Poverty, Gender, and Primary School Enrolment in Pakistan

G. M. ARIF, NAJAM US SAQIB, and G. M. ZAHID

1. INTRODUCTION

Primary education is at the base of the pyramid of education, and is regarded as a fundamental human right today. In addition, it has several tangible social and economic effects. As an essential component of human capital, primary education plays an important role in the economic growth and development of a country.[1] Its impact on several other socioeconomic variables has also been documented in the literature. To quote a few examples, Butt (1984) has found that five or more years of a farmer's education lead to increased farm productivity, reduced use of farm labour, and increased use of yield augmenting inputs. Azhar (1988) also reports a significant relationship between the number of years of schooling and increase in farm output due to increased technical efficiency. Studies of the rates of returns to education attribute a positive value to the rate of returns to primary education.[2] This means that by acquiring primary education one can increase one's earnings.

Every policy document prepared by the Government of Pakistan aims at attaining universal primary education. However, it is also true that each of these documents has advanced the date for achieving the target specified in the previous one. The net enrolment rates at the primary level show that we are still far from this target. The policy failure of the past fifty years in attaining universal primary education warrants a careful review, one aspect of which is to analyse the factors that

G. M. Arif is Senior Research Demographer, Najam us Saqib is Senior Research Economist, and G. M. Zahid is Research Demographer at the Pakistan Institute of Development Economics, Islamabad.

[1]A review of the evidence related to the impact of primary schooling on economic development can be found in Colclough (1982). For Pakistan, empirical evidence on forgone growth due to under-investment in education is reported in Birdsall *et al.* (1993).

[2]See for example, Hamdani (1977); Haque (1977); Guisinger *et al.* (1984); Khan and Irfan (1985); Psacharopoulos (1985); Jimenez and Tan (1985) and Pasha and Wasti (1989).

determine enrolment in primary schools, and, with their help, come up with policy options and a viable strategy to achieve the objective.

Several studies carried out during the last two decades have isolated a number of factors that influence school enrolment but the role that poverty plays in this context has seldom been addressed. The possibility that the poor behave differently while deciding to enrol their children in a primary school needs to be explored as children belonging to poor households are less likely to attend primary school and the negative effect of poverty is likely to be more pronounced on girls. The present paper is an effort to study the impact of poverty on primary school enrolment in Pakistan and it also aims at analysing the gender gap in enrolment after controlling for poverty.

A brief review of the literature is presented in the next section. The data and methodology used in this study are discussed in Section 3 while relevant characteristics of the working sample are reported in Section 4. In the following section the impact of poverty on primary school enrolment is examined after controlling for gender of children and poverty status of their households. The results of five logit models estimated for this study are reported in Section 6. The last section discusses some implications of the findings of the study.

2. REVIEW OF LITERATURE

Several studies of the determinants of school enrolment exist for Pakistan, but they are hardly comparable because of wide differences in data and methodology. Data sets used in these studies range from old [Say (1977)] to relatively recent [Period (1991)]. The coverage also differs widely—from a single city to the entire country. Methodologies used for analysing the data also vary considerably. Some authors are content with cross-tabulation while others use more sophisticated probit or logit models. Despite these differences, some common observations can be made about these studies.

Chishti and Lodhi (1988) study school attendance decision using data from socioeconomic survey of Karachi conducted during 1987-88. Their logit analysis reveals that the decision to attend school depends on the gender of the potential student, household income, parents' education, and the ethnic background. Karachi is the largest metropolitan city of Pakistan with the highest literacy rate in the country. Hence findings for this city cannot be automatically generalised for the rest of the country, especially rural areas.

The data for the Food Security Management Project jointly collected by the Pakistan Institute of Development Economics and International Food Policy Research Institute (IFPRI) in 1986 form the basis of Hamid's (1993) study. Her sample consists of households with 5 to 14 years old children. She uses cross-tabulation to study the distribution of households sending their children to school from various variables of interest like household income, household heads'

profession, education, and gender. The percentage of households sending all children or at least one child to school is found to be higher for households with higher income, with a female head, or a more educated head. Since the scope of the cross-tabulation analysis is limited by its inability to control for more than a few variables at best, the results can be only suggestive.

