4

Rural girls in Pakistan: Constraints of policy and culture

Cynthia Lloyd, Cem Mete, and Monica Grant

Not all girls suffer the same educational disadvantages in Pakistan. Girls living in urban areas whose families come from the highest quartile of the income distribution are almost as likely as their male peers to have attended school or completed the five grades of primary schooling. By contrast, no more than a third as many girls as boys from the lowest income quartile of the income distribution who live in rural areas of Pakistan have ever attended school, and less than a quarter as many girls as boys in the same circumstances have completed primary school. Poor girls living in rural areas thus suffer a triple disadvantage, with their poverty and rural location compounding the gender-based disadvantage experienced by their better-off urban peers. The identification of policy prescriptions that could lead to the achievement of universal primary schooling in the context of these overlapping layers of disadvantage requires a full understanding of their determinants in Pakistan.

In explaining the relatively large and persistent countrywide gender gap in schooling, experts have typically given weight to both demand- and supply-side constraints. These include poverty and parental concerns about the safety and mobility of their daughters on the demand side and underinvestment in girls' schooling on the supply side. The very recent rapid rise in private school enrollment at the primary level in rural Pakistan (Sathar and others 2006; Andrabi, Das, and Khwaja 2002, 2006) suggests the possibility, however, that there may be a large reservoir of unmet

demand for girls' schooling in rural areas. These recent and dramatic shifts in the distribution of enrollment between the public and private sectors challenge us to seek a deeper understanding of the factors that may contribute to the multiple educational disadvantages that poor rural girls continue to face in Pakistan.
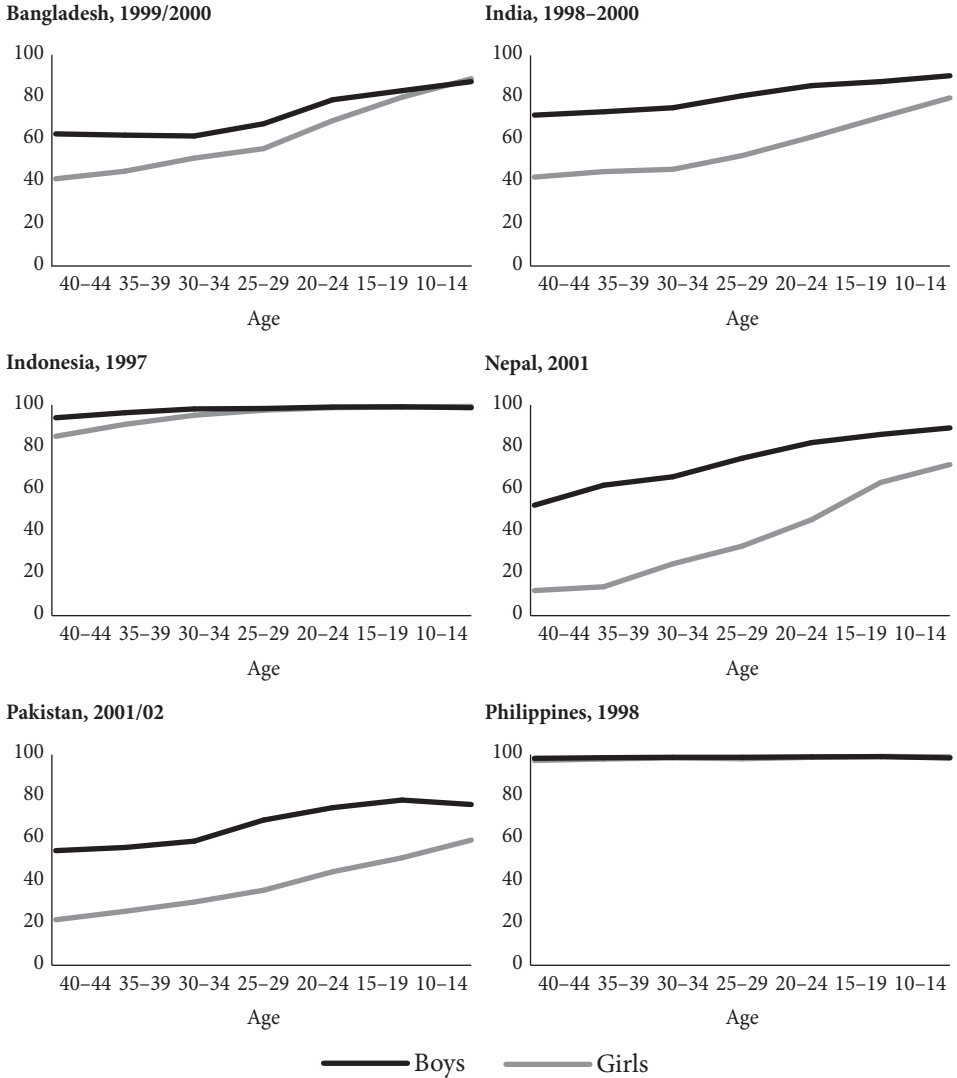
This chapter makes use of two relatively new data sets to explore some of the factors still limiting girls' participation in primary school, even in the context of the rapid growth of private primary schooling in rural Pakistan. The focus on primary school is justified by the fact that universal primary schooling remains an elusive goal in Pakistan, where large numbers of children, particularly girls, still never enroll in school, despite the very high estimated rates of return to primary completion (Behrman, Ross, and Sabot 2002).

This chapter begins with a brief review of the literature on girls' schooling in Pakistan in order to highlight the major factors that have been identified as potentially important to understanding the low levels of enrollment for girls in rural areas. It then describes the degree of gender inequality in school participation, using data from the 2001–02 national survey on adolescents and youth in Pakistan (Sathar and others 2003). The third part of the chapter relies on community data from the same national survey to explore some of the factors that have influenced the geographic placement of new government and private schools over the previous five years. We are especially interested in determining the extent to which new schools are being established in areas where girls have suffered particular disadvantage in the past (the poorest districts and those with the largest gender gaps in enrollment). The fourth part of the chapter relies on panel data collected in rural villages in the North West Frontier Province (NWFP) and Punjab (most recently in 2004) in order to explore, in a multivariate framework, some of the school and family factors associated with gender differences and variations in girls' enrollment rates. The last section draws conclusions and implications.

