

**THE EFFECT OF DECISION MAKING PATTERNS ON DEMAND
FOR MODERN CONTRACEPTIVES IN GHANA: EVIDENCE
FROM THE 2003 DEMOGRAPHIC AND HEALTH SURVEY.**

ARNOLD N. DEGBOE

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Abstract

The main objective of the study is to examine the effect of decision-making patterns on the demand for modern contraceptives in Ghana, a sub-Saharan African country with a total fertility rate stalled at 4.4 births per woman since 1998.

First, I assess the type of decision-making patterns associated with large household purchases. Next, I evaluate the level of current contraceptive use according to large-purchase decision-making patterns in the household. Finally, I use logistic regression to model modern contraceptive use with decision making on large household purchases as the key explanatory variable. The Ghana Demographic and Health Survey, 2003 dataset, is used in the analysis.

The findings have established that joint decision-making by couples in Ghana increases the demand for modern contraceptives. The study identified education and form of employment remuneration, as well as background characteristics such as age group, ethnicity, form of union, and residence in urban areas as key factors that explain the effect of joint decision-making patterns on the demand for modern contraceptives. Also, the increase supply of surviving children significantly determines the demand for modern contraceptives.

INTRODUCTION

Sub-Saharan Africa has witnessed some decline in fertility; from 1985, fertility decreased from 6.7 children per woman to 6.1 in 1994 and to about 5.4 in 2004 (Tabutin and Schoumaker, 2004). In spite of the decline in fertility, efforts are still required in reducing the growth of the population from births. Fertility control in the developed world was achieved when modern contraceptives became widely accepted. In contrast, contraceptive use in sub-Saharan Africa is far from levels that can result in significant reduction in fertility.

According to the Easterlin fertility approach, births result from parental demand for surviving children. Thus, a decline in mortality should also lead to a reduction in fertility. However, while a decrease in mortality does not entail changes in individuals' values or behavior per say, fertility tends to alter not only the values of parents but also requires behavioral changes. These dimensions of personal value and behavioral changes have prevented sub-Saharan Africa from achieving the expected decline in fertility.

Mortality decline in the developed world contributed to the reduction in the level of fertility. Medical technology and public health measures, such as improved sanitation and clean drinking water, also contributed to mortality decline in the developed world. These measures were adopted in the developing countries to bring about rapid decline in mortality, which is appreciable but nowhere near that of the developed countries. From the economic literature, such as the study by Coale and Hoover (1959), the developing world will not be able to transform its economies from agricultural based to industrial unless population growth is reduced through fertility decline, thereby freeing resources for investment activities. Thus, research must continue to examine the various ways in which modern contraceptive use can be enhanced in sub-Saharan Africa.

Demographic investments such as family planning involves much more than public education on contraceptives, as well as ensuring access to modern birth control methods. In recent times, women empowerment has been seen as crucial in the drive toward fertility control in sub-Saharan Africa. Education of women and income generation continue to receive attention as ways in which women autonomy can be enhanced. Research must identify other ways in which women autonomy can be improved and translated into greater modern contraceptive use in sub-Saharan Africa. In

this paper, I examine the extent to which large household purchases as an economic decision among couples relates to contraceptive use in Ghana. The argument is that if women contribute substantially in making large outlay economic decisions with their male partners, then that level of power could translate into decisions about contraceptive use. First, I assess the type of decision-making patterns associated with large household purchases. Next, I evaluate the level of current contraceptive use according to the decision-making pattern predominant in the household. Finally, I use logistic regression to model modern contraceptive use with decision-making on large household purchases as the key explanatory variable. Other independent variables are subsequently added to the model to determine their contribution to modern contraceptive use with decision-making as the key explanatory covariate.

Few studies have examined empirically the influence of women's decision-making on contraceptive behavior in sub-Saharan Africa. Most studies evaluated the relationship between socio-economic position and reproductive behavior. The study will contribute to filling the gap in literature by assessing how decision-making patterns affect women's demand for modern contraceptive use in Ghana as an example of a sub-Saharan African country.

