

Female Labour Force Participation and Fertility Desires in Pakistan : An Empirical Investigation

NASRA M. SHAH*

Introduction

Female labour force participation as a factor affecting fertility has recently attracted considerable attention in both developing and developed societies. It has been theorized that female work would have a depressing effect on fertility because of the high opportunity cost involved in high fertility. On the other hand, it has been argued that higher family income could induce more fertility. Some of the socio-demographic reasons that determine female work status could explain differentials in fertility desires. A number of important reasons which lead women to work can be identified : the availability of jobs, the economic 'push' from low family income, husband's attitude towards wife's work, attractiveness of the job in terms of monetary and/or psychological satisfaction, etc.

Two distinct, though related, hypotheses about the relationship between female work and fertility can be summarized from relevant studies. The first hypothesis pertains to the motivation leading to female work. Jobs could be taken up sheerly out of economic necessity or because the woman wants to develop a career for reasons other than purely economic. The first type of jobs might be conceived as being motivated by 'push' factors while the second type would be motivated by 'pull' factors, given other variables such as job availability. This differential motivation to work would be related to the wife's attitude towards having additional children. In the former case, family size itself might be one of the factors which 'pushed' the wife into the labour force. The cost of reducing fertility (i.e. not having another child) in this case, however, might, under some circumstances be high, because having additional children might, for example, be perceived as being economically profitable in terms of providing farm hands, old age security, etc. Furthermore, the competition between procreation and female work participation would not be very great since the job was taken up because of necessity rather than for self and career development. The motivation to curtail fertility would thus be minimal. On the other hand, we would expect greater competition between female work and fertility in case of a woman who took up a job in order to develop her career and personality in addition to the economic incentive provided by her work.¹

*The author is Research Demographer at Pakistan Institute of Development Economics, Islamabad, Pakistan. She would like to express her deep appreciation to all the persons, both within and outside the PIDE, who reviewed the article. In particular, thanks are due to Ismail Sirageldin and Leslie Corsa for their comments on the paper. Miss Naushin Iftikhar's help in preparing some of the tabulations is gratefully acknowledged.

¹It might be added here that there exists in most cultures some societal definition of jobs that can be classified as being relatively more 'respectable' and attractive than others Papanek [12] suggests that in the case of Pakistan, teaching and medical professions are two prestigious occupations. Both of these occupations essentially indicate an urban-educational setting as the base.

The second hypothesis on the relationship between female work and fertility relates to the presence of conflict between the mother-role and the worker-role brought about by the place of work and the cost of child care. In so far as the roles of mother and worker do not conflict or are not incompatible, there is no depressing impact on fertility. The roles may be essentially compatible if the nature of occupations is such that work can be performed at home. Also, since the joint or extended family still constitutes a significant proportion of families in the developing countries, there may usually be relatives who can look after the children while the wife is working. The cost of child care in this case might be low, thus reducing the conflict between mothers' employment outside the home and their fertility behaviour. Given this general conceptual framework, the objective of the present study is to analyse the relationship between female labour force participation and fertility desires for Pakistani women. This is done by controlling for the effect of important demographic and socio-economic factors which might influence both female labour force participation and fertility desires.

Review of Related Literature

Relevant studies from many countries have dealt with the two hypotheses discussed above.² Findings from most of the studies in the United States of America show a negative relationship between female work participation and fertility. Presser [14], in discussing fertility differentials between white and non-white women in relationship to their work roles, argues that the nature of occupations might be more crucial than employment *per se* in reducing fertility. It may well be that motivation essential for effective control of fertility emanates basically from personal preference to participate in non-familial activity; and when such participation is solely a matter of necessity, motivation might be minimal. It follows that the higher the social and economic status of possible non-familial activities, the more attractive such activities may be. The reason indicated by Presser that work was found to have a smaller negative effect on fertility of blacks than of whites could be the low-status jobs occupied by the former. In another biracial comparison of white and black females in the United States, Reed and Udry [15] found various measures of female work to affect negatively the number of children ever born within each racial group. The difference in the total number of children between the blacks and the whites was, however, substantial.

The negative relationship between female labour force participation and fertility has also been demonstrated in much more homogeneous and controlled situations. Tien [24], studying non-catholic American university couples found that wives with two children were more likely to be employed after marriage than wives with four children; and the latter did not work before marriage and also remained outside the labour force after marriage. Further examples of this inverse relationship can be found in other studies, e.g. Ridley [16], Pratt and Whelpton [13], and Collver [2].

Apart from studies in the United States, an international comparison by Collver and Langlois [3] showed that an inverse relationship exists between women's work participation rates and fertility (as measured by child-woman ratios). The regression equation indicated that the number of children per 1000 women declined by seven for each one percent increase in work participation rate. Rosen and Simmons [17], using data from five Brazilian areas having different urbanization and industrialization levels, found that women working in highly urban-industrial settings had lower actual family size than women working in rural and less urban-industrial settings.

This relatively clear and significant relationship between female work and fertility is not found in reported data from developing countries. In many of the

²For a good bibliography of relevant studies, see [8].

studies from such countries the negative association holds only for specific sub-groups, if at all. Stycos and Weller [23] examined the relationship by controlling for rural-urban residence, education and exposure to conception within marriage in Turkey. They found no differences in fertility by labour force status, although a slightly greater proportion of employed women was in favour of smaller families and family limitation than of non-working women. They concluded that the reason for the lack of relationship was that the type of jobs the Turkish women were involved in was compatible with the mother-role and hence did not act as a deterrent to fertility. Weller [26] substantiated this hypothesis about role incompatibility in a study of lower and middle class residents of San Juan, Puerto Rico. He found that the greater the incompatibility between the roles of mother and worker, the greater the fertility differential between workers and women not in the labour force. There is also a suggestion in the study that role incompatibility may be related positively with socio-economic status.

In a comparison of women engaged in cottage industries in Puerto Rico and Japan, Jaffe and Azumi [6] found that the fertility of women engaged in home industries was approximately the same as that of women who remained outside the labour force. Women who worked outside the home, however, averaged about half a child less than women in the preceding two groups. Stycos's analysis of this relationship in Lima, Peru [22] shows that mean birth order by age of mother is virtually identical for housewives and service workers, the latter constituting two-thirds of the female labour force. Office workers had 43% fewer births as compared with non-workers, but office workers comprised only 4% of the female labour force. Within the upper class, no differences in fertility by employment status were found. Zarate [27], in his study of Monterrey, Mexico, found small differences in the fertility of men whose wives had worked before marriage or who were currently working and men whose wives had never worked. The place of wife's work showed important differences—men whose wives worked outside the home had an average of only 3.89 children compared with 4.41 children for men whose wives worked at home.