Education in Pakistan

The literature on and concern about the determinants of girls' relatively low levels of schooling in Pakistan can be traced back many years. While girls' enrollment rates have risen over time and gender gaps have narrowed, by the turn of the twenty-first century Pakistani girls had achieved levels of enrollment that were no better than those achieved by Indian girls 10 years earlier (Lloyd 2004). In the years since the eastern part of the original nation of Pakistan became the independent nation of Bangladesh, education of girls in Bangladesh has shown much more rapid improvement than in Pakistan, despite a much poorer initial resource base (Lloyd 2004). Currently, Pakistan lags behind all of its Asian neighbors except Nepal with respect to overall enrollment rates for girls (figure 4.1). As of 2001/02 the overall percentage of 10- to 14-year-old girls who had ever attended school had not quite reached 60 percent (Lloyd 2004).

Figure 4.1. The percent of boys and girls that ever attended school, by age, in six countries

Bangladesh, 1999/2000

India, 1998–2000

Indonesia, 1997

Nepal, 2001

Pakistan, 2001/02

Philippines, 1998

— Boys   — Girls

Source: Lloyd (2004).

Poverty, cultural constraints, and an inadequate supply of government schools for girls in some rural areas are the three principal factors consistently identified in the literature in explaining the gender gap in primary school enrollment and the persistent disadvantage of rural girls. These factors would seem to form a vicious negative

cycle because the same societal attitudes emphasizing girls' modesty, protection, and seclusion, which are said to limit parents' willingness to send their girls to school, are also likely to be prevalent among the provincial and district education officers responsible for building and provisioning new schools in relatively poor rural areas, as well as among the teachers who staff the schools.

Furthermore, the most traditional attitudes toward girls' schooling tend to be held by the least educated, leading to a perpetuation of disadvantage, because the least educated parents, who are also the poorest parents, are least inclined to educate their girls and typically live in villages where others share their views. Mothers' education rather than fathers' matters most in decisions about the education of their daughters, a pattern consistently confirmed in the empirical literature on schooling in Pakistan (see, for example, Holmes 2003; Sathar and Lloyd 1994; Pakistan 1998; World Bank 2002).

Most published studies analyzing the determinants of enrollment have found the association between household or family income and girls' enrollment to be positive and statistically significant, whether it is measured directly, using detailed household consumption data, or more indirectly, through some aggregation of household assets (World Bank 2002; Pakistan 1998; Sathar and Lloyd 1994; Hazarika 2001). Furthermore, in most cases, when results for boys and girls are compared, the size and significance of income effects are larger for girls than boys (World Bank 2002; Pakistan 1998; Sathar and Lloyd 1994).

A few recent studies have explored the separate role of permanent income relative to temporary income shocks—an important distinction in a context where the majority of poor rural residents have limited, if any, capacity to insure against risks and are very vulnerable to sudden negative shifts in income. Using rural panel data from 1986–91, Sawada (1999) finds that transitory income shocks (including deaths of household members, deaths of animals, and deviations from average rainfall) affect children's enrollment significantly, with a greater impact for girls. Lloyd, Mete, and Grant (2006) find the loss of remittances (a relatively uncommon phenomenon) to be a significant factor increasing the likelihood of dropout for boys.

There are other demand-side factors that are less commonly explored in the literature but are also potentially important, particularly for girls. They include the persistence of relative high fertility in rural Pakistan (although it is now beginning to decline) as well as the relatively poor health and nutritional status of poor rural children of school age. Indeed, Lloyd, Mete, and Grant (2006) find that whether or not a mother had had an unwanted child in the past six years was one of the most significant factors associated with dropout rates for girls but not for boys between 1997 and 2004 in rural NWFP and Punjab. Alderman and others (2001) also find evidence of the potential importance of preschool nutrition for school enrollment, with larger effects for girls than boys.

Before the rule of General Zia ul Haq in the late 1970s, coeducation in rural primary schools was more common. During the peak of the Islamization process, girls

were often forced to withdraw from coeducational primary schools despite the lack of alternatives (Shaheed and Mumtaz 1993). The tradition of single-sex schooling in Pakistan—a tradition that assures parents that their daughters will be taught exclusively by women—has created considerable challenges to the delivery of educational services in rural areas given the shortage of qualified female teachers in many parts of rural Pakistan. A principal constraint on girls' schooling in Pakistan has been the supply of all girls' government schools. In their assessment of learning in primary schools in Pakistan, Warwick and Reimers (1995) suggest that it was never the policy of the government to provide equal educational access and that the Pakistani government followed a rough rule of thumb, building one girls' primary school for every two boys' primary schools. While some girls attend boys' primary schools, particularly in rural villages where no girls' primary school is available, it is rare to find girls progressing beyond preprimary grades in boys' schools, even to the first few grades (Sathar, Lloyd, and ul Haque 2000). Furthermore, when girls attend boys' primary schools their attendance rates are very low, according to a 1997 rural survey of schools in 12 villages (36 percent compared with 88 percent in girls' schools) (Sathar, Lloyd, and ul Haque 2000). Thus it would appear that given current conditions, girls do not thrive in boys' government schools.