LITERATURE REVIEW

Theoretically, attempts to explain contraceptive use patterns in sub-Saharan African have been considered from the following perspectives: socio-demographic characteristics of individuals, economic factors, and cultural or institutional factors (United Nations, 1987). Education and age at first marriage are the key socio-demographic characteristics which affect contraceptive use in sub-Saharan Africa (Oheneba-Sakyi and Takyi, 1997); higher education is associated with greater use of contraceptives (Gage 1995, Bulatao and Lee, 1983; Caldwell 1986) while early age at marriage by women the likelihood modern contraception (Gage 1995).

Studies from the economic perspective found that women's access to income generation employment also impacts positively on the use of contraceptive (Kritz and Gurak 1991; Kritz and Makinwa-Adebusoye 1994). Similarly, women's level of control over household resources also increases contraceptive use (Kritz and Gurak 1991). The cultural and institutional perspective of explaining contraceptive use in Africa raises

debate in the sense that society continues to undergo changes (Oheneba-Sakyi and Takyi, 1997). For instance, urbanization resulting from rural-urban migration and the advances in technology and communication has allowed African societies to be affected by the Western world. However, several studies in Africa attributed the failure of women in realizing their reproductive goals to the male-dominated communities in which they live. Ethnicity has been identified as a key factor, and its effect on reproductive outcomes persists to a large extent after controlling for education, occupation, income earning status, polygyny, and age-at-marriage (Gage, 1995; Kritz and Makinwa-Adebusoye 1994). A closer look at the issue of ethnicity points to the gender role subordinating women into lower status at work in the traditional communities in sub-Saharan Africa. Thus, decision making in a typical sub-Saharan African community is dominated by men. Aside from a few studies which have evaluated the direct relationship between general decision-making and contraceptive use, research has emphasized the effect of reproductive decision-making on contraceptive use. According to Oni and McCarthy (1991), among men in Ilorin in Nigeria, contraceptive use decisions are predominantly made by men. The study by Kritz and Makinwa-Adebusoye (1994) showed that ethnic groups that assign low status to women in Nigeria do not allow women to have much input in family size decisions. Spousal agreement on family planning results in higher usage of contraceptive methods (Kritz and Gurak 1991). According to Kuponiyi and Alade (2007) of Oyo State of Nigeria, women took part in reproductive decision-making when it relates to family size and rejection of contraception use. Besides, all aspects of reproductive issues suffer from poor joint decision-making. Clearly, the cited studies did not consider reproductive decision making in the context of the extent to which women partake in household decisions in general. The current study examines contraceptive use within the context of large purchase household decision making patterns. Two studies have examined the relationship between general decision-making and contraceptive use. The importance of evaluating the relationship between general decision-making and contraceptive use was raised by Hossain and Khan (1997), who noted that socio-demographic factors such as wife's age, education, occupation, and income affect fertility through decision-making that consequently impacts on contraceptive use. The implication is that the extent to which women's socio-demographic factors affect fertility depends on

the degree to which these socio-demographic factors affect decision-making in the household. Derose and Ezeh (2007) studied three decision-making patterns, namely joint decisions, wife-dominated decisions, and husband-dominated decisions, and their relationship to contraceptive use in selected communities in Uganda. The findings were that wife-dominated decisions are more likely to result in modern contraceptive use while joint decision making tends to promote traditional reproductive behavior. I argue that large household purchases entail gender power relations; hence, the decision-making patterns may also help explain the use of contraceptive among women since child birth tends to be associated with gender power as well.

Conceptual Framework

From Figure 1, the demand for contraception is determined by several factors including power dynamics between the couple. Power relationship is a reflection on how empowered a woman is to exert her wish on the male partner. The demand for contraception also depends on the demand for children by the couple, the fecundity of the woman, and the cost-benefit balance of the birth control. Socioeconomic factors also affect demand for contraception and the empowerment of the woman. The pathway being evaluated in the present study is the association between decision-making patterns and demand for modern contraceptive.

