertility is greater implying the preferred number of children is more than their actual fertility.

**Table 2:** Reproductive Health and Fertility Behaviour

Fertility Behaviour	Women		Men	
	Frequency	Percent	Frequency	Percent
<b>Actual Number of Children</b>				
1– 2	83	33.5	62	25.0
3 – 4	132	53.2	78	31.5
5 and above	33	13.3	108	43.5
<b>Mean Number of Children</b>	4		5	
<b>Category of Desired/Preferred Fertility</b>				
Greater	62	25.0	128	51.6
Equal	102	41.1	62	25.0
Less	84	33.9	58	23.4
<b>Excess Fertility</b>				
Yes	67	27.0	146	41.1
No	181	73.0	102	58.9
<b>Contraceptive use</b>				
Yes	92	37.1		
No	156	62.9		
<b>Preference for a particular sex</b>				
Yes (Prefers males or females)	128	51.6	139	56.0
No	120	48.4	109	44.0
<b>Knowledge of Reproductive Right</b>				
Yes	101	40.7	34	13.7
No	147	59.3	214	86.3

Source: Field Survey, 2019

**Distribution of women’s bargaining power over Reproductive health**

The reproductive decision-making index ranges between 0 and 1 as shown in table 3. The mean score of women’s

bargaining power was 0.34, indicating that women’s decision-making as regards their reproductive health and right is low. This result indicates that even though, engagement in, and control over, specific decisions on a range of reproductive outcomes should be a woman’s thing, men are the key players in household decision making including their spouse’s (women’s) reproductive health and rights. This shows that women in the study area are disempowered in their decision as regards their reproductive health. In the Bale zone at Ethiopia, Nigatu *et al.*,<sup>40</sup> found that 39.5% of women had greater decision-making power regarding maternal and child health care. Also, Sultana<sup>41</sup> in a cross-sectional study carried out in Southern Ethiopia in 2011, found that 43.1% of married rural women had low modern contraceptive use decision-making power. Tadele *et al.*<sup>42</sup> found in Mettu Rural District, South-West Ethiopia that 42% of women have low levels of reproductive health decision-making among women of reproductive age. The current findings are also comparable to those from a cross-sectional study conducted in Southern Ethiopia in 2011, which showed that 43.1% of married rural women had decision-making power regarding modern contraceptive use.<sup>41</sup>

**Table 3:** Pattern of Women’s Bargaining Power over Reproductive Health

Level	Freq	Percent
Low bargaining power (DMI= ≤0.33)	108	43.55
Moderate bargaining power (DMI= 0.34- 0.66)	49	19.76
High bargaining power (DMI= ≥0.67)	91	36.69
<b>Total</b>		
<b>Mean index (0.33)</b>	<b>248</b>	<b>100.00</b>

Source: Field Survey, 2019

**Table 4:** Determinants of women’s reproductive health bargaining power

Variables	Coefficients	Standard Error
<b>Household Characteristics</b>		
Residence	-0.002**	0.001
Spousal relations	0.472***	0.132
Type of Marriage	0.581	1.022
<b>Women’s Characteristics</b>		
Age	0.021*	0.011
Age at first marriage	0.124	0.438
Wealth status	0.217**	0.106
Religion (Islam)	-0.002**	0.001
Education	0.231**	0.112
Occupation (unemployed)	2.162*	1.202
<b>Husband’s Characteristics</b>		
Age	1.623	1.201
Education	0.045***	0.012

**Determinants of women’s bargaining power over Reproductive health**

The Tobit regression result in Table 4 revealed that rural women have a lower level of decision-making power over their reproductive health compared to their urban counterparts. The result implies that farm households who are resident in rural communities in the study area were less likely to participate in the decisions as regards their reproductive health. Also, women’s age has a significant positive influence on their reproductive health decision-making power. The implication is that as women get older, they have more power in their reproductive health decisions. Besides, women’s wealth status has a positive influence on their decision-making power as regards their reproductive health. This implies that the higher the value of assets owned by women, the more their bargaining power over their reproductive health decision. Religion (Islam) has a negative influence on women’s bargaining power over reproductive health. This implies that women affiliated with Islam religion were less likely to decide on their reproductive health when compared to their Christian counterparts. Also, women that have more years of schooling and are employed, were more likely to take charge of their reproductive health desires. Women with educated husbands have higher bargaining power over their reproductive health and that of their children when compared to their uneducated husband counterparts.

