

Determinants of Desired Family Size in Rural Ghana (West Africa): A Multivariate Analysis

THE desire for children is almost universal. However, there is a tremendous variation in the intensity of this desire from one culture to another. It is often portrayed in sociological and demographic literature that parents in the developing countries desire a large number of children for a variety of reasons. In the culture of many of these societies different techniques and sanctions, including religious, are applied to stimulate the desire and birth of many offspring. The status of women in these societies, to a large extent, is defined by the number of children they bear and mothers of many children, especially sons, are accorded enhanced prestige while spinsters, childless or sonless women are often an object of ridicule or pity.

In the developing world the desire for children is particularly strong in tribal African societies where the children are emphasized as the *raison d'être* of marriage and the family is generally marked by many children. In the case of the Ashanti tribe of Ghana, Forte has observed :

To be childless is the greatest personal tragedy and humiliation for both men and women and the larger the family the prouder is the parent. In Southern Ashanti a public ceremony of congratulation is performed for a couple who have 10 living children. (1954 : 262)

The very survival of women in these societies thus depends on motherhood and childlessness or low fecundity is often considered an important reason for divorce, desertion or bringing in another wife. In one tribal study it was reported that 28% of the divorces were due to the wife's barrenness, premature stoppage of children and old age (Henin 1959 : 177). Further, in many areas of

Africa where polygamy is still prevalent, children strengthen the position of the mother in relation to her co-wives.

It is not surprising, therefore, that in many African countries, women more often visit the family planning clinics to learn about ways to increase their fertility than about ways to decrease it (Husein 1967 : 2). It has also been observed that barren women of almost all Ghanaian tribes seek the help of herbalists and go to the extent of spending all their wealth in order to procure native medicines which could make them fertile (Gaisie 1968 : 89).

Besides many anthropological studies, the intensity of desire for children in African culture has also been documented in many recent sociological and demographic studies. In a rural Moroccan study it was found that on an average husbands desire 4.1 children while the average for the wife was 4.6. Thus the husbands in this study considered fewer children ideal than the wives (Morocco, 1970 : 2).

Another study in Kenya reported that both husbands and wives desired an average of 3.6 additional children; in the case of husbands this was made up of 2 additional boys and 1.6 additional girls, while for the wives the sex breakdown was 1.9 sons and 1.7 daughters. The total number of children desired by husbands and wives was 6.6 : the husbands desired 3.4 sons and 3.2 daughters, the wives desired equal numbers of sons and daughters (Dow, 1965 : 785). In West Africa some studies in Nigeria have reported that most people in both Urban and Rural areas consider five to six children ideal (Qlusanya, 1969 : 376; Okedji, 1969 : 347). So far as Ghana is concerned, many studies have observed that most Ghanaians want children in large numbers and their culture has long assumed this to be a natural desire. In a survey of population attitudes in Rural Ghana, Caldwell found that two-thirds of the respondents reported that it is good to have many children (1967 : 95). In another Ghanaian study also, most men and women expressed the view that 'large family' has more prestige than a 'small family' but relatively more women than men favored large families (Pool, 1970a : 14-15). Pool in another study in rural Ghana also observed that a majority of the rural Ghanaian women desired big families, or else they had no interest in the questions about family size (1970 b : 208). As regards number of children considered ideal by the Ghanaians, Caldwell has reported that on an average males consider 6.8 children to be ideal while the corresponding figure for the females was 7.3 children (1968 : 21). Furthermore, more than three-fifths of the respondents in most KAP studies carried out in Ghana desired six or more children and this proportion is one of the highest ever recorded in KAP studies in developing countries (Mauldin, 1965 : 1-10; Berelson, 1966 : 665-69).

The desire for children is, by and large, governed by traditional values and personal circumstances. In the less developed countries in general and tribal African societies in particular, the former have a greater sway than the later.

One of the characteristics of the tribal African societies is the strong emphasis of kinship groups. In these societies, a married couple is closely connected with a wider social group having either a partrilineal or matrilineal system. The objective of both these systems is to ensure continuity of kinship growth through legitimate heirs and a large number of children is considered a means of enhancing the prestige of the group as well as for perpetuating the lineage. These groups therefore prescribe high fertility norms and the individuals who adhere to these norms are given economic and personal support not only in the matter of bearing and rearing children but also by way of contributing to the bride price which has to be paid for procuring a wife. Since in such societies the burden of rearing children is shared by the members of a corporate group and does not directly fall on the parents to the extent it does in urban industrial societies, the individuals feel a sense of security in venturing into marriage and giving birth to a large number of children.

Besides the social and religious values attached to children, they are also looked upon as an economic asset and a form of security in old age. They are a very crucial source of cheap labour on the farms where the nature of agricultural techniques employed is such that a large manpower is needed during farming and harvesting times. A large number of children thus becomes desirable and could be mobilised by the family on such occasions. Furthermore, since social schemes devised to aid the aged and disabled are lacking in these societies, they have to depend upon their children for their sustenance. Under the existing social structure, the acceptance of this responsibility by the children is considered the main manifestation of filial piety. Thus the greater the number of children the parents have, the greater will be the number to contribute in their old age or in case of disability. It is not only in the case of old age or disability that the children support their parents (Caldwell, 1966 : 11), a study of Ghanaian University of students revealed that over a fifth of the students reported that they were receiving financial help from their brothers and sisters (Caldwell, 1965 : 189).