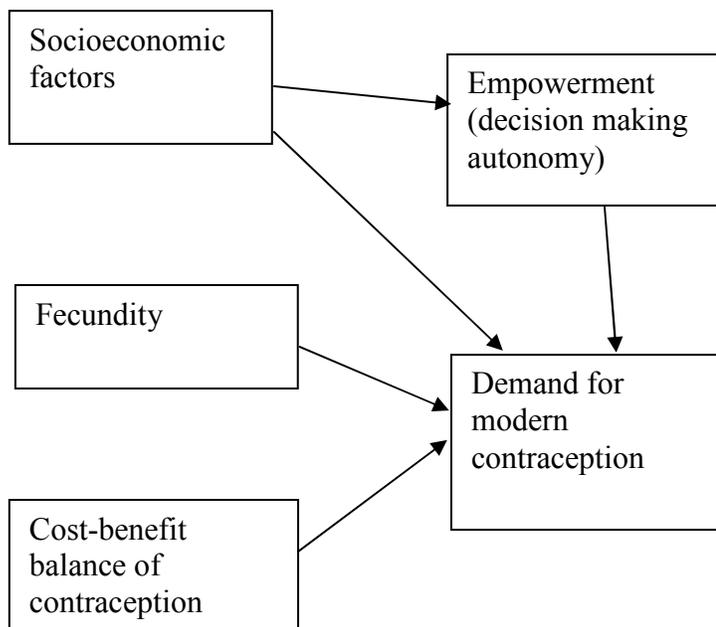
Several studies on fertility in Africa have documented that women's reproductive goals do not materialize because of the dominance of men in the household, including decision making (Doodoo and van Landewijk 1996; Ezeh 1991; Ezeh, Seroussi, and Riggers 1996; Isiugo-Abanihe 1994; Kannae and Pendleton 1994; Mbizvo and Adamchak 1991, 1992; Ngom 1996; Terefe and Larson 1993). Based on the conceptual framework and the male-domineering attitude, the following are the hypotheses of the study:

1. Joint decision-making patterns may or may not be associated with less contraceptive use. This is because these decision-making patterns may still provide men with greater say in reproductive issues than the female and consequently satisfy the often expressed desire of men to have many children.
2. Female-dominated decision making will be associated with greater use of

contraceptives. The assertion is based on the finding in sub-Saharan Africa that women do desire smaller family sizes but are unable to fulfill this wish because men dominate decision-making in the household. Thus, if women have greater decision making autonomy, their fertility desires will materialize.

3. Male-dominated decision-making will be associated with less contraceptive use. This is because a male-dominated union leads to the suppression of the female in the relationship. Consequently, the woman will not be able to implement her fertility desire which is noted from several past studies to favor small family size.

Figure 1



Conceptualization of contraception use and decision-making patterns

DATA AND METHODOLOGY

The study analyses data from the 2003 Ghana DHS and are based on the responses of about 3,549 of women who are currently married or living together with their male partners.

The DHS collected detailed information about the demographics as well as contraceptive use of the respondents. Other background information included in the DHS are marital history, ethnicity, employment status, educational attainment, fertility preferences, residence, religious affiliation, wealth quintile, and earnings allocation and control.

The dependent variable of interest is the current use of modern contraceptive. Women were asked whether they currently use any modern contraceptive method. For current use of a modern method, 1 was coded as current use and 0 for non-use.

Women's participation in decision making was examined as part of women's empowerment in DHS 2003 Ghana. Five questions pertaining to various aspects of household decisions were asked. The questions are as follows:

“Who makes decisions about your own health care?”

“Who makes decisions about large house purchases?”

“Who makes decisions about daily household purchases?”

“Who makes decisions about paying visits to family or relatives?”

“Who makes decisions about what food to cook each day?”

The respondent's choice of the decision maker could be “woman only” ; “jointly with husband”; “jointly with someone else”; “husband only”; “someone else” or “decision not made/ not applicable”. For the current study the question of interest is “Who makes decisions about large household purchases?”. The question selected is consistent with Gammage’s discussion (1997) of the spheres of decisions commonly made in households.

The responses were coded as 1 for “woman only”; 2 for “jointly with husband”; 3 “others” and 4 “husband only” as the reference response in the descriptive analysis. In the regression models, the “husband only” was recoded as 3 (reference category) after the “other” category was dropped.

