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The Desire for Additional Children among Pakistani Women: The Determinants

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It is generally argued that the traditional social and economic structure of the Pakistani society keeps the value of children relatively high and the demand for contraception relatively low, resulting in the persistence of high fertility in the country. Nevertheless, there is evidence of a latent demand for fertility control among women in all strata of the population. This study examines the determinants of the desire for additional children for currently married women in Pakistan, drawing data from the Population, Labour Force and Migration (PLM) Survey of 1979-80. The variations in the patterns of desired fertility and their relationship to the factors of economic and social change – such as education, husband's occupation, household income, child education, and work – are also analyzed. The analysis is conducted using logit regression models.

The basic analysis of desired fertility reveals that a significant minority of currently married fecund women in all subgroups want no more children, and that this is a majority for women with four children or more. Among the factors determining the desire for no more children, the major findings are that besides the strong and all-pervasive effects of the life-cycle factors (such as parity, age, and the number of living son), fertility desires of urban and rural women are determined differently in response to the social and economic factors. While a higher percentage of rural women want more children, their desire for no more children is significantly related to such factors as household income, nuclear family living, and child schooling – factors that are unrelated to urban women's fertility desires. For urban women, alongwith the advantage of being in a more modern, non-agrarian setting, an exposure to urban living and at least secondary schooling are associated with wanting no more children. The likely effective steps suggested to achieve a reduced desire for additional children are an expansion in education beyond the primary levels, the development of an opportunity structure for rural women, and an improvement in the targeting of programme services for those who have the potential motivation to limit fertility.

INTRODUCTION

The stated desire for children is an important subject of study because it defines the demand for children and also indicates the motivation to limit fertility (within marriage) deliberately, the latter being a major precondition for fertility

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decline to modern levels. The research is making it increasingly evident that responses to the questions on the desired number of children are expressive and meaningful for measuring reproductive choices, for assessing the motivation for fertility regulation, and for analyzing the future prospects of fertility change. In Pakistan, where changes in the actual reproductive and fertility control behaviour have been minimal and the persistence of high fertility is attributed to a high demand for children (although other determinants may also be contributing factors), it seems important to study the processes that influence fertility attitudes; but the desire for children, in particular, which is generally associated with various aspects of economic and social organization. It is also of interest because we are not yet clear how women's position is related to the demand for children, and how their fertility desires are responding to the forces of social and economic change.

Pakistan is a traditional society with respect to its family structure and family planning behaviour. Apparently, many socio-economic changes are occurring in the urban and modern sector of the economy. A substantial difference in the urban and rural levels of development and life-styles already exists as resulting from the urban areas having a wage economy, greater availability of educational facilities, greater exposure to the media, and access to health and family-planning services. As such, we may examine both the traditional and modern (and changing) aspects of the fertility desire among women. An analysis of both the urban and rural sectors may give us an important basis to judge the variation in the demand for children across the two settings. Although empirical evidence indicates that overall fertility in Pakistan is slightly higher in the urban than in the rural areas,[1] it is likely that urban women may have a lower desire for more children. It may indeed be due to higher levels of education or other factors; and this is one of the questions to be addressed in this study. More specifically, this paper has two objectives:

1. To examine the determinants of the desire for additional children among currently married and fecund women in Pakistan: How is women's desire for children affected by such factors as parity, age, education, residence, family's income and occupation, family type, school-attendance of children, and child work? and
2. To study how these effects differ for urban versus rural women: Which of these socio-economic factors contribute most to explaining the variation in the demand for children for both urban and rural women, and in what direction? Is region of residence an important factor in the aggregate context?

[1]The explanations for a slightly higher fertility in the urban areas of Pakistan have been sought in terms of the fertility-increasing effects of a shorter duration of breastfeeding, breakdown of postpartum taboos, lower infant mortality loss, and relatively better reporting and coverage of births among urban women.

In reviewing the literature relevant to these objectives, it was found that there has been limited research relating desired fertility to the forces of social and economic change. Khan and Sirageldin (1979), using Pakistan National Impact Survey (NIS) of 1968-69, attempted to assess the quantitative impact of certain socio-economic variables on completed as well as desired fertility. They reported that, besides women's age and age at marriage, income adequacy and the number of sons were significantly related to the additional children wanted. Their work, although limited by the data-base, is useful for understanding the basic interrelationships between income, education, and fertility in Pakistan and suggests a more detailed analysis to be undertaken. DeTray (1984) concluded from the same data-set that even though the number of sons strongly predicts the fertility desires of couples, their actual fertility behaviour is predominantly influenced by the overall desires for numbers of children regardless of the sex of those children. The questions that we address in this study will focus more on the identification of factors that explain variation in the demand for children in the context of Pakistan's social and economic structure, and will add in various ways to what is already known about fertility-related behaviour of Pakistani women. In addition to the determination of factors that influence the desire for further births, the study will help identify the potential target groups of women for family-planning services and may also provide a basis for integrating specific programmes for women into regional and national development plans.

THEORETICAL CONSIDERATIONS

Several economists and sociologists have emphasized the role of the demand for children as an important source of change in the reproductive behaviour of individuals. Becker and others, by using the standard micro-economic consumer approach, theorized that children are perceived by parents as other durable goods and the changes in income and prices will predictably influence the demand of couples for children. Because child-bearing and rearing involve a significant amount of time and money, parents who choose to have more children weigh the rewards from having another child against the rewards of other goods and services that could have been attained instead, thus making the demand for children change with the income and time costs [Becker (1960, 1965)]. Caldwell (1976, 1982) combined the concept of an economic demand for children with institutional change and theorized that the process of ideational and cultural change in the developing countries that comes with the dissemination of western values through education and mass media would ultimately undermine the demand for children by inverting the intergenerational wealth flows from parents to the children. Cain's theoretical notion implied that in traditional social settings, children are perceived to be of

special value due to their labour services to the household and as an insurance against risks in unfavourable circumstances, thus making the desire for large families a rational force to keep the value of children high [Cain (1982, 1983)]. Derived from both the economic and sociological perspectives, the most relevant theoretical framework for predicting couples' fertility desires is the so-called demand framework [Bulatao and Lee (1983); Coale and Watkins (1986); Cleland and Wilson (1987)], in which the number and sex of children desired is a function of the perceived value of children, which in turn depends on the perceived costs and benefits of children.

In agrarian societies like Pakistan, direct economic benefits are the predominant advantages in having children. On the one hand, the farm labour and income contributions of children to the family from an early age and the expected help and security for parents in the old age are important considerations underlying a high demand for children. On the other hand, direct economic costs such as the education of children and other time costs are of less significance in determining the demand for children in these societies. This difference in the value of children is manifest to some extent in Pakistan's social and economic structure, where women belonging to a more traditional and agrarian setting exhibit a greater desire for children than women from more modern and urban background. In this context, it may also be argued that different aspects of the traditional and subordinate position of Pakistani women may be contributing to keeping the value of children high. Women's dependence on men may enhance the demand for children, particularly sons, because they are expected to provide protection against risks of widowhood and abandonment and help strengthen women's social position in the family. In Islamic cultures like that of Pakistan, where women usually live in segregation and their childbearing role is greatly emphasized, women's need to secure their position in the family may keep the value of children high [Van de Walle and Quaidon (1985)]. However, with the spread of education, urbanization, and a wage economy, women may obtain alternative family roles and higher life aspirations, which may indeed be important factors in the acquisition of smaller family size norms.