Another important factor which stimulates the desire for large progeny in African societies, as in other parts of the developing world, is the high level of infant and child mortality. The parents in these countries desire a large number of children as a form of insurance under the fear that many of those born will die and only a few will eventually survive. It is generally argued that as more children survive the number of births required to achieve desired family size will be reduced. But although in recent times the infant and child mortality rates have declined considerably, the support for large families in these societies has not shown a corresponding decline. It has been pointed out that large family values persist even after the conditions responsible for them cease to exist due to what Kozlov (1967 : 158) calls a "complex of ideological factors" and which Lorimer (1954 : 251) labels "cultural inertia".

Probably it takes a generation or two to realise the actual fall in mortality levels in these societies, but there is very little information on people's perceptions about mortality decline in the developing countries.

Childbearing after all is a personal affair between a man and a woman, but as mentioned above, the kinship groups provide economic and social support to people who adhere to the traditional norms of high fertility and thus strengthen the motivation for prolific childbearing. But those who realise that the incentives provided by the corporate groups are not enough to offset the benefits of having small families try to inculcate a desire for smaller families. In this way differentials in family size desires start to emerge among the different segments of the society. Some studies in Ghana, Nigeria, East Africa have shown that in the urban areas as well as prosperous cash cropping rural areas, people do realise the drawbacks of large families. Many respondents in these studies expressed the view that large families cause economic burden and also create many social problems such as congestion, noise, suffering, fighting and jealousy (Caldwell, 1968 : 603-4; Olusanaya, 1971 : 644). Analysis of findings from some African studies have further shown that age, religion, type of marriage, income, education, occupation are some of the important factors which explain the individual differences in family size desires (Caldwell, 1968 : 605; Olusanaya, 1967 : 371; Olusanaya, 1971 : 646-47; Ohadike, 1968 : 72-73).

Family size norms have important implications for the family planning or population control programs in developing countries.

So long as large family norms persist, the acceptance of family planning will be limited to a small segment of the population already at high parity. The couples in these societies have more children not because they are ignorant of the ways and means to control their fertility but probably because they want more children. One of the basic prerequisites of any fertility control programme, therefore, is to bring about a change in the people's attitudes towards large families. To effect this behavioural change, it is essential to gain knowledge of the factors which determine these norms. Once these factors are known, population policies could be directed to influence one or more of these factors. However, inspite of large number of studies in this area, our knowledge about these factors, in African societies in particular and developing countries in general, thus far, remains limited or at best fragmentary. Many of the factors influencing the reproductive norms are interrelated and there are not many multivariate studies to isolate the effect of one from the other.

Objectives and Methodology

The main objective of this paper is to examine family size desires among a sample of husbands and wives in rural Ghana and to analyse the salient determinants of the expressed desire. The analysis is based on the interviews with

778 husbands and 857 wives. The survey was carried out by the DANFA comprehensive Rural Health and Family Planning Project, Ghana (West Africa) with which the author was associated for about five years. This was a demonstration, teaching and research Project developed and implemented jointly by the University of Ghana Medical School and School of Public Health, University of California, Los Angeles.

In this survey in order to ascertain the desire of the respondents for additional children, two differently worded questions were posed to them. The respondents who had stated that they had one or more living children were asked: "you have stated that you had—living children. Do you feel that the number you have is sufficient or would you like to have more?". In case of those respondents who had not reported any children, the question posed simply was "would you like to have children?" Those of the respondents who indicated a definite desire for additional children were asked a further question "How many more do you want". The question asked from those who did not report any living children was "How many do you want to have." It may be pointed out that identical questions were asked of husbands and wives and every effort was made to see that they were interviewed individually but by the same interviewer. It was also endeavoured to interview both of them the same day without much time lag so that they would not have time or opportunity to discuss the interview with each other prior to the completion of both interviews. The relationship of desired number of children with various independent variables has been analysed. The independent variables selected are : age, age at first marriage, type of conjugal relationship, type of family, number of previous marriages, number of living children, and experience of infant and child deaths. At first one way analysis of variance was done to find out the level of significance of relationship between the dependent and each of the independent variables. Since there was likely to be interrelationship between the various independent variables, the next step was to use multivariate statistical techniques to examine the net effect of any single independent variable on the number of children desired.

The main statistical techniques used for the analysis are cross-tabulation, one-way analysis of variance and multiple classification analysis (MCA). Since many of our independent variables are nominal, the technique of analysis most appropriate for analysing the relationship between our dependent variable and independent variables is MCA. It is an extension of 'dummy' variable multiple regression analysis where the explanatory variables may represent membership in classes rather than numerical values. MCA obtains for each sub-class of independent variable a coefficient indicating its influence on the dependent variable after the effects of other variables have been taken into account. This technique is particularly useful for independent variables which are unordered (religion, tribe, occupation, family type etc.). MCA routinely computes a multiple R as

well as Beta coefficients which are analogous to partial *B* coefficients in ordinary multiple regression with numerical values (Andres *et al.*, 1967 : 1-7).

Findings and Discussion

The desire for additional children by the husbands and wives is shown in Table 1. Since polygamy is an important aspect of the African social system, the responses have been further bifurcated into those of monogamous and polygamous individuals. It could be seen from the table that desire for additional children was found to be quite widespread among the respondents. Approximately four-fifths of both husbands and wives expressed a desire for additional children. Further, 7.8% of the husbands and 4.2% of the wives could not provide any specific answer to the questions and reported that it is 'up to God'. Thus the number of husbands giving such fatalistic answers was twice as much as the wives. Only 10.1% of the husbands and 18.1% of the wives indicated that they did not want more children. As regards the desire of the monogamous and polygamous husbands, it would be seen from the table that while 82.8% of the monogamous husbands wanted additional children, the corresponding percentage for the polygamous husbands is 78.3. Further, there is not much difference in 'up to God' responses between these two kinds of husbands. So far as wives are concerned, the picture is reversed. Here, unlike the husbands, more of the polygamous than monogamous wives expressed a desire for additional children, the respective percentage being 80.6 and 75.7. The variation in the 'up to God' responses as between these two categories of wives is marginal.