Every study of the determinants of primary school enrollment in Pakistan that has included some data on primary school access in the community (measured by the presence of a gender-appropriate school within the community or within some reasonable distance from the center of the community) has found access to be a significant factor explaining variation in enrollment across communities, particularly for girls (Alderman and others 1995; Sawada and Lokshin 2001; Sathar and Lloyd 1994; Durrant 1999; Alderman and others 2001; Hazarika 2001; Lloyd, Mete, and Sathar 2005; World Bank 2002, 2005). Indeed, there appear to have been more studies of the effects of primary school access on enrollment in Pakistan than in any other country—a clear sign of its importance. These studies are based on data that range from the mid-1980s to the late 1990s, indicating that the problem has persisted for many years. Given the very rapid rise in private coeducational schooling in rural areas in recent years, it is of interest to see whether access to primary schooling for girls remains as big a problem now as it was in the past.

Additional factors of potential importance on the supply side include the poor quality of government primary schools, the hidden costs to parents and children of government school attendance due to pervasive corruption and discriminatory treatment, and the local availability of postprimary schooling. Recent evidence suggests that some aspects of primary school quality may be important factors for parents in deciding whether to send their children to school. Using data collected in rural Punjab and NWFP in 1997, Lloyd, Mete, and Sathar (2005) find that a measure of the share of teachers residing in the community (a proxy of the extent of teacher absenteeism) is a statistically significant factor inhibiting girls' enrollment but an unimportant factor

for boys.[1] Absenteeism among teachers is also a more important problem in government girls' schools than government boys' schools. In a survey of primary schools in 12 rural villages of Punjab and NWFP, Sathar and others (2003) find that 31 percent of teachers at government girls' schools and 19 percent of teachers at government boys' schools were absent. The teacher absenteeism rates in the Pakistani data sets are similar to those observed in India.[2]

Primary school costs have also been found to be a more inhibiting factor for girls than boys. Among the direct costs that may be underreported and hard to trace are the bribes that parents often must pay to teachers to gain admittance or maintain the standing of their children in school, an extra cost that may differentially jeopardize girls' schooling. In a household survey in Pakistan described by Transparency International (2002), many parents report irregular admissions procedures and persistent corrupt practices after admission requiring various forms of payment in exchange for a child's admittance or continued good standing in school. The presence of a middle school within the community has also been documented to be a statistically important factor explaining variations in enrollment rates across communities (World Bank 2002, 2005).

Girls' disadvantage in enrollment: existing evidence and data

Data from the 2001/02 national survey of adolescents and youth in Pakistan provide some excellent descriptive documentation of the extent of girls' disadvantage in primary enrollment (Sathar and others 2003). These data can be broken down by gender, residence, province, and household economic status. While Pakistan is home to four major ethnic groups (Baluchi, Punjabi, Pushtun, and Sindhi), their geographic location is roughly mirrored by provincial boundaries, thus making it impossible to disentangle ethnic differences in enrollment from provincial differences.[3] To measure household economic status, an asset index was created using information on house-

---

1 One reported reason for absenteeism is that teachers in the public sector often secure their positions by paying substantial bribes to politicians and bureaucrats—outlays that require that they take on side jobs to cover their investment. These side jobs require that they be absent from school (Hasnain 2005).

2 Kremer and others (2005) find that 25 percent of teachers were missing at the time of the interviews in Indian primary schools. They document lower absentee rates in private schools and among teachers from local areas. Cross-country evidence reported by Chaudhury and others (2006) reveals that teacher absenteeism rates in India and Pakistan are on the high side of the distribution, exceeded only by Uganda (with a 27 percent primary school absentee rate). The average absentee rate for the six countries included in the authors' study is 19 percent.

3 Provincial ministries of education hold much of the policy and budgetary authority for primary schooling in Pakistan. Provincial differences in enrollment thus reflect differences in provincial educational investments and policy priorities as well as social, economic, and cultural differences, including ethnic differences.

Table 4.1. Percentage of all 15- to 19-year-olds in Pakistan who ever attended school, by economic status, location, and gender, 2001/02

	Rural			Urban		
	Boys	Girls	Gender gap	Boys	Girls	Gender gap
Household economic status[a]						
Low	66.1	22.3	43.8	51.9[b]	40.4[b]	11.4
Low-medium	82.0	37.1	44.9	77.4	46.3	31.1
Medium-high	91.9	67.5	24.4	84.2	70.1	14.1
High	96.6	81.5	15.1	96.6	90.3	6.3
Province						
Punjab	83.1	51.5	31.6	90.8	87.9	2.9
Sindh	77.4	35.2	42.2	91.1	75.4	15.7
NWFP	89.4	39.0	50.4	91.0	63.3	27.7
Balochistan	73.7	31.7	42.0	85.5	47.9	37.6

a. For definition of household economic status, see footnote 4.
b. Fewer than 30 cases.

Source: 2001/02 National Survey of Adolescents and Youth in Pakistan.

hold possessions and amenities.[4] This asset index can be interpreted as a proxy for the permanent income of the household.

Among Pakistanis 15–19 years old who ever attended school, the gap between boys and girls in the richest group is small relative to that in the poorest group in both urban and rural areas (table 4.1). The gender gap in enrollment is 15 percentage points among the richest rural youth but 44 percentage points among the poorest rural youth. Furthermore, the gender gap widens steadily from the highest to the lowest economic group. Girls' enrollment is highest in Punjab, but the gender gap among the poorest rural adolescents is also highest there, exceeding 50 percentage points (table 4.2).

Following the lead of the National Research Council/Institute of Medicine panel report on transitions to adulthood in developing countries (Lloyd 2005), we develop an index of inequality in order to capture a gender-specific measure of the degree of inequality across economic or residence groups. The index ranges from 0 to 100, with 100 representing the most extreme form of inequality (the complete nonenrollment of

---

4 Twenty-nine variables collected at the household level on household possessions and amenities were used as inputs into a principal components analysis based on the full sample (urban and rural residents combined). The first component was scored and households divided into quartiles. Each youth interviewed was linked to the socioeconomic status of his or her household. Because some households had more than one young person, the respondents are not evenly distributed across quartiles (Sathar and others 2003).