This process may substantially differ for men/husbands, whose perceptions about the value of children may have different orientation and considerations; and may also be influential in affecting women's demand for children in developing societies.[2] Our analysis of variation in desired fertility, however, is focused on women alone, because the available data contains information on women only.

[2]Evidence from the literature has shown that the responses of husbands and wives on desired fertility differ when both are interviewed [Knodel and Prachuamboh (1976); Coombs and Fernandez (1978)], but the magnitude of such differences, on the average, is small and insignificant among married couples in many developing countries [Mason and Taj (1987)].

Although the evidence for Pakistan suggests that the husband's attitudes are important in determining the wife's desire for additional children [Khan and Sirageldin (1977)], we have presumed in this analysis that a woman's fertility desires are not significantly different from those of her husband and represent the desire for children of a couple.

A theoretical model of the hypothesized effects of the social and economic factors likely to affect the demand for children is presented in Figure 1, in which the dependent variable is the desired additional fertility. Given the cross-sectional data on ever-married women and their background characteristics, the three exogenous factors in the model are women's age, place of residence (urban/rural), and education. These characteristics are basic and predetermined at the time of marriage, and are expected to operate directly and through other social and economic factors – such as the husband's education, occupation, family income, child mortality, family type, and school-attendance of children – to influence the demand for children. Therefore, a hierarchical model, showing the direct and indirect effects of each explanatory variable is developed, with the hypothesized effects on desired additional fertility.

THE METHODOLOGY

Since the dependent variable (the desired additional fertility) is binary in nature, logit models are used for the analysis which take the natural logarithm of the odds of desiring no more children as a function of a set of predictor variables.[3] The logit models give predictions or coefficients bounded by zero and unity in the probability metric. The model, therefore, can be written in the logit form as:

$$\text{Log } (P/1-P) = a + \Sigma ß_i \; X_i$$

where P is the probability of the desire for no more children, X_i represents the given characteristics of women and $ß_i$ indicates the change in the logit (log-odds) for each unit change in X. A variable that increases the log-odds of the event occurring (in this case, the desire for no more children) also increases the probability of the event occurring or vice versa [Morgan and Teachman (1988); Cleary and Angel (1984)].

[3]The possible alternatives to estimate regressions for binary dependent variables are: the logit model, the probit model, and the log-linear model. Since it is not always possible to fully satisfy the conditional probability interpretation of a linear functional form, the two non-linear models, i.e., the logit and the probit are more commonly used. On theoretical grounds, it is difficult to determine which of these two models is more appropriate for analysis because the logistic and normal distributions are quite close to each other except at the tails; hence the estimates obtained from the logit and probit models are not likely to be much different. (For further information on this, see Kmenta (1986). I used the logit model because of its computational ease, parsimony, and desirable statistical properties.)

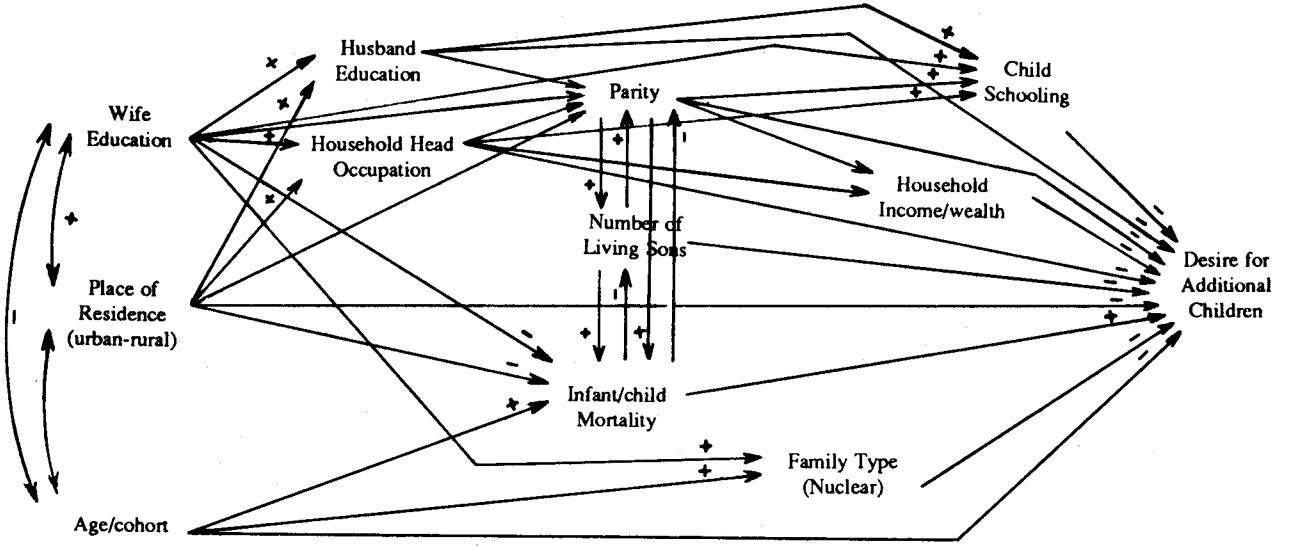

Fig. 1. A Theoretical Model of the Relationship between Predictor Variables and the Desire for Additional Children

The effect of the explanatory variables on the desire for children is evaluated through the estimation of different sets of equations. First, controlling for parity and age, the effects of each predictor variable are estimated to see their total effects on the desire for no more children net of parity and age. Then, several partial models are estimated by adding different socio-economic variables individually as well as in different combinations to identify how all independent variables are specifically interrelated and contribute towards the indirect effects. Finally, a full equation model is estimated by taking into account all predictor variables to indicate the net direct effect of each explanatory variable on desired additional fertility. The predicted logit model including all variables is given as:[4]

$$\text{Log-odds NMore} = \beta_0 + \beta_1\text{Parity} + \beta_2\text{Age} + \beta_3\text{Res} + \beta_4\text{Wed} + \beta_5\text{Hed} + \beta_6\text{Hocc} + \beta_7\text{Incm} + \beta_8\text{Sons} + \beta_9\text{Mort} + \beta_{10}\text{Ftype} + \beta_{11}\text{Chsch} + \beta_{12}\text{Region}.$$

Considering the social and economic differences apparent in Pakistan's urban and rural settings, the models are estimated for urban and rural sub-samples separately, selecting the relevant predictor variables in the theoretical context. The model is also applied to the total sample – to get an overall average estimate of the parameters and see the extent of the relationships between the explanatory and the dependent variable. Using the Proc Logist Procedure available in the SAS statistical package, Maximum Likelihood Estimates of the parameters of the models are obtained.

