

3. Focus on Human Development: The Benefits and Political Economy of Health and Education

3.1 The poverty analysis in Chapter 2 provides some indication of the nature and extent of poverty in Pakistan, not just as a measure of consumption, but also as an index of human development. Educational attainment and health are among the most valuable benefits of such development and are also- since they constitute vital investments in human capital - important determinants of whether someone living in poverty is likely to improve their circumstances. In aggregate, the educational attainment and health of Pakistan's population is therefore crucial to the country's ability to grow economically, and alleviate poverty.

3.2 This chapter charts its progress in education and health during the 1990s, primarily using household data from the Pakistan Integrated Household Survey (PIHS), and the new survey conducted under the aegis of this report.¹ The evidence presented quantifies the significant effect that trends in education and health have exerted on the welfare and long-term economic potential of households. It also permits a systematic investigation of household characteristics that seem to explain differences in the educational attainment and health of its members – characteristics that need to be considered in the design and targeting of policy interventions.

3.3 The urgency for intervention has grown during the 1990s. Some indicators like infant mortality and contraception awareness and usage have posted significant gains, however, significant challenges remain among health indicators that are lagging behind. One of the most salient trends noted is the fact that while the primary gross enrollment rate (GER) in Pakistan improved until the middle of the decade, it then stagnated. Throughout, enrollment showed significant rural/urban differences, with poor constituents unsurprisingly faring the worst. While the gender gap in enrollment closed slightly, this was in large part, due to some declines in male enrollments. While the significance of a rapid concomitant expansion of private schooling is unclear, this is a phenomenon deserving further study.

3.4 The lack of improvement in education outcomes is particularly significant for poverty as the evidence suggests education does impact earnings in Pakistan, particularly in the urban economy, though it appears to yield less appreciable earnings benefits in rural areas. However, as widely observed, investments in education appear to yield strong household externalities, and among factors that determine whether children stay in school, parental education is the most important. Some direct policy implications follow on these observations. Particularly, the importance of targeting education benefits to ensure as wide coverage as possible, because of the high household externalities that can accrue if even only one family member is educated.

3.5 As discussed in Chapter 1, the underlying obstacles to the provision of public services such as education and health in Pakistan are embedded in its political economy. Accordingly, the last section of the chapter addresses the issue of governance and service provision, primarily using the case of education, where exhaustive data is available, as an example. The discussion, for example, identifies obstacles both in the supply and demand of education, in the former case the formal and informal institutions that govern political decision making, and in the latter cultural attitudes that appear to depress demand for education in Pakistan, particularly for girls. The last section of chapter describes the potential for the ongoing devolution reforms in Pakistan to address the institutional limitations on educational progress in the 1990s. It highlights areas where they may be particular windows for change, as well as some of the practical limitations on reforms.

Trends in Education During the 1990s, with Recent Findings²

3.6 The PIHS data collected during the 1990s (1991, 1995-96, 1996-97 and 1998-99) indicate that primary enrollment as measured by the GER, showed some improvement for the country as a whole between 1991 and 1995-96, but none thereafter. As established partly in chapter 2, enrollment rates were closely associated with poverty, and while the gender gap decreased, this was partly because male enrollments fell on net. School enrollments were lower among poor, and the poor also had relatively higher dropout rates. Private schooling increased, though the exact ramifications for this remain unclear.

3.7 In urban regions, the trends for both males and females have generally been positive, but in rural regions, enrollments among males have shown declines, while those of women have remained stagnant since 1995-96, following initial improvements. Table 3.1 shows that while primary GER increased from 81 percent to 91 percent in urban areas between 1991 and 1998-99, in rural areas it fell to 61 percent between 1995-96 and 1998-99, after having risen from 59 percent to 64 percent since 1991.

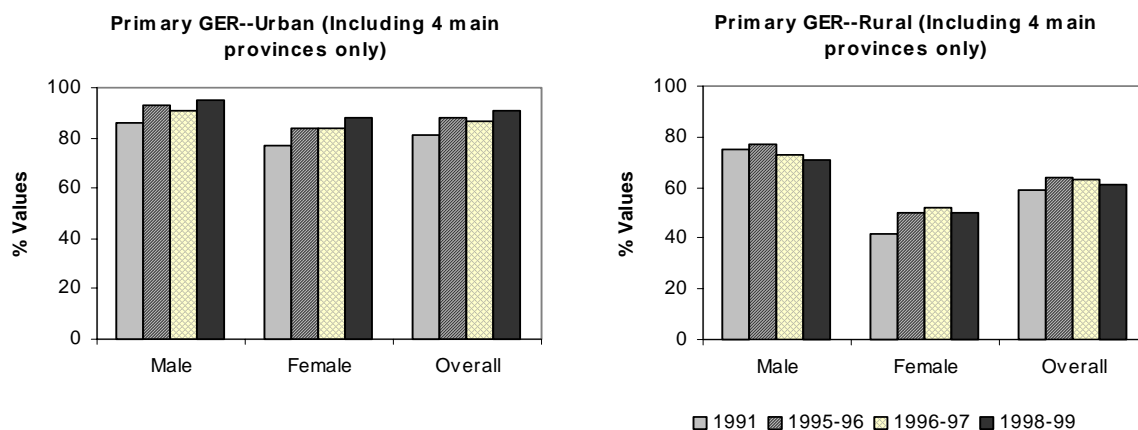
Table 3.1: Primary Gross Enrollment Rates (%)

	1991	1995-96	1996-97	1998-99
Punjab	..	73	73	76
Sindh	..	70	64	56
NWFP	.	66	68	67
Balochistan	..	63	58	58
All Four Above	..	71	70	69
Azad J & K	..	..	..	101
Northern Areas	..	..	..	75
FATA	..	..	..	39
Pakistan -- Urban	81	88	87	91
Pakistan -- Rural	59	64	63	61
Pakistan -- Male	78	81	78	78
Pakistan -- Female	53	60	61	60
Pakistan -- Aggregate	65	71	70	69

Source: PIHS for relevant years³

3.8 For males, the primary GER showed little change throughout the 1990's, while for females, a marked improvement was seen between 1991 and 1995-96, followed by stagnation. Looking into male and female enrollments separately for urban and rural areas (Figure 3.1), it turns out that primary GER (a) increased for both males and females in urban areas between 1991 and 1998-99,⁴ (b) declined for males in rural areas over the period, and (c) increased for females in rural areas from 1991 to 1995-96, but remained stagnant thereafter. For the country as a whole, the rural and urban trends combined to produce an increase in GER between 1991 and 1995-96, and small declines thereafter.

Figure 3.1: Primary GERs in 1990s



3.9 Notably, even in the period 1991 to 1995-96, when primary GER increased the most, improvements fell far short of the targets set by Social Action Program (SAP), discussed earlier in Chapter 1. GER increased from 65 percent in 1991 to approximately 70 percent over this period, an average increase of about 1 percent per year. The targets set by SAP, though not directly comparable (since they address the age group 5 to 9, as opposed to the 5 to 10 bracket considered herein), suggest a growth in GER of almost 4 percentage points per year, translating into 19 percentage points over the 5 years leading up to 1997-98. At around 69 percent, the GER in 1998-99 is far short of SAP target of 88 percent, which was to have been reached by 1997-98.

3.10 Comparison across provinces shows that Punjab and Balochistan showed the greatest improvements in urban primary enrollment between 1995-96 and 1998-99, while enrollments in urban Sindh showed some decline. None of the major provinces experienced significant improvement in rural enrollments between 1995-96 and 1998-99. Indeed, there was a large decline in Sindh, and a smaller one in Balochistan. Net enrollment rates, generally considered better indicators of educational attainment than gross rates, are the highest for Azad Jammu and Kashmir, followed by Northern Areas and Punjab in 1998-99 – a pattern similar to that evinced by the gross rates.⁵ For the country as a whole, net primary enrollment in 1998-99 was approximately 50 percent, with regional and gender gaps similar to those affecting gross enrollment (Table 3.2).