Table 4.2. Percentage of poorest rural 15- to 19-year-olds in Pakistan who ever attended school, by province and gender, 2001/02

Province	Boys	Girls	Gender gap
Punjab	72.8	22.1	50.7
Sindh	60.8	22.0	38.8
NWFP	66.8	27.7	39.1
Balochistan	58.1	18.2	39.9

Note: Figures are for youth from lowest quartile of household economic status index. See definition in footnote 4.

Source: 2001/02 National Survey of Adolescents and Youth in Pakistan.

Table 4.3. Index of rural/urban residence and income inequality in percentage of 15- to 19-year-olds who ever attended school, by gender and income, 2001/02

Province	Girls	Boys	Gender gap
Rural/urban			
Punjab	41.4	8.5	32.9
Sindh	53.3	15.0	38.3
NWFP	38.4	1.8	36.6
Balochistan	33.8	13.8	20.0
Pakistan	44.9	9.8	35.1
Lowest quartile/highest quartile			
Punjab	77.2	25.6	51.6
Sindh	71.7	36.4	35.3
NWFP	56.4	32.1	24.3
Balochistan	78.7	42.5	36.2
Pakistan	74.3	32.0	42.3

Note: See footnote 5 for explanation of index of inequality.

Source: 2001/02 National Survey of Adolescents and Youth in Pakistan.

the disadvantaged group) and 0 representing complete parity across groups.[5] A value of 50 can be interpreted as indicating that the more disadvantaged group has an enrollment rate that is 50 percent that of the more advantaged group.

For Pakistan as a whole, enrollment by rural girl is 45 percentage points lower than that of urban girls, while enrollment by rural boys is only 10 percent lower than

---

5 The index is calculated as one minus the ratio of ever attendance of the most disadvantaged group (rural residents or those in the bottom quartile of the socioeconomic index) to ever attendance of the most advantaged group (urban residents or those in the top quartile of the socioeconomic index), multiplied by 100.

that of urban boys (table 4.3). Thus rural boys suffer much less inequality in enrollment relative to urban boys than do rural girls relative to urban girls. Similar patterns exist if one measures inequality between rural and urban areas in parental aspirations for their children's education (the percentage of parents who say that their daughters or sons "should attain secondary or higher education" or "should attend school as long as they want"), but the degree of inequality is much smaller. Eighty percent of parents of rural girls and 93 percent of parents of urban girls express the aspiration that their daughters obtain secondary or higher education; for boys the difference is just 2 percentage points (data not shown).

The degree of inequality between the richest and poorest groups is even greater. The poorest girls have enrollment rates that are almost 75 percent lower than the richest girls, while the poorest boys have enrollment rates that are 32 percent lower than the richest boys. Similar gender differences exist in indices designed to capture inequalities in primary school completion (data not shown).

Geographically, gender differences in the degree of economic inequality are greatest in Punjab and smallest in NWFP. Overall levels of economic inequality for both boys and girls, however, are greatest in Balochistan, Pakistan's poorest province. Gender differences in the degree of inequality between rural and urban areas are greatest in Sindh and NWFP, with overall levels of inequality for both boys and girls greatest in Sindh. Thus both geography and economic status matter in explaining the particular disadvantage of girls.

Parents of rural girls are much more likely than parents of rural boys to cite lack of access (no school available or school too far away) or parental disapproval (including "seeing no benefit") as reasons for nonenrollment. Parents cite costs as important reasons for both boys and girls (data not shown). While school quality is rarely cited as a reason for nonenrollment for either boys or girls, it is possible that parental disapproval is tied up with school quality if there are particular features of schools (such as the presence of male teachers or the absence of proper toilet facilities) that lead parents to disapprove of school in its current form.

Are new schools in rural areas addressing the needs of the most disadvantaged girls?

School access has been an important factor inhibiting girls' enrollment, particularly in rural areas. Changes in government educational policy in recent years, as well as the rapid growth of low-fee private schools in rural areas, may be changing the educational opportunity structure for poor rural girls. The Education Sector Reform Action Plan (2001–05) has broadened the criteria for placing new government primary schools in rural areas beyond the traditional criterion of village size (more than 500 residents) to include considerations of gender and need (World Bank 2005).

Using both community and household data from the 2001/02 National Adolescent and Youth Survey, we explore the distribution of private and government girls' primary schools in rural areas and how it changed from 1997 to 2002 (table 4.4). The 150 rural communities in the sample are categorized by quintiles according to the mean household asset count in the community and the extent of the average gender gap in primary enrollment in the community.[6] The extent of gender disparity in the community is measured as the ratio of the percentage of males 15–24 who ever enrolled in primary school to the percentage of females 15–24 who did so, with the highest values representing the most extreme gender disparity and the lowest values (closest to one) representing the smallest disparity. By using the age group 15–24, we are capturing the situation roughly 10 years before the survey, in the early 1990s, when the group would have been 5–14.[7] The determination of schools' availability five years before the survey is derived from data on the establishment date of each school listed in the community survey.[8]

We find a strong positive association between the percentage of communities with a private primary school and the economic standing of the community during both time periods, with 15 percent of the poorest communities and 44 percent of the richest rural communities having a private school by 2002. Furthermore, the absolute growth in the percentage of communities with a private primary school was greatest in the better-off communities.[9] The association between the community's economic standing and the percentage with a government girls' school is also notable among communities in the three lowest quintiles, but that association does not persist among better-off communities. In 2002 only 43 percent of the communities in the lowest economic quintile had a girls' government school. The figure was 89 percent in the middle quintile and 78 percent in the highest quintile. Over the five-year period, the greatest absolute growth in the number of communities with a government girls' primary school occurred in the poorest and the richest communities.