THE DATA AND VARIABLES

The data for the present analysis are drawn from the national household survey of Population, Labour Force, and Migration (PLM) in Pakistan, conducted by PIDE/ILO during 1979-80.[5] The survey was based on a two-stage stratified random sampling covering all four provinces of Pakistan, with an urban and rural stratification. Using four separate questionnaires on Labour Force, Income-Expenditure, Migration, and Fertility, extensive information on social, economic, and demographic variables was collected. With a view to determining the nature of

[4]NMore=Wanting no more children; Res=residence; Wed=wife's education; Hed=husband's education; Hocc=Household head's occupation; Incm=Household monthly income; Mort=infant/child deaths; Chsch=Children 5 – 14 attending school; Ftype=family type.

[5]A collaborative effort of the Pakistan Institute of Development Economics (PIDE) with the International Labour Organization (ILO), funded by the United Nations Fund for Population Activity (UNFPA), the overall objective of the survey was to generate national information on the demographic and socio-economic situation of the country, and the integration of population variables into a comprehensive development planning strategy.

interdependence between reproductive behaviour and other family characteristics, the data generated from the four separate questionnaires were merged. Hence, a number of socio-economic variables from the three household surveys of Labour Force, Migration, and Income-Expenditures were added to fertility information,[6] providing us with a valuable data set of individual as well as family characteristics of 9,732 ever-married women.

Since the main question addressed in the study is about what determines the desire for additional children, we select a sample of currently married and fecund women aged 15 – 44 years who responded to the question, "Do you want to have any (more) children?" Our dependent variable which quantifies the desired additional fertility is measured as a dichotomous variable that takes the value of *one* if the respondent does not want any more children; and that is zero otherwise. Originally, the dependent variable was a three-category variable, indicating 'wanting more children', 'no more children', and 'undecided' as three choices of response. For the present analysis, women expressing uncertainty or an undecided response have been included in the 'all others' category under the assumption that they do not have a clear wish to stop childbearing and could be counted as effectively wanting more children.[7] We get, therefore, a sample of 7,602 women, 2,820 urban and 4,782 rural. To reveal the proportion of uncertain responses about the desire for future births, Table 1 shows the percentage distribution of the dependent variable by three choices of response across different age cohorts and parities for total, urban and rural areas. The results indicate that for the total sample, only 6.3 percent of women gave undecided responses about having any more children at the time of interview versus 57.3 percent wanting more and 36.4 percent wanting no more children. In general, the distributions are in the expected direction, with a larger proportion of older and high parity women wanting to stop childbearing. Moreover, a greater proportion of urban women want no more children than their rural counterparts (45.5 percent versus 31 percent). There are substantial variations in the desire for no more children across different age cohorts and parities, and this could be an important basis for identifying the potential demand for fertility limitation and selecting women for implementing programme objectives.

[6]Women eligible for the fertility questionnaire (i.e., ever-married women aged 10 – 49 years) were selected from the household schedule of the migration questionnaire, and the questions asked in the fertility module were essentially the same as those used in the Pakistan Fertility Survey (PFS) undertaken as part of the WFS programme in 1975. The only difference between the PFS and the PLM fertility questionnaires was the absence of a household schedule from the latter. Thus, the household schedule of the migration module was used to select eligible women for obtaining the fertility-related information.

[7]Lightbourne (1988) has also supported this classification in his recent model for estimating the demand for children. Another argument suggests that women undecided about having more children could be viewed as wishing to space the next birth until they make up their mind, implying that they might want one later [Lightbourne and MacDonald (1982)].

Table 1

A Percentage Distribution of the Desire for Additional Children by Age Cohort and Parity for Total, Urban, and Rural Samples (Currently Married, Fecund Women, Aged 15 – 44 Years)

Variables	All Women (N=7602)			Urban Women (N=2820)			Rural Women (N=4782)		
	Want No More	Want More	Undecided	Want No More	Want More	Undecided	Want No More	Want More	Undecided
Total	36.4	57.3	6.3	45.5	48.4	6.1	31.0	62.5	6.5
Age/Cohort									
15–24	6.4	89.7	3.9	9.9	89.9	5.2	4.6	92.2	3.2
25–34	36.3	55.7	7.9	47.4	45.1	7.5	29.4	62.4	8.2
35–44	69.0	24.5	6.6	77.9	17.3	4.9	63.5	28.8	7.6
Parity									
None	0.3	98.7	1.0	0.3	97.5	2.2	0.4	99.2	0.5
One	3.3	93.7	3.0	4.9	91.3	3.8	2.6	94.8	2.6
Two	14.3	77.9	7.8	20.5	70.5	8.9	10.9	81.9	7.2
Three	33.7	57.0	9.3	41.9	48.5	9.6	28.8	62.1	9.1
Four	59.6	31.8	8.7	66.0	26.9	7.1	55.7	34.7	9.6
Five	71.2	19.3	9.5	79.3	13.1	7.5	65.4	23.8	10.8
Six plus	83.1	10.1	6.9	88.3	7.5	4.2	78.7	12.2	9.1
(N)	(2767)	(4353)	(482)	(1284)	(1364)	(172)	(1483)	(2990)	(309)

The explanatory variables used in predicting the desire for no more children and their hypothesized relationships with the dependent variable are described below. (See Table 2 for measures of explanatory variables, their mean values, and definitions.)

Parity and current age, representing the lifecycle stage of a woman, are used as control variables in the model, and are expected to be positively related with the desire for no more children. To measure the effect of urban exposure on desired fertility, a three-category variable is constructed by taking into account the premari-

Table 2

Measures of Explanatory Variables and their Mean Values for Total, Urban, and Rural Samples (Currently Married, Fecund Women Aged 15 – 44 Years)

Explanatory Variables	Total	Urban	Rural
Current Age (Years)	29.0	29.0	28.9
Parity (Nos.)	3.1	3.4	2.9
Residence			
Rural[a]	–	–	–
Lifetime Urban Residents	0.28	–	–
Rural to Urban Migrants	0.09	–	–
Wife's Education			
None[a]	–	–	–
Primary	0.06	0.10	0.04
Secondary Plus	0.08	0.19	0.01
Husband's Education (Years)	3.6	5.7	2.4
Living Sons (Nos.)	1.6	1.8	1.5
Child Deaths			
None[a]	–	–	–
One or More	0.37	0.35	0.38
Household Head's Occupation			
Farmers/Farm Managers[a]	–	–	–
Professional/Clerical	0.09	0.19	0.03
Proprietors/Sales Persons	0.12	0.19	0.07
Service Workers	0.04	0.07	0.03

Continued–

Table 2 – (*Continued*)