An attempt has also been made to compare the desire of the husbands and wives for additional children. The results are shown in Table 2 which indicates that in approximately seven out of ten cases both husbands and their wives wanted more children while in one eighth of the cases husbands expressed a desire for additional children while the wives were not desirous of having more children. There are also a few instances (4.0%) where the husbands did not want more children while the wives expressed the contrary view. Only in 5.7% of the cases both husbands and wives indicated a desire to have no more children. Though the desire for additional children has been found to be slightly more on the part of husbands, yet in 75% of the cases the response was similar and the relationship is statistically significant ($\chi^2 = 95.8; P = 0.000$).

Desire for Additional Children by Number of Living Children

The responses to the general question about desire for additional children are important for family planning, programme planning and implementation since those giving negative response to the question represent a population which

TABLE 1-DISTRIBUTION OF RURAL GHANAIAN HUSBANDS AND WIVES BY DESIRE FOR ADDITIONAL CHILDREN

<i>Desire for additional children</i>	<i>Husbands</i>						<i>Wives</i>					
	<i>Monogamus</i>		<i>Polygamus</i>		<i>All</i>		<i>Monogamus</i>		<i>Polygamus</i>		<i>All</i>	
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>
Want more children	488	82.8	148	78.3	636	81.7	446	75.7	216	80.6	662	77.2
Do not want children	55	9.3	24	12.7	79	10.1	116	19.7	39	14.6	155	18.1
Up to God	45	7.6	16	8.5	61	7.8	23	3.9	13	4.8	36	4.2
Didn't Know	1	0.2	1	0.5	2	0.3	4	0.7	0	0.0	4	0.5
Total	589	100.0	189	100.0	778	100.0	589	100.0	268	100.0	857	100.0

seems to be already motivated to restrict further births and could be brought within the ambit of birth control acceptors with least effort. However, these responses could be analysed more meaningfully in relation to the number of living children the respondents already have.

TABLE 2-RELATION BETWEEN RURAL GHANAIAIAN HUSBANDS AND WIVES IN DESIRE FOR ADDITIONAL CHILDREN

<i>Desire for additional children by wife</i>	<i>Desire for additional children by Husband</i>							
	<i>Want more children</i>		<i>Do not want more children</i>		<i>Up to God</i>		<i>Total</i>	
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>
Want more children	528	68.4	31	4.0	30	3.9	589	76.3
Do not want more children	94	12.2	44	5.7	10	1.3	148	19.2
Up to God	13	1.7	4	0.5	18	2.3	35	4.5
Total	635	82.3	79	10.2	58	7.5	772	100.0

$$X^2=95.8$$

$$P = 0.000$$

Table 3 shows the relationship between desire for additional children by the husbands and number of living children. It would be seen from the table that there are very few husbands having less than 6 living children who do not want more children. Thereafter the proportion of those wanting no more children increases steeply but remains more or less stable. Less than one-fourths of the husbands who had already 8 or more living children did not want more children while three-fifths of them expressed a definite desire for more offspring and the remaining one-sixth reported that it is 'up to God'.

The percentage of wives desiring additional children by number of living children is given in Table 4, which indicates a positive relationship between number of living children and proportion not desiring additional children. After the wives have had two living children there is a steep increase in the proportion of those not wanting more children. Approximately one tenth of the wives who had three living children expressed a desire for no more children while for those with 8 or more living children, approximately two-thirds of the wives were in this category. The relationship between number of living children and desire of the wives for additional children is significant ($Z^2 = 185.64$; $P = 0.000$).

TABLE 3-DESIRE FOR ADDITIONAL CHILDREN BY RURAL GHANAIAN HUSBANDS BY NUMBER OF LIVING CHILDREN

<i>Desire for additional children</i>	<i>Percentage of husbands having living children</i>										<i>Total</i>	
	<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>+</i>	<i>No.</i>	<i>%</i>
Want more children	100.0	100.0	89.1	90.5	83.7	88.0	73.6	66.0	59.7	63.6	52.0	
Do not want more children	0.0	0.0	1.0	4.3	6.7	8.0	22.6	24.0	23.6	79	10.2	
Up to God	0.0	0.0	9.9	5.2	9.6	4.0	3.8	10.0	16.7	61	7.9	
N	23	80	101	116	104	100	53	50	144	776	100.0	
% distribution of husbands	3.6	10.3	13.0	14.9	13.4	12.9	6.8	6.4	18.6			

$$X^2 = 113.11$$

$$P = 0.0000$$

Number of Additional Children Desired by the Husbands and Wives

So far our analysis has been limited to knowing what proportion of husbands and wives at each parity desire additional children and what proportion do not want more children. It is, however, also important to know the number of children wanted by husbands and wives of different parities. Those of our respondents who indicated a definite desire for additional children were asked a further question: "How many more do you want"? For the husbands and wives who in response to our previous question indicated that they do not want more children, for the purpose of the following analysis, the number of additional children desired has been taken as zero.