We find a clear correlation between the extent of gender disparity at the community level and the percentage of communities with a private school. The smaller the disparity or the greater the equity in past enrollment, the more likely it is that a community will have a private school. If anything, this association appears to have

6 We use this asset count indicator to rank communities by economic or wealth status rather than the asset index presented earlier, because it allows more differentiation among rural residents. The household economic index presented earlier for the whole sample groups most of the rural communities in the lower quintiles.

7 The typical age for starting school in Pakistan ranges from five to seven.

8 We assume that the number of schools that existed in 1997 is simply the number of schools existing in 2002 minus the number of schools established since 1997. In the absence of data on school closures, we have to assume that no schools that existed in 1997 were closed before our survey in 2002. We also assume that all middle schools have primary school sections and that the count of available primary schools in rural areas is thus the sum of all primary and middle schools. This seems a reasonable assumption, since our panel data show that it is a common pattern for primary schools to add a middle school section as they expand.

9 The results are the same if we confine the analysis only to private for-profit schools because very few private schools in our sample were nonprofit schools or schools supported by nongovernmental organizations.

Table 4.4. Percentage of rural communities in Pakistan with private or girls' primary schools, by asset ownership and gender enrollment ratio, 1997 and 2002

	Private primary school			Government girls' primary school		
	1997	**2002**	**Change**	**1997**	**2002**	**Change**
Community asset quintile						
Low	9	15	+6	34	43	+9
Low-medium	4	15	+11	57	63	+6
Medium	15	26	+11	81	89	+8
Medium-high	19	43	+24	67	71	+4
High	22	44	+22	67	78	+11
Male/female enrollment ratio						
High disparity	4	9	+5	30	38	+8
High-medium	11	21	+10	58	66	+8
Medium	19	31	+12	77	85	+8
Low-medium	4	33	+29	71	75	+4
Low disparity	27	40	+13	73	80	+7

Source: 2001/02 National Survey of Adolescents and Youth in Pakistan.

strengthened over the five-year period. Thus it would appear that communities are seen to be more suitable to private school formation when the gender disparity in enrollment is relatively narrow, ensuring entrepreneurs of more potential clients.

Next we explore the question of the determinants of new school formation in rural Pakistan in a multivariate framework, using the rural village (or primary sampling unit) as the unit of analysis. In the case of the formation of private schools, which in Pakistan are typically for-profit coeducational schools, we are interested in some of the community characteristics that might make a rural community appear to provide a good business opportunity to a private entrepreneur. Among possible factors we include parental capacity to pay (in the form of the mean community household asset index and a measure of the degree of within-community wealth inequality),[10] the availability of adult females with teaching qualifications (the percentage of adult

10 Household asset inequality is measured as the ratio of the asset index for households in the 75th percentile of the household asset distribution to the asset index among households in the 25th asset percentile of the distribution. This is a measure proposed by James (1993) in her study of the factors affecting the cross-national variation in the public/private mix of educational services. She hypothesizes that in the context of relatively low levels of public school quality, differential preferences among parents for various levels of school quality could lead to greater demand for private schooling when there is greater income diversity within the community.

women in the community who completed secondary schooling),[11] the relative size of the client population (proportion of the sample population that is 5–15),[12] the existence of competition (the existence of a private school in the community and the existence of a government girls' primary school in the community), and a measure of unmet need for primary schools for girls (the male/female ratio of the percentage of 15- to 24-year-olds who ever enrolled).

Our probit regression results show that, while most variables work in the hypothesized direction, the key statistically significant variable predicting the establishment of a new private for-profit school in the community between 1997 and 2002 was the variable measuring the extent of gender disparity in enrollment (table 4.5). (The positive association between household assets index and the establishment of a private school is also weakly significant, at the 10 percent level, in one of the three specifications.) Communities with greater gender equity in enrollment were those most likely to acquire a new private for-profit school over the five-year period. From a business point of view, private entrepreneurs may see themselves as more likely to persuade parents who are already committed to girls' schooling to consider private school than they are to persuade parents who have not yet decided to send their girls to school to send them to a private school. That conclusion is also supported by Lloyd, Mete, and Sathar (2005), who show, through a series of simulations, that the arrival of a private school in the community is unlikely to have much impact on overall enrollment rates but is likely to have greater impact on the distribution of enrollment between the private and public sectors. Thus private schooling does not seem to be addressing the needs of girls who have not yet had an opportunity to go to school. It is more likely to be giving additional choices to the parents of girls who have already decided to enroll them.

These findings, which focus on the establishment of new private primary schools during a recent five year period, complement findings from a related study of the determinants of private school formation in rural Punjab over a twenty year period since 1981 (Andrabi, Das, and Khwaja 2006). The major finding from this study was the importance of a girls' high school in the community in predicting the likelihood of new private school formation. This is because most private school teachers are women who were educated in the same village as the one they are teaching in. Communities with girls' high schools are likely to be the very same communities where there is greater gender equity enrollment.

The decision rules adopted by officials in the Ministry of Education to determine the placement of new government primary schools should be different from the

---

11 In an analysis of the cross-community variation in private school availability based on the 2001/02 Pakistan Integrated Household Survey, the presence of a high school for girls within five kilometers (suggesting the availability of qualified teachers within the community) was found to be a highly significant variable (World Bank 2005).

12 Unfortunately, we lack data on the total population of each community or the absolute size of the youth population.

Table 4.5. Probit regression coefficients for new school formation in rural areas of Pakistan, 1997–2002

Independent variable	Private primary school			Government girls' primary school		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Number of household assets	0.16*	0.10	0.10	0.05	0.06	0.15
Asset inequality	−0.49	−0.70	−0.48	0.05	0.10	0.30
Percentage females completed secondary school	2.41	1.58	0.97	0.32	0.60	−0.04
Proportion of population 5–15	1.76	3.90	2.95	−1.66	−1.85	−6.94**
Access to private school in 1997	0.37	0.19	0.21	−0.46	−0.41	−0.85
Access to girls' government school in 1997	−0.22	−0.49	−0.50	−0.58**	−0.54*	−1.08***
Male/female enrollment ratio		−0.21**	−0.21**		0.02	0.03
Province						
Sindh			−0.71			−0.99*
NWFP			−0.21			1.46**
Balochistan			0.52			0.28

* Significant at the 10 percent level.
** Significant at the 5 percent level.
*** Significant at the 1 percent level.