Agricultural Labourers	0.06	0.02	0.09
Production Workers	0.25	0.36	0.19
Others/Unemployed	0.13	0.13	0.14
Household Monthly Income (Rs)	1147.7	1510.7	933.6
Family Type			
Nuclear	–	–	–
Extended	0.51	0.51	0.51
Children Aged 5 – 14 in School			
No Child in the Household[a]	–	–	–
Have Child, None in School	0.37	0.24	0.45
At Least One in School	0.42	0.57	0.33
Children Aged 5 – 14 Working			
No Child in the Household[a]	–	–	–
Have Child, None Working	0.60	0.67	0.56
At Least One Working	0.19	0.14	0.23
Region of Residence			
Punjab[a]	–	–	–
Sindh	0.26	0.34	0.20
The North-West Frontier Province	0.11	0.09	0.12
Balochistan	0.05	0.06	0.04
Total (N)	(7602)	(2820)	(4782)

Note: Variables such as occupation, income, family type, children in school and working represent the household characteristics of women.
[a]Reference category.

tal and current place of residence. Taking 'rural resident' as a reference category,[8] the dummy variables are 'lifetime urban resident' and 'rural to urban migrant'. The expectation is that women with greater urban exposure have a lower desire for children than those with a rural background due to their different perceptions about the value of children via the modernization, westernization effects.

Wife's education is measured as a three-category variable, representing 'none', 'primary', and 'secondary or higher level', to see if reaching a particular level of education is critical in influencing women's desire for no more children. We expect women's education to be a forceful factor in reducing the net value and hence the ultimate demand for children; higher education, particularly, is likely to lead to lower fertility desires since the highly educated elite group of women is also likely to be more egalitarian and engaged in modern-sector employment.

Household monthly income and household head's occupation are selected as economic status and class variables. Since the distribution of income is highly skewed, a log transformation is used for adjustment. Household head's occupation is divided into seven major categories using a standard classification of occupations as shown in Table 2. In addition, two variables representing child-schooling and child-work are constructed using information on children aged 5 – 9 and 10 – 14 in the household attending school and/or working. Since schooling raises the costs of children, we would expect a negative relationship between school attendance and the desire for additional children. On the other hand, labour productivity of children is expected to increase the demand for children. The other selected variables of interest are the number of living sons, child deaths, husband's education, family type, and region of residence. The number of living sons is included primarily to examine the extent of son preference on desired fertility. The effect of infant/child deaths on the desire for no more children is evaluated for those women with at least one child death versus those with none, with the expectation that child mortality experience of women will increase the desire for additional children. Region of residence is added in the model to see if more urbanized and developed regions in the aggregate context reflect lower fertility desires than the less developed regions.

THE RESULTS AND DISCUSSION

The results are presented for each explanatory variable in three basic models. Model I gives the effect of explanatory variables net of parity and age, factors that are most likely to affect the desired fertility and are used as control variables in the analysis; Model II shows the coefficients for each explanatory variable controlling

[8]Women living in rural areas also include a very small proportion of those who have lived in an urban place in their childhood (2.9 percent). The proportion is too small to form a separate category for analysis and, hence, is included in current rural residence.

for selected socio-economic factors such as wife's and husband's education, residence, and household head's occupation in addition to parity and age; and Model III takes into account all predictor variables to indicate the net direct effect of each variable on desired fertility. Since the dependent variable is the desire for no more children, the interpretation of the logit results indicates that with each unit change in an independent variable, say *X*, a positive coefficient increases the likelihood of the desire to stop childbearing and a negative coefficient reduces the probability of wanting no more children. The results are now discussed for each variable in relation to the hypotheses proposed earlier.

Women's Parity and Current Age

The results in Table 3 indicate that parity and age have a strong positive relationship with the desire for no more children and confirm the hypothesis that fertility desires are affected strongly by the lifecycle stage of a woman. The coefficient of parity for the entire sample is .677 when only age is taken into account (Model I), and it reduces to .479 in Model II primarily due to the inclusion of living sons in the equation, a variable highly correlated with the number of living children.[9] The coefficient does not change much with additional controls for other variables in Model III, confirming the strong net effect of parity on the desired additional fertility. The results further indicate that with each additional living child, the log-odds of desiring no more children increase by .52 for urban as compared to .43 for rural women (Model III). Although this is not a large difference, it reflects that parity has a relatively stronger relationship with desired fertility for urban than for rural women. This seems reasonable because urban women have a relatively smaller desired family size than rural women; and, hence, they are influenced more by the number of children they already have. The strong effect of age is also pervasive and not mediated by other explanatory variables, as the coefficients remain the same across all models for both urban and rural women, supporting the argument that age has a life-course effect on women's desire for children.

Urban Exposure

Table 3 indicates that an exposure to urban living makes a striking difference in reducing the desire for children. As the table shows, the log-odds of desiring no more children increase by .72 for lifetime urban residents and .52 for rural to urban migrants net of parity and age when compared with rural residents (Model I). These coefficients, however, shrink to .421 and .402, respectively, with additional controls for other predictor variables, leaving a small net difference between the

[9]The correlation between parity and living sons is .81 for the total sample of women.

Table 3

Logit Regression Coefficients of the Effect of Parity and Age on the Desire for No More Children for Total, Urban and Rural Samples

Variables	Model I[a]	Model II[b]	Model III[c]
Parity			
Total	.677(1079.8)[d]***	.479(344.6)***	.457(279.5)***
Urban	.714(427.5)***	.514(143.4)***	.521(127.4)***
Rural	.642(605.0)***	.464(203.5)***	.436(159.4)***
Current Age			
Total	.978(187.9)***	.085(203.6)***	.076(147.2)***
Urban	.076(64.2)***	.077(61.3)***	.071(47.7)***
Rural	.088(144/6)***	.089(140.1)***	.078(96.6)***
Urban Residence			
Rural Resident	–	–	–
Always Urban	.718(96.9)***	.554(36.1)***	.421(18.7)***
Rural to Urban Migrant	.524(22.3)***	.475(15.4)***	.402(10.5)***

*Significant at .05 level; **at .01 level; ***at .001 level.
[a]Only parity/age controlled.
[b]Parity, age, wife's education, residence, husband's education, household-head occupation and living sons controlled.
[c]Full model controlling for parity, age, residence, wife education, husband's education, occupation, living sons, child mortality, family type, household income, children in school, and region of residence.
[d]Figures in parentheses are X^2 values.

effect of lifetime urban residence and rural to urban migration on desired fertility (Model III). These results can be interpreted as suggesting that rural migrant women may either be the select group with relatively greater aspirations for an urban way of life and, hence, do not differ much in their fertility attitudes from lifetime urban residents or have been influenced by urban living. This conforms well with the theoretical argument that urban living and its social environment impart new values and ideas conducive to a smaller desired family size.