The relationship between the number of living children and number of additional children desired by the husbands is shown in Table 5. The table reveals that the husbands for whom we have information about the number of children desired, approximately one-sixth (16.4%) did not want any more children, a little more than one-fourth (28.8%) wanted between 1 and 3 additional children, while the remaining more than half (54.9%) indicated a desire for 4 or more additional children. It could also be seen from the table that there is a negative correlation between the number of living children and the number of additional children desired, which is statistically significant ($r = -0.249$; $P = 0.000$). Though on the whole, as the number of living children increases, the number of additional children desired decreases, there are some deviations in this trend and furthermore the decrease in the number of additional children desired is not proportionate to the increase in the number of living children. The husbands having 0 to 2 living children desired approximately 6 additional children, those with 3 to 6 living children wanted about 4 more children while those with 7 or more living children indicated a desire for a little more than 3 additional children.

The relationship between number of living children and number of additional children desired by the wives is shown in Table 6, which indicates that unlike husbands there is a neat consistency in this relationship between number of living children and number of additional children desired is much stronger for the wives ($r = 0.503$; $P = 0.000$). A comparison of this table with the previous table would also indicate that at each parity the number of children desired by the husbands is much higher than those of wives.

Number of Children Desired by Husbands and Wives

Since in this study no direct question was asked about the total number of children desired or considered ideal by the respondent, this has been derived by adding up the number of surviving children reported by the respondent and number of additional children desired. The analysis reveals that on an average husbands desired 9.3 children with a standard deviation of 5.6, while the corres-

TABLE 4-DESIRE FOR ADDITIONAL CHILDREN BY RURAL GHANAIAAN WIVES BY NUMBER OF LIVING CHILDREN

<i>Desire for additional children</i>	<i>Percentage of wives having living children</i>										<i>Total</i>	
	<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8+</i>	<i>No.</i>	<i>%</i>	
Want more Children	86.5	93.5	90	86.0	75.9	65.0	52.1	31.2	30.86	12	76.2	
Do not want more children	2.7	4.3	3.6	10.7	18.2	27.5	45.1	57.4	65.4	155	19.3	
Up to God	10.8	2.2	3.6	3.3	5.8	3.9	2.8	10.6	3.8	36	4.5	
N	37	93	140	150	137	102	71	47	26	803	100.0	
% distribution of wives	4.6	11.6	17.4	18.7	17.1	12.7	8.8	5.9	2.4			

$$7.2 = 185.64$$

$$p = 0.000$$

TABLE 5—PERCENTAGE DISTRIBUTION OF RURAL GHANAIAH HUSBANDS BY NUMBER OF LIVING CHILDREN CROSS CLASSIFIED BY NUMBER OF ADDITIONAL CHILDREN DESIRED

Number of additional children desired	Number of living children									Average No. of living children	No. of husbands	% distribution of husbands
	0	1	2	3	4	5	6	7	8 or more			
0	0.0	0.0	6.2	13.3	13.2	12.2	27.3	33.3	37.8	6.3	97	16.4
1	0.0	1.3	2.5	7.2	5.3	12.2	6.8	7.7	3.1	4.8	31	5.3
2	0.0	9.5	12.5	13.3	22.4	10.8	15.9	12.8	15.3	4.6	80	13.5
3	8.3	12.2	2.5	20.5	5.3	8.1	2.3	23.1	9.2	4.4	59	10.0
4	20.8	21.6	11.2	10.8	17.1	4.0	15.9	7.7	10.2	3.7	75	12.7
5	8.3	9.5	5.0	2.4	5.3	28.4	0.0	2.6	4.1	4.1	45	7.6
6	29.2	10.8	23.7	15.7	18.4	6.8	11.4	2.6	5.1	3.2	77	13.0
7	8.3	2.7	0.0	4.8	0.0	1.3	0.0	0.0	0.0	2.1	9	1.5
8 or more	25.0	32.4	36.4	12.0	13.0	16.3	20.4	10.2	15.2	3.8	119	20.1
Average no. of additional children desired	6.6	6.2	6.0	4.3	4.5	4.4	4.2	3.1	3.2			
No. of husbands	24	74	80	83	76	74	44	39	98		592	100.0
% distribution of husbands	4.1	12.5	13.5	14.0	12.5	12.5	7.4	6.0	16.6			

$$r = -0.249$$

$$p = 0.0000$$

TABLE 6—PERCENTAGE DISTRIBUTION OF RURAL GHANAIAI WIVES BY NUMBER OF LIVING CHILDREN CROSS CLASSIFIED BY NUMBER OF ADDITIONAL CHILDREN DESIRED

Number of additional children desired	Number of living children										Average No. of living children	No. of wives	% distribution of wives
	0	1	2	3	4	5	6	7	8 or more				
0	3.9	5.1	4.9	13.4	26.9	34.9	51.6	75.7	73.9	5.2	164	23.0	
1	2.6	2.5	1.6	15.7	8.7	16.9	11.3	2.7	17.4	4.2	61	8.5	
2	11.7	7.6	23.0	18.9	21.2	18.1	14.5	13.5	4.3	3.3	119	16.7	
3	9.1	21.5	11.5	15.7	9.6	8.4	6.5	8.1	0.0	2.7	82	11.5	
4	31.2	17.7	18.9	14.2	14.4	9.6	12.9	0.0	4.3	2.4	111	15.5	
5	11.7	13.9	3.3	4.7	1.0	4.8	0.0	0.0	0.0	1.7	35	4.9	
6	15.6	16.5	18.0	10.2	9.6	3.6	1.6	0.0	0.0	2.1	74	10.4	
7	0.0	6.3	0.0	0.0	0.0	2.4	0.0	0.0	0.0	2.1	7	1.0	
8 or more	14.3	8.9	18.9	7.1	8.7	1.2	1.6	0.0	0.0	2.1	61	8.5	
Average no. of additional children desired	4.8	4.6	4.6	3.1	2.9	1.9	1.4	0.5	0.4				
No. of wives	77	79	122	127	104	83	62	37	23		714	100.0	
% distribution of wives	10.8	11.1	17.1	17.8	14.6	11.6	8.7	5.2	3.2				

$r = -0.503$
 $P = 0.000$

ponding figures for the wives work out to be 6.4 and 3.3. Thus the husbands on an average desired 3 children more than the wives and these differences are statistically significant ($t = 12.1$; $P = 0.000$). The data therefore indicates that the desire for children is much greater on the part of husbands as compared to the wives.