Note: Number of observations across all models is 150.

Source: 2001/02 National Survey of Adolescents and Youth in Pakistan.

decision rules guiding private entrepreneurs, but in both cases an assessment of demand (or need) should be critical. For this reason we use the same set of variables in a multivariate analysis of the potential factors influencing new government school formation. Using the Education Sector Reform guidelines to consider gender and need in the placement of new government primary schools, we might expect that new girls' schools would be most likely to be established in poorer communities, in communities that did not previously have a government girls' school, and in communities in which the gender disparity in enrollment is most extreme. In fact, the coefficients for the community's economic status and the extent of gender disparity in enrollment in the community are not statistically significant. The most important factor affecting

the likelihood that a new government girls' school will be built in the community is the lack of such a school, with communities much more likely to gain a new government girls' primary school if they did not already have one. Despite this, many of the poorest communities (57 percent) and the communities with the highest gender disparities (62 percent) still lack a girls' school (see table 4.4). Furthermore, commitment to establishing new girls' schools varies significantly by province. Ministry authorities in NWFP were much more likely over the five-year period to have established new girls' schools in rural areas than ministry authorities in Punjab, while ministry authorities in Sindh were significantly less likely to have done so. With the current pace of coverage expansion, it will still be many years before every community will have a government girls' primary school.

What factors affect girls' enrollment in rural Pakistan?

A 2004 survey of 12 rural villages in Punjab and NWFP included 597 women who had been interviewed in 1997, when they were married and between the ages of 20 and 45. The data include a full education history for each of their children. These data are complemented by and can be linked to a survey of primary schools attended by children in the community. In our analysis potential factors that may be important in explaining variations in enrollment in primary school among children 10–14 include household characteristics (including recent economic and demographic shocks since the previous wave of data collected in 1997), school characteristics (including public and private school availability, costs, and quality at the time each child in the analysis was 10), and a rating of overall level of community development.[13]

In interpreting the findings, it is important to understand some of the recent changes occurring in these communities, particularly as they relate to school choice. In 1997 there were 12 government girls' primary schools in these communities.[14] Between 1997 and 2004, one new government girls' school became operational and the number of private schools located in the 12 villages rose from 12 to 33.[15] The number of private schools outside the villages but nearby rose from 10 to 19, expanding still further the choice available to parents.

With such a dramatic expansion of school availability and choice, we might have expected a dramatic increase in primary school enrollment. In fact, during this same period, enrollment among 10- to 14-year-olds rose only modestly, from 90 percent to 93 percent for boys and from 66 percent to 71 percent for girls. Much more dramatic

---

13 Community development is measured with an index that awards one point for the presence of each of seven elements within the primary sampling unit: a metalled road, public transport, sewerage, electricity, telephone, natural gas, and paved streets.

14 Ten villages had at least one girls' government primary school; two did not.

15 In 1997, 4 of the 12 communities had at least one private coeducational school within the village; in 2002 the number of communities with a private for-profit coeducational school had grown to seven.

Table 4.6. Descriptive statistics for estimation of maximum-likelihood probit model of enrollment of children 10–14 in Pakistan (percent, except where otherwise indicated)

Statistic	Boys	Girls	Total
Ever enrolled in school	89.9	68.8	79.8
Mother ever attended school	22.2	20.9	21.6
Father blue-collar or agriculture	55.1	62.3	58.6
Monthly household consumption (thousands of Rs)	6.9	6.9	6.9
Crop loss	16.7	17.5	17.1
Any other shock	48.5	52.4	50.4
Unwanted birth	39.6	40.4	40.0
Availability of public primary school	100.0	83.0	91.9
Availability of private primary school	53.1	50.9	52.0
Cost of public primary school (Rs)	94.1	93.5	93.8
Cost of private primary school (Rs)	214.4	214.1	214.2
Public school teachers live in community	23.7	17.2	20.6
Private school teachers live in community	28.0	27.1	27.6
Community development index (2–3)	26.8	26.2	26.5
Community development (4)	50.6	50.9	50.7
Community development (5–6)	22.7	22.9	22.8

Source: 2004 Changing Educational Opportunities Survey in Rural Punjab and NWFP.

was the shift in the composition of enrollment, as younger cohorts were more likely than slightly older ones to attend private school (Sathar and others 2006).

During this period the public sector made substantial investments in upgrading primary schools, with notable improvements in toilet facilities for girls and a significant decline in teacher absenteeism (Lloyd, Mete, and Grant 2006). Many schools added a middle school section to an already existing primary school, although this was much more likely to happen in private than in public schools (Sathar and others 2006). As the number of private schools expanded, the percentage of private school teachers who were female declined, from 85 to 69 percent, possibly suggesting that the number of women potentially qualified to become teachers was insufficient to support such a rapid expansion in private schools without some growth in the number of male teachers.

Variable means and the results of our maximum-likelihood probit models reveal several interesting points. The cost of private school (as reported by parents) is only twice the cost of public school (table 4.6). The percentage of local teachers (teachers

who live in the village) is not significantly different in public and private schools. Roughly half of the children in the sample have access to a private school in their village. As many as 40 percent of children 10–14 had mothers who had given birth to an unwanted child in the previous six years (between the two survey waves). Other household shocks, such as crop loss, are much less common; for example, no more than 18 percent of children live in households that had experienced such a loss in the past six years.

Regression results for boys and girls are presented separately. Three models are compared: one including basic household and community characteristics, a second that is expanded to include the occurrence of household shocks during the previous six years, and a third that is expanded still further to include information on public and private schools within the village (table 4.7). The discussion here focuses on model 3 because the inclusion of all the variables in the full model does not appear to affect the results for the specific variables included in the other models.