Table 3.2: Net Enrollment Rates in 1998-99

	Net Primary Enrollment Rates (%)			Net Secondary Enrollment Rates (%)		
	Male	Female	Overall	Male	Female	Overall
Urban	68.5	64.6	66.5	46.7	47.4	47.0
Rural	53.6	36.4	45.2	34.9	15.8	25.6
Overall	57.2	43.6	50.5	38.3	25.1	31.9

3.11 Both male and female literacy rates increased from 1991 to 1998-99, rising from 40 percent to 58 percent for males, and 17 percent to 27 percent for females, with most provinces showing significant improvements. Accordingly however, while the gap between male and female literacy rates has shrunk somewhat over the years, it still remains very significant, especially in rural areas. Comparing across provinces in 1998-99, Azad J & K has the highest literacy rates among males and females alike, in both rural and urban areas, while FATA and Balochistan rank the lowest. The literacy rates for 1998-99 fall far short of the national targets for 1997-98 set by the SAP, which were 66 percent, 40 percent, 53 percent for males, females, and all adults respectively.⁶

Gender Gaps in Literacy and Enrollments

3.12 These numbers highlight a persistent problem in Pakistan. Historically, the country has had some of the lowest female enrollment rates in the world, resulting in wide educational gender gaps. Currently, the national female-male enrollment ratio is less than 55 percent, and only in Punjab does this ratio approach even the low South Asian average of 70 percent.⁷ This is particularly troubling because numerous studies have shown that female education has an important role to play in development. The impact of female education is transmitted in the context of the variety of social and economic roles women typically play; lower infant mortality, and also improved child nutrition and better schooling for her children, through her role as a mother; higher wages and increasing farm yields through in a capacity as a producer; and increases in the number of teachers in a region - thus decreasing the cost of education - through her potential role as an educator for future generations.⁸

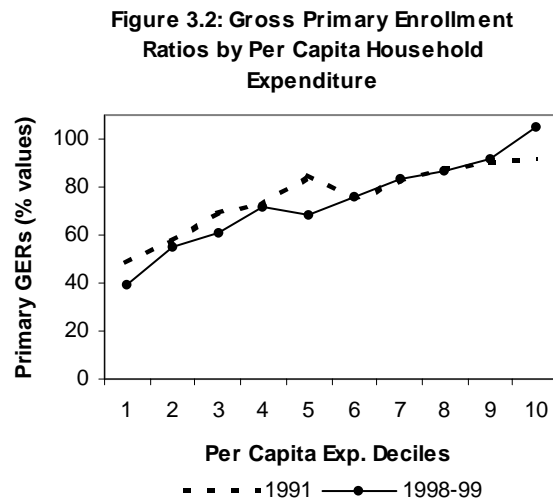
3.13 While gender gaps in literacy and enrollment have been reduced to some extent over the last decade (Figure 3.1) - if partly because female enrollments have tended to increase while male enrollments

have actually fallen a little - significant gaps still remain, especially in rural areas. The gender gap in primary enrollment is much smaller for the urban areas, and has also shown more consistent improvement, with female enrollment rising faster than male enrollment. Consequently, the overall male-female gap of 18 percentage points for the four large provinces in 1998-99, is closer to that in 1996-97, and smaller than that for 1991, when it was 25 percentage points.

3.14 Preliminary evidence suggests that the gender gap in enrollment in Pakistan is less a function of poverty – being almost equally prevalent among the poor and the non-poor – than other likely factors. Social norms and practices, combined with a shortage of schools for girls and a lack of women teachers, could conspire to reduce girls’ enrollment, particularly in rural areas. Encouragingly, a nationwide study of recent record of private schooling in Pakistan suggests that low female enrollment rates may be more a reflection of the design of specific institutions, impeding girl’s access to schools, rather than an underlying reluctance on the part households to educate girls.⁹ The issue of how access is related to the observed gender gaps is an important one and will be explored in greater detail later in this chapter.

The Rich-Poor Gap in Enrollments

3.15 Educational attainment, or rather the lack of it, is closely related to poverty. This relationship has been documented to a certain extent in Chapter 2, which noted the large gaps in literacy, and net enrollment rates that distinguish the poor and the non-poor. Comparing the periods 1991 and 1998-99 (Figure 3.2), it appears that for all the lower deciles, gross primary enrollment ratios for 1998-99 are lower than those in 1991, suggesting that primary enrollment rates have fallen disproportionately among the poor over the 1990s. A very similar story is also found to apply to secondary enrollment rates also (though this is not mapped by a figure in this chapter). In fact for both primary and secondary enrollments, large improvements over the period are evidenced only in highest expenditure deciles, coupled with a fall in enrollments for the lower deciles.



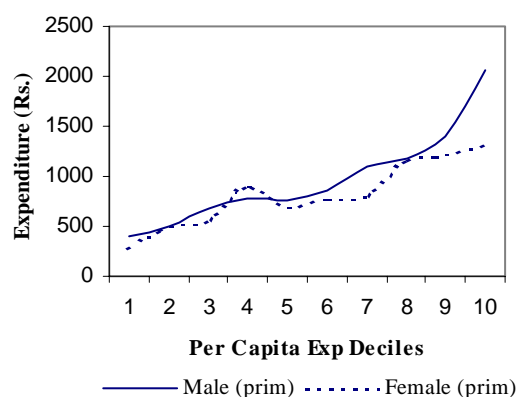
3.16 To examine more closely how school participation may be influenced by economic status, Table 3.3 lists average primary GERs in 1998-99 for every per capita expenditure decile, illustrating that both primary and secondary gross enrollment rates increase almost monotonically with expenditure. The primary and secondary enrollments can be seen to increase almost in parallel, suggesting that the likelihood of being enrolled in primary school increases at the same rate as that of being enrolled in secondary school as the household becomes relatively better-off.

Table 3.3: Gross Enrollments, Share of Private Schools in Enrollment, and Proportion of Individuals in Primary and Secondary School Age Groups – 1998-99¹⁰

Per Capita Exp Deciles	Primary Gross Ratio	Primary Private Share	Primary Age Share	Secondary Gross Ratio	Secondary Private Share	Secondary Age Share
1	40.36	9.65	21.39	15.78	4.77	13.45
2	54.68	9.26	20.20	22.98	4.62	14.52
3	60.53	13.86	18.75	29.95	7.63	13.81
4	71.65	13.32	18.68	34.33	10.06	13.65
5	69.33	17.15	16.98	37.47	11.50	12.46
6	75.78	23.60	15.89	47.70	12.66	12.77
7	83.56	24.74	14.43	50.60	14.55	12.60
8	86.49	28.39	13.93	59.10	15.90	12.62
9	92.72	35.15	11.77	65.30	22.22	11.82
10	104.60	59.94	9.90	85.02	37.45	10.65
Overall	70.53	23.35	16.20	43.15	17.16	12.84

3.17 The gap between the rich and the poor is reflected not only in the enrollment rates, but also in the pattern of spending on education, as illustrated by data from the recent rural survey for Pakistan, PRHS (2001). Figure 3.3 shows that households who are better off on the average spend more on primary schooling per child. This indicates that even when poor children are enrolled in school, they face a significant handicap that is likely to affect their educational attainment. Moreover, there is a sizeable male-female gap in per-student spending that persists across nearly all expenditure categories. The apparent gender gap in spending is also likely to reinforce the existing gaps between males and females in indicators of educational attainment, such as completion and repetition rates.