Constant	2.611***	0.313
Number of observations = 248		
LR $Chi^2$ (11) = 106.111		
Prob > $Chi^2$ = 0.000		
Pseudo R <sup>2</sup> = 0.112		
Log likelihood = -4141.632		

**Effects of women’s bargaining power over Reproductive health on fertility behavior**

The effects of women’s control over reproductive health and rights on fertility behavior are revealed in Table 5. The result shows that farm households that reside in urban area are less likely to have excess fertility, relative to those in rural area. This implies that rural women do not perceive their economic activities as an attractive alternative to childbearing, hence their higher demand for children. This is a result of their low bargaining power over reproductive health. However, Ojo and Adesina<sup>43</sup> posited that the women who do not perceive having many children as an impediment to their income-earning activities are mainly those in the rural or informal economy.

Woman’s age has a negative effect on excess fertility. This implies that younger women would rather prefer to have fewer children than their older counterparts. Age at marriage has a negative effect on excess fertility which means that women who married at a young age are more likely to have excess fertility than their older counterparts. Hence, the smaller their age at first marriage, the more children they may desire.

Also, in households with women who are into traditional or Islamic religion, there was a higher likelihood for excess fertility than in their Christian counterpart. Dibaba and Mitike<sup>44</sup> posited that women who belonged to the Protestant and Catholic religious groups had relatively lower mean desired family size when compared to their Christian orthodox and Islam counterparts.

Women’s income has a negative effect on excess fertility. This implies that the higher the financial status of women, the lower the number of children they desire to have. Van Bavel<sup>45</sup> acknowledged that an important aspect of the opportunity cost of having children is women’s income forgone during childbearing and childrearing, indicating that higher-income mothers are expected to have fewer children because fertility is more costly to them.<sup>45</sup> Ojo and Adesina,<sup>43</sup> posited that, income played a central role in determining fertility management among women.

Women’s education has a negative effect on excess fertility. Studies have revealed that highly educated

women were more like to revise their fertility intention downwards (i.e. have fewer children than intended) than their less educated counterparts.<sup>46</sup>

Women’s bargaining power over reproductive health decisions has a negative effect on excess fertility. This implies that as women’s bargaining power over reproductive health decisions increases, women desire fewer children than their actual children. The result shows that women with high participation in reproductive health decision-making are more likely to desire smaller number of children than they actually had.

**Table 5:** Logit regression results of the effects of women’s bargaining power over reproductive health on fertility behavior

Variables	Coefficients	SE
Residence (rural)	0.314**	0.152
Women’s Age	-0.266**	0.131
Women’s Age at first marriage	-0.793***	0.213
Husband’s Religion (Christian=1)	-0.045***	0.012
Women’s Income	-0.233***	0.062
Spousal-Parental Co-residence	-0.221	0.484
Women’s Years of schooling	-0.444**	0.212
Men’s Years of schooling	1.116	0.721
Women’s bargaining power	-2.008***	0.614
Type of Marriage (Polygamous=1)	-0.054	0.114
Constant	1.106**	0.452
Number of observations = 248		
LR $Chi^2$ (11) = 177.08		
Prob > $Chi^2$ = 0.0000		
Pseudo R <sup>2</sup> = 0.1421		
Log likelihood = -3324.2		