Primary school attendance behaviour of children between the age of seven and fourteen years is the subject matter of the paper by Sathar and Lloyd (1994). They estimate logit regressions using data from Pakistan Integrated Household Survey of 1991, a nationally representative sample survey. They find that, in general, children with educated parents, higher household consumption level, and those who live in Punjab are more likely to be enrolled in a primary school. Girls are less likely to attend a primary school, though their chances in rural areas are improved with the availability of a girls-only public school within a distance of one kilometre.

Burney and Irfan's papers (1991, 1995) focus on the determinants of child school enrolment. In both these studies, they use data from a nationally representative survey called Population, Labour Force, and Migration Survey. The Pakistan Institute of Development Economics and International Labour Organisation conducted this survey in 1979. Their methods of estimation include linear probability, probit, and logit regressions. They report several different regression results in the two studies, using different estimation methods and separate sub-samples for gender, age groups, and regions. Household income, father's education above primary level and his tenurial status of landowner emerge as significant positive influences on children's school enrolment. A salient feature of these studies, which distinguishes them from other similar research for Pakistan, is inclusion of a community variable. They find a positive and significant relationship between village literacy level and school enrolment. However, they justify this variable on the basis of the Duesenberry (imitation) effect rather than the role of community variables in educational production function postulated by Hamilton (1983); Oates (1977) and others.

Alderman *et al.* (1996) present some probit estimates for school attendance in Pakistan.[3] The data used in this study was collected by IFPRI in its survey of rural Pakistan during 1988-89. The primary purpose of this study was to decompose the gender gap in cognitive (literacy and mathematical) skills into components attributable to various factors underlying this gap. In this process they also estimate probit functions, which attempt to explain factors determining probability of starting school. They consider all individuals between the age of 10 and 25 with relevant data in the sample for whom a school was locally available when they were of age to start school. According to IFPRI data used by them, most of the students attending

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[3]This paper is an improved version of an earlier study by Sabot (1992). We focus on Alderman *et al.* version because it is the most recent and also because the earlier version did not report estimation results for the school attendance probits.

primary school in rural Pakistan fall in the age group of 5 to 14 years. Thus their choice of age group is bound to exclude a significant proportion of primary school age population. Moreover, many respondents in their sample must have made a decision regarding school attendance long ago. Hence the explanatory variables like household income and book costs do not necessarily reflect the values of these magnitudes at the time of decision. They find that travel time to school and book costs (as a proxy for all out-of-pocket-cost) are important influences on the decision to start schooling. Other variables that figure in their school attendance probits include a measure of household's permanent income, father's attendance of middle school, a quadratic in age, and square of a measure of preschool ability.

It is evident from this brief review that although several studies have related income with school enrolment, the role that poverty plays in this context has seldom been examined. The likelihood that the effect of poverty on school enrolment is over and above the effect of income needs to be explored.

3. DATA AND METHODOLOGY

Source of Data

The data source used in this study is the Pakistan Socio-economic Survey (PSES) carried out by the PIDE between March and July 1999. The universe of this survey consists of all urban and rural areas of the four provinces of Pakistan excluding FATA, military restricted areas, districts of Kohistan, Chitral, Malakand, and protected areas of NWFP. The population of the excluded areas constitutes about 4 percent of the total population. The village list published by the population census organisation in 1981 was taken as the sampling frame for drawing the sample for rural areas. For urban areas, the sampling frame developed by the Federal Bureau of Statistics (FBS) was used.

The two-stage stratified sample design was adopted for the 1998-99 PSES. Enumeration blocks in the urban domain and mouzas/dehs/villages in the rural domain were taken as primary sampling units (PSUs). Households within the sampled PSUs were taken as secondary sampling units (SSUs). Within a PSU, a sample of 8 households from the urban domain and 12 households from the rural domain was selected. The PSES covered 3564 households (2268 rural and 1296 urban) in 351 PSUs. The data generated by the PSES is representative at the national level [for more detail see Arif *et al.* (1999)].