Goldstein [5], in his study of the relationship in various sections of the Thai population, found a clear negative relationship between labour force participation and children ever-born only in the modern industrial city of Bangkok. Fong [4] found a positive relationship between work and children ever-born in Malaysia except in the subgroup of women who were educated. Also, it was found that working women desired more children than non-working women in urban areas but not in rural areas. A recent study in Bangladesh by Chaudhry [1] found an overall negative relationship between the percentage of females in the labour force and fertility. Contrary to most earlier studies, non-agricultural activity was found to be positively related with fertility while agricultural activity showed a negative effect on fertility.³

Data and Methodology

The study has used data on employment and fertility desires collected as part of the National Impact Survey, 1968-69. The survey was designed to collect baseline data on the impact of family planning and included several questions on labour force participation of women.⁴ The present study deals only with the subsample of married women who have not yet completed their 'ideal' family size, i.e. their living number of children is smaller than their ideal number reported. Fifty-two percent of all currently married women (N = 1498) belong to this subgroup. The major reason for selecting this subgroup of women is that since these women have

³One probable reason for this, not pointed out by the author, could be the error in reporting both labour force participation and fertility. If the participation rates were over-reported and the fertility was under-reported in rural areas then we would expect the negative relationship found between cultivating activity and fertility. The finding could, therefore, be simply an artifact of the data rather than a true representation of reality.

⁴For details of the survey see [11, 18, 19 and 25].

not yet completed their 'ideal' family size they constitute an important segment of the target population for family planning. The question of whether these women want or do not want additional children is thus very important in terms of their motivation for using or not using contraception in order to limit fertility. Desire for additional children within this subgroup is thus analysed as the dependent variable rather than measures like children ever-born or child-woman ratios. Although there are some problems inherent in the measurement of 'ideal' and 'wanted' children, it is expected that the desire for additional children would provide a relatively accurate notion of the actual motivation.⁵

This subgroup of women has a disproportionately high number of younger women. Seventy percent of the women in this group are less than thirty years of age compared with only 53% of all currently married women under 50 years of age. If working women within this relatively young group report no desire for additional children, as compared with non-working women, this could have important implications for programmes aimed at limiting family size and for involving more women in jobs outside the home. Thus, the policy implications of this and similar other studies seem clearly evident.

The questions that have been used to measure labour force participation deal with (i) whether the woman has ever done any work besides housework, and (ii) whether the woman is self employed or employed by someone else (not a relative).⁶ The distinction between self and other employment is intended as a refinement to measure the nature of female participation in the labour force. However, the question ascertaining the employment status is not very specific and there is a possibility that the results presented may have been biased due to varying interpretations of the intended meaning of the question by the respondent. In the absence of any other source of data to check the effect, if any, of these varying interpretations, we have reported the results. However, the readers are cautioned to be careful in interpreting the findings.⁷ If the woman is self-employed she would have more control over her place of work (home or outside) unless, of course, the work is of a nature that necessitates her going out. Secondly and more importantly, employment by some other person would be more likely to involve cash payment, and might therefore provide the wife greater incentive to work. One of the weaknesses of using cross-sectional survey data as our measure of labour force participation is the relatively small number of cases in various categories. It is particularly difficult to perform detailed analysis after controlling for educational levels or occupational status in order to see the net effect of labour force participation on fertility.

The analysis is divided into two parts. In the first section, the relationship between female work and fertility desires is examined by controlling for selected demographic and socio-economic variables which are regarded to have important influences on the dependent variable. The control variables used in this section are : husbands' and wives' educational and employment status, number of living children, number of living sons, family type, and age of wife.

The second section uses wife's work status as one of the variables along with other socio-economic and demographic variables to test in a multivariate model

⁵It has been argued that reports on 'Ideal' family size often only reflect the actual or achieved family size of the respondent. This however, is not true for our study. The question asked about family size was :

"In your opinion, what is the appropriate number of children for a family like yours"? Eleven percent of the respondent gave non-numerical answers like "It's up to God".

⁶The categories of self and other employment had to be combined in some cases, mainly because of the small number of cases. The question used to measure employment was : "Have you done any work other than housekeeping at any time?"

⁷The data are being further analysed to find out the type of biases that might have been introduced due to errors in reporting, and in a subsequent paper we hope to clarify some of the problems.

whether wife's employment status explains any variance in desired fertility after many of the other relevant variables are controlled. The technique used for the analysis is AID (Automatic Interaction Detection) which consists of defining a set of population subgroups such that each differs from the rest in terms of mean value on the dependent variable, is homogeneous within itself, and is large enough to provide statistical comparisons.⁸

The analysis has been done separately for rural and urban areas for several reasons. The nature of occupations in which women can be employed is quite different for the two areas. The constraints in bringing up children and educating them are probably greater in the urban areas and could constitute a part of the motivation to have fewer of them. The family composition and the informal interaction structure with kin and friends could operate differently in the two areas and would have important influences on both female work and fertility desires.

Given this background, the question that the present study asks is : If other relevant factors are controlled for, would female labour force participation be negatively associated with fertility in the sense that a smaller proportion of the working women would want additional children ?

Findings

About twice as many rural women as urban women reported that they had ever worked—27% compared with only 13% (Table 1)⁹. The majority of the women (71%) in rural areas ever having worked reported only agricultural work as their occupation. The largest proportion (41%) of urban women ever having worked reported textiles and handicraft work as their occupations. Eleven percent of urban women reported professional occupations as opposed to only 1% of the rural women. As mentioned earlier, it is evident that the structure and nature of work are substantially different between rural and urban areas.

Female work does seem to have some negative effect on fertility desires for both rural and urban areas, especially in the latter (Table 2). It should be noted again that the subsample used in the following analysis includes only those women who reported more children as "ideal" than the number they now have and who also reported in a separate question whether or not they wanted any additional children. Among the urban women who were currently employed, 43% reported that they did not want additional children as against only 25% of the urban women who had never worked.¹⁰ Employment by someone else also shows a consistent negative relationship with fertility desires in both rural and urban areas, although

⁸For further description of the techniques, see Appendix A.

⁹'Ever-worked' includes past as well as current work. In order to compare with the 1961 Census, which reported the female population, 10 years of age and over, which was in the labour force, we get the following participation rates for different groups of women :

	Total	Rural	Urban
Percent of currently married women, age 15—49	17.0	19.0	7.0
Percent of all women, age 15—19	14.0	16.0	6.0

The higher overall participation rate of 23% in the Impact Survey could be a result of more specific probing or perhaps represents an actual gain in the proportion of working women. It might be added here that the question used to measure work participation in the 1961 Census was as follows : "Are you working for profit or to earn wages or salary, or do you help any member of your family on the farm, etc.?"

¹⁰Despite this larger differential, 'ever-work' rather than 'current work' was analysed for a major part of the study partly because of the rather small number of women currently engaged in work in urban areas. The more important reason for using ever-work as our measure is that we do not want transitory circumstances like unemployment or sickness related to work participation to affect our analysis since we are studying a basic behavioural decision like fertility.