Figure 3.3: Median Per Capita Annual Expenditure on Primary Schooling

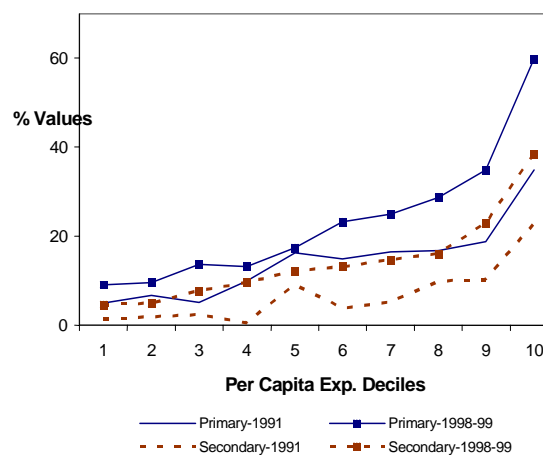


Source: PRHS(2001)

Increasing Role of Private Sector

3.18 An important educational trend in Pakistan is the observed increase in the share of the private sector in schooling over the years. According to a recent Census of Private Schools (2000), Pakistan has as many as 40,000 of such private schools, the result of a significant growth in private schooling over the 1990's.¹¹ The share of private sector in total national enrollment in primary schools increased from 14 percent in 1991 to around 23 percent in 1998-99. The private share of secondary schooling increased from 8 to 17 percent over the same period. The increases were distributed across all expenditure deciles (Figure 3.4) though most pronounced in the higher income groups, with private share in primary enrollment

Figure 3.4: Private Shares in Gross Enrollment by Per Capita Household Expenditure



growing from 5 to 10 percent for the lowest decile and from 35 to 60 percent for the highest decile. This supports evidence from previous PIHS studies, which have found for example that between 1991 and 1995-96, enrollment in non-government primary schools increased by 70 percent, compared to 4 percent in government schools.¹²

3.19 It is important to mention here that this growing importance of private schooling does *not* include enrollment in *madrassas*. The share of *madrassas* in aggregate enrollment is found to be miniscule, amounting to no more than 0.7 percent of all students currently attending school nationwide.¹³ While the more recent PRHS (2001) shows slightly higher figures, the share of all religious schools in primary and secondary enrollment still amount to only 2 and 3 percent respectively in the 130 rural communities surveyed. All available sources thus suggest that *madrassas* play a minimal role in the school enrollment patterns described here. Notably, this seems to contradict prevailing notions of a large expansion in such types of schools in Pakistan. To explain this apparent paradox, one should note that survey findings do not rule out the possibility that religious schools play disproportionate roles in certain areas, or that they offer non-formal instructions to large numbers of students outside the scope of formal schooling.

3.20 The rapidly expanding role of the private sector in educational provision in Pakistan has obvious implications for educational policy in the country, a key challenge of which will be to harness this growth for expanding access to education. Important issues related to the existing nature of private schooling, and its potential for such politics will be explored in greater detail later in this chapter.

Enrollment Profiles of School-Age Children

3.21 Gross educational enrollment figures are of course only one indicator of educational achievement, and can mask numerous quality problems in education provision. One direct indicator of this is the rate of dropouts, which is high in Pakistan. This pattern of school enrollment, also taking into account the rate at which children fall behind their appropriate grade, is therefore a crucial determinant of the status of education in Pakistan, and points up problems even deeper than those suggested by enrollment rates.

Table 3.4: School Attendance Profile (1998-99) for Children¹⁴

Age in Years	Percentage of Children			
	Okay for Age	Behind for Age	Left School	Never Attended
5	30.9	0.0	0.2	68.9
6	32.2	14.5	0.3	53.1
7	20.9	36.7	0.4	42.1
8	17.6	43.8	0.9	37.6
9	19.3	47.2	1.4	32.1
10	17.0	45.4	3.8	33.9
11	19.7	47.9	7.6	24.8
12	13.1	43.5	11.3	32.1
13	15.4	39.5	15.0	30.1
14	14.1	32.5	21.8	31.6
15	11.3	28.7	27.0	33.0
16	0.0	33.3	32.7	34.0
17	6.5	23.9	39.9	29.8
Total	17.6	33.4	10.7	38.3

3.22 It is worrying in this regard that a large number of Pakistani children appear to enter school later than they should, and that few of those enrolled in school attend a grade that is appropriate for their age. Table 3.4 presents the detailed school enrollment profiles of children in the school-age group in the country. Nationwide, 31 percent of 5-year-old children - the prescribed age for grade 1 - attend school. The proportion rises steadily until age 11, and declines thereafter. The proportion of children who have never attended school decreases until the approximate age of 11, and remains more or less constant thereafter. The proportion of children who have attended school in the past, but have since dropped out, remains low until 10 or so, but increases rapidly thereafter.

3.23 This national pattern is even more pronounced among rural students, particularly girls. Figures 3.5 and 3.6 present the enrollment profiles disaggregated by sex in rural areas. A higher proportion of children, boys and girls alike, attend school in urban areas than in rural areas.¹⁵ Moreover, the rural-urban differential is higher for girls than for boys. As a proportion of those who have attended school, dropout rates are also higher for rural areas than for urban areas, and for girls compared to boys. The rich-poor gap in educational outcomes is also reflected in detailed enrollment profiles.¹⁶ At 52 percent, the proportion of children who have never attended school is much larger among the poor than among the non-poor, for which the number is 31 percent. Poor children are also likely to fare poorly in school, with relatively higher dropout rates, and greater proportions attending grades lower than those appropriate for their age. A combination of factors accordingly appears to impede educational attainment among poor children –including late entry into school and greater likelihood of grade repetition.

Figure 3.5: School Attendance Profile for Rural Girls: 1998-99

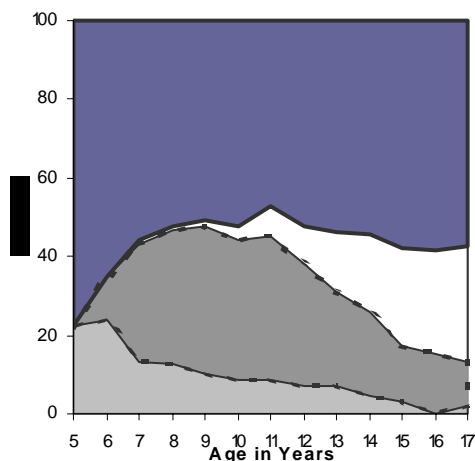
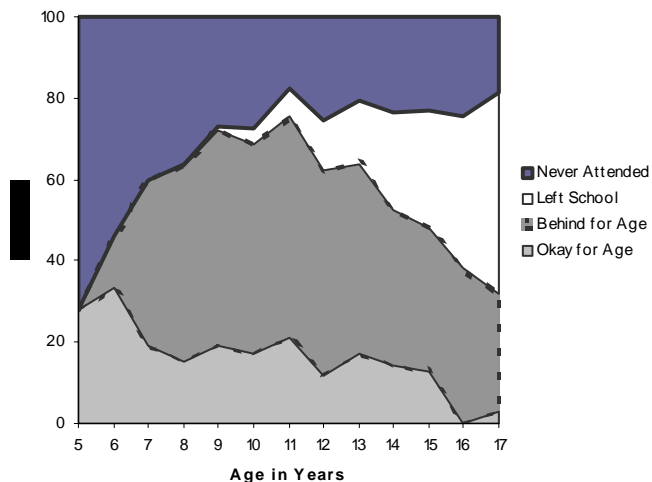
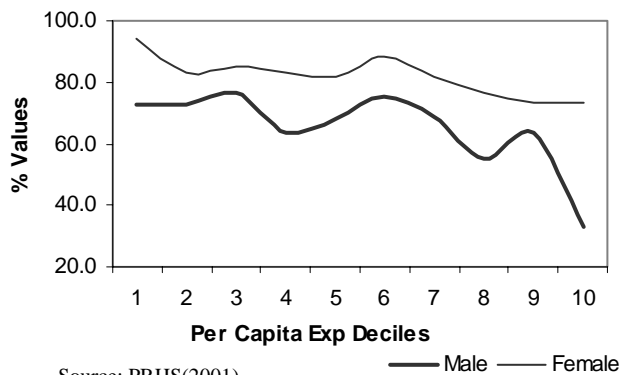


Figure 3.6: School Attendance Profile for Rural Boys: 1998-99



3.24 The recently conducted PRHS (2001) also indicates that the widening gender gap in educational attainment is starker than what enrollment rates would indicate. The proportion of individuals of age 5 to 21 who entered school, but dropped out before finishing Class 10 in the rural communities where this survey was fielded, is higher among females (32 percent) than among males (24 percent). Moreover, as Figure 3.7 shows, even among those who drop out of school, the proportion of dropouts that occur in *primary* school is higher for females than for males, no matter what the economic status of the household. While 65 percent of all male dropouts before grade 10 occur at primary level, the same is true for 79 percent of female dropouts. Given that relatively few women enter school in the first place,¹⁷ the fact that girls drop out at a higher rate than boys *and* tend to do so at an earlier stage of schooling is of high concern.