Educational Attainment

The impact of education may operate through different paths to reduce the desire for children. Education can increase a woman's individuality and aspirations for the quality of children. It can also increase the opportunity cost and value of time for mothers, allowing greater financial independence and an ability to make individual choices and decisions about family size. Table 4 shows the results of women's and husbands' education for total, urban and rural areas. Our findings are that only in urban areas the secondary and higher education of women is important in increasing the desire for no more children, while primary schooling is not. In rural areas, on the other hand, educational attainment is not significant in affecting desired fertility, indicating an interaction between residence and women's education. As Table 4 shows, the coefficients for secondary-plus education are positive and highly significant, and do not change much across all models for urban women. This result is in accord with the findings from a recent study on the education-fertility relationship in urban Pakistan, where female schooling at the secondary level of education was a powerful force for fertility change – after taking into account differences in women's exposure time, employment opportunities, domestic autonomy in terms of financial or family matters, and income [Sathar and Mason (1989)]. For rural women, the coefficients for both the primary and secondary levels are not significant across all models. Several factors may be operating to negate the effect of education in rural areas. One possibility is that the impact of education among those few primary- and secondary-educated rural women is not substantial enough to alter their attitudes towards family size. It is also possible that the concerns about the social legitimacy of having fewer children are playing a role here, or the limited opportunity structure in rural areas does not provide such alternative roles for women as may conflict with their desired fertility.

Table 4 also shows the results for husbands' education. Our findings are that the variable is not a powerful net predictor of women's desired fertility, and most of the effect of husbands' education is explained by women's education. As we can see from Table 4, the coefficient for husbands' education in urban areas is positive and highly significant net of parity and age (Model I) or with additional control for occupation (Model II), but it becomes insignificant once wife's education is added to the equation (Model III). This is partly because the two variables are correlated, or a stronger relationship of wife's education with desired fertility results in a spurious relationship of husband's education in the urban strata. In rural areas, husband's education is not critical at all in affecting the fertility desires of women, the reasons for which may not be much different from those discussed in case of rural women's education, where the context effects appear to be stronger than the effects of education *per se*.

Table 4

Logit Regression Coefficients of the Effect of Wife's and Husband's Education on the Desire for No More Children for Total, Urban and Rural Samples

Variable	Model I[a]	Model II[b]	Model III[c]	Model IV[d]
Wife's Education				
Total				
None	–	–	–	–
Primary	.357(3.1)[e]	.165(1.4)	.145(1.0)	.106(0.5)
Secondary-plus	.865(59.8)***	.522(17.5)***	.489(12.7)***	.531(13.9)***
Urban				
None	–	–	–	–
Primary	.068(0.2)	.051(0.1)	.012(0.0)	.001(0.0)
Secondary-plus	.658(26.6)***	.618(19.8)***	.542(11.5)***	.631(13.9)***
Rural				
None	–	–	–	–
Primary	.394(3.2)	.403(3.3)	.408(3.2)	.313(1.7)
Secondary-plus	.031(0.1)	.016(0.0)	.022(0.0)	–.125(0.1)
Husband's Education				
Total	.043(39.1)***	.018(5.3)	.005(0.4)	–.021(1.6)
Urban	.036(13.1)***	.033(8.8)**	.012(0.9)	–.004(0.1)
Rural	–.005(0.2)	.005(0.2)	–.001(0.0)	–.024(3.0)

*Significant at .05 level; **at .01 level; ***at .001 level.
[a]Parity and age controlled.
[b]Parity, age, residence, household-head's occupation controlled.
[c]Parity, age, residence, wife/husband education, occupation controlled.
[d]Full equation model as in Table 3.
[e]Figures in parentheses are X^2 values.

The Socio-economic Status of the Family

The occupation of the household-head, household monthly income, and land-ownership are used as class or economic status variables in the analysis. Status concerns are more prominent among those better off. The white-collar families, where couples are likely to be more educated, have higher aspirations for the quality and education of their children; and they have smaller family size norms, providing strong reasons for a reduced desire for children. The results in Table 5 indicate

Table 5

Logit Regression Coefficients of the Effect of Household-head's Occupation, Income and Land Owned on the Desire for No More Children for Total, Urban and Rural Samples

Variables	Model I[a]	Model II[b]	Model III[c]
Household Head's Occupation			
Total			
Farmers/Farm Managers	–	–	–
Professional/Clerical	.637(29.9)[d]***	.048(0.1)	.094(4.3)
Proprietors/Sales Persons	.503(20.3)***	.099(0.6)	.104(0.7)
Service Workers	.357(4.7)*	.001(0.0)	.061(0.1)
Agricultural Labourers	.106(0.6)	.075(0.3)	.159(1.1)
Production Workers	.431(24.1)***	.141(2.1)	.232(5.2)*
Others/Unemployed	.489(20.8)***	.217(3.6)	.290(6.0)*
Urban			
Farmers/Farm Managers	–	–	–
Professional/Clerical	.730(4.2)*	.477(1.7)	.411(1.2)
Proprietors/Sales Persons	.599(2.8)	.467(1.6)	.401(1.1)
Service Workers	.398(1.1)	.373(0.9)	.239(0.9)
Agricultural Labourers	.251(0.2)	.276(0.3)	.259(0.23)
Production Workers	.562(2.6)	.525(2.2)	.508(1.9)
Others/Unemployed	.828(5.1)*	.639(2.9)	.661(2.9)
Rural			
Farmers/Farm Managers	–	–	–
Professional/Clerical	–.179(0.6)	–.217(0.8)	–.096(0.1)
Proprietors/Sales Persons	.121(0.5)	.124(0.5)	.106(0.4)
Service Workers	.048(0.0)	.045(0.0)	.224(0.0)
Agricultural Labourers	.084(0.3)	.086(0.3)	.138(0.8)
Production Workers	.146(1.7)	.146(1.7)	.251(4.4)*
Others/Unemployed	.213(2.7)	.197(2.2)	.272(3.9)
Household Income			
Total	.359(50.0)[d]***	.195(11.6)***	.233(16.7)***
Urban	.279(13.9)***	.154(3.5)	.123(1.9)
Rural	.212(7.9)**	.208(6.5)**	.328(13.8)***
Land Owned (Rural)			
No Land	–	–	–
Landed Farm	–.012(0.1)	.398(4.3)*	.499(6.3)**

*Significant at .05 level; **at .01 level; ***at .001 level.
[a]Parity and age controlled.
[b]Parity, age, residence, wife and husband education, and occupation controlled.
[c]Full equation model as in Table 3.
[d]Figures in parentheses are X^2 values.

that household-head's occupation is not an important predictor of the additional children wanted. Any occupation effects reflect an urban-rural residence effect because the occupation loses its significance when the residence is taken into account. This is largely due to the fact that all non-agricultural and wage-based occupations are more common in urban areas that make the relationship of the occupation with desired fertility a spurious one. We also note from Table 5 that there are no significant differentials in the effects of various occupational categories within urban and rural strata.