Number of Children Desired by Husbands and Wives by Selected Characteristics

In order to explain some of the differentials in the number of children desired both by the husbands and wives, first one way analysis of variance of mean number of children desired with each of the following characteristics of the respondents was done : age, age at first marriage, educational level attained, occupation, religion, tribe, lineality, type of marriage (monogamous or polygamous), type of conjugal relation, type of family, number of previous marriages, number of living children, and infant and child deaths. The last variable i.e., infant and child deaths, which was obtained from the retrospective fertility history of women, was included in the case of wives only. But since many of these variables are likely to be interrelated, it was considered essential to use multivariate techniques of analysis in order to find out the net effect of each of these variables on the number of children desired. For this purpose analysis of covariance has been attempted in which nominal variables : tribe, religion, type of marriage, type of conjugal relation, type of family, and experience of infant and child deaths are introduced as factors and the numerical variables : age, age at first marriage, education, number of previous marriages and number of living children are included as covariates. Further in order to ascertain the amount of variation explained by these variables in the number of children desired by the husbands, multiple classification analysis (MCA) is done. The joint effect of factors and covariates has been found to be statistically significant both for the husbands and wives. In the case of husbands the variation explained by these variables in the number of children desired is 20% ($R^2 = 0.20$), the contribution of factors and covariates being 13.2 and 6.8% respectively; the variation explained in the number of children desired by the wives works out to be only 10% ($R^2 = 0.10$), the contribution of factors and covariates being 8 and 2% respectively.

The relationship between the number of children desired and individual variables, which is shown in Tables 7 and 8, is discussed below :

Age. Our initial analysis showed a direct and significant relationship between age of the husband and number of children, desired ($F = 7.5$; $P = 0.000$). But since age is also related to education, number of previous marriages and number of living children, which in turn is related with the number of children desired

TABLE 7—MEAN NUMBER OF CHILDREN DESIRED BY RURAL GHANAIAN HUSBANDS AND WIVES BY SELECTED CHARACTERISTICS

<i>Selected characteristics</i>	<i>Husbands</i>			<i>Wives</i>		
	<i>No. of cases</i>	<i>Mean number of children desired</i>	<i>Standard deviation</i>	<i>No. of cases</i>	<i>Mean Number of children desired</i>	<i>Standard deviation</i>
V)	(2)	(3)	(4)	(5)	(6)	(7)
Age						
15-24	26	7.9	4.2	155	6.3	31
25-34	182	8.0	4.4	339	6.4	2.7
35-44	216	9.3	4.6	220	6.7	2.4
45 or above	171	10.3	5.5	—	—	—
Age at First Marriage						
Below 16	19	13.2	12.0	68	6.6	3.3
16-19	33	9.5	4.5	389	6.4	2.7
20-24	231	9.6	5.9	207	6.5	2.6
25-29	210	9.7	4.3	21	7.9	3.4
30-34	76	9.0	3.7	—	—	—
35 or above	29	8.4	3.8	—	—	—
Education						
None	342	10.5	5.9	565	6.7	2.8
Primary	90	9.1	4.9	80	5.7	2.8
Middle	134	6.9	3.1	60	5.4	1.9
Higher	31	6.4	2.4	8	4.1	1.2
Occupation						
Not working, students, trainees, unemployed & retired persons	15	11.5	10.3	90	6.3	2.7
Professional and Technical personnel, Govt. Officers, business executives, and other white collar workers	33	7.1	2.9	—	—	—
Farmers	436	9.6	5.3	384	6.8	2.9
Drivers and other transport workers, Postmen, messengers linemen etc.	25	7.4	2.9	—	—	—
Labourers, watchmen, cooks and Other manual workers	25	8.9	4.3	—	—	—
Village artisans, bakers, masons, carpenters, tool makers, jewellers etc.	49	7.5	3.5	—	—	—

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Alcohol Distillers, retail traders, sales and shop assistants	15	12.1	9.5	240	6.0	2.4
Religion						
Protestant	227	7.5	3.0	259	6.0	2.3
Catholic	31	7.5	3.5	24	5.2	1.7
Muslim	48	9.0	5.9	45	6.2	3.8
Traditional	289	10.6	5.6	384	6.9	2.8
Tribe						
Ga	208	9.1	5.2	212	6.2	2.2
Ewe	145	10.6	6.5	175	6.6	2.9
Akan	119	7.0	2.9	145	5.9	2.1
Others	121	10.2	5.3	143	7.2	3.5
Lineality						
Patrilineal	353	9.7	5.8	387	6.4	2.5
Matrilineal	245	8.6	4.5	327	6.5	2.9
Type of Marriage						
Monogamous	462	8.7	5.4	495	5.6	2.6
Polygamous	135	11.2	4.8	219	8.3	3.0
Type of Conjugal Relation						
Customary	545	9.3	5.0	624	6.5	2.8
Mutual consent/friendship	41	9.1	4.0	73	6.2	2.3
No. of Previous Marriages						
None	331	8.6	5.3	495	6.5	2.9
One	162	9.3	4.3	176	6.3	2.3
Two or more	105	11.2	6.3	43	6.4	2.6
Type of Family						
Nuclear	350	9.5	5.8	396	6.5	2.7
Extended	248	9.0	4.6	318	6.4	2.7
Number of Living Children						
0-2	179	7.7	4.5	278	5.8	3.0
3-5	235	8.7	5.2	314	6.6	2.7
6 or above	184	11.6	5.5	122	7.7	1.6
Infant and Child Deaths						
Lost Children	—	—	—	327	6.8	2.6
Did not lose children	—	—	—	387	6.2	2.8

by the husbands, by controlling these variables along with others, the relationship between age and the number of children desired is reduced to a non-significant level ($F = 1.17$; $P = 0.281$).