Figure 3.7: Proportion of Dropouts for Age 5-21 those dropping out in primary school



Source: PRHS(2001)

Education, Household Welfare and the Economy

3.25 There is evidence that education widely impacts the economic status and welfare of household members. Some evidence of this has already been presented; in chapter 2 it was noted that higher education of the household head is associated with lower incidence of poverty, and for certain levels of education - less vulnerability to poverty. The relationship between poverty and education for households is especially relevant in Pakistan, given its pattern of persistent poverty, and evidence that the spread of education, as measured by school enrollments and literacy rates, has been slow and marked by wide disparities.

3.26 According to the evidence presented in this section, literacy and education are seen to have general positive impact on earnings, though there are some marked variations in the benefits that it confers on women and men, and on rural vs. urban households. Broadly speaking, and as partly noted earlier in this chapter, the most salient developmental benefits of education are the externalities that it yields. Among the most important of these is the fact that health indicators like infant and child mortality, improve with the education of mothers, as do enrollment rates for male and female children alike. The evidence also points to a strong impact of education on human capital and the long-term earning potential of households. This carries strong, and familiar policy implications, particularly for policies that would promote educational attainment within a household-based framework.

Impact of Education on Labor Earnings

3.27 The impact of education on household earnings can be thought about in two ways; its direct and more immediate impact on the earning capacity of household members; as well as in terms of its externalities: whether a worker's labor earnings are affected by the educational attainment of other members of their household?¹⁸ Cross-section household data imposes limitations on the extent to which the former issue can be analyzed - the impact of education on income volatility, for instance, cannot be assessed using this data. However, it does offer some avenues for estimation, as noted below. Externalities can also be analyzed to some degree. These may arise because for certain activities, there may be benefits from having easy access to a literate household member. For instance, an illiterate urban worker who has to be aware of what are their employment opportunities, or require information in order to bargain with employers, might benefit considerably from this. And individual labor market earnings mapped by the data used in this chapter, can accordingly provide some measures of educational externalities.

3.28 Estimations that measure the effect of literacy and education on wage earnings suggest firstly that a workers' own literacy and education have positive effects on earnings for all non-farm workers. For instance among males, literate workers earn 42 percent and 9 percent more than non-literate workers in the urban and rural non-farm sectors respectively.¹⁹ Second, the externality benefits of literacy and education levels are the highest for male workers in the urban non-farm sector, and to a lesser extent for those in the rural non-farm sector. Third, benefits from own education are always stronger than externality benefits. And fourth, literacy or education variables have significant effects on earnings in the rural agricultural sector (Table A-3.4, Annex).²⁰

3.29 Moreover, in regards to educational externalities - looking only the wage earnings of *non-literate workers* (Table A-3.5, Annex) - the evidence shows that having a literate member in the family is found to have positive and significant effects on earnings of non-literate urban workers. Boosting their wages by 13 percent and 49 percent respectively this is true for males and females alike, but there are nevertheless important gender gaps. In general, literacy, as well as the (highest) education attainment among household members generates the highest positive externalities - in terms of their wages - for male urban

workers. In comparison, externalities are generally weaker for female wage earners, and for the rural non-farm sector compared to the urban sector; they are non-existent for the rural farm sector.²¹

3.30 The pattern of education being more important for wage earnings in the non-farm sector is consistent with what one would reasonably expect, given that wage earners in the farm sector are likely to consist mostly of daily wage labor engaged in activities with low or non-existent returns to education. The pattern of education having higher direct returns and externalities on earnings in the urban sector, compared to rural areas, is also consistent with expectations, since urban areas are likely to offer greater range of opportunities to workers with more education, or are better-informed about job opportunities (as a result of having educated members in the household).²²

3.31 With some qualifications, these findings are also consistent with the notion that education can improve opportunities for workers in the often better-paying non-farm sector. Workers being educated and literate are found to increase the probability that rural male and female workers alike participate in the non-farm sector vis-à-vis the farm sector. Education also confers externalities in this regard, but as noted earlier, these seem to accrue less to women while having a literate member in the household makes it more likely for a rural male illiterate worker to participate in the non-farm sector, it has little effect on the participation of rural women in either sector.

3.32 Therefore, not only do literacy and the level of education of a worker matter for earnings, the educational attainment of other household members can also confer sizeable positive externalities in the non-agricultural labor market. This evidence of intra-household externalities carries an important policy implication – namely that the *spread* or the distribution of literacy and education among the population can have a powerful impact on their welfare. A household with no education among any of its members may benefit from even one member gaining access to education, beyond the immediate gains to that particular individual. And this not only in terms of improvements to health and education of the family's children, but also in terms of better immediate earning opportunities for other members. Household focused policies must however grapple with the gender dimension of this phenomenon, since women seem to benefit less from the earning externalities than do men.

What Determines Participation in Schooling?

3.33 Given the importance of education in determining earnings and economic status, and in the light of the deficiencies in enrollments and attendance profiles identified so far, it is important to identify the factors that help explain participation in schooling. The evidence suggests enrollment is linked strongly to parent's education, both that of the mother and father. It is also linked to the ease of access, and proximity, to schools. However, no definite causality can be established in these regards. This also underlines the additional difficulty of distinguishing methodologically the extent to which lack of demand for or supply of schooling is the determinant culprit. While subjective responses lifted from the PIHS household survey offer a glimpse at the kind of factors respondents themselves use to explain why the children in question have never attended, or dropped out of school, these also reflect this ambiguity (Box 3.1).

Box 3.1: Reasons for Never Attending or Leaving School – Evidence from PIHS (1998-99)

A collation of subjective household responses outline some reasons for why their children have never gone to, or dropped of school (see Tables A-3.6 and A-3.7 in Annex). The most frequently cited reasons for never attending school were “too expensive”, “parents disapproved”, “child not willing” and “too far away.” The first three factors are also cited frequently as reasons for leaving school, but “had to help at home or with work” emerged as more important than “too far away”, especially in urban areas. In all cases, one of the main reasons cited was that education was too expensive. Parental disapproval is much less frequently cited as a reason for leaving school, as opposed to never attending school. Which is as expected, parental approval is likely to have been required for entering school in the first place.

In rural as opposed to urban areas, “too far away” is a much more common reason for never attending school, consistent with the notion that availability of schooling is more restricted in these areas. However, in both rural and urban areas, parental disapproval is more frequently cited as a reason for girls never attending school, or leaving school, than it is for boys. In rural areas, this is given as the main reason for 39 percent and 18 percent of girls have never attended, or left school. The corresponding numbers for boys are only 6 percent and 4 percent respectively. Notably, lack of female teachers is a fairly important reason for girls never attending school in rural areas. Probably reflecting the role that boys in contributing to household earnings, “Had to help at home/work” is a more frequently cited reason for them leaving school, than it is for girls. This may point to a link between child labor and school participation, which requires more careful analysis.

One should however be cautious about making distinctions between demand and supply factors on the basis of these findings. For example, even an apparently demand-related response like “had to help at home/work” could merely imply that the relative returns to work as opposed to schooling is high, because school is getting too expensive, or is perceived as being of a low quality. Thus the responses tabulated can serve, at best, as the starting point for further analysis.

3.34 On its part, data analysis of the factors that affect school participation generally indicates the importance of economic status, parents’ education and access to school facilities in determining the probability of a child attending school (Table A-3.8, Annex).²³ These results are based on a multivariate analysis that it is able to differentiate among the various factors, controlling for all the other probable influences. A probit regression of school participation of children of age 6 to 14 on a range of variables was used to identify the role of each factor in explaining the probability of participation.