The results for measures of income/wealth in Table 5 indicate that a higher income and land-ownership increase the likelihood of wanting no more children, but the coefficients are significant only for rural areas. For urban households, the entire negative effect of income on desired fertility reflects the education and occupation effects rather than household income *per se* because the coefficient becomes insignificant when the education and household-head's occupation are taken into account (Model II). This seems reasonable in the urban context, where high income is generally associated with high education and high-status occupations. For rural households, where income is largely determined by land-ownership or agricultural status of the household-head, a negative relationship of income with desired fertility is contrary to our theoretical argument of a greater demand for children in landed/rich families. To further test the hypothesis that measures of wealth such as land are positively associated with the demand for children, we have shown results for land owned in Table 5 for the rural sub-sample only. As in the case of income, the coefficient for land owned is positive and significant after controlling for all predictor variables including household income (Model III). This is in accord with the earlier result that income bears a negative relationship with desired additional fertility in rural areas. The results of land owned, being contrary to our expectation, lead us to speculate that, with an increased use of tools and machinery on land and with greater availability of agricultural credit facilities in recent years, the perceptions about the labour value of children may have changed to some degree in farmer/landed families. These results, however, do not fully accord with those from an earlier study on education, income, and fertility relationship in Pakistan in which current monthly income and land owned were not important in determining the additional children wanted for rural women [Khan and Sirageldin (1979)].[10] The findings of that study represent the 1960's situation, and it is very likely that with social, economic, and political changes in rural areas during the past

[10]The results of that study further indicated that 'adequacy of income' came out as a significant predictor of the desire for additional children both in urban and rural sub-samples, with a stronger impact for rural women. 'Adequacy of income' referred to the question of whether income during the past 12 months was adequate for the family or not. Since this measure of income is different from the one used in the present study, the results are not comparable.

few years, the relationship of income/wealth indicators and desired fertility has changed. Moreover, the wealthier families in rural areas represent the rural elite class with greater exposure to mass media, transport and communications, and a higher socio-economic status in the community, all contributing towards reducing desired additional fertility of women in recent years.

Son Preference, Child Mortality, and Family Type

The effects of the number of living sons, child deaths, and family type on desired fertility are of great interest in traditional cultures like Pakistan, where strong kin relationships and influence of other family members on fertility decisions still hold. In such cultures, where in most cases women are economically dependent on their husbands and live without the economic and social support of their natal kin, children, particularly sons, are an important source of strengthening their social position in the household; such factors are conducive to a high demand for children.

The results in Table 6 show that the number of living sons is indeed an important and major factor in determining the desire for additional children both for urban and rural women. The coefficients are positive and highly significant after controlling for parity and age in Model I, and remain essentially the same across all models, strengthening the argument that a woman's desire for additional children is greatly influenced by the number of sons she already has. Based on the reasoning of greater parental investment in child education and higher aspirations for the quality of life among urban and educated women, we would expect that the extent of son preference is less strong among urban women than among their rural counterparts with lower educational levels. The results in Table 6 do not conform with this argument because of the larger coefficients for urban than rural women. We see in Model III that for each additional living son a woman has, her log odds of desiring no more children are increased by .52 for urban as compared to .38 for rural women, indicating that the effect of the number of sons is stronger for urban women relative to their overall desire for children. These results can be interpreted as suggesting that as women's desire for larger families falls, sex preference exerts a stronger influence on fertility; as the proportion of couples who want to stop childbearing once their sex preferences have been met will rise, the smaller will be the number of children desired. These results fit the observation that strong sex preferences are likely to stall the decline in fertility as a population experiences a reduced desire for children [Williamson (1983); Cain (1982)].

The results for infant/child mortality in Table 6 indicate that women experiencing prior child losses are more likely to want no more children than those with no child deaths, a finding contrary to our general expectation in Pakistan's context,

Table 6

Logit Regression Coefficients of the Effect of Number of Sons, Child Deaths, and Family Type on the Desire for No More Children for Total, Urban and Rural Samples

Variables	Model I[a]	Model II[b]	Model III[c]
Living Sons			
Total	.423(143.6)[d]***	.441(151.2)***	.434(142.5)***
Urban	.512(74.5)***	.527(76.9)***	.519(72.3)***
Rural	.390(75.7)***	.390(75.5)***	.379(68.1)***
Children Died			
Total			
None	–	–	–
At Least One	.128(3.7)*	.198(8.5)**	.238(11.5)**
Urban			
None	–	–	–
At Least One	.069(0.4)	.182(2.6)	.261(4.9)*
Rural			
None	–	–	–
At Least One	.209(6.1)*	.212(6.2)*	.214(5.8)*
Family Type			
Total			
Extended	–	–	–
Nuclear	.128(3.7)*	.171(6.6)*	.280(14.7)***
Urban			
Extended	–	–	–
Nuclear	–.028(0.1)	.017(0.0)	.050(0.2)
Rural			
Extended	–	–	–
Nuclear	.253(8.8)**	.277(10.0)***	.408(18.9)***

*Significant at .05 level; ** at .01 level; *** at .001 level.
[a]Parity and age controlled.
[b]Parity, age, residence, wife and husband education controlled.
[c]Full equation model as in Table 3.
[d]Figures in parentheses are X^2 values.

where 'replacement' and 'compensatory' effects seem to operate and a positive relationship between infant/child mortality and fertility has been found in the past studies [Rukanuddin (1982); Irfan and Farooq (1984)]. As the table shows, with at least one child death, the log-odds of desiring no more children increase by .26 for urban women and by .21 for rural women net of all other explanatory variables (Model III). One explanation for this inverse finding could be that a recent child death experienced by a woman might have psychological, physical, and emotional implications, causing her to express the desire for no more children when asked. In Pakistan's culture, where preference for sons is high, it is also likely that some women would want no more children if the prior death was that of a female child or is caused by intentional neglect (particularly of daughters), indicating that the previous birth was not wanted. A partial support for this argument is found from a study in Pakistan in which the tendency to compensate for child death is stronger among couples with a male child loss than with female child losses [Rukanuddin (1982)]. Das Gupta (1987) offers evidence for the Punjab villages in India where excess female mortality is especially prevalent in families that already have one or more surviving daughters, reducing the value of the female child; it also traces such mortality patterns, through sex differences, in the allocation of food and health care within the household. Since Pakistan experiences almost similar mortality differentials by gender, it is quite possible that a portion of the deaths were the result of intentional neglect and discrimination against female children in terms of nutritional intake or medical treatment, which in turn has its effects on desired additional fertility. Heer and Wu (1975) also report for Taiwan that the sex of the child lost is a critical factor in the additional children wanted. However, the moderate value of the coefficient for infant/child mortality in Model III and its fluctuating value for urban women in Models I and II suggest that the variable is not a very powerful determinant in the model. Khan and Sirageldin's work (1979) also showed a negative relationship between the number of dead children and the additional children wanted, but the coefficients were insignificant in the model. Hence, our result that a reduction in child mortality raises fertility desire is suggestive of the fact that a negative relationship between child mortality and desired additional fertility cannot be ruled out for Pakistan. However, it is not very clear from these data as to how and why such a relationship may be operating for this sample of Pakistani women; unless we get further evidence on sex differentials in child mortality through mechanisms of child neglect or unwanted previous births.