Table 1

Type of Occupation for all Rural and Urban Women, Pakistan

Occupation Category	Rural			Urban		
	Total Number	Sample %	% reporting ever-worked	Total Number	Sample %	% reporting ever-worked
Never worked	1257	72.8		1020	86.7	
Professional	5	0.3	1.1	17	1.4	10.9
Agricultural work	115	6.7	25.8	2	0.2	1.3*
Textile, Sewing, Leather work	54	3.1	7.0	64	5.5	41.0
Agricultural Labourers	203	11.8	45.4	12	1.0	7.7
General Labourers	57	3.3	12.7	24	2.0	15.4
Other -bakers, cooks, etc.	36	2.1	8.0	37	3.1	23.7
	1727	100.1	100.0	1176	99.9	100.0
			N = 470			N = 156

*N < 10

Table 2

Relationship between Desire for More Children and Work Status of Women Whose Reported 'Ideal' Number of Children Exceeds Living Children. Rural and Urban Pakistan

Work Status	Don't want more children	Want more children	%	Total No.
(Percentage)				
Never worked				
Rural	17.8	82.2	(100)	668
Urban	24.9	75.1	(100)	511
Ever Worked*				
Rural	27.0	73.0	(100)	254
Urban	30.3	69.7	(100)	66
Currently Working				
Rural	19.9	80.1	(100)	206
Urban	42.6	57.4	(100)	47

*Includes current as well as past work. Comparing the never worked and ever-worked categories χ^2 value is significant at .01 level.

the differences are not statistically significant. Thirty-one percent of the urban and 25% of the rural other-employed women reported no desire for another child compared with 25% and 17% of non-working urban and rural women respectively. Women who were self-employed were very similar in their fertility desires to women who had never worked. Not much can be concluded, however, from these differences without controlling for other factors which can have significant effects on fertility desires.

Demographic Factors, Wife's Employment and Fertility Desires

The age of wife, the number of living children and the number of living sons were used as controls to examine the net relationship between wife's employment and fertility desires. Employment, particularly by someone else, showed a negative association with desire for additional children in both rural and urban areas among the older women, i.e. those 30—49 years of age (Table 3). Fifty-eight percent of the rural as well as urban women aged 30—49 who were employed by someone else reported that they did not want any more children compared with 43% of rural and 48% of urban women who had never worked. Differences by employment among the younger women (under 30 years) were negligible.

Among the rural women at different parity levels, employment, especially by someone else, was found to be negatively related to desire for more children (Table 4). Twenty-two percent of the women who were other-employed at parities 1—3 desired no more children compared with only 10% of women who had never worked; the corresponding figures for women at parity 4 were 57% and 44% respectively. Among the urban women the differential was observed only for women at parity 4⁺, a greater proportion of those who were employed by someone else reporting no desire for more children.

The number of sons has been shown to be a very important factor in determining family size ideals in the developing countries. In our sample of rural women who had not yet achieved their ideal family size, the effect of employment on desires becomes evident only after a wife has had two sons. Fifty-one percent of the rural women with at least two sons, who were other-employed, reported no desire for additional children compared with 42% of women who had never worked (Table 5).¹¹ Among the urban women, however, employment seems to make a difference even for women with no sons or with only one son. Twenty percent of the other-employed women with no sons reported no desire for additional children compared with only 7% of women who had never worked.¹² The data point to the existence of interaction between the three variables discussed in Table 5.

Thus, noticeable differences in desired fertility were found for different employment groups even after controlling for some of the demographic variables that are highly correlated with desire for additional children. Although this does not hold in all cases, employment by someone else, rather than self-employment, seems to make a greater difference in terms of fertility desires in both rural and urban areas.

Socio-economic Factors, Wife's Employment and Fertility Desires

Education

Employment, when controlled for wife's and husband's education, showed a negligible and statistically insignificant association with desire for additional children. One reason for this lack of association could be the concentration of younger couples in the educated categories.¹³ As observed earlier, employment

¹¹ The difference was significant at .01 level.

¹² While the difference is statistically significant at .01 level, most of the cases in urban categories are quite small and should be interpreted with caution.

¹³ This relationship between higher education and age is in the expected direction only for educated husbands, a large proportion of whom have young wives. The majority of such couples might be in the early stages of their life cycle, and want more children.

Table 3

Relationship between Desire for More Children and Employment Status by Age for Wives Whose Reported 'Ideal' Number of Children Exceeds Living Children, Rural and Urban Pakistan.

Age and employment status	Rural			Urban		
	Want more children	Don't want more	N	Want more children	Don't want more	N
	(Percentage)			(Percentage)		
Wife < 30 years						
Never worked	91.3	8.7	472	84.6	15.4	358
Self employed	94.2	5.8	86	90.9	9.1	22
Other employed	90.0	10.0	80	84.2	15.8	19
Wife 30—49 years						
Never worked	57.5	42.5	186	52.0	48.0	150
Self employed	60.9	39.1	46	41.7	58.3	12
Other employed	42.1	57.9	38	41.7	58.3	12
	X ² value is significant at .01 level.			X ² value is significant at .01 level.		

Table 4

Relationship between Desire for More Children and Employment Status by Number of Living Children for Wives Whose Reported 'Ideal' Number of Children Exceeds Living Children, Rural and Urban Pakistan

Number of Living children and employment status	Rural			Urban		
	Want more children	Don't want more	N	Want more children	Don't want more	N
	(Percentage)			(Percentage)		
1—3 living children						
Never worked	90.00	10.0	401	71.8	28.2	323
Self employed	85.9	14.1	85	75.0	25.0	20
Other employed	77.6	22.4	76	72.2	27.8	18
4 ⁺ children						
Never worked	55.6	44.4	81	57.7	42.3	71
Self employed	45.0	55.0	20	20.0*	80.0*	5
Other employed	43.5	56.5	23	42.9*	57.1	7
	X ² value is significant at .01 level			X ² value is significant at .01 level.		
				*N less than 10.		

status was important in explaining the differential in desired fertility only for older women (Table 3). It might be that these educated younger couples have not yet crossed a certain threshold of achieved family size and therefore do not show any significant difference in their desired family size as compared with uneducated couples. Also, these results could be an artefact of the type of data with which we are dealing. A sample which could concentrate on (and perhaps over sample) educated respondents might have yielded different results.

Family Type

The structure of the family in which a couple is living can have significant influences on attitudes and behaviour related with family size. Nucleation of the family has been a part of the general process of development and urbanization in Western societies. In the present subsample of Pakistani women, 39% of the rural and 34% of the urban women reported that they were living in families that could be designated as nuclear.¹⁴ Among the wives residing in nuclear families, the desire for another child was not affected by the wife's employment status (Table 6). Of the women living in joint or extended families, noticeably more of those who were other-employed reported no desire for additional children compared with the women who had never worked (or were self-employed). Twenty-nine percent of the rural and 31% of the urban other-employed women said they did not want more children compared with only 16% of rural and 20% of urban women who had never worked.¹⁵ It might be that wives in joint or extended families have been 'pushed' into the labour force because of the pressure of 'dependency' in such families. Hence family size itself might be acting as a factor in motivating working wives towards fewer additional children. On the other hand, it can be expected that there would be lesser conflict between the mother-role and working-role in an extended family because there would be other people in the house to look after the children. Employment would, therefore, not affect fertility desires negatively. In the present subsample, however, employment, which is likely to involve cash payment and to be outside the house, does relate negatively with family size. The relationship between the specific nature of work and fertility-desires is explored further in the following section.