Working Sample

In the PSES, data were collected at the individual, household, and community levels. In the household roster a sub-module concerning the schooling of children was added. For the analysis, the present study covers 5–12 years old children. This age group was selected after examining the age distribution of children enrolled in 1-

5 grades. According to the official definition, all children between the age of 5 and 9 years are considered to be in the primary school age group. However, the age limit set by this definition is considered too narrow by many researchers. The PSES data also revealed that about one-third of children currently enrolled in 1–5 grades were older than the upper bound of the official age group, while only 3.5 percent of the enrolled children were older than 12 years. These older children were excluded from the working sample. The analysis was thus restricted to 5-12 years old children (inclusive of end points) who were enrolled or not enrolled at the time of survey.

In this age group the PSES identified 4303 children. Distribution of these children by age, controlling for rural/urban areas and proportion of male children in each age group are reported in Table 1. Approximately half the sampled children were girls. There was no substantial difference between rural and urban areas with respect to age distribution of children selected for the present analysis.

Table 1

Distribution of 5–12 Years Old Children by Rural/Urban Area, Age at the Time of Survey and Proportion of Male

Children Age (Years)	Rural	Urban	Total	Male (%)
5	6.9	8.0	7.3	54.4
6	18.5	19.0	18.7	49.9
7	13.5	14.2	13.8	53.0
8	18.2	17.0	17.8	50.9
9	10.9	13.4	11.8	54.4
10	15.2	13.7	14.7	51.4
11	6.3	6.7	6.4	49.1
12	10.4	7.9	9.6	48.3
All Ages	100.0	100.0	100.0	51.4
(N)	(2806)	(1497)	(4303)	

Source: Computed from the primary data set of the 1998-99 Pakistan Socio-economic Survey (PSES).

The Measure of Poverty

To examine the effect of poverty on primary school enrolment, households of the sampled children were divided into poor and non-poor categories. This division was based on the poverty line computed by Qureshi and Arif (1999) from the 1998-99 PSES, the data set used by the present study. While constructing the poverty line, Qureshi and Arif employed two methods, food energy intake and the cost of basic needs (CBN). This study uses the poverty line based on the CBN method. The basket of basic needs consisted of food, housing, clothing, health, education, transportation, and recreation. The line estimated for the year 1998-99 was Rs 705 per capita per

month. More than half the sampled children were living below this poverty line. For rural areas this percentage was 60.[4]

4. SAMPLE CHARACTERISTICS

Characteristics of the sampled children, their parents and households that can affect their enrolment in school are reported in Table 2. The mean age of the children was about 8 years. There was no major difference between the mean ages of children living in rural and urban areas. Evidence from the 1998-99 PSES suggests that fathers of more than half of the sampled children were illiterate. The level of illiteracy was substantially higher (60 percent) in rural areas than in urban areas (40 percent). Fathers of more than one-quarter of the children located in urban areas had completed at least 10 years of schooling. The corresponding figure for rural areas was only 11 percent. With respect to mother's education, 83 percent of them were illiterate. Only 5 percent had completed their education to the level of matriculation or above. Table 2 also shows that the average household size was approximately 9 in both urban and rural areas. The reported average monthly household income was Rs 5440. It was much higher in urban areas than in rural areas. In rural areas slightly less than half the sampled children belonged to farm households. About 6 percent of children lived in households that received some remittances during the year preceding the survey.[5]

Table 2

Sample Characteristics by Rural and Urban Areas

Sample Characteristics	Rural	Urban	Total
Children Characteristics			
Sex (%Male)	52.3	49.6	51.4
Mean Age (Years)	8.31	8.16	8.26
Father's Education			
Illiterate	59.5	39.5	52.5
Primary	17.7	16.0	17.1
Middle	11.4	16.6	13.2
Matric +	11.3	27.9	17.1
Mother's Education			
Illiterate	92.6	66.1	83.3
Primary	5.3	13.5	8.2
Middle	1.1	6.7	3.0
Matric +	1.0	13.8	5.5
Household Characteristics			
Household Size (Mean)	8.8	9.0	8.9
Average Income Per Month (RS.)	4556.0	7097.2	5440.1
Poor Household (%)	60.2	39.7	52.7
Farm Household (%)	44.4	5.7	31.0
Receiving Remittances (%)	6.6	4.2	5.7
(N)	(2806)	(1498)	(4303)

Source: Computed from primary data set of 1998-99 Pakistan Socio-economic Survey (PSES).