In case of wives also though the relationship between age and number of children desired is positive and linear, the differentials are marginal and have not been found to be statistically significant in both one-way analysis of variance ($F = 1.18$; $P = 0.166$) and analysis of covariance ($F = 1.2$ $P = 0.276$). Thus in this study age as such has not been found to have any significant effect on the number of children desired by the husbands and wives.

Age at First Marriage. Table 7 would indicate that the husbands whose first marriage had taken place when they were 16 years old or younger desired the highest number of children (13.2) and those married considerably later, i.e., at the age of 35 or above, desired the least number of children (8.4). For other age at

TABLE 8 - SUMMARY OF RELATIONSHIP BETWEEN DEPENDENT VARIABLE Y(NUMBER OF CHILDREN DESIRED; AND INDEPENDENT VARIABLES X_i - TO X_n

independent variables X_i	relationship*			
	Husbands		Wives	
	Bivariate** Analysis	Multivariate Analysis	Bivariate" Analysis	Multivariate*** Analysis
X_1 Age	S	NS	NS	NS
X_2 Age at first marriage	S	NS	NS	NS
X_3 Education	S	S	S	S
X_4 Occupation	S	+	S	S
X_3 Religion	S	S	S	NS
X_6 Tribe	S	S	S	S
x_7 Lineality	S	+	NS	+
x_8 Type of Marriage	S	S	S	NS
X_9 Type of conjugal relation	NS	NS	NS	+
x_{10} Type of family	NS	NS	NS	NS
X_{11} No. of previous marriages	S	S	NS	NS
X_{12} No. of living children	S	S	S	+
x_{13} Infants and/child deaths	—	—	S	S

*95% confidence level.

** $Y = a + b_1X_1 + b_2X_2 + \dots + b_nX_n$.

*** $Y = a + b_1X_1 + b_2X_2 + \dots + b_nX_n$.

+ The SPSS Analysis of Covariance Programme can take only 5 factors and 5 covariate. Due to this limitation, these variables could not be included in the analysis of covariance.

S = Significant; NS = Not significant.

first marriage groups the differences in the number of children desired are marginal. The one way analysis of variance found the relationship between these two variables to be statistically significant ($F = 3.0$; $P = 0.011$). However, here again when other variables are controlled the significance of this relationship disappears ($F = 1.17$; $P = 0.281$).

Regarding wives, it could be seen from Table 7 that the number of children desired by three groups of wives, i.e., whose first marriage took place when they were below 16 years of age, those married for the first time between the age of 16 and 19 and those whose age at first marriage was between 20 and 24, are negligible in as much as the number of children desired by them average 6.6, 6.4 and 6.5 respectively. However, wives who were married for the first time when they were 25 years old wanted on an average 7.9 children. The one way analysis of variance found these differences to be statistically non-significant ($F = 1.9$; $P = 0.123$) and the analysis of covariance further reduced the F value to 0.56; $P = 0.453$.

Thus age at first marriage does not appear to have any statistically significant relationship with the number of children desired by the husbands and wives.

Education. It could be seen from Table 7 and 8 that there is a consistent and highly significant negative relationship between the level education attained by both husbands and wives and number of children desired by them. The statistics obtained from one-way analysis of variance for husbands and wives are : $F = 19.7$; $P = 0.000$ and $F = 8.3$; $P = 0.000$ respectively. The significance of these relationships persists even when other variables are controlled in the analysis of covariance, though the F value is reduced considerably ($F = 5.5$; $P = 0.019$ and $F = 6.0$; $P = 0.015$ for husbands and wives respectively).

Occupation. The one way analysis of variance shows significant differences in the number of children desired by husbands and wives according to occupational status ($F = 3.9$; $P = 0.00$, and $F = 5.2$; $P = 0.00$). The husbands in trading occupations desired the highest number of children while professionals and white collar workers desired least number of children, though, the number of husbands in the later category is very small. As regards wives, those in trading and miscellaneous occupations desired the least number of children, while those engaged in farming expressed a desire for largest number of children.

Due to the limitation of SPSS ANOVA computer programme the net effect of husbands occupation on the number of children desired could not be determined by controlling other relevant variables. But for wives the statistical significance of this relationship persists when in the analysis of covariance other variables are controlled ($F = 3.7$; $P = 0.025$).

Religion. The analysis reveals that Protestant and Catholic husbands desired on an average 7.5 children, while mean number of children desired by the husbands belonging to Muslim and traditional religion works out to be 9.0 and 10.6

respectively. These differences in religion and number of children desired by the husbands are statistically significant in one-way analysis of variance ($F = 19.3$; $P = 0.00$) and remain significant when in the analysis of covariance other variables are controlled ($F = 6.5$; $P = 0.00$).