Control variables were chosen based on past research. The socioeconomic and background characteristics measures include education, employment, wealth quintile, and

place of residence. Education was categorized as no education, primary education, and secondary or higher (reference category). Employment was grouped as “not employed or employed but not paid”; “employed for cash only” (reference category); “employed for cash and in kind”, and “employed for in kind only”. Wealth quintiles were poorest, poor, middle, richer, and richest (reference category). The place of residence was either rural or urban (reference category).

Other household characteristics were number of living children, and type of marital union (monogamy or polygyny). The age of the respondents were grouped as less than 26 years, 26 to 36 years, and greater than 36 years. The ethnicity was grouped as Akan (reference category), Ga/Dangme, Ewe, Guan, Northern tribes (Mole-Dagbani, Grussi, Gruma, Hausa) and other.

The effects of women's decision making on contraceptive use are examined using logistic regression models. Since the dependent variable is dichotomous, logistic regression is appropriate (DeMaris 1995). I used proc surveyfreq and proc surveylogistic procedures in SAS 9.1 to run the analysis. The survey procedures were used because of the complex sampling techniques used in collecting the DHS 2003 Ghana data. These survey procedures allow the inclusion of strata, cluster, and sample weights to handle the complex sample selection adopted in the data collection. I created a new variable for the strata with 20 levels based on the ten regions and the rural/urban dichotomy upon which the population was stratified prior to formation of the clusters. For easy interpretation, the results are presented as odds ratios. An explanatory variable has a positive effect on contraceptive use if the odds ratio is greater than 1.00; an odds ratio less than 1.00 implies the explanatory variable reduces contraceptive use.

RESULTS

Descriptive statistics

Table 1a shows the descriptive statistics for the choice of contraceptive method by selected background characteristics. The current use of any contraceptive appears to be clearly due to the use of a modern method. About a quarter of all women age 26 and above use some form of contraception. The proportion of married/cohabiting women who currently use the traditional form of contraception remains almost unchanged within the

three age groups. Monogamous unions show a higher demand for both modern and traditional contraception compared to polygamous marriages. The demand for contraceptives among urban women in unions is about 31% compared to 20% in rural areas. Increasing education is associated with increasing current use of both modern and traditional contraception. About a quarter and more than a third of the women with a secondary and higher than secondary education respectively make use of a modern form of birth control. Increasing wealth in a household leads to increasing demand for a modern or traditional contraceptive method. By ethnicity, at least 25% of the women from Ga/Dangbe, Ewe, and Akan tribes practice some form of contraception.

Table 1b shows the distribution of contraceptive use according to the pattern of decision making adopted by a couple when making a large purchase in the household. Clearly, joint decision making pattern is associated with higher demand for modern as well as traditional contraceptives.

Multivariate analysis

Current use of contraceptives and decision types

I examined the current use of modern contraceptives with “large household purchases” as the main explanatory variable. The odds ratios of the logistic regression models are presented in Table 3.

Model (1) indicates that those with joint response are 55% more likely to demand a modern contraceptive compared to those with husband/partner alone as the sole decision maker on “large household purchase”. In Model (2), education and employment are introduced into the baseline model, resulting in a reduction in the odds ratio by about 15%, which is still significant. Also, in Model (2) the odds of being a current modern contraceptive user is 32% and 44% less for “cash and kind” and “in kind only” respectively, compared to “cash only” employment. This implies that providing cash only employment opportunities among Ghanaian women would lead to greater modern contraceptive take-up. The result thus indicates that education and cash employment contribute to the effect of a joint response in “large household purchase” decision making on modern contraceptive use.