[4] These estimates of poverty refer only to households of the sampled children. For the total 1998-99 PSES sample, it was estimated that 35 percent of households lived below the poverty line.

[5] It includes remittances from within the country and abroad.

5. POVERTY, GENDER AND PRIMARY SCHOOL ENROLMENT

Poverty is a multifaceted fact that cannot be described entirely as scarcity of material resources of a person or a household. From a sociological point of view, the word 'poor' describes an entire social group or class that differs from others, not only in terms of its income or consumption level, but also in several other respects. School enrolment behaviour of those living in poverty is one such aspect.

We hypothesise that the poor behave differently from the non-poor while deciding to enrol their children in a primary school. More specifically, children belonging to poor households are less likely to attend primary school.

Table 3 sets out data on the percentage of children enrolled in primary schools by rural/urban areas, gender, and poverty status. Four important points can be drawn from this table. One, it shows that the percentage of enrolled children who belong to poor households is less than that for the children who belong to non-poor households. Two, primary school enrolment is very low, only 49 percent in rural areas as compared to 72 percent enrolment in urban areas. Three, girls are in general less likely than boys to be enrolled in primary schools. Four, the negative effect of poverty on primary school enrolment is more pronounced in the rural areas and for girls. The data presented in Table 3 clearly show that poverty, gender and place of residence have a significant effect on primary school enrolment.

Table 3

Proportion of 5–12 Years Old Children Enrolled in Primary Level by Controlling for Poverty Status of Household

Total	Poor	Non-Poor	Total
Total Sample			
Both Sexes	50.1	65.1	57.2
Male	59.4	70.7	64.7
Female	40.3	59.2	49.3
Rural Areas			
Both Sexes	46.3	53.9	49.3
Male	57.4	62.8	59.5
Female	34.1	44.2	38.1
Urban Areas			
Both Sexes	61.1	79.4	72.1
Male	65.5	81.2	75.1
Female	56.9	77.6	69.2
(N)	2268	2035	4303
(%)	(52.7)	(47.3)	(100)

Source: Computed from primary data set of 1998-99 Pakistan Socio-economic Survey (PSES).

6. DETERMINANTS OF PRIMARY SCHOOL ENROLMENT:
A MULTIVARIATE ANALYSIS

The capacity of the cross-tabulation approach to analyse the relationship between variables is limited by the number of variables we can control at a time. To overcome this problem, the logit technique is used in this study. The enrolment dummy, which values one for those enrolled in school and zero otherwise, is the dependent variable. The explanatory variables included in the logit models are age, gender, rural/urban area, parents' education, household income, poverty, farm status, and remittances. Model I is the complete model since it includes all explanatory variables. Model II contains all variables but poverty status of household. Similarly, in model III household income is excluded.

The definitions of the explanatory variables along with the results of estimation are reported in Table 4, which indicate (model I) that the probability of a child to enrol in a primary school increases with child's age, reaches a maximum, and then starts to taper off. Girls are less likely to go to school. Those living in urban areas have a higher probability of school enrolment. All levels of father and mother's education have a positive effect on school enrolment probability. Children belonging to farm households are less likely to attend primary school, probably because their parents need their help in farm related work.

The findings reported in the foregoing are fairly standard and are in conformity with those of previous studies. However, there are two results of this study that make it different from most others. One of them relates to the role of remittances in education, and the other is about impact of poverty on school enrolment. There is anecdotal evidence that the households that receive income from remittances invest a significant part of it on children's education [Shahnaz (1996)]. Remittances can influence school enrolment by increasing resources available to the households [UN (1986)]. To see the effect of remittances (from within the country and abroad) on school enrolment, a dummy variable was included for the households that received remittances during the year preceding the survey. This dummy variable turned out to be positive and significant, showing that remittances had an independent effect on school enrolment.