Nature of Work

As mentioned above, the type of job can be a significant factor in whether a wife's work status affects fertility or not. Table 10 shows that in both rural and urban areas, the majority of the jobs are of such nature that they are not likely to provide social mobility. In the urban areas, only 11% of the women could be classified as professionals while in the rural areas hardly any woman qualifies for this category. Hence it might be said that the majority of the Pakistani working women were engaged in jobs that were prestige-reducing rather than prestige-enhancing. Within the urban areas, a small differential in fertility desires was observed between women in professional occupations and those engaged in menial

¹⁴Families including only the husband, wife and unmarried children are denoted as nuclear families. Relatively fewer of the couples in this subsample reported living in nuclear families as compared with the total sample :

	Rural	Urban
Percent in nuclear families in the total sample	44.6	41.5
Percent in nuclear families in the subsample of this study	38.7	34.4

One possible reason for the residence of fewer subsample respondents in nuclear families is that these are relatively younger couples and the pressure to move out of the parental house is not yet very strong. The age of wife and the number of living children are related positively to the proportion of couples living in nuclear families. It seems that the process of nucleation results both from the pressure of large families and the death of the older people in a household. see [7].

¹⁵The difference in the proportions is statistically significant at .01 level only for rural areas, using the χ^2 test.

Table 5

Relationship between Desire for More Children and Employment Status by Number of Living Sons for Wives Whose Reported 'Ideal' Number of Children Exceeds Living Children, Rural and Urban Pakistan

Number living sons and employment status	Rural			Urban		
	Want more children	Don't want more	N	Want more children	Don't want more	N
	(Percentage)			(Percentage)		
No living sons						
Never worked	94.8	5.2	288	93.3	6.7	210
Self employed	98.2	1.8	56	89.5	10.5	19
Other employed	92.9	7.1	42	80.0	20.0	10
One living son						
Never worked	82.3	17.7	220	71.9	28.1	160
Self employed	87.2	12.8	39	62.5*	37.5*	8
Other employed	81.1	18.9	37	58.3*	41.7*	12
Two or more living sons						
Never worked	58.0	42.0	150	50.7	49.3	138
Self employed	54.1	45.9	37	42.9	57.1*	7
Other employed	48.7	51.3	39	66.7	33.3*	9

X² value is significant at .01 level.

X² value is significant at .01 level.
*N less than 10.

Table 6

Relationship between Desire for More Children and Employment Status by Family Type for Wives Whose Reported 'Ideal' Number of Children Exceeds Living Children, Rural and Urban Pakistan

Family type and employment status	Rural			Urban		
	Want more children	Don't want more	N	Want more children	Don't want more	N
	(Percentage)			(Percentage)		
Nuclear family						
Never worked	77.6	22.4	232	64.6	35.4	164
Self employed	79.4	20.6	63	66.7	33.3	18
Other employed	78.6	21.4	56	66.7	33.3	15
Non-nuclear family						
Never worked	94.0	16.0	426	79.9	20.1	344
Self employed	85.5	14.5	69	81.2	18.8	16
Other employed	71.0	29.0	62	68.7	31.3	16

X² is not significant at .05 level

X² is not significant at .01 level

jobs, such as those of labourers. Forty-four percent of the professional women reported that they did not desire any more children compared with 32% of the women working as labourers (Table 7).¹⁶

The husband's occupation can be treated as another measure of the couple's socio-economic status and could be expected to be related positively with wife's occupational status. We found small and insignificant differences for couples where both husband and wife were in the labour force in various occupational groups. One reason for the lack of difference could be our inability to make a detailed analysis due to the small number of cases. The observations were too few to allow the used breakdown into self and other-employed women. Thus, after controlling for some of the basic socio-economic factors, the negative relationship between female work and fertility desires was observed only for one or two subgroups. Most of the differences, though present and in the right direction, were too small to be statistically significant.

Work in Relation to Contraceptive Use

In order to see whether fertility desires have any impact on actual behaviour (in terms of adoption of family planning methods) of women in different employment statuses, Table 8 was prepared. Both the lack of desire for another child and wife's employment were positively related with the proportion of users in rural areas. Among the categories of employed women, more than twice as many of those who did not want more children reported use of methods as those who wanted more children. In the rural areas, comparing those women in different work statuses who did not want more children, 8 percent of the women who had never worked reported that they had used contraceptive methods compared with 17 percent of those who were other-employed. Similar relationship can be observed for the urban areas for the women who had never worked and those who were self-employed.

The positive relationship between work and contraceptive use, particularly in the rural areas, could have implications for "beyond family planning" programmes designed to limit family size. Also, since desire or lack of desire for another child is clearly related to actual behaviour (i.e., non use or use of contraceptives), our contention that desires are a 'true' measure of motivation towards action is upheld to some degree.

Further Analysis of Fertility Desires Controlling for Demographic and Socio-economic Factors

In order to examine the 'net' effect of work status on fertility desires, the following factors were used as competing predictors in a multivariate analysis using the Automatic Interaction Detection (AID) technique as discussed in Appendix. The objectives were, firstly, to discover the variables that are most important in determining fertility desires and, secondly, to analyse whether work status is important in explaining the variance in fertility desires in competition with several other factors. In addition to the preceding discussion, the multivariate analysis is regarded as a refinement in so far as it takes into account the interaction among predictors intended to explain fertility desires. The analysis could identify whether female employment is important for any particular subgroup in the AID 'three'. Fertility desire, which was used as the dependent variable for the AID analysis, was defined as a scale with the following values:

	Code
No numerical responses to ideal number children was given (e.g., fatalistic response given)	0
Reported wanting more children	1
Reported not wanting more children	2

¹⁶The difference is not significant at .05 level, using a Z test.

Table 7

Relationship between Desire for More Children and Occupation for Wives Whose Reported 'Ideal' Number of Children Exceeds Living Children, Rural and Urban Pakistan

Occupation* (Rural)	Rural			Occupations* (Urban)	Urban		
	Want more children	Don't want more	N		Want more children	Don't want more	N
	(Percentage)				(Percentage)		
Agricultural work	73.8	26.2	61	Professionals*	55.6**	44.4**	9
Agricultural Labourers	80.0	20.0	110	Textile Sewing	75.0	25.0	24
General Labourers	84.6	15.4	26	Agri Gen. Lab. and others	67.9	32.1	28
Sewing & other	94.0	16.0	50				

X² value is not significant at .05 level.

X² value is not significant at .05 level.

*Includes self & other employed
**N less than 10.