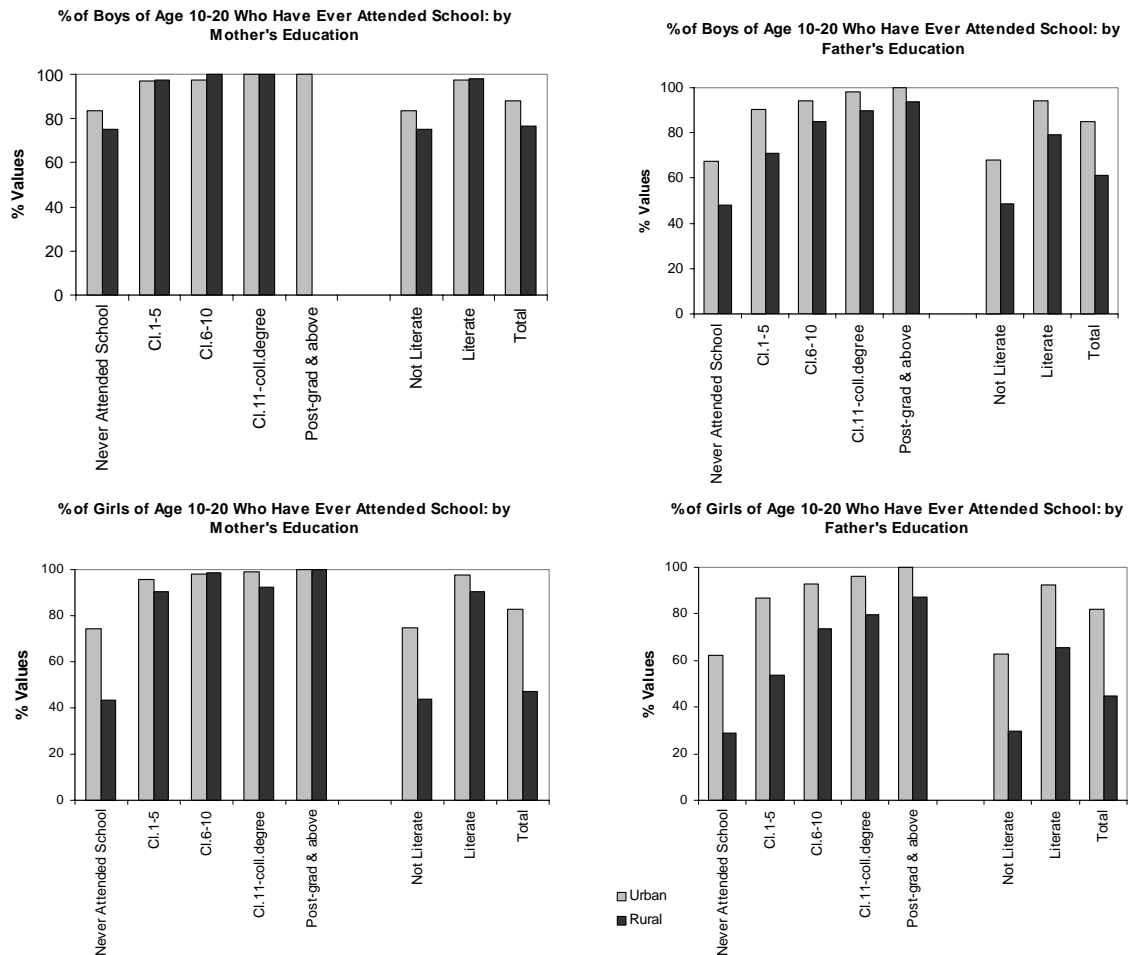
3.35 Economic status, as expected, plays an important role in explaining school participation. The marginal effect of being in a particular per capita expenditure quintile, on the probability of a child of age 6 to 14 attending school (with the lowest quintile as the reference group) is found to be quite high and statistically significant for the country as a whole, as well as for all subgroups. Nationally, the probability of a child attending school is 10 percent, 16 percent, 21 percent and 25 percent higher if his/her household belongs to the 2nd, 3rd, 4th and 5th expenditure deciles, respectively. The impact of household well being is also somewhat larger for urban households than for rural ones, and among the latter ones, more so for female children than for male children.²⁴

Impact of Parents’ Education on Children’s’ Attainment

3.36 The analysis also finds that the parental educational attainment, particularly that of mothers, also impacts the likelihood that their children will attend school – which is generally supported by studies for other countries. In Pakistan, the marginal effects of whether the parent has ever attended school are seen to be high and significant for mother and father alike. Having a mother who has attended school makes it 23 percent more likely that a child will also do so; having a father who has attended school makes it 16 percent more likely that a child will do so. The effects of mother’s schooling are also slightly stronger in rural areas, and have greater impact on female enrollment than male enrollment in these areas. However, this effect tapers off as the education attainment of the parent increases. The correlations represented in Figure 3.8 are consistent with these findings. For instance, when mothers are literate - compared to when they are not - the school participation rate is higher, and the urban-rural differential - as well as gender

differences- are significantly lower.²⁵ The strong effect of parents' education on the likelihood of a child attending school underscores the positive externalities for human development conferred by education, and female education in particular.

Figure 3.8: Parents' Education and School Participation



Access to Educational Facilities

3.37 As household responses themselves suggest, access to educational facilities is also an important determinant of school participation. Physical proximity to a school appears to be quite important, though it is not apparent that poor households are particularly disadvantaged in this respect. However, in light of the gender gap in enrollments, this may be important. To this end, it is notable that private schooling seems generally to offer better gender outcomes, in large part because they make few assumptions about the unwillingness of households to enroll girls even in co-educational institutions as long as they are close-by, and have been successful in recruiting female teachers. As further discussed, another issue which policy should address is the manner in which social barriers related to caste or class, impede access to schooling for marginal groups.

3.38 In regards to the proximity of education facilities, the aforementioned regressions of school participation show that the presence within a 1 km radius of a school offering primary education in rural

areas increases the probability of a girl attending school by 15 percent.²⁶ Similarly, the presence of a school offering all three levels of education - primary, middle and secondary - increases the probability of any child attending school by 8 percent. This is consistent with the simple cross-tabulations listed in Table 3.5: for a village with a primary school for girls within at least 1 km, the net primary enrollment rate for girls is 43 percent, compared to around 13 percent for the rest of the rural population. Similar patterns are observed for net secondary enrollment for boys and girls alike, across almost all provinces.²⁷

3.39 Given that access to school - defined as even the mere existence of schools - help explain variations in enrollment rates, it is relevant to inquire whether poorer areas tend to lack schooling facilities? Although available evidence suggests that the poor are a little more likely to live in areas more remote from school facilities that accommodate women, such differences are not very significant.²⁸ The PIHS data reveal that around 79 percent of the rural population lives in areas where there is at least one primary school for girls in or within 1 km, distance from the village (Table 3.5). For 12 percent of the rural population, the nearest school is at least 6 km. away. There are however regional variations in the proportion of the rural population with a girls' primary school located within 1 km radius. These range from 100 percent in Azad J & K to 41 percent for Balochistan. Access to primary school for boys, on the other hand, seems to be uniformly high across the country; 95 percent of the rural population lives in areas where the nearest primary school for boys is within 1 km of the village.²⁹

Table 3.5: Access to School and Enrollments in Rural Areas (1998-99)

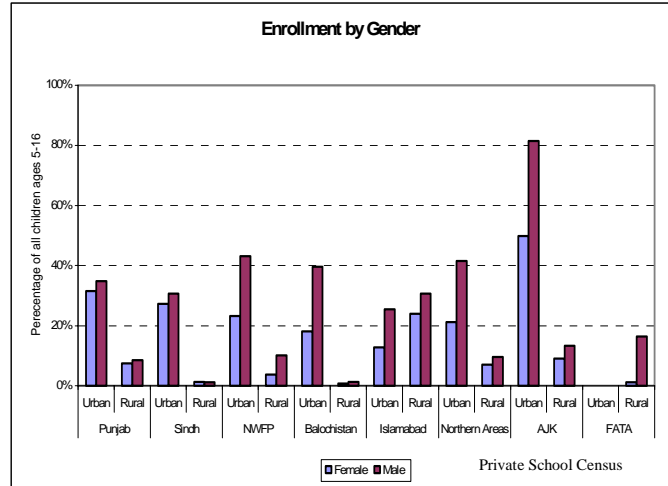
	% of Rural Population	Net Enrollment Rates
Nearest Girls' Prim. Schl. (Net Prim. Enrl. Girls)		
In PSU or <=1 km distance	78.7	43.3
Distance >1 & <6 km	9.7	13.4
Distance >=6 km	11.6	12.6
Nearest Girls' Sec. Schl. (Net Sec. Enrl. Girls)		
In PSU or <=1 km distance	25.7	28.4
Distance >1 & <6 km	38.4	15.0
Distance >=6 km	35.8	10.6
Nearest Boys' Prim. Schl. (Net Prim. Enrl. Boys)		
In PSU or <=1 km distance	95.4	55.0
Distance >1 & <6 km	3.4	29.1
Distance >=6 km	1.1	14.5
Nearest Girls' Sec. Schl. (Net Sec. Enrl. Girls)		
In PSU or <=1 km distance	39.4	54.1
Distance >1 & <6 km	34.9	40.6
Distance >=6 km	25.7	25.7

3.40 The observed differences in the availability of primary schools for girls and boys in rural Pakistan no doubt partly explain wide gender gaps in schooling outcomes. The fact that even the mere availability of a school within a short distance is associated with much higher enrollment rates speaks for the need to expand access to schools, particularly for women. As mentioned before, a recent study of private schooling indicates that low female enrollments are closely linked to institutional defects in the public school system that limits access of girls to school facilities (Box 3.2). This also points up the advantages that private schools seem to enjoy; gender differences in their enrollments are found to be low. Primarily this is because these mostly co-educational schools provide greater opportunities for girls' attendance, as well as the fact that they have been able to employ large numbers of women as teachers.