For both boys and girls, household consumption and community development show a strong, positive, statistically significant association with enrollment. Whether or not a girl's mother ever enrolled in school is also significantly associated with enrollment. As far as the experience of household shocks is concerned, the occurrence of a crop loss in the previous six years is a statistically significant factor discouraging enrollment for girls while it is unimportant for boys. For boys only one household shock—the arrival of an unwanted child—has a statistically significant effect (at the 10 percent level) on enrollment, and its effect is positive rather than negative, as would have been expected. This demographic household shock, which has previously been shown to increase the likelihood of dropout for girls in grades 1–8 (Lloyd, Mete, and Grant 2006), has a negative effect on the likelihood that girls will enroll, as expected, but the estimated coefficients are not statistically significant at the 10 percent level.

The presence of a government girls' school in the village contributes positively to the likelihood of enrollment, while the presence of a private school does not. However, only two of the 12 villages lacked a government girls' primary school at the time the children were 10 years old, but five or six villages lacked a coeducational private school accessible to girls, depending on the year that children in the sample entered school. The percentage of government primary school teachers living in the community—a proxy for school quality—was also a statistically significant and positive factor in enrollment decisions for girls, but it appears to be a negative factor for boys. In contrast, for girls the percentage of private school teachers residing in the community contributes negatively to overall enrollment rates. It could be that the community residence of teachers captures two conflicting aspects of quality: resident teachers are both less likely to be absent and more likely to be poorly qualified. These factors may balance out differently in different types of schools, and they may have differential effects on parental decisions about enrollment for boys and girls. Finally, school costs, calculated as village-level means of reported household expenditures on school fees, uniforms,

Table 4.7. Probability of ever enrolling in primary school for children 10–14 in two Pakistani villages, 2004

Independent variable	Boys			Girls		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Household characteristic						
Mother's schooling (1 = ever in school)	0.03	0.03	0.03	0.29***	0.30***	0.18***
Father's occupation (1 = agriculture or blue collar)	−0.02	−0.01	−0.01	−0.04	−0.05	−0.06*
Log of monthly household consumption	0.07***	0.07***	0.06***	0.07***	0.08**	0.10***
Community development dummies						
Middle third	0.12***	0.13***	0.11***	0.04	0.01	0.34**
Upper third	0.09***	0.09***	0.08**	0.29***	0.26***	0.32***
Household shock dummies						
Crop loss		0.00	−0.00		−0.15**	−0.16***
Any other household shock		0.01	0.01		0.07	0.03
Unwanted birth		0.04*	0.03*		−0.05	−0.02
School access within village						
Public			—a			0.80***
Private			−0.03			0.04
*School costs*b						
Public			0.00			0.01**
Private			−0.00			−0.00***
*Percentage of teachers resident*b						
Public			−0.14*			0.67**
Private			0.11			−0.85***
Number of observations		433			400	

* Significant at the 10 percent level.
** Significant at the 5 percent level.
*** Significant at the 1 percent level.

a. Dropped because all villages have at least one government boys' school.
b. If no school is available in village, the variable is set equal to zero. If there is more than one school in the category in the village, the variable measures the average of all village schools in category.

Source: 2004 Changing Educational Opportunities Survey in Rural Punjab and NWFP.

stationery, and books for government schools and private schools separately, show a positive and significant association with girls' enrollment in the case of public schools and a negative and statistically significant association with girls' enrollment in the case of private schools.

Conclusions and policy implications

Despite the dramatic expansion of primary school availability and choice in Pakistan, the percentage of poor rural girls enrolled in school remains low. This finding may be partially explained by the fact that school choice has expanded most (through the establishment of private schools) in richer communities and in communities in which gender disparities in enrollment are narrower—that is, in communities in which girls' enrollment rates were higher to begin with. As a result, many of the poorest communities and the communities with the highest gender disparities still lack a girls' school. Between 1997 and 2004, there was substantial variation across provinces in the rate of establishment of new government girls' schools, with NWFP building more new rural government girls' schools than other provinces. It thus appears unlikely that the expanding private sector can fully substitute for the public sector in addressing the educational needs of poor rural girls.

    The poorest rural girls still seem beyond reach in many settings, in some cases because villages are sparsely settled, making it expensive for the government to establish separate primary schools for boys and girls. In such circumstances it is critical to provide each village with at least one school, ideally a government school, that is a welcoming place for girls. Unfortunately, it is in these very settings that it is difficult to find qualified female teachers, given historical gender disparities in enrollment. While the data indicate that rural parents strongly prefer to have their girls taught by women (Sathar, Lloyd, and ul Haque 2000), it is not known whether parents might be more receptive to coeducational government schools if some of their concerns for the safety and protection of their daughters could be met in ways other than through the presence of female teachers.

    The search for solutions will require some program experimentation and evaluation. If a more cost-effective model could be found and implemented, we would predict that the gender gap could narrow considerably, because the poorest communities are the least likely to have a school that is welcoming to girls.

    Even if government primary schools were made equally welcoming to boys and girls, we would still expect some of the gender gap to remain. Some of the remaining barriers to girls' schooling are clearly economic, with parents somewhat less willing to invest in girls' schooling than in boys'. This hypothesis is supported by the finding that household economic shocks affect girls' schooling negatively but have no such effect on boys. These results may also explain why the rapid expansion in

private schooling in rural communities has not had a more positive effect on overall enrollment rates, particularly for girls. These remaining barriers could be addressed through conditional grants or subsidies to support girls' attendance in school, fairer recruitment practices, and greater accountability by teachers in the public sector in order to minimize bribes and other hidden expenses.

References

Alderman, H., J.R. Behrman, V. Lavy, and R. Menon. 2001. "Child Health and School Enrollment: A Longitudinal Analysis." *Journal of Human Resources* 36 (1): 185–205.