Table 8

Relationship between Desire for More Children and Employment Status by Contraceptive Use for Wives Whose Reported 'Ideal' Number of Children Exceeds Living Children, Rural and Urban Pakistan

Employment status and whether want more children	Rural			Urban		
	Never use	Ever use	N	Never use	Ever use	N
	(Percentage)			(Percentage)		
Never worked						
Want more children	96.3	3.7	538	93.2	6.8	381
Don't want more	92.5	7.5	120	80.3	19.7	127
Self employed						
Want more children	93.6	6.4	109	100.0	0.0	25
Don't want more	87.0	13.0	23	77.7*	22.3*	9
Other employed						
Want more children	93.2	6.8	88	76.2	23.8	21
Don't want more	83.3	16.7	30	90.0	10.0	10

X² value is not significant at .05 level.

X² value is significant at .01 level.

*N less than 10.

The predictors used in the study are listed below in order of their importance (explanatory power) if used to make a single division of the whole sample :

	B. .SS/T .SS x 100 ^a
*Age of wife	15.0
*Number of living sons	12.7
*Family type	0.8
*Rural Degree of urban	0.6
Husband's education	0.4
Wife's employment	0.3
Wife's education	0.0

^aBSS stands for between sum of squares ; TSS stands for total sum of squares.

*Refers to those variables on which splits were made (see Figure 1). The Seven variables explained 32% of the variance in desire for additional children. Data pertaining to the best dichotomous splits for each of the seven predictors are presented in Table 9, while the results of the AID Analysis are presented in summary form in Figure 1.

The age of wife appeared as the most important variable in explaining the variation in fertility desires (Table 9). Women who were 35 years of age or more had a very high mean score (on fertility desire) of 1.54 as compared with 1.11 for women who were less than 35 years of age, the overall mean score for the total sample being 1.19. The number of living sons followed the age of wife very closely in explaining variation in fertility desires, those with two or more sons having a mean score of 1.45 as compared to a score of 1.10 for those who had only one or no sons. Each of the remaining five variables explained less than 1% of the variation in fertility desires. The splits for family type, urban rural residence and wife's employment were all in the expected direction. Wives living in nuclear families and urban places and other-employed had higher mean scores than those living in non-nuclear families and rural areas as well as those not working or self-employed (Table 9). That is, fewer of the wives in the former groups wanted additional children than the ones in the latter groups.

It might be noted here that wife's employment explained a rather small amount of variation (0.3%) for the total sample, although the dichotomous split between those who wanted additional children followed the expected direction. The mean score on desire for another child was 1.26 for the women who were other-employed compared to a score of 1.18 for women who had never worked or were self-employed (Table 9). Thus, a more rigorous analysis of the nature of work further supports our earlier findings of the more significant relationships between other-employment and lack of desire for additional children. In order to examine whether wife's employment was an important variable in interaction with the other predictors, Figure 1 was prepared. For ease of discussion, the group with the larger mean score was always placed to the right of every split. Couples who had the highest score of 1.94¹⁷ (compared with an overall mean score of 1.19) were those with older wives (40+ years of age) and at least one son and residing in extended or joint families. Thus a very large majority of the women with these characteristics did not want additional children. The group at the lowest end of the scale having a mean score of only 1.01 can be identified as the group with young wives (< 30) and no living sons (group 10, Fig. 1). Following the dichotomous splits over the total sample, the age of wife explained the largest amount of variance in desire for another child and was therefore used to divide the sample into two groups : wives less than 35 and wives 35 or more. As the analysis proceeds within the subgroups, the age of wife and the number of living sons appeared repeatedly as the most important variables in explaining variation in desire for another child. Generally, a strong negative relationship between the number of living sons and the

¹⁷It might be recalled that the highest score any individual could have was 2.

desire for another child seems to be true. To simplify the analysis, the two groups of women—less than 35 and 35 or more—are discussed separately in the following paragraphs.

Table 9

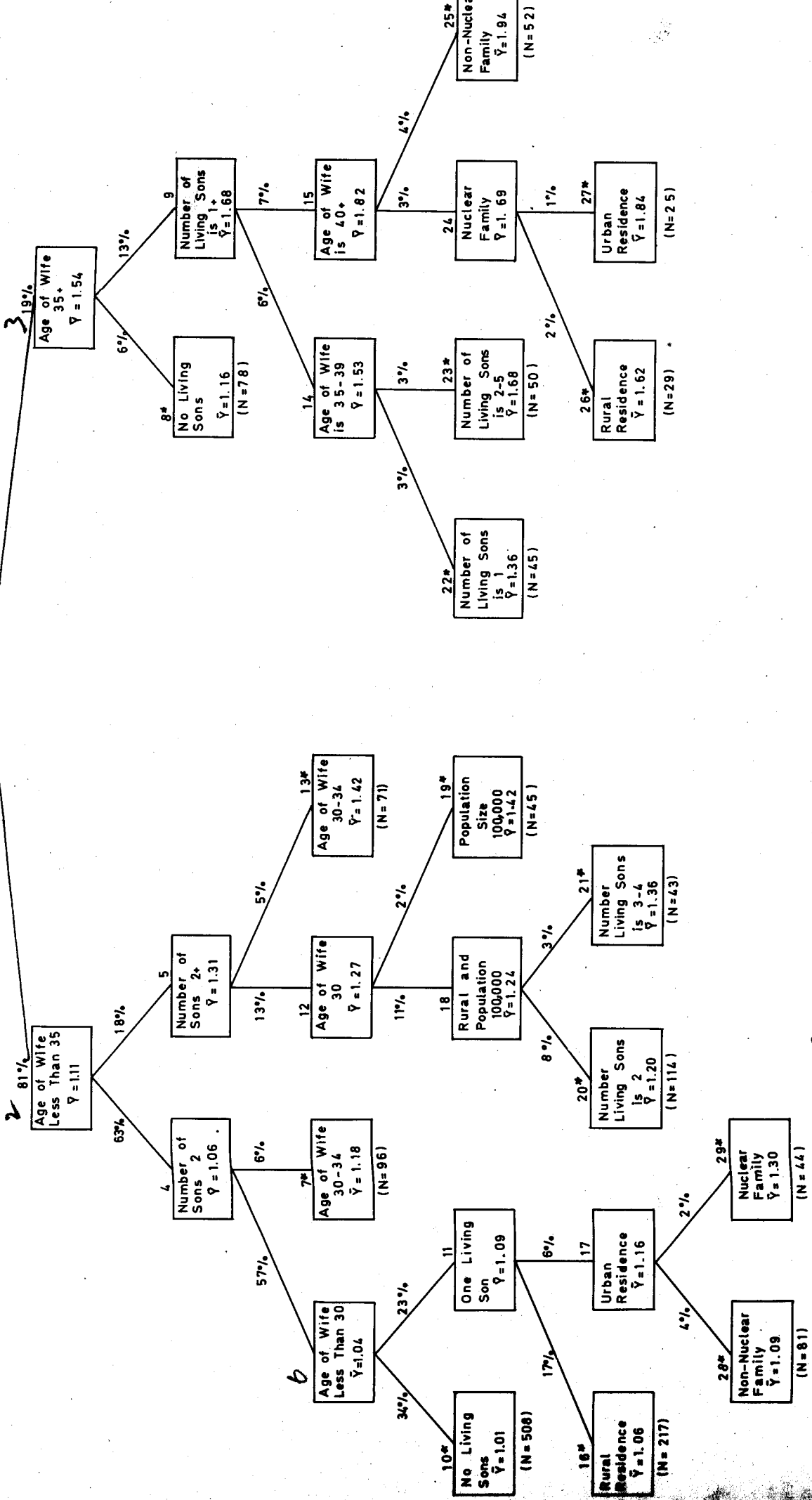
Mean Scores on Desire for Additional Children and Percentage of Variations Explained by the Best Dichotomous Split on Each Predictor Variable for the Total Sample, N = 1498