Table 1a: Percentage distribution of women who are married or cohabiting with male partners by selected background characteristics and contraceptive method currently being used, Ghana DHS 2003

Background characteristics	Choice of contraceptive method		
	Any method, %	Modern, %	Traditional, %
Age group			
< 26yrs	21	16	5
26 to 36yrs	27	20	6
> 36yrs	25	18	6
Type of union			
Monogamy	27	20	6
Polygyny	17	13	4
Residence			
Urban	31	24	7
Rural	20	15	5
Education			
No education	14	11	3
Primary	25	21	5
Secondary	33	24	9
Higher	48	35	14
Employment			
Not paid	17	14	3
Cash only	20	5	6
Cash and kind	13	10	3
In kind only	29	23	7
Wealth index			
Poorest	13	9	4
Poorer	23	19	4
Middle	24	19	6
Richer	29	21	8
Richest	35	26	8
Ethnicity			
Ga/Dangbe	26	24	2
Ewe	28	21	7
Guan	24	19	5
Northern tribes	15	12	3
Akan	30	22	8
Others	16	13	3
(Total N)	(3,549)	(3,549)	(3,549)

Source: 2003 Ghana DHS individual respondents SAS data file, weighted data.

Table 1b: Percentage distribution of women who are married or cohabiting with male partners and their participation in large purchase decision-making and contraceptive method currently being used, Ghana DHS 2003

Decision	Choice of contraceptive method		
	Any method, %	Modern, %	Traditional, %
Large household purchases			
Respondent only	24.3	18.6	5.6
Respondent & Husband/partner	30.4	22.5	8.0
Husband/partner only	20.5	15.7	4.8
(Total)	(24.6)	(18.7)	(5.9)

Source: 2003 Ghana DHS individual respondents SAS data file, weighted data.

Table 1c: Percentage⁺ distribution of women who are married or cohabiting with male partners according to the person who has final say in making large purchase decisions by selected background characteristics, Ghana DHS 2003

Background characteristics	Final say on decision					Total	N
	Large household purchases						
	Respon- dent only	Respon- dent & Husband/ partner	Husband/ partner only	Other	Total		
Age group							
< 26yrs	3	7	9	4	23	823	
26 to 36yrs	9	17	15	2	43	1,531	
> 36yrs	9	14	10	1	34	1,177	
Type of union							
Monogamy	15	32	25	6	77	2,714	
Polygyny	7	6	9	1	23	817	
Residence							
Urban	10	14	13	3	40	1,430	
Rural	11	24	21	4	60	2,101	
Education¹							
No education	5	14	17	2	38	1,352	
Primary	5	8	6	1	20	705	
≥Secondary	10	17	11	4	42	1,474	
Ethnicity							
Ga/Dangbe	2	3	2	1	8	283	
Ewe	4	4	4	1	13	443	
Guan	<1	1	1	<1	3	95	
Northern tribes	3	7	12	2	23	823	
Akan	11	21	11	3	46	1,631	
Others	1	2	4	<1	7	246	

¹ Those with 'higher' education were added to 'secondary' group because the sample size was too small.

+ Percentages may not add up to 100 because of rounding up and a few missing values.

Source: 2003 Ghana DHS individual respondents SAS data file, weighted data.

Table 3: Odds ratio of married or cohabiting women's current use of a modern contraceptive method, Ghana DHS 2003

Variable	Model			
	(1)	(2)	(3)	(4)
Large household purchases				
Respondent only	1.23	0.98	1.02	0.96
Respondent & Husband/partner	1.55***	1.32*	1.21	1.22
Husband/partner (ref.)	1.00	1.00	1.00	1.00
Education				
No education		0.47***		0.49***
Primary		0.81		0.81
Secondary (ref.)		1.00		1.00
Employment				
Not paid		0.65		0.81
Cash only (ref.)		1.00		1.00
Cash and kind		0.68**		0.73*
In kind only		0.56*		0.71
Age group				
< 26yrs			1.34	1.32
26 to 36yrs			1.33*	1.29*
> 36yrs (ref.)			1.00	1.00
Type of union				
Polygyny			0.73*	0.79
Monogamy(ref.)			1.00	1.00
Residence				
Rural			0.66*	0.65*
Urban (ref.)			1.00	1.00
Wealth index				
Poorest			0.42*	0.68
Poor			0.90	1.34
Middle			0.81	1.11
Richer			0.84	1.05
Richest (ref.)			1.00	1.00
Ethnicity				
Ga/Dangbe			1.84*	1.34
Ewe			1.67	1.03
Guan			1.75	1.36
Northern tribes			1.10	1.00
Akan (ref.)			1.00	1.00
Others			1.51	0.95
No of chn.				
Log likelihood	3254	2922	3084	2821

*p<.05; **p<.01; ***p<.001 ref.= reference group
Source: 2003 Ghana DHS individual respondents SAS data file, weighted data.