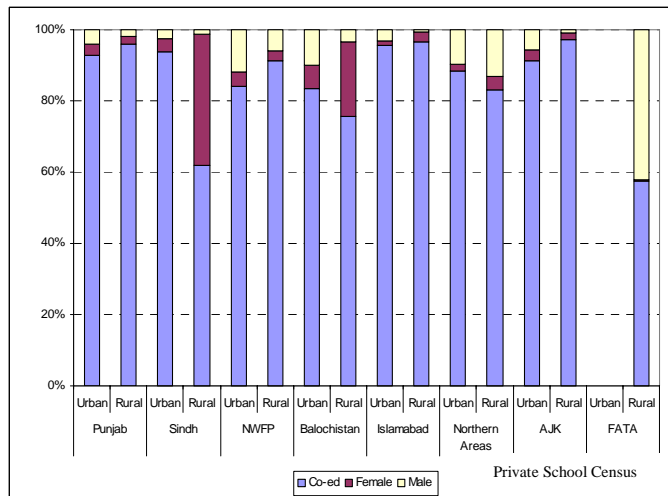
Box 3.2: Female Enrollment and Private Schooling: A Unique Opportunity?

A recent nationwide study shows that low female enrollment rates in Pakistan may be a reflection of the design of specific educational institutions. The graph shows the enrollment of boys and girls in *private schools* as a percentage of all school age pupils in the region. Encouragingly, girl and boy enrollments are roughly equal for Punjab and Sindh, the two major provinces. In Punjab particularly, gender differences in private enrollment rates are very low, with female enrollment exceeding that of males by 90 percent in some districts.

How have private schools managed to raise female enrollment ratios? First, private schools have made no assumptions regarding the ability of girls to attend co-educational schools. The majority of private schools are co-educational (see graph) and as a result, girls have *greater opportunities* for attending a school. Government schools tend to be overwhelmingly single-sex, based on the understanding that households would feel uncomfortable sending their children to co-educational institutions. What the private school experience shows is that it may be *more*



important to have a school close by than to have a single-sex institution. Households feel more uncomfortable about sending their girls to single-sex institutions that are far away than to co-educational schools that are close to the village. Second, private schools have been very successful in recruiting women. More than 50 percent of all teachers in the private educational sector are women, and in some regions -for instance Punjab - they account for more than 70 percent all teaching staff. This has had an impressive impact on the enrollment of girls. Increasing the percentage of female teachers in a school from 0 to 100, increases female enrollment from 22 percent to 52 percent. Moreover, educated women have been found to have played a pivotal role in increasing the enrollment of *male children as well*.



Also, since private schools tend to rely on educated women for their staffing needs, increasing the number of educated women in a region implies that there is greater scope for setting up a private school in the first place. Extrapolating, one could surmise that if the number of educated females in a *patwar circle* were brought to equal the number of educated males, enrollment would increase from 387 to 834 students and the number of private schools would more than double from 1.37 to 4.66.

Source: Andrabi, Das and Khwaja (2002). "The Rise of Private Schooling in Pakistan: Catering to the Urban Elite or Educating the Rural Poor?"

3.41 Thus to improve female enrollments, it may be more important to locate schools admitting girl students closer to communities, rather than to focus on single-sex institutions that cannot be universally provided. This might also help create local virtuous cycles for female education; the analysis suggests that on the one hand, increasing the number of female teachers encourages girls schooling, and on the other, an increase in the number of educated women in the community raises the number of private schools. In this respect there therefore appears to be a unique opportunity for Pakistan to radically improve the status of female education. Notably, these mechanisms have already been shown to work in Balochistan,³⁰ and corroborating evidence at the national level provides considerable further grounds for optimism. There are admittedly concerns about poor household's access to these opportunities, but as discussed later on this section, they may not be as well-founded as often thought.

3.42 Notably however, the statistics on access provided so far only measure the incidence of schools, without taking into account that the mere presence of a school may not necessarily make it equally accessible to all members of a local community. Firstly, caste or social hierarchies may influence access. A recent study finds that interaction of caste relationships and public services can produce a range of outcomes, with very different policy implications (Box 3.3). While in some cases, properly functioning public facilities tend to eradicate caste-based differentials, in other areas there is evidence that existing social hierarchies compromise the very functioning of these public services. In these areas, true *public* access to these services is likely to become possible only through political empowerment of marginalized groups.

Box 3.3: Caste and Schooling

A recent study of schooling in Pakistan collected census data on one village in the districts of Muzaffargarh, Toba Tek Singh, Chakwal, and Mardan, and provided some evidence of the importance of caste in determining enrollment patterns where public schools do not function well, more so than other factors such as land-ownership. The census included conventional demographic information such as age and gender, as well as information on individuals' educational status, as well as the caste and land-owning status of the relevant household. Educational indicators for adults over age 15 were regressed on individual characteristics, as well as household characteristics such as caste and land ownership status. In all four villages, caste dummy variables were statistically significant determinants of educational achievement, and dominated land ownership, which is commonly believed to be important. Indeed, land ownership status lost explanatory value once caste dummy variables were included. A similar exercise was then conducted in order to explain the prevailing enrollment pattern of school-age children (ages 5-15). Caste dummy variables continued to be significant and dominated land ownership status in two of the four villages - Muzaffargarh and Toba Tek Singh. In the other two villages, the caste dummy variables were no longer statistically significant.

Critical insights drawn from qualitative work that was a part of the study helps explain these regression results. The villages in Chakwal and Mardan were found to have long-standing well-functioning government schools. In Toba Tek Singh, although the government school was of a high standard, caste hierarchy and open prejudice was strong. Children from low caste families were discouraged through persistent verbal abuse on the part of other pupils as well as some teachers. In the Muzaffargarh village the government school was new and not well-established. Accordingly, the regression results were interpreted in the following way: caste was an important determinant of educational attainment in the past in all of the villages, as evidenced by the adult sub-sample. The regressions on the 5-15 age group showed that caste was still important in the village where caste discrimination was actively present, and in the village where the government school was as yet not properly established. In the two villages where the government schools were well established and functioning well, caste was no longer a factor in determining school participation.

Source: Gazdar (2000). "State, Community and Universal Education: A Political Economy of Public Schooling in Rural Pakistan"

3.43 Secondly, the mere existence of a school does not imply that it offers quality education, or even that it meets the minimum standards of a functional school. While the physical location of facilities in or near communities is important, it is worth considering that in spite of near-universal physical proximity to at least one primary school for boys, gross primary enrollment rates among boys in rural areas was only around 57 percent in 1998-99. There is reason to believe therefore that poor quality of existing schools, related to governance problems, could be important. Only by taking issues of quality and functionality of schools into account can one arrive at a proper understanding of the set of factors that determine observed outcomes in schooling.