Predictor	Category	Mean Score	(N)	BSS/TSS 100
Age of Wife	35	1.11	(1219)	15.0
	35 or more	1.54	(279)	
Number of Living sons	0 or 1 son	1.10	(1117)	12.7
	2 or more sons	1.45	(381)	
Family Type	Non-nuclear	1.16	(947)	0.8
	Nuclear*	1.23	(551)	
Degree urban	Rural	1.17	(921)	0.6
	Urban—all sizes	1.25	(577)	
Husband's education	Can read, write & gone to school	1.16	(652)	0.4
	Can not read & write	1.21	(846)	
Wife's employment	Never worked or self employed	1.18	(1349)	0.3
	Other employed	1.26	(149)	
Wife's education	Schooling 2 +grades	1.15	(118)	0.0
	Illiterate or completed, 1 grades	1.19	(1380)	

*Including only husband, wife and unmarried children.

DON'T DESIRE ANOTHER CHILD

$\bar{Y} = 1.19$
 $V = .18$
 $N = 1496$



\bar{Y} = Mean on desire for another child. V = Overall variance on desire for another child.
 N = Total eligible couples (un-weighted number) * = Represents the end-groups.
 $\%$ = Weighted percentage of women in each group as a percent of the total N .

The Older Women (35 years of age or more ; Group 3, Fig. 1)

Among the older women, the number of living sons was found to be a crucial variable in affecting the desire for another child. Those with no living sons had a very low mean score compared with those who had at least one son : 1.16 and 1.68 respectively. Furthermore, the actual number of living sons appeared to be important, those with two or more sons having a much higher score than those with only one son (groups 23 and 22, Fig. 1). Thus, the data point to a distinct negative and linear relationship between the number of living sons and the desire for more children.

Within the group of the oldest women (40⁺) with at least one son, the combination of nuclear families in urban places shows a higher mean score (1.84) than the women with the same characteristics but living in rural areas (1.62, groups 27 and 26 ; Fig. 1). It seems that the type of family is related to the desire for additional children in several ways. Firstly, the pressure of dependency in non-nuclear or extended family is one aspect of the motivation towards such desire. Secondly, residence in nuclear families in the urban areas constitutes perhaps a modernizing influence on wives leading them to desire fewer additional children. Hence both the types of family structure—nuclear as well as extended—can have a negative influence on fertility desires, given certain other factors.

The Younger Women (less than 35 years of age ; Group 2, Fig. 1)

Within this group of younger women, the number of living sons explained the largest amount of variation in the desire for additional children. Unlike the older women, the 'threshold' for not wanting another child among the younger women was at least two sons : those who had two or more sons had a mean score of 1.31 compared with a score of 1.06 for those with less than two sons. Generally, the relationship between the number of living sons and the desire for more children was found to be negative and linear for the younger women also. Among the youngest women (< 30) those who had no sons had the lowest mean score of 1.01 while those who had three or four sons had a mean score of 1.36 even though the women in the latter group were living in rural areas (groups 10 and 21, Fig. 1).

The two other variables which appeared to be important for the younger women were the residence in nuclear families and the residence in urban (or highly urbanized) places. Those young women (< 30) with at least two sons, who were living in large urban places, had a noticeably higher mean score than the women who were living in rural or small urban (< 100,000 population) places (see groups 19 and 18, Fig. 1). Also, among the subgroup of the youngest (< 30) women with at least one son, the urban-nuclear combination resulted in a lower desire for additional children. Those in urban-nuclear families had a mean score of 1.30 compared to a score of 1.09 for women in urban-extended families (groups 29 and 28, Fig. 1). Besides the purely demographic factors like the age of wife and the number of living sons, urban influence and nucleation of families are perhaps indicative of a general social change affecting motivation towards additional children. The findings are particularly significant since they deal with fairly young women who have yet to complete their childbearing.

The three variables which were not important enough to appear in the analysis presented in Fig. 1, were wife's employment and the husband's as well as wife's education.¹⁸ Thus, the 'net' effect of wife's employment on desire for another child was not strong enough to be visible in competition with the other variables used in the present study. Some possible reasons for the lack of relationships are discussed in the section below.

¹⁸For the criteria that were used to determine the importance of a variable at each step in the analysis, see the Appendix.

Summary, Discussion and Conclusions

The relationship between female labour force participation and fertility desires was examined after controlling for several demographic and socio-economic variables for a sample of Pakistani women. Some significant differences in the desire for additional children were found between working and non-working women, particularly for older women, women at higher parities and women with at least one living son. The main differences were found between the women who had never worked and those who were other-employed, larger proportions of the latter groups stating that they did not desire additional children. Among the socio-economic variables, residence in extended or joint families and wife's employment in professional occupations showed small negative effects on fertility desires. The relationship between wife's work and contraceptive use was found to be positive, particularly when the wives did not desire more children.

A more rigorous analysis of fertility desires using multivariate techniques showed the 'net' effect of wife's employment on wanting another child to be negligible. Demographic variables—the age of wife and the number of living sons—were far more important in explaining fertility desires than the socio-economic variables. The number of living sons showed a marked negative and linear effect on desire for another child within the subgroups of older as well as younger women. Within the demographic subgroups, however, fewer wives living in urban-nuclear families desired more children compared with other wives (in urban-extended families or rural - nuclear families). The employment of wife did not appear to be a significant factor for any of the subgroups in the AID analysis (see Fig. 1).

The relatively weak bivariate relationships between female work status and fertility were thus not upheld in the multivariate analysis using stepwise analysis of variance. One reason for the absence of a significant relationship could be the nature of jobs that most women were engaged in. Only 11% of the urban women were classified as professionals while hardly any of the rural women qualified for this category. Of the working women, more than half of the rural and over one-fourth of the urban women were working as labourers. The majority of the jobs the women were engaged in were of an unskilled nature, particularly in the rural areas, and had probably been taken up because of "economic need" rather than a desire to improve one's social status. The desire to stay on in the labour force would, therefore, be expected to be minimal among these women. Thus additional children might not pose a situation of conflict in relation to their occupations among these women.