Religious differentials in the number of children desired by the wives are also shown in Table 7 which would indicate that Catholic wives expressed desire for least number of children, while those having faith in traditional religion the highest. The average number of children desired by Muslim wives is slightly higher than the Protestants. These differences, on one-way analysis of variance, are found to be statistically significant ($F = 6.8$; $P = 0.00$) but are reduced to a non-significant level when other variables are controlled ($F = 1.9$; $P = 0.115$). Thus, while in the case of husbands the net effect of religion on the number of children desired has been found to be statistically significant, it is not so in the case of wives.

Ethnicity. Both for husbands and wives in one-way analysis of variance as well as analysis of covariance, statistically significant ethnic differentials in the number of children desired are observed. The statistics obtained as a result of one-way analysis of variance are : $F = 12.3$; $P = 0.00$; $F = 6.8$; $P = 0.00$ for husbands and wives respectively. These values for husbands and wives in the analysis of covariance are $F = 16.5$; $P = 0.00$; $F = 4.9$; $P = 0.002$.

The husbands belonging to Akan tribe desired least number of children (7.0); those from the Ewe ethnic group the highest (10.6). The mean number of children desired by husbands works out to be 9.1 and those from northern and non-Ghanian tribes on an average desired 10.2 children. Similar pattern is observable for the wives also.

Marital Type. The monogamous husbands on an average desired 8.2 children while the corresponding number for the polygamous husbands is 11.2. The difference between these two groups of husbands are highly significant in one way analysis of variance ($t = 4.9$; $P = 0.000$) and remain as such in the analysis of covariance ($t = 4.4$; $P = 0.00$). Similar trend is discernible for wives. The polygamous wives on an average desired 8.3 children while the corresponding figure for the monogamous wives is 5.6. These differences too are found to be statistically significant in one-way analysis of variance ($t = 3.1$; $P = 0.002$) but are reduced to a level of statistical non-significance in the analysis of covariance ($t = 0.0$; $P = 0.99$).

Thus while the net effect of polygamy on the number of children desired by the husbands is significant, it is not so for wives.

Number of Previous Marriages. It could be seen from Table 7 that there is a direct linear relationship between number of previous marriages of the husband and number of children desired by him. The husbands with no previous marriages desired on an average 8.6 children, the corresponding number for those with

one and two or more previous marriages works out to be 9.3 and 11.2 respectively. In one-way analysis of variance the relationship between these two variables is found to be statistically significant ($F = 9.7$; $P = 0.000$) and remains highly significant when in the analysis of covariance other relevant variables are controlled ($F = 12.3$; $P = 0.000$).

The differentials in the number of children desired by the wives according to number of previous marriages are, however, found to be marginal and statistically not significant both in the one-way analysis of variance ($F = 0.4$; $P = 0.695$) and analysis of covariance ($F = 0.92$; $P = 0.338$).

Number of Living Children. It could be seen from Table 7 that both for husbands and wives there is a direct linear relationship between number of living children and number of children desired. In one-way analysis of variance, these differences are found to be highly significant both for husbands and wives, the respective statistics are : $F = 28.9$; $P = 0.000$, and $F = 21.5$; $P = 0.000$. This variable could be included in the analysis of covariance for husbands only and the relationship remained significant, though the level of significance is considerably reduced ($F = 4.9$; $P = 0.027$).

Infant and Child Death Experience. The relationship between this variable and number of children desired is analysed for wives only. The analysis shows that wives who had experienced deaths of their live-born infants and children desired on an average 6.8 children while those who had not lost any of their live born children desired on an average 6.2 children. These differences are found to be statistically significant in one-way analysis of variance ($t = 2.87$; $P = 0.007$) and remain as such in the analysis of covariance ($t = 2.94$; $P = 0.001$).

Furthermore statistically significant relationship is observed in the number of children desired by the husbands according to lineality ($t = 2.6$; $P = 0.009$) but no such relationship is observed for wives ($t = 0.63$; $P = 0.530$).

The relationship between type of family and type of conjugal relationship on the number of children desired by the wives has also been examined in one-way analysis of variance but no statistically significant differences could be found.

Effect of Child Schooling on Desire for Children

Some studies in Africa have observed that the parents in these societies have started feeling the burden of large families consequent upon the increase in school costs and expenses of maintaining a large number of children in school. These costs include the expenses of schooling, school equipment, better clothing, the withdrawal of children from productive work and ability of the educated children to extract more money from the parents (Olusanaya, 1971: 644; Caldwell, 1968 : 603-4). It would therefore be interesting to test the hypothesis that the fathers who send their children to school have lesser family size desires as

TABLE 9--DISTRIBUTION OF SCHOOL GOING CHILDREN BY SEX
CROSS CLASSIFIED BY SCHOOL ATTENDANCE STATUS

Category	Never attended school		Now attending school		Attended School in the past		Total
	No.	%	No.	%	No.	%	
All children (6-14 years)	596	54.3	471	42.9	30	2.7	1097
Male children (6-14 years)	299	49.1	293	48.1	17	2.3	609
Female children (6-14 years)	297	60.9	178	36.5	13	2.6	488

compared to those who keep their school age children at home. Since the main burden of supporting the family falls on the husband rather than the wife, it is considered more appropriate to test this hypothesis for the father than for the mother.