Alderman, H., J.R. Behrman, S. Khan, D.R. Ross, and R. Sabot. 1995. "Public Schooling Expenditures in Rural Pakistan: Efficiently Targeting Girls and a Lagging Region." In D. van de Walle and K. Nead, eds., *Public Spending and the Poor: Theory and Evidence*. Baltimore, Md.: Johns Hopkins University Press.

Andrabi, T., J. Das, and A.I. Khwaja. 2002. "The Rise of Private Schooling in Pakistan: Catering to the Urban Elite or Educating the Rural Poor?" Pomona College, Claremont, CA.

———. 2006 "Students Today, Teachers Tomorrow? The Rise of Affordable Private Schools." Pomona College, Claremont, CA.

Behrman, J.R., D. Ross, and R. Sabot. 2002. "Improving the Quality versus Increasing the Quantity of Schooling: Evidence for Rural Pakistan." Working Paper 02-022. Penn Institute for Economic Research, Philadelphia, PA.

Chaudhury, N., J. Hammer, M. Kremer, K. Muralidharan, and F.H. Rogers. 2006. "Missing in Action: Teacher and Health Worker Absence in Developing Countries." *Journal of Economic Perspectives* 20 (1): 91–116.

Durrant, V.L. 1999. "Community Influences on Schooling and Work Activity of Youth in Pakistan." Paper presented at the 14th annual general meeting and conference of the Pakistan Society of Development Economists, 28–31 January, Islamabad.

Hasnain, Z. 2005. "The Politics of Service Delivery in Pakistan: Political Parties and the Incentives for Patronage 1988–1999." PREM Working Paper Series SASPR-6. World Bank, Washington, D.C.

Hazarika, G. 2001. "The Sensitivity of Primary School Enrollment to the Costs of Post-Primary Schooling in Rural Pakistan: A Gender Perspective." *Education Economics* 9 (3): 237–44.

Holmes, J. 2003. "Measuring the Determinants of School Completion in Pakistan: Analysis of Censoring and Selection Bias." *Economics of Education Review* 22 (3): 249–64.

James, E. 1993. "Why Do Different Countries Choose a Different Public-Private Mix of Educational Services?" *Journal of Human Resources* 28 (3): 571–92.

Kremer, M., N. Chaudhury, F.H. Rogers, K. Muralidharan, and J. Hammer. 2005. "Teacher Absence in India: A Snapshot." *Journal of the European Economic Association* 3 (2/3): 658–67.

Lloyd, C.B. 2004. "The Changing Transitions to Adulthood in a Comparative Perspective: The Case of Pakistan." *Pakistan Development Review* 43 (4): 441–67.

———, ed. 2005. *Growing Up Global: The Changing Transitions to Adulthood in Developing Countries*. Report of the National Research Council and Institute of Medicine Panel on Transitions to Adulthood in Developing Countries. Washington, D.C.: National Academies Press.

Lloyd, C.B., C. Mete, and M. Grant. 2006. "The Implications of Changing Educational and Family Circumstances for Children's Grade Progression in Rural Pakistan: 1997–2004." Policy Research Division Working Paper 209. Population Council, New York.

Lloyd, C.B., C. Mete, and Z.A. Sathar. 2005. "The Effect of Gender Differences in Primary School Access, Type and Quality on the Decision to Enroll in Rural Pakistan." *Economic Development and Cultural Change* 53 (3): 685–710.

Pakistan, Government of, Federal Bureau of Statistics. 1998. *Education Sector Performance in the 1990s: Analysis from the PIHS*. Islamabad.

Sathar, Z.A., and C.B. Lloyd. 1994. "Who Gets Primary Schooling in Pakistan? Inequalities among and within Families." *Pakistan Development Review* 33 (2): 103–34.

Sathar, Z.A., C.B. Lloyd, and M. ul Haque. 2000. *Investment in Children's Education and Family-Building Behavior in Pakistan: Findings from Rural NWFP and Punjab*. Islamabad: Population Council.

Sathar, Z.A., C.B. Lloyd, M. ul Haque, J.A. Diers, A. Faizunnissa, M. Grant, and M. Sultana. 2003. *Adolescents and Youth in Pakistan 2001–2002: A Nationally Representative Survey*. Islamabad: Population Council.

Sathar, Z.A., M. ul Haque, M. Khan, C.B. Lloyd, and M. Grant. 2006. *Fewer and Better Educated Children: Expanded Choices in Schooling and Fertility in Rural Pakistan*. Islamabad: Population Council.

Sawada, Y. 1999. "Income Risks, Gender and Human Capital Investment in Rural Pakistan." Stanford University, Economics Department, Stanford, CA.

Sawada, Y., and M. Lokshin. 2001. "Household Schooling Decisions in Rural Pakistan." Poverty and Human Resources Policy Research Working Paper 2541. World Bank, Washington, D.C.

Shaheed, F., and K. Mumtaz. 1993. "Women's Education in Pakistan." In J.K. Conway and S.C. Bourque, eds., *The Politics of Women's Education: Perspectives from Asia, Africa and Latin America*. Ann Arbor, Mich.: University of Michigan Press.

Transparency International. 2002. "Corruption in South Asia: Insights and Benchmarks from Citizen Feedback Surveys in Five Countries." Berlin.

Warwick, D.P., and F. Reimers. 1995. *Hope or Despair? Learning in Pakistan's Primary Schools*. Westport, Conn.: Praeger Press.

World Bank. 2002. *Poverty in Pakistan: Vulnerabilities, Social Gaps and Rural Dynamics*. Economic Report 24296-PAK. Washington, D.C.

———. 2005. *Pakistan Country Gender Assessment. Bridging the Gender Gap: Opportunities and Challenges*. Environment and Social Development Sector Report 32244-PAK. South Asia Region, Washington, D.C.