The theoretical reasons for including the family type as a determinant of the desire for additional fertility are that women living in nuclear households would be more likely to want fewer children than those in extended households because nuclear family living is more egalitarian, conjugally oriented, and closer to the western pattern of family organization. Our results in Table 6 indicate that the

coefficients for the nuclear family are positive and highly significant for rural women across all models, while no such effect exists for urban women. The reason that rural women are responsive to the nuclear type of living arrangements could be due to the fact that the experience of living in a nuclear household may have given them more social and economic freedom, enabling them to make independent choices and aspire for fewer children. For urban women, on the other hand, living in a nuclear family is more acceptable and normative, making them indifferent to the type of living arrangement. It is also possible that tighter housing in urban areas makes some traditional couples live apart from extended households, yet close enough for patriarchal authority to be exercised. Hence, the social environment and strong kinship ties in such living arrangements make family type a less differentiating variable for urban women.

Child Education and Work

Schooling of children and their work productivity are the two variables directly related with the costs and benefits of having children. School attendance pushes up the cost of raising children and can lead to a reduced desire for additional children, while child work increases the value of children. Our analysis of the effect of parental investment in schooling of children on desired fertility is based on distinguishing between those households which have children of 5 – 14 years old versus those with none, so that the effect of households with school-age children is not confounded by those which have none. Since variables of child education and child work are formed on the basis of the same children in the household, who are either attending school or are working,[11] the effects of these two variables are examined in separate equations for each.

The logit results of the effect of child education and work are shown in Table 7 for the total, urban and rural samples. Looking at the coefficients, we find that the effect of child schooling on the desire for no more children is significant in rural strata only . For rural women, with at least one child in the household going to school, the log-odds of desiring no more children increase by .67 as compared to .28 for those with none in school after controlling for all predictor variables (Model III). This means that rural women who are sending their young children to school are more likely to want no more children with a significant difference from those

[11]It is clear that school attendance of children and their work activity are correlated because children out of school are more likely to work than those in school. There is, however, a possibility that school attendance may not hinder children from working because the time left after school can be spent working, particularly in rural areas; or those out of school may not be working. The present data indicate that only a small minority of school-going children are working (16 percent urban and 13 percent rural). However, not all children out of school work: only 26 percent of the children out of school in urban areas are working, while it is 36 percent in rural areas.

Table 7

Logit Regression Coefficients of the Effect of Child Education and Work on the Desire for No More Children for Total, Urban and Rural Samples

Variables	Model I[a]	Model II[b]	Model III[c]
Children Aged 5 – 14 in School			
Total			
No Child in the Household	–	–	–
Have Child, None in School	–.079(0.5)[d]	.060(0.3)	.043(.6)
At Least One in School	.514(21.37)***	.476(17.6)***	.393(11.25)***
Urban			
No Child in the Household	–	–	–
Have Child, None in School	–.0384(4.7)*	–.256(2.0)	.255(1.8)
At Least One in School	.089(.32)	.102(.40)	.068(.16)
Rural			
No Child in the Household	–	–	–
Have Child, None in School	.347(4.8)*	.339(4.5)*	.283(3.0)
At Least One in School	.812(25.1)***	.827(25.7)***	.670(15.9)***
Children Aged 5 – 14 Working			
Total			
No Child in the Household	–	–	–
None Working	.240(4.9)*	.279(6.5)*	.239(4.5)*
At Least One Working	.107(0.7)	.293(5.1)	.144(1.1)
Urban			
No Child in the Household	–	–	–
None Working	–.070(0.2)	–.023(0.0)	–.033(0.0)
At Least One Working	–.056(0.1)	–.065(0.1)	–.071(0.1)
Rural			
No Child in the Household	–	–	–
None Working	.538(11.9)***	.538(11.8)***	.453(8.1)**
At Least One Working	.507(8.6)**	.516(8.8)**	.345(3.7)*

*Significant at .05 level; ** at .01 level; *** at .001 level.
[a]Parity and age controlled.
[b]Parity, age, residence, wife and husband education controlled.
[c]Full equation model as in Table 3.
[d]Figures in parentheses are X^2 values.

who have none enrolled in school. We may also note that rural women with no child in school do not significantly differ from those who have no school-age children. The finding that school attendance of children is important in reducing desired additional fertility of rural women is reflective of a change in their perceptions about the demand for children and their aspirations for child education. This finding fits in well with Caldwell's theoretical argument that during the course of modernization and social changes, perceptions about the costs and benefits of children begin to change and operate through the effects of mass media, child schooling, and exposure to a more modern world. For urban women, differentials in child schooling do not play a role in influencing their demand for children probably because they already live in a social environment where it is normative and common to send children to school.

Child work, as in the case of child education, emerges as a significant predictor of the demand for additional children for rural women only. The results, however, are not in the expected direction. Rural women, with both working and non-working children have a greater likelihood of desiring no more children than the women with no school-age children, as indicated by the positive and significant coefficients for both categories of work. Although the values of the coefficients are somewhat higher for those with no working child in the household, the difference between the coefficients of no working child and at least one child working is small and insignificant (.453 versus .345, respectively, in Model III). We may, thus, infer that rural women's desire for children is not differentiated by child work; the positive and significant coefficients for both categories of work are rather reflective of the effect of the number of young children in the household rather than their work *per se*. For urban women, on the other hand, the work contribution of children is irrelevant for explaining women's desire for children, thereby negating the theoretical argument that the labour value of children, particularly in rural areas, increases the demand for children.

Region of Residence

The region of residence is included in the model to see if the aggregate context is important in predicting women's desire for additional children. The four major regions of Pakistan differ substantially in terms of their socio-cultural, economic, and demographic characteristics. Each region has its own local language and people living in the rural parts mostly adhere to their local customs and traditions. The cultural characteristics of these regions are related, to some extent, to the diverse social and economic situation of the four regions. Punjab and Sindh are relatively more urbanized and developed than the other two regions of the NWFP and Balochistan. It is expected that women residing in the less developed and more

traditional regions are likely to want more children than those in a more modern situation.

The results for the region of residence are presented in Table 8 for the total, urban and rural areas. As we can see, once controlled for parity and age, the coefficients for the region of residence do not change much with additional controls for other predictor variables. The results are, therefore, shown only for two models (I and II). Our finding is that in the rural sub-sample, women from all three provinces (Sindh, NWFP and Balochistan) are less likely to want no more children when compared with Punjab, but the coefficients are strong and highly significant

Table 8

Logit Regression Coefficients of the Effect of Region of Residence on the Desire for No More Children for Total, Urban and Rural Samples

Variables	Model I[a]	Model II[b]
Region of Residence		
Total		
Punjab	–	–
Sindh	.181(5.8)[c]*	.083(1.0)
The North-West Frontier Province	–.456(17.5)***	–.542(22.7)***
Balochistan	–.638(18.7)***	–.780(21.8)***
Urban		
Punjab	–	–
Sindh	.448(15.2)***	.461(14.0)***
The North-West Frontier Province	.207(1.2)	.116(.4)
Balochistan	–.289(4.50)*	–.418(2.92)*
Rural		
Punjab	–	–
Sindh	–.270(6.2)	–.171(2.2)
The North-West Frontier Province	–.798(33.4)***	–.932(41.3)***
Balochistan	–.964(18.5)***	–1.021(18.9)***