It is a well-known and empirically well-documented fact that purchasing power, as expressed by some measure of income, is positively related to school enrolment. The point we are trying to emphasise here is that the effect of poverty on school enrolment is over and above the effect of income. We included in our regression both household income and a dummy variable for poverty status of the household. The two variables were found to be significant. This finding gives credence to our view that poverty exerts a significant negative influence on a child's probability to enrol in a primary school and this effect cannot be entirely explained by the low household income. Rather, the impact of poverty is independent of household income. To check the robustness of our results, we included household

income and poverty separately in Models II and III respectively. Results of these models are also reported in Table 4. It can be seen from there that interchanging these variables in our model does not affect their significance.

Table 4

Logistic Regression Effects of Predictors on School Enrolment of
Children 5–12 Years Old

Predictors	Odds Ratios		
	Model I	Model II	Model III
Age (Years)	9.55*	9.58*	9.50*
Age^2	0.88*	0.88*	0.88*
Sex (Male=1)	0.44*	0.44*	0.44*
Children Aged 5-12 Years			
as % of Household Size	0.18*	0.19*	0.16*
Place of Residence (Urban=1)	1.56*	1.59*	1.58*
Father's Education			
Illiterate	1.00	1.00	1.00
Primary	2.17*	2.19*	2.19*
Middle	2.60*	2.63*	2.65*
Matric +	3.69*	3.78*	3.85*
Mother's Education			
Illiterate	1.00	1.00	1.00
Primary	3.86*	3.94*	3.84*
Middle	3.59*	3.80*	3.61*
Matric +	4.68*	4.91*	4.88*
Household Characteristics			
Household Income (Rs)	1.00**	1.00*	–
Poverty (Poor=1)	0.82*	–	0.79*
Farm Status of Household (Farm=1)	0.62*	0.63*	0.60*
Remittances (Receiving=1)•	1.86*	1.88*	1.88*
–2 Log Likelihood	4648	4655	4653
(N)	(4303)	(4303)	(4303)

Source: Computed from primary data set of 1998-99 Pakistan Socio-economic Survey (PSES).
　　　　• It includes both domestic and overseas remittances.
Note:　The symbols *, **, and *** denotes statistical significance at the 1 percent, 5 percent, and 10 percent levels respectively.

The gender dimension of poverty also reveals very interesting facts. When we estimated models separately for boys and girls, poverty still remained a significant explanatory variable and its coefficients were almost the same for both (Table 5). However, income became insignificant in the regression for boys. This shows that poverty affects male and female enrolment rates alike, but this is not the case with income. While parents' decision to enrol boys in school is not significantly influenced by household income, girls' chances of attending school depend on the availability of additional financial resources. In other words, budget constraint of the household is primarily binding for the school attendance of girls. Boys, on the other hand, are not hit hard by this constraint.

Table 5

Logistic Regression Effects of Predictors on School Enrolment of
Male and Female Children 5–12 Years Old

Predictors	Odds Ratios	
	Male	Female
Age (Years)	11.65*	7.11*
Age^2	0.88*	0.89*
Sex (Male=1)	–	–
Children Aged 5-12 Years as % of Household Size	0.18*	0.18*
Place of Residence (Urban=1)	1.34**	1.83*
Father's Education		
Illiterate	1.00	1.00
Primary	2.38*	2.09*
Middle	2.92*	2.37*
Matric +	4.26*	3.49*
Mother's Education		
Illiterate	1.00	1.00
Primary	2.57*	5.94*
Middle	1.68	8.23*
Matric +	2.96*	6.55*
Household Characteristics		
Household Income (Rs)	1.00	1.00**
Poverty (Poor=1)	0.80**	0.88**
Farm Status of Household (Farm=1)	0.70*	0.53*
Remittances (Receiving=1)•	1.50**	2.44*
–2 Log Likelihood	2365	2218
(N)	(2199)	(2104)

Source: Computed from primary data set of 1998-99 Pakistan Socio-economic Survey (PSES).
    • It includes both domestic and overseas remittances.