School Quality and Performance

3.44 Evidence from various sources suggests that such quality problems are widespread and that they often arise out of institutional failures. One manifestation of this is the prevalence of schools that are non-functional, e.g. ones where teachers are not in regular attendance, or that have been appropriated by private parties for their own use.³¹ More information on such quality problems is available from the aforementioned PRHS (2001), which included a detailed facility questionnaire that was administered to all schools offering primary education in about 130 rural communities.³² While the survey finds that primary schools are present in most villages, – consistent with what was reported from the nationally

representative PIHS data – a major area of concern is the quality and functioning of schools. Table 3.6 reveals the poor status of school infrastructure and critical amenities. Only a third of the sample schools had an adequate building, measured in terms of the quality of its floors, walls, and roofs. In addition, only about half the schools had access to drinking water and toilets, a third had electricity, and only 16 percent of the co-educational schools had a separate toilet for girls.

Table 3.6: School Quality Indicators

School Infrastructure	% of Schools in Sample
Adequate Building	33
Furniture	51
Textbooks	23
Drinking Water	52
Toilets	48
Electricity	32
Separate girls toilet (co-ed facilities)	16

Source for Table 3.6, 3.7, Figure 3.9, and 3.10 is PRHS(2001).

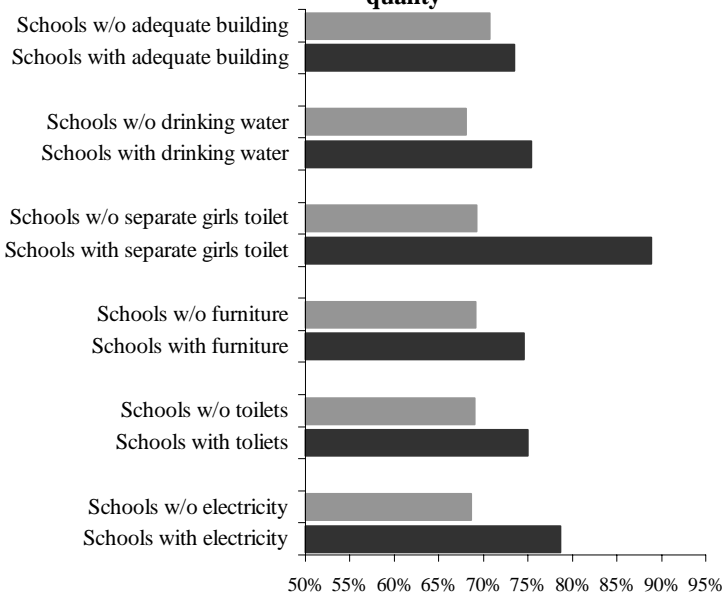
Table 3.7: Teacher Absenteeism

	Schools with no classes being held (%)	Teacher attendance in schools with classes being held (%):		
		Total teachers	Male teachers	Female teachers
Punjab	3.5	75.3	77.6	72.6
Sindh	28.6	77.5	87.3	11.1
NWFP	22.7	90.8	94.3	80.6
Balochistan	25.0	85.0	90.6	36.4
Pakistan	16.5	81.2	86.2	68.5

3.45 On teacher attendance, available evidence suggest significant problems. Out of the 206 schools surveyed in rural areas for the PRHS study, classes were not being held in 34 at the time of the visit. In other words, over 16 percent of the schools did not meet even this minimal standard of educational provision (Table 3.7).³³ Even in schools where classes were being conducted the rate of teacher absenteeism was fairly high (around 20 percent), and higher for female teachers in some areas, which is especially detrimental to the prospects for girls education in those areas. Moreover, since the majority of rural schools are single or two-teacher establishments, these aggregate numbers understate the disruption to education caused by teacher absenteeism at the individual school level. In such a school the absence of the teacher necessarily implies that a large part of the instruction will not take place at all. At the level of individual school facilities, roughly 20 percent of schools holding classes had half the total teachers absent, and 31 percent had half the female teachers absent.

3.46 Given these problems in school quality, it is no surprise then that student attendance rates were relatively low. At the time of the visit, approximately 64 percent of enrolled boys and 61 percent of enrolled girls were observed to be present in the classroom.³⁴ The survey data revealed a negative correlation between student-teacher ratio and student attendance rates. Figure 3.9 also illustrates the negative impact that poor quality infrastructure has on the demand for education, as

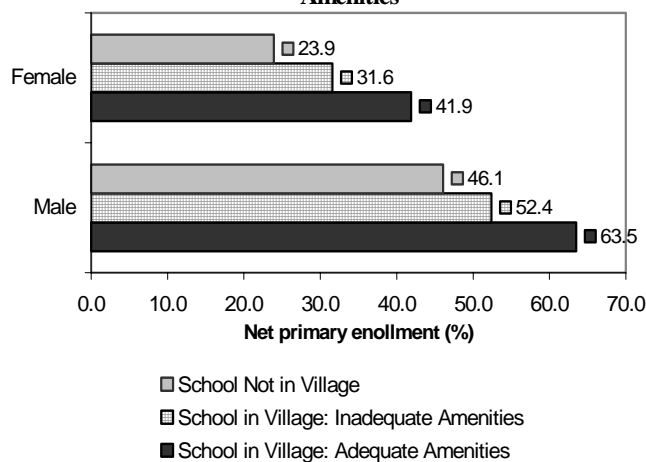
Figure 3.9: Student attendance as a function of school quality



evidenced by lower student attendance rates in facilities lacking toilets, furniture, textbooks, drinking water, electricity, and an adequate building.

3.47 Likewise, there are indications that better quality of schools is associated with higher enrollments. Linking household level information on enrollment with facility level information, one finds that net primary enrollments are higher for males and females alike when the community has at least one school with adequate basic amenities, than when the school(s) lack those amenities, or when no school is present (Figure 3.10).³⁵ For example, among girls of primary age in communities where schools have adequate amenities, comprising 41 percent of all primary age girls in the sample, the net enrollment rate is 42 percent, in comparison to a rate of 32 percent when girls' school(s) in the community lacks amenities, and 24 percent when there is no girls' school in the community at all. These results indicate that quality and functionality of schools, over and above their mere presence of, matter for school participation.

Figure 3.10: Enrollment by School Access & Amenities



Determinants of School Quality

3.48 So how does one explain the prevalence of poor quality schooling in Pakistan? In part, it is a function of economic status: PRHS data reveals that wealthier districts in general possess better school buildings. However, this in turn complicates arguments about causality. For example, lower household income could result in lower demand for schooling, or school attendance, as well as poorer school infrastructure, and any association between attendance and infrastructure would then be spurious. However for other indicators of school quality, such as the availability of the basic amenities discussed above, there is no strong relationship with per capita expenditures at the district or the community level. Therefore, it seems reasonable to posit that school quality does to some extent drive attendance and enrollment.

3.49 Active parent and community involvement in school management is widely recognized as crucial to increasing teacher accountability and improving school performance. The survey data seems to support the applicability of this notion in the Pakistani case. In the sampled communities, it was found that basic amenities, such as drinking water and toilets, were significantly higher in schools with a parent-teacher association (PTA) than in those without one. However, the survey also revealed that PTAs are far from universal in rural Pakistan, and in most cases exist only in name. While roughly 52 percent of the sampled schools possessed a PTA, the number of financially viable organizations was smaller, since only 68 percent of these PTAs received governmental grants. The PTAs on average met only once a month, a quarter had not met with the school principal in the past month, and over half had met with the principal only once.

3.50 To summarize, access to schooling, both in terms of availability and quality of schools, appears to be significant constraints on educational attainment in Pakistan. And the evidence so far has indicated that in most part there is a systemic failure of public education. In this context, and given that the private sector has played an increasingly important role in schooling in Pakistan in recent years, as seen

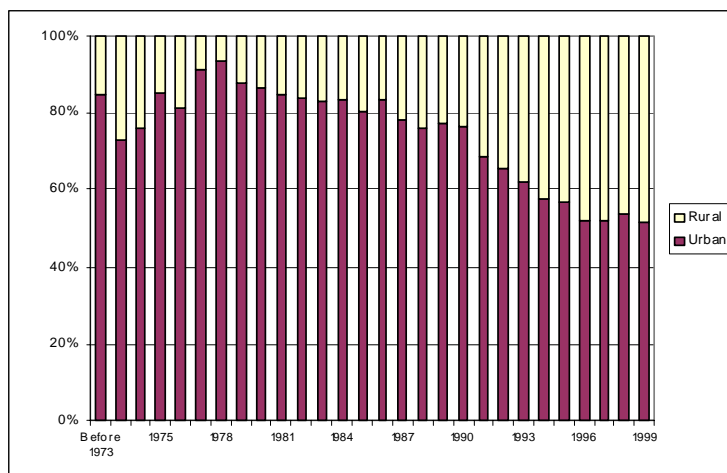
previously in this chapter, it will also be important to explore in some detail the opportunities offered by this sector in delivery of education services.