Note: \*\*\*, \*\* and \* implies significant at 1%, 5% and 10% respectively

**Discussion**

Women’s autonomy on sexual and reproductive health issues is critical to women’s health and well-being. Women have the right to decide on their fertility and sexuality, be free from coercion and violence, and achieve well-being. This study has identified women’s autonomy regarding decision and exercise of their sexual reproductive health and rights and its association with fertility behavior. In this study, we sought to provide answers to what extent does women decision-making over reproductive health influence their fertility behavior. This study found that women who take decisions alone



on their reproductive health are more likely to have achieved the number of children. This was achieved using cross-section survey of farm households in Abeokuta. After adjusting for potential outlier information, the results showed that women who took their reproductive health decision alone were more likely to achieve their desired number of children. The result in this current study confirms that women's reproductive health decision-making power is a critical factor influencing their fertility behavior. It was found that men desired more children (would like to have more children) than what they had. The result on women's contraceptive use is low with 37% reporting usage. Also, 59% of women have no awareness of their reproductive rights. 52% and 56% of women and men respectively prefer particular sex most especially the male child. Also, women that have more years of schooling and are employed, were more likely to take charge of their reproductive health desires. Women with educated husbands have higher bargaining power over their reproductive health and that of their children when compared to their uneducated husband counterparts. Even though, engagement in, and control over, specific decisions on a range of reproductive outcomes should be a woman's thing, men are the key players in household decision making including their spouse's (women's) reproductive health and rights. This shows that women in the study area are disempowered in their decision as regards their reproductive health.

#### ***Implications of the findings of this study***

Women's and girls' autonomy in decision making over consensual sexual relations, contraceptive use and access to sexual and reproductive health services is key to their empowerment and the full exercise of their reproductive rights. A woman's ability to say "no" to her husband/partner if she does not want to have sexual intercourse is well aligned with the concept of sexual autonomy and women's empowerment. An exploratory study of women's role in reproductive decision-making in Abeokuta shows that women are increasingly taking active decisions on matters affecting their daily and reproductive lives. More women than ever before believed that they could take decisions on family size, when to have a baby and choice of spacing period. The ability of women to take decisions on these issues may not only enhance their bargaining power but also improve their fertility behavior. Of central importance are the rights to autonomy and privacy in making sexual and reproductive decisions, as well as the rights to informed consent and confidentiality in relation to the number of children to birth. It is imperative to take women's reproductive decisions into consideration to strengthen existing policies geared towards fertility

control and improvement in maternal health to achieve Sustainable Development Goals 3 and 5.

#### ***Strengths and limitations of this study***

The strength of this study is the analysis of a cross-sectional sample of women of reproductive age from Abeokuta agricultural development zone between 2018/2019 farming season. To the best of our knowledge, this study is one of the few studies that builds on the intra-household bargaining framework to investigate women's decision-making over their reproductive health decisions and their fertility behavior. Using the Principal Component Analysis to assess the bargaining power over reproductive health. Fertility behavior) was captured by a categorical variable i.e., having excess fertility or not. Excess fertility was modeled as a function of various socioeconomic variables and women's bargaining power over reproductive health.

Notwithstanding, the present study has a few limitations that are worth mentioning. First, the cross-sectional nature of the survey only captures farm households in Abeokuta agricultural development zone. Secondly, only women of reproductive age were used for this study which is not considered to be representative. Hence, our data is limited to women of reproductive age in Abeokuta agricultural development zone.

#### **Conclusion**

This study adds insight into the understanding of the effects of women's bargaining power over reproductive health decisions on fertility behavior among farm households in Ogun State, Southwest, Nigeria. Men desired more children than women. Women's decision-making as regards their reproductive health and right are the men's things implying that women are disempowered in their decision as regards their reproductive health. Women with high bargaining power over reproductive health decisions a desire smaller number of children than their actual children. The development of national policies and programs aimed at substantially decreasing the fertility rate in Nigeria should focus on enhancing the women's leverage in the bargaining power over reproductive health decisions in her attempts to make decisions over her fertility.

#### **Declarations**

***Authors' Contribution:*** Adekunle, C.P. wrote the introduction, Adekunle, C.P., Oyekale, T.O., Kao, P. were involved in literature review, Adekunle, C.P., Kao, P. designed the model and analytical techniques. Adekunle, C.P. analysed the data. Adekunle, C.P. and



Kao, P. wrote the manuscript. All authors discussed the results and contributed to the final manuscript.

**Conflict of interest:** There is no conflicts of interest associated with this manuscript.

**Funding:** There was no significant financial support for the work that could have influenced its outcome.

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