Note: The symbols *, **, and *** denote statistical significance at the 1 percent, 5 percent, and 10 percent levels respectively.

7. DISCUSSION

Poverty exerts a significant negative influence on the primary school enrolment. This influence is independent of the effect of household income. The role of income in determining primary school attendance has been emphasised in previous studies as well. The results of these studies can be used to argue that increasing household income will result in an increase in primary school enrollment. However, these results do not point to a specific target group on which policy-makers should focus their attention for attaining higher enrolment rates. The present study clearly isolates poverty as one of the causes of low primary school attendance, and highlights the need for directing educational policies towards the poor, particularly towards girls belonging to poor households. Eradicating poverty can go a long way in increasing primary school enrolment and reducing the gap between the enrolment rates of boys and girls.

REFERENCES

Alderman, Harald, Jere R. Behrman, David R. Ross, and Richard Sabot (1996) Decomposing the Gender Gap in Cognitive Skills in a Poor Rural Economy. *Journal of Human Resources* 31:1 229–254.

Arif, G. M., S. Mubashir Ali, Zafar Moin Nasir, and Nabeela Arshad (1999) Pakistan Socio-economic Survey: An Introduction. (PIDE-Mimeograph.)

Azhar, Rauf A. (1988) Education and Technical Efficiency in Pakistan's Agriculture. *The Pakistan Development Review* 27:4 687–695.

Birdsall, Nancy., David Ross, and Richard Sabot (1993) Underinvestment in Education: How Much Growth Has Pakistan Forgone? *The Pakistan Development Review* 32:4 453–492.

Burney, Nadeem A., and Mohammad Irfan (1991) Personal Characteristics, Supply of Schools, and Child School-enrolment in Pakistan. *The Pakistan Development Review* 30:1 21–62.

Burney, Nadeem A., and Mohammad Irfan (1995) Determinants of Child School Enrolment: Evidence from LDCs Using Choice-theoretic Approach. *International Journal of Social Economics* 22:1 24–40.

Butt, M. S. (1984) Education and Farm Productivity in Pakistan. *Pakistan Journal of Applied Economics* 3:1 65–82.

Chishti, Salim, and Akhtar Lodhi (1988) Simultaneous Determination of Choice to Attend School, and the Demand for School Education: A Case Study of Karachi, Pakistan. *Pakistan Journal of Applied Economics* 7:2 101–108.

Colclough, Christopher (1982) The Impact of Primary Schooling on Economic Development: A Review of the Evidence. *World Development* 10:3 167–185.

Guisinger, S. E. *et al*. (1984) Earnings, Rates of Returns to Education and the Earnings Distribution in Pakistan. *Economics of Education Review* 3:4 257–267.

Hamdani, K. A. (1977) Education and Income Differential: An Estimate for Rawalpindi City. *The Pakistan Development Review* 16:2 144–164.

Hamid, Shahnaz (1993) A Micro Analysis of Demand-side Determinants of Schooling in Urban Pakistan. *The Pakistan Development Review* 32:4 713–723.

Hamilton, Bruce W. (1983) The Flypaper Effect and Other Anomalies. *Journal of Public Economics* 22:3 347–361.

Haque, Nadeem Ul (1977) Economic Analysis of Personal Earnings in Rawalpindi City. *The Pakistan Development Review* 16:4 353–382.

Jimenez, Emmanuel, and Jee-Peng Tan (1985) Educational Development in Pakistan: The Role of User Charges and Private Education. (World Bank Discussion Paper. Education and Training Series Report No. EDT16.)

Khan, Shahrukh R., and Mohammad Irfan (1985) Rates of Returns to Education and the Determinants of Earnings in Pakistan. *The Pakistan Development Review* 24:3&4 671–680.

Oates, Wallace E. (1977) On the Use of Local Zoning Ordinances to Regulate Population Flows and the Quality of Local Public Services. In Orley Ashenfelter and Wallace Oates (eds) *Essays in Labour Market Analysis*. New York: Wiley.