*Significant at .05 level; **at .01 level; *** at .001 level.
[a]As in Table 3.
[b]Full equation model as in Table 3.
[c]Figures in parentheses are X^2 values.

only for the NWFP and Balochistan (Model II). This seems reasonable because rural Punjab has a relatively more advantageous position in terms of its economic and social development than the rural parts of the other three provinces. In the urban sub-sample, women in Sindh have a greater likelihood of desiring no more children than women in Punjab, as indicated by the positive and significant coefficient of .461 in Model II. This seems plausible in the sense that the urban part of Sindh is the most developed and modern region of Pakistan because of the two big metropolises of Karachi and Hyderabad. As expected, women in Balochistan are least likely to want no more children, as is evident from the negative coefficients of –.418 for the urban strata and –1.021 for the rural areas (Model II). In general, these results reflect that the more traditional the socio-economic and cultural environment of a region is, the lower is the likelihood of desiring no more children. Although we do not have very specific measures of socio-cultural differences of these regions, our results conform well with the hypothesis that region of residence has a macro effect on desired fertility and the general development level of a region is important in explaining the differentials in the desired additional fertility of this sample of married women.

CONCLUSIONS

Although the results of this analysis in many cases are in the expected direction, there are situations where we have contrary findings which may have raised more questions than provided answers in explaining women's desired additional fertility. At the outset, we found that a substantial minority (sometimes a majority) of currently married fecund women expressed the desire to stop childbearing in all strata, especially those with at least three children. If statements about wanting no more children indicate the latent demand for fertility control, then this may be important for assessing the proportion of potentially motivated women for family limitation and for selecting target groups for programme objectives.

Among factors explaining variation in desired additional fertility, the main findings are that, besides the strong and pervasive effects of parity, age, and living sons, fertility desires of urban and rural women are determined differently in response to the social and economic factors, and that there are important differentials in the effect of explanatory variables by urban-rural residence. Our analysis, thus, provides a useful basis for understanding how the specific relationship of the predictor variables with the desired additional fertility varies depending on the social and economic context of the setting. For urban women, the achievement of at least secondary education and exposure to urban living are critical for wanting no more children. We found that lifetime urban residents desire fewer children than do rural residents. The impact is equally strong for rural to urban migrants, suggesting

that those women are either a select group to begin with, or have been influenced by the urban milieu. For rural women, on the other hand, such factors as family income, family type, and child education are important in increasing the likelihood of wanting no more children – factors that are unrelated to urban women's fertility desires. The fact that the impact of education on desired fertility, often found pervasive and widespread elsewhere, does not show a significant relationship in rural Pakistan perhaps because the traditional value system and cultural milieu in the rural setting is operating to suppress this relationship. It can also be argued that education may not be imparting new values and ideas which may be conducive to smaller family size norms among those few primary- and secondary-educated women (because of the rural context); or the opportunity structure in rural areas is such that a woman even with secondary schooling has no better work opportunities that might conflict with her childbearing role than has a woman with less schooling.

Our results also indicate that income/wealth differentials are not important in defining the demand for children for urban women, while income and land-ownership bear a positive relationship with wanting no additional children for rural women. This is contrary to what is expected in the context of the rural setting of Pakistan where a higher value is assigned to children, particularly sons, because of their contribution to farm-work. We speculated that because of an increased use of tools and machinery on farms, it is possible that the perceptions about the labour value of children have changed among the rural wealthier/landed class.

Another unexpected result is related to child mortality which indicates that child losses in the family increase the desire for no more children both among urban and rural women, a finding contrary to what would be expected in the socio-demographic setting of Pakistan, where replacement and compensatory effects have been observed in the past in the form of a positive relationship between infant/child mortality and fertility. We speculated on some mechanisms which might account for the reverse relationship, including the possibility that wanting no more children might increase mortality through child neglect. The fact that a reduction in child mortality will increase fertility desires raises important questions about the causal relationship of the two variables.

The results for child education are in the expected direction, and they are significant only in the rural sub-sample. This suggests that child schooling has affected rural women to change their ideologies and perceptions about the value of children, a finding that conforms well with Caldwell's theoretical notion of declining fertility through the spread of education. Urban women, who have smaller fertility desires than rural women, are not influenced by child schooling costs, probably because sending children to school is more common and normative in urban areas. Overall, our results have given some indication that women in Pakistan, the rural in particular, seem to be experiencing a change in the perceived value of children as

explained by their significant response to income/wealth, nuclear family living, and child schooling costs; whereas for urban women, urbanization and education effects seem to play a key role in defining their desired additional fertility.

Given these results, it seems important to ask: What do our findings imply in terms of the social and demographic concerns about Pakistan that motivated this research? Firstly, it becomes apparent from this analysis that a large proportion of women express the desire for no more children, and that the desired fertility varies with women's personal traits as well as with the socio-cultural context in which they live. In a situation of persistent high fertility and low contraceptive use in Pakistan (a major concern for development planners and policy-makers), it is important to learn that a substantial latent demand for fertility control exists among all strata of population for both urban and rural women. Although our analysis has revealed significant differentials in desired fertility by education, residence, type of household, etc., the relationships found do not provide a clear guidance for disproportionately targeting specific social strata. For example, while differentials in desired fertility as between nuclear and extended families or between child schooling and no schooling are significant, the considerable proportion of women wanting no more children in both types of families suggest that it would be unwise for the programme to target those in nuclear families alone or with school-going children only. However, it does appear that if limited programme resources dictate a somewhat selective approach, it could be worthwhile to concentrate on women with three or more children. For women with less than three children, very few say they do not want more children. In the early stage of Taiwan's successful programme, there was an emphasis on women with at least two children and one son. Nevertheless, our findings do suggest room for expansion of educational opportunities beyond the primary levels, for development of an opportunity structure for rural women, and for improvement in targeting of programme services to increase contraception among those who express the desire for no more children. The effects of such changes are likely to reinforce each other in influencing the reproductive behaviour of Pakistani women.

LIMITATIONS OF THE STUDY

Besides the usual caveats of the response and non-response errors in a survey data, our analysis has been limited by the aggregate information on desired fertility within a cross-section of married women only, which has left many questions unresolved regarding how and to what extent women's socialization, family circumstances, and community environment influence their demand for children. In this regard, husbands' attitudes towards desired fertility are also important to study to see how and to what extent women's fertility desires are influenced by the

husband's attitudes and how strongly they differ from those of women. Moreover, it is realized that more information on the cultural and contextual aspects of the regions under study could provide greater understanding of the processes related to the demand for children, so that the interpretations would be more substantive. Nevertheless, with the limited quantitative information we have on desired fertility, and the background characteristics of women at the individual/household level, we still are able to draw useful results concerning the variations in desired fertility and the determining factors.

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