The DANFA project as part of its household census registration collected information about the educational level and school-going status of each member of the household. However, in this survey the relationship of individual members of the household was recorded only with respect to the head of household. Therefore it was not possible to identify the children of respondents who were not heads of households. This analysis is therefore limited to a sub-sample of husbands who are heads of households. In this way the requisite information could be collected for 357 out of 778 husbands in our sample. All their children between the age of 6 and 14 are identified and their school-going status is determined, as shown in Table 9. It can be seen from this table that a little more than half (54.3%) of the children had never attended any school, the percentage being much higher for female than male children. The zero order correlation between proportion of school age children of a husband reported attending school and the number of children desired by him, though not very strong, is nevertheless found to be negative and statistically significant ($r = -0.9$ $P = 0.047$). Thus it appears that the higher the proportion of children going to school, the fewer the number of children desired by the husband. But there is also significant positive correlation between education of the husband and number of children desired by him ($r = -0.28$; $P = 0.001$). Thus when the effect of education of the husband is controlled the correlation between proportion of school age children attending school and number of children desired by the husband is reduced to a non-significant level, though it still remains negative ($r = -0.02$; $P = 0.354$). Thus it appears that schooling of children does not seem to affect per the desire for children in this society. It is probable that

unlike the urban areas, in the rural areas of Ghana the cost of sending children to school, particularly at the primary or middle level, is not much and the children anyway help their parents after school hours and may even keep them out of school during busy farming operations.

Summary and Conclusion

In this paper an attempt has been made to examine desired family size among a sample of rural Ghanaian husbands and wives and to analyse its salient determinants. In order to find out the net effect of each of their selected characteristics on the number of children desired by them, multivariate statistical techniques have been used. The analysis shows on an average husbands and wives desire 9.6 and 6.4 children respectively. The analysis also shows that so far as desired family size is concerned, our prediction is much better for husbands than the wives. For husbands we have been able to explain about 20% of the variation in the number of children desired while for wives it is only 10 percent. The net effect of education, occupation, ethnicity, and number of living children on the desired family size has been found to be statistically significant both for husbands and wives, while religion, type of marriage and number of previous marriages have significant relationship with the number of children desired by the husbands only. The relationship between infant and child deaths and desired family size is examined only for wives and these two variables have been found to be inversely and significantly related. The effect of child schooling on the number of children desired is also analysed but no statistically significant relationship could be established.

The results of both bivariate and multivariate analysis have been included in this paper in order to demonstrate the hazard of basing our conclusions on the results of only bivariate analysis which is often reported in many such studies.

Acknowledgements

The DANFA Comprehensive Rural Health and Family Planning Project Ghana was supported in part by USAID Grant AID/CM-afr—IDA—73—14. The author is grateful to Dr. Alfred K. Neumann, Project Director, for making the data available and for his constant encouragement and critical comments on author's work.

References

1. Andrews, F. M. *et al.*, 1967, *Multiple classification Analysis—A Report on Computer Program for Multiple Regression Using Categorical Predictors*, Institute for Social Research, Ann Arbor, University of Michigan.

2. Berelson, B., 1966, KAP studies and fertility. In : B. Berelson *et. al.* (eds.), *Family Planning and Population Programmes*, Chicago University Press.
3. Caldwell, J. C., 1965, Extended family obligations and education : A study of an aspect of demographic transition among Ghanaian University Students, *Population Studies*, 19(2).
4. _____ 1966, The erosion of the family : A study of the fate of family in Ghana, *Population Studies*, 20(1).
5. _____ 1967, Fertility attitudes in three economically contrasting rural regions of Ghana, *Economic Development and Cultural Change*, 15(2), Pt. 1.
6. _____, 1968, The control of family size in tropical Africa, *Demography*, 5(7).
7. Dow, T. E. Jr., 1965, Attitude towards family size and family planning in Nairobi, *Demography*, 4(4).
8. Fortes, M., 1954, A demogrphic field study in Ashanti. In: Frank Lorimer (ed.), *Culture and Human Fertility*, Paris, UNESCO.
9. Gaisie, S.K., 1968, Fertility and social structure, *Ghana Journal of Sociology*, 14(2).
10. Henin, R. A., 1959, The pattern and causes of fertility differentials in Sudan, *Population Studies*, 23(2).
11. Husein, H. M., 1967, Evaluation of progress of fertility control in U.A.R., *Proceedings of the World Population Conference held at Belgrade 30 August-10 September 1965*, New York, United Nations.
12. Kozlov, V. I., 1967, Some causes of high fertility of the population of developing countries, *Proceedings of the World Population Conference held at Belgrade 30 August-10 September 1965*, New York, United Nations.
13. Lorimer, Frank, 1954, *Culture and Human Fertility*, Paris, UNESCO.
14. Mauldin, W. Parker, 1965, Fertiliity studies : Knowledge, altitudes and practice, *Studies in Family Planning*, 7.
15. Morocco, Government of, 1970, Morocco, family planning knowledge, attitudes and practices in rural areas, *Studies in Family Planning*, 58.
16. Pool, D.I., 197Ca, Ghana; the attitudes of urban males towards family size and family limitation, *Studies in Family Planning*, 60.
17. _____, 1970 b, Social change and interest in family planning in Ghana—A explanatory analysis, *Canadian Journal of African Studies*, 4(2).
18. Ohadike, P. O., 1967, A demographic note on marriage, family and family growth in Lagos Nigeria. In : J. C. Caldwel and C. Okonjo (eds.), *Population of Tropical Africa*, London, Longmans.
19. Okedji, F. O., 1969, Socio-economic status and differential fertility in an African City, *The Journal of Developing Areas*, 3.
20. Olusanya, P. O., 1967, The educational factor in human fertility : A case study of the residents of a suburban area in Ibadan, Western Nigeria, *Nigerian Journal of Economic and Social Studies (Ibadan)*, 9(3).
21. _____, 1969, Cultural barriers to family planning among the Yoruba, *Studies in Family Planning*, 37.
22. _____ 1971, Status deffrentials in the fertility attitudes of married women in two communities, *Economic Development and Cultural Change*, 19(4).