Pasha, Hafiz A., and S. Ashraf Wasti (1989) Unemployment and Rates of Return to Education. *Singapore Economic Review* 34:2 64–77.

Psacharopoulos, George (1985) Returns to Education: A Further International Update and Implications. *Journal of Human Resources* 20:4 583–604.

Qureshi, S. K., and G. M. Arif (1999) Poverty Profile in Pakistan in 1998-99. (PIDE-Mimeograph.)

Sabot, Richard H. (1992) Human Capital Accumulation in Post Green Revolution Rural Pakistan: A Progress Report. *The Pakistan Development Review* 31:4 449–487.

Sathar, Zeba A., and Cynthia B. Lloyd (1994) Who Gets Primary Schooling in Pakistan: Inequalities Among and Within Families. *The Pakistan Development Review* 33:2 103–134.

Shahnaz, Lubna (1996) Impact of Male Out-migration on Female Decision-making: A Case Study of Selected Areas of Kharian, M. Phil Thesis, Department of Economics, Quaid-i-Azam University, Islamabad, Pakistan.

United Nations (1986) Migrant Workers No. 2. The Social Situation of Migrant Workers and their Families. Department of International Economic and Social Affairs, Now York.

Comments

It is now widely established that schooling is linked to higher earnings, better health and nutrition, greater labour productivity as well as greater economic equality. In view of the above, it becomes all the more important to conduct inquiries relating to the factors affecting schooling attainment. The paper under discussion conducts a thought provoking exercise primarily to determine the linkage between poverty and primary school enrolment. It is a useful addition to the literature on the determinants of schooling with a focus on gender differentials.

I will try to highlight some areas which in my opinion need a more in-depth analysis than was accorded in the paper.

- It is not clear how the poverty status variable has been constructed and how it is being used to measure the extent of poverty.
- The paper would benefit from a detailed discussion of the effects of parental education on primary school enrolment given that the results from both the combined sample as well as the male and female samples show a significant effect of mother's education and father's education on the enrolment of their children. More specifically, for the combined sample, mother's education has a stronger effect on enrolment as compared to father's education in all the three models. It is also interesting to note that the enrolment of girls is more influenced by mother's education than by father's education whereas the enrolment of boys is more influenced by father's education relative to mother's education. In my opinion, these results need to be analysed carefully especially because mother's schooling plays an important role in the household production activity of producing quality child care which leads to better and higher schooling attainment of children.
- I should also mention that liquidity constraints mainly arising from imperfections in the capital market leading to nonavailability or scarcity of funds for schooling investments could be a major factor affecting primary school enrolments especially for poor households. Since the focus of this study is on the linkage between poverty and schooling, an analysis of liquidity constraints would enrich the policy implications especially for compulsory education. A way to check for the presence of liquidity constraints could be by including a variable reflecting the asset position of households.
- Keeping in view the theme of this conference, any study which explores the determinants of schooling should definitely take into account the effect of institutional features relating to the supply side factors of school quality and

school availability. A measure of the accessibility to schools would not only help in explaining the overall enrolment pattern but would also throw considerable light on the gender inequality in primary school enrolments. The fact that enrolment rates of the urban poor are greater than the enrolment rates of the rural non-poor (Table 3) might be explained by easier accessibility of schools in the urban areas.

- In analysing the gender differentials in enrolment it can be investigated whether poorer economic incentives in terms of lower expected labour market earnings leading to lower expected rates of return from schooling investments is a factor leading to relatively lower primary school enrolment rates for girls. This hypothesis related to the demand for schooling is being tested in the current literature to explain linkages between labour market characteristics and the gender gap in schooling in developing countries.

- Lastly, I would like to refer to the 1998 Human Development Report for South Asia which asserted that income poverty is not necessarily a barrier to the spread of basic education. It documents the examples of successful civil society initiatives in Bangladesh, Sri Lanka and the South Indian state of Kerala in spreading basic education through the joint partnership efforts of local communities, NGOs and the state, as a possible solution to raise standards of living through schooling investments and achieving gender balance in school enrolments.

Aliya H. Khan

Quaid-i-Azam University,
Islamabad.