A little over half the women in both rural and urban areas were self-employed, meaning that the women could have some control over their time and place of work. In many of the cases, they could probably take the children along, e.g. to the fields. In such a situation there would be no 'extra' burden of child care constituting a conflict between the mother-role and the working-role. The relationship between the type of family in which a woman was residing and the desire for more children did not follow the expected direction for all cases. Among the oldest (40⁺) women with at least one son, more women in extended (rather than nuclear) families did not want additional children. Among the relatively younger women the urban-nuclear combination seemed most effective in terms of lower fertility desires, given other factors. If the hypothesis concerning the relationship between prestigious (professional) jobs and lower fertility is true, we would expect that as more women in rural areas move up into such occupations in the future, differentials in the desired fertility would first become visible in the urban-nuclear families. This is to say that if jobs are attractive and want to be pursued for reasons other than purely economic, the conflict between the mother—and working roles would be felt more actually in the nuclear (urban) families. The impact in rural areas would be felt after a longer period because of both the concentration of non-professional jobs and a family structure which is supportive of child care even

if the family in question is nuclear. Relatives often live in the same compound and can easily look after children. These are, however, speculations which would have to be substantiated by data which would allow for a measurement of a 'threshold' at which wife's employment begins to make a significant difference in terms of fertility.¹⁹ Examples of studies which have provided such measurement can be found in Brazil [17] and Thailand [5]. One of the conclusions of the present study is that both the nature of occupations and factors related to mother—and working roles conflict are important variables in analysing the relationship between employment and fertility. There can be interactions between these two factors, and certain combinations can have a more prominent negative effect on fertility than certain others.

Although from this analysis wife's employment did not appear as a statistically significant variable in relation to fertility desires when other variables were controlled, the data suggest certain other relationships which might have some policy implications. Firstly, the number of sons is a very crucial variable in fertility and must be taken into account. Secondly, only a specific type of employment, i.e. other-employment, is related negatively with fertility desires. This category includes the professionals, and since most jobs of this nature would involve cash payment, they would be more attractive. In this type of a situation the possibility of a conflict between the mother role and working role would be greater and might be conducive to lower fertility desires. Hence measures like the percentage of females in the labour force *per se* constitute highly crude indicators of the employment status of women. Further studies should attempt to use more refined measurements of labour force participation as well as analyse more varied subgroups within a culture to establish what type of jobs in what particular setting make a significant difference. Given our data limitations, we can say with some confidence that policies for increasing female employment can not be expected to have miraculous negative effects on fertility, except for specific jobs in some subgroups.

Lastly, employment, particularly by someone else, has a positive (though weak) relationship with the actual use of contraceptive methods in the rural areas. Seventeen percent of the other-employed women who did not want an additional child had ever used a contraceptive method compared with only 8 percent of the women who had never-worked. This small but distinct differential in actual behaviour by women reporting different fertility desires is perhaps indicative of a transition in the motivations of working women, especially those employed by others, and might have implications for the employment policies of the future.

¹⁹Data from the Impact Survey are limited in scope and any conclusions drawn on the basis of these data have to be interpreted with caution. The validity of some of the ideas presented in these pages would have to be checked against results from recent, more intensive studies with larger number of observations.

Appendix

AID (Automatic Interaction Detection) consists of defining a set of Population subgroups such that each differs empirically from the rest as much as possible in terms of mean value on the dependent variable, is relatively homogenous within itself and is large enough to provide statistical comparisons. The technique operates in a sequential manner and by working with each potential explanatory power (reduction in error variance) achievable by using that classification. It examines the mean of the dependent variable against each explanatory classification in turn. In each case it finds the "best way" to use that explanatory classification to divide the sample into two parts—best of the best in terms of variance explained ("between sum-of-squares"). After examining each predictor the programme divides the total sample on the basis of the one which explained the largest amount of variance. It then proceeds with the subgroup (the next "parent-group") having the largest remaining variability and repeats the process using all the predictors and finds the best predictor and the best split for this subgroup. The process goes on until a prescribed set of criteria are met (for details of the procedure see [9, 20, 21]. In the present analysis the following criteria were used in order for a parent group to split.

1. The division must explain at least 0.2% of the total sum of squares.
2. The minimum number of observations in a group must be 25.
3. The number of end groups must not exceed 30.

An "end-group" refers to a group which cannot be split further because of the criteria limitations on the programme.

It might be reiterated here that the scale on desire for additional children used as the dependent variable had the following values:

	Code
Mentioned God in response to ideal number of children ..	0
Reported wanting more children	1
Reported not wanting more children	2

References

1. Chaudhry, Rafiqul-Huda. "Labour Force Status and Fertility." *The Bangladesh Development Studies*. Vol. II, No. 4. October 1974. pp. 819—838.
2. Collver, Andrew. "Women's Work Participation and Fertility in Metropolitan Areas." *Demography*. Vol. V, No. 1. 1968. pp. 55—60.
3. ——— and Eleanor Langlois. "The Female Labour Force in Metropolitan Areas." *Economic Development and Cultural Change*. Vol. 10. No. 4. July 1962. pp. 367—85.
4. Fong, Monica S. "Some Social and Economic Determinants of the work of Married Women in the Fertile Ages in West Malaysia." Paper presented at the Annual Meeting of Population Association of America, New York. April 1974.
5. Goldstein, Sidney. "The Influence of Labour Force Participation and Education on Fertility in Thailand." *Population Studies*. Vol. 26, No. 3. November 1972. pp. 419—436.