Model (3) shows the effect of background characteristics, producing an insignificant odds for the joint response compared to the baseline Model (1). The background characteristics of significance in Model (3) include age group 26-36 with a likelihood of current modern contraceptive use 33% above that of the >36 age group, polygyny with about 27% less likelihood of modern contraceptive use compared to monogamous union, and residence in rural area with odds of modern contraceptive use, which is about 66% that of residence in an urban area. The supply of surviving children is strongly significant in terms of the likelihood of modern birth control; each additional child results in 26% increase in the odds of modern contraceptive use. This finding confirms that declining mortality and the associated increase in the survival of children does contribute to an increase in demand for modern contraceptive methods. Given that fertility remains high in Ghana, I posit that factors other than child survival may be of greater importance in enhancing modern contraceptive demand in Ghana. The issue of parental values and behavioral changes may be critical factors worth considering in formulating fertility reduction policies in Ghana.

In Model (4), “no education”; “cash and kind”; employment, age group 26-36, rural residence, and number of children remain significant with marginal changes in the values of the odd ratios compared to Model (3). The joint decision-making variable is no longer significant. Thus, background characteristics, education, and employment shape the effect of decision-making pattern in “large household purchases” on the demand for modern contraceptives.

DISCUSSION

The research has identified three key issues in relation to the three hypotheses put forward at the beginning of the study. Firstly, from the descriptive statistics as well as the logistic regression results, joint decision-making among couples (married and cohabiting) produces greater demand for modern contraceptive methods. This finding is consistent with the first hypothesis which stated that joint decision-making may or may not increase the demand for modern contraceptive. A possible explanation for the increase in contraceptive use observed is that, in the context of a joint decision-making pattern among couples, women gain the power to influence their fertility compared to contexts in which the male partner or the woman solely decides on making large purchase decisions. Secondly and contrary to

what was expected, women-dominated decision making does not lead to greater demand for a modern contraceptive use. This was unexpected because research findings indicate that women in sub-Saharan Africa who desire smaller family sizes are unable to do so because men dominate household decision making. Thus, if women have greater autonomy in decision making then their fertility desires should materialize. Another explanation for the lack of support for the second hypothesis is that even when women dominate their partners in household decision-making issues, their dominance provides them with less ability to implement a low fertility desire compared to women who make decisions jointly with the male partner. The third issue relates to the confirmation of the final hypothesis, which stated that male-dominated decision making should result in less likelihood of contraceptive use among women.

The findings are consistent with the theory that marital unions that promote egalitarian type of gender-roles may have smaller families (Chapman 1989). When individuals develop egalitarian gender-role attitudes, they are more likely to practice contraceptive use (Ntozi 1990). Similarly, spousal agreement on family planning was noted to result in higher usage of contraceptive methods (Kritz et al , 1995). Although Ghana is clearly not an egalitarian society, the finding that joint decision making leads to higher likelihood of modern contraceptive use implies that gender policies aimed at promoting cohesive decisions among couples may be an effective contraceptive use strategy. My assertion is further supported by the finding that women-dominated decision making did not produce greater use of modern contraceptives.

Another important finding in the study is that “cash” employment reward leads to greater use of modern contraceptives. Gage (1995) found a similar pattern in modern contraceptive use among women in Togo.

The study can be extended in future by performing a similar analysis using the DHS dataset of male respondents.

Conclusion

In conclusion, the findings have established that joint decision making by couples in Ghana increases the demand for modern contraceptives. The study did identify education and form of employment remuneration, as well as background characteristics such as age group,

ethnicity, form of union, and residence in urban areas, as factors which explain some of the effect of joint decision making pattern on the demand for modern contraceptives. Also, increase supply of surviving children was significantly associated with greater demand for modern contraceptives.

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