Shah: Female Labour Force and Fertility Desire

6. Jaffe, A. J. and K. Azumi. "The Birth Rate and Cottage Industries in Underdeveloped Countries." *Economic Development and Cultural Change.* Vol. 9, No. 1. October 1960. pp. 52—63.
7. Karim, Mehtab S. "Fertility Differentials by Family Type." *Pakistan Development Review.* Vol. XIII, No. 2. Summer 1974.
8. McGreevey, Willam P. and Nancy Birdsall. *The Policy Relevance of Recent Social Science Research on Fertility.* Washington, D.C.: Simthsonian Institution; Interdisciplinary Communications Programme. Occasional Monograph Series No. 2. 1974.
9. Morgan, James N. Ismail Sirageldin and Nancy Baerwaldt. *Productive Americans: A study of How Individuals Contribute to Economic Progress.* Ann Arbor, Michigan: ISR, University of Michigan. 1966.
10. Pakistan Census Organization. *Census of Pakistan, 1961. Vol. 3, (West Pakistan).* Karachi. n.d.
11. Pakistan Family Planning Council. "*National Impact Survey 1968: Survey Design and Development.*" Karachi: Inter Services Press Limited. n.d.
12. Papanek, Hanna. "Purdah in Pakistan: Seclusion and Modern Occupations for Women." *Journal of Marriage and the Family.* Vol. 33, No. 3. August 1971. pp. 517—530.
13. Pratt, Lois and P.K. Whelpton. "Extra Familial Participation of Wives in in Relation to Interest in and Liking for Children, Fertility Planning and Actual and Desired Family Size." In Whelpton and Kiser (eds.) *Social and Psychological Factors Affecting Fertility.* New York: Milbank Memorial Fund. 1958. pp. 1245—80.
14. Presser, Harriet B. "The Timing of the First Birth, Female Roles and Black Fertility." *The Milbank Memorial Fund Quarterly.* Vol. 10, No. 3. July 1971. Part I. pp. 329—363.
15. Reed, Fred W. and Udry, Richard J. "Female Work, Fertility and Contraceptive Use in a Biracial Sample." *Journal of Marriage and the Family.* Vol. 35, No. 4. Nov. 1973. pp. 597—602.
16. Ridley, Jeanne Clare. "Numbers of Children Expected in Relation to Non-Familial Activities of the Wife." *The Milbank Memorial Fund Quarterly.* Vol. 37, No. 3. July 1959. pp. 277—296.
17. Rosen, Bernard C. and Alan B. Simmons. "Industrialization, Family and Fertility: A Structural-Psychological Analysis of the Brazilian Case." *Demography.* Vol. 8, No. 1. February 1971. pp. 49—69.
18. Sirageldin, Ismail. "The Survey Method in Family Planning Research and Evaluation: Review and a Proposal." Paper presented at Joint American Association for Public Opinion Research/World Association for Public Opinion, Research Conference, Atlantic City. 1972.
19. ——— and Gilbert Hardee. "A Flexible Interaction Model for Analysing Sample Survey Data for Planning and Evaluation of Fertility Control in Pakistan." *CENTO Symposium on Demographic Statistics.* Ankara, Turkey: Office of U.S. Economic Co-ordinator for CENTO Affairs. 1970.
20. Sonquist, John A. *Multivariate Model Building: The Validation of a Search Strategy.* Ann Arbor, Michigan: ISR, University of Michigan. 1970.
21. ———, Elizabeth Lanh Baker and James N. Morgan. *Searching for Structure (alias Aid III): An Approach to Analysis of Substantial Bodies of Micro-Data and Documentation for a Computer Programme.* Ann Arbor, Michigan: ISR, University of Michigan. 1971.
22. Stycos, Mayone J. "Female Employment and Fertility in Lima, Peru." *Milbank Memorial Fund Quarterly.* Vol. 43. January 1965. pp. 42—54.

6. Jaffe, A. J. and K. Azumi. "The Birth Rate and Cottage Industries in Under-developed Countries." *Economic Development and Cultural Change.* Vol. 9, No. 1. October 1960. pp. 52—63.
7. Karim, Mehtab S. "Fertility Differentials by Family Type." *Pakistan Development Review.* Vol. XIII, No. 2. Summer 1974.
8. McGreevey, Willam P. and Nancy Birdsall. *The Policy Relevance of Recent Social Science Research on Fertility.* Washington, D.C.: Simthsonian Institution; Interdisciplinary Communications Programme. Occasional Monograph Series No. 2. 1974.
9. Morgan, James N. Ismail Sirageldin and Nancy Baerwaldt. *Productive Americans: A study of How Individuals Contribute to Economic Progress.* Ann Arbor, Michigan: ISR, University of Michigan. 1966.
10. Pakistan Census Organization. *Census of Pakistan, 1961. Vol. 3, (West Pakistan).* Karachi. n.d.
11. Pakistan Family Planning Council. "*National Impact Survey 1968: Survey Design and Development.*" Karachi: Inter Services Press Limited. n.d.
- ✓ 12. Papanek, Hanna. "Purdah in Pakistan: Seclusion and Modern Occupations for Women." *Journal of Marriage and the Family.* Vol. 33, No. 3. August 1971. pp. 517—530.
- ✓ 13. Pratt, Lois and P.K. Whelpton. "Extra Familial Participation of Wives in Relation to Interest in and Liking for Children, Fertility Planning and Actual and Desired Family Size." In Whelpton and Kiser (eds.) *Social and Psychological Factors Affecting Fertility.* New York: Milbank Memorial Fund. 1958. pp. 1245—80.
14. Presser, Harriet B. "The Timing of the First Birth, Female Roles and Black Fertility." *The Milbank Memorial Fund Quarterly.* Vol. 10, No. 3. July 1971. Part I. pp. 329—363.
15. Reed, Fred W. and Udry, Richard J. "Female Work, Fertility and Contraceptive Use in a Biracial Sample." *Journal of Marriage and the Family.* Vol. 35, No. 4. Nov. 1973. pp. 597—602.
- ✓ 16. Ridley, Jeanne Clare. "Numbers of Children Expected in Relation to Non-Familial Activities of the Wife." *The Milbank Memorial Fund Quarterly.* Vol. 37, No. 3. July 1959. pp. 277—296.
- ✓ 17. Rosen, Bernard C. and Alan B. Simmons. "Industrialization, Family and Fertility: A Structural-Psychological Analysis of the Brazilian Case." *Demography.* Vol. 8, No. 1. February 1971. pp. 49—69.
18. Sirageldin, Ismail. "The Survey Method in Family Planning Research and Evaluation: Review and a Proposal." Paper presented at Joint American Association for Public Opinion Research/World Association for Public Opinion, Research Conference, Atlantic City. 1972.
19. ——— and Gilbert Hardee. "A Flexible Interaction Model for Analysing Sample Survey Data for Planning and Evaluation of Fertility Control in Pakistan." *CENTO Symposium on Demographic Statistics.* Ankara, Turkey: Office of U.S. Economic Co-ordinator for CENTO Affairs. 1970.
20. Sonquist, John A. *Multivariate Model Building: The Validation of a Search Strategy.* Ann Arbor, Michigan: ISR, University of Michigan, 1970.
21. ———, Elizabeth Lanh Baker and James N. Morgan. *Searching for Structure (alias Aid III): An Approach to Analysis of Substantial Bodies of Micro-Data and Documentation for a Computer Programme.* Ann Arbor, Michigan: ISR, University of Michigan. 1971.
- ✓ 22. Stycos, Mayone J. "Female Employment and Fertility in Lima, Peru." *Milbank Memorial Fund Quarterly.* Vol. 43. January 1965. pp. 42—54.

- ✓ 23. ——— and Robert H. Weller. "Female Working Roles and Fertility." *Demography*. Vol. 4. 1967. pp. 210—217.
- ✓ 24. Lien, Juan A. "Mobility, Non-Familial Activity and Fertility." *Demography*. Vol. 4, No. 1. 1967. pp. 218—227.
25. Training, Research and Evaluation Centre. *National Impact Survey Report*. Lahore : Pakistan Population Planning Council. n.d.
- ✓ 26. Weller, Robert H. "The Employment of Wives, Role Incompatibility and Fertility : A Study Among Lower and Middle Class Residents of San Juan, Puerto Rico." *Milbank Memorial Fund Quarterly*. Vol. 46, Part II. 1968. pp. 507—526.
- ✓ 27. Zarate, A. O. "Differential Fertility in Monterrey, Mexico : Prelude to Transition." *Milbank Memorial Fund Quarterly*. Vol. 45. April 1967. pp. 93—108.