Expanding Role of the Private Sector: Reason for Optimism?

3.51 A number of questions arise over the nature and impact of private schools and their implications for regional and income equity in the delivery of public services. What for instance is the feasibility of increasing the access of rural and less well-off households to private schools? Recent history, supported by analysis of detailed data on private schools available from the Census of Private Schools (2000), provide some grounds for optimism.

3.52 Figure 3.11 shows that in Pakistan there has been a qualitative shift in the establishment and operation of private schools from 1990 onwards furthering broader access to such services - even though there is still a significant “rural-urban” divide with enrollment in urban private schools outnumbering that of rural private schools by a ratio of 3:1. Before 1990, less than 20 percent of all private schools established were located in rural regions, but from 1990 to 2000, this number has increased, and now remains stable at close to 50 percent. As a result, more than 45 percent of the schools established since 1996 are located in rural areas.

Figure 3.11: Establishment of Private Schools



Source: Private School Census (2000)

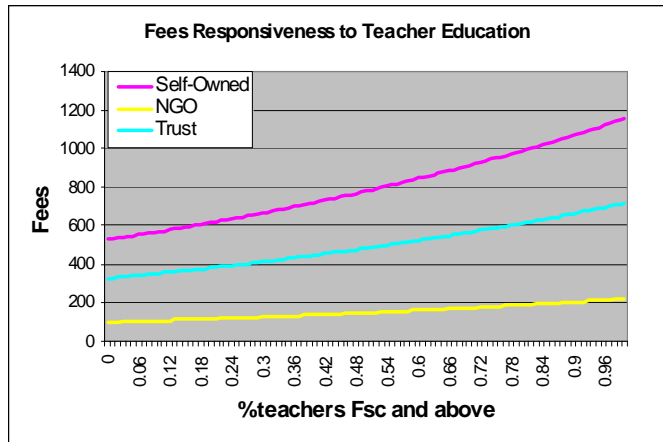
3.53 Moreover, as outlined in Box 3.4, the recent experience with private schooling in Pakistan calls into question a number of prior beliefs about its elite nature. In particular, it appears that tuition fees in private schools are not set so that they cater only to the wealthy. Also, in terms of their total cost, private schooling actually turns out to be cheaper than public schooling. Having said that, important questions still need to be addressed in order to ascertain the potential role of private sector in expanding access to quality education in Pakistan. One key area of research should be to assess of how private school *test assessment outcomes* compare to public schools, and whether these test outcomes correlate positively with prices in the private sector. This would be important because the absence of a price-quality relationship would indicate that households face problems in learning about the quality of a school, which can lead to extremely inefficient outcomes. On the other hand, the existence of a price-quality relationship would indicate that households have information to make good decisions. In that case, a policy to promote equity by targeting educational subsidies at the household level (for example, through vouchers) would also be efficient. A thorough evaluation of this issue would address the important question of whether using the private sector and providing educational subsidies to poor households can be an efficient policy lever, to some extent supplanting complete reliance on the public sector to expand primary education.

Box 3.4: Private Schools in Pakistan: Purely an Urban Elite Phenomenon?

The stereotype of elite private schools charging exorbitant fees is not borne out by the data from the Private School Survey. The median monthly tuition fee for a primary school in the rural areas ranges from an astonishingly low Rs. 53 a month in Punjab to just over Rs. 115 in Balochistan. Moreover, fees in urban areas are not much higher. For instance, the median monthly tuition fee for urban Punjab is only Rs. 71. In Punjab, these tuition fees represent 1.7 percent of average household expenditure at the rural level and 2.1 percent at the urban level. How do these figures compare to public schools? The correct benchmark for establishing the cost of private vs. public schooling is a comparison of tuition fees in private schools with fees in public schools *plus* the government outlay on spending per child. Doing so presents a telling picture: the per child government expenditure on education amounts to a staggering Rs.2,430 for all educational categories.³⁶ Even if this amount is halved to adjust for primary vs. higher educational spending, total expenditure per child in a public school costs Rs.1,200 compared to just over Rs.1000 for private schools. Is this because public schools provide higher quality education than private schools? Recent evidence suggests not. Although public school teachers are more experienced and have more training, head-teachers in private schools tend to have more years of schooling (12.7 vs. 11.3), student-teacher ratios in private schools are about half of those of public schools (24.8 vs.42.7) and private schools have better infrastructure facilities, such as toilets and classrooms with desks.

So far however, one has only looked at the *average* private school in Pakistan and in doing so, may have overlooked important variations in quality and price. In fact, a related concern with private schooling has been the non-standardization of educational provision – whether lack of regulation allows institutions to take advantage of households, many of whose children are first-generation literates - and provide poor education. It should be noted that the fact that there are low and high quality schools, with (respectively) low and high prices, is not a cause for concern from an efficiency point of view *if households can accurately gauge the quality of schooling received*: richer households would opt for more expensive and higher quality options. While this may be troubling from an equity perspective, the correct policy prescription is *not* to restrict supply options. Rather it is to increase cash resources at the household level, potentially through the use of educational subsidies (Alderman et al, 1999).

Since data on student outcomes, such as test scores, do not exist, one cannot really answer this important question of the relationship between price and quality. A possible proxy would be to examine the relationship between school fees and inputs that may be correlated to school quality, such as student-teacher ratios or teacher's education. A multivariate regression exercise that controls for district level dummies and school type shows that at least at this basic level, households are correctly evaluating educational quality, with fees decreasing with an decrease in the teacher-student ratio as well as the proportion of matriculated teachers (figure).



Source: Private School Census

Source: Andrabi, Das and Khwaja (2002). "The Rise of Private Schooling in Pakistan: Catering to the Urban Elite or Educating the Rural Poor?"

Health in Pakistan

3.54 While various health indicators have shown improvements over the 1990s, as Chapter 1 has shown, most indicators remain below the levels seen in countries with comparable levels of income. These include life expectancy, infant and child mortality rate, as well as spending indicators like expenditure per capita and government expenditure per capita on health. As noted in Chapter 2, health indicators and poor sanitation are also likely related to vulnerability and poverty in the country. On a number of grounds, the health status of the population therefore bears further scrutiny.

3.55 There are reasons for optimism on the health front: available data suggests that infant mortality has improved over the decade and evinces no significant gender gap; the incidence of diarrhea - a leading cause of infant death - has also fallen; the immunization rate has improved over the decade; and knowledge of contraception has increased significantly among married women of child bearing age and now appears near universal. However, significant challenges remain. Infant mortality rate is characterized by a large rural-urban gap; the incidence of pre-natal consultation remains low, particularly in rural areas; Oral Rehydration System, a simple, inexpensive and highly effective treatment for diarrhea is administered for only 49 percent of diarrhea incidents among children of the poor; and, in spite of much improved awareness, actual use of contraception remains low among women of childbearing age.

3.56 One significant point of this section, is its highlighting of the persistence of chronic malnutrition among a number of districts sampled by an IFPRI survey in Pakistan, with almost no improvement over the past 15 years. While the survey is not nationally representative, it provides a robust indicator of changes in household health in four separate communities over a longer period. It shows that by the time a child reaches age 5, it has a 60 percent probability of being stunted, 40 percent probably of being underweight, and 10 percent likelihood of being wasted. This is significant because numerous studies conducted in other developing countries strongly indicate that poor childhood nutrition impacts the productive life of the adult, and that interventions later on in their adolescence are ineffective in remedying this.

3.57 What determines these poor nutritional outcomes? Crucially, the section shows that the wealth or economic status of the community is likely to be more important than household specific factors in determining a child's nutritional status. It is a reasonable conjecture that this may be in large part because wealthier communities command better facilities. As discussed, this has vital implications for the targeting and design of health policies. While differences in access prove important in explaining variations in health status, the quality of facilities is also a significant problem. Tabulations of outpatient visits show considerable variation across facilities in terms of usage, with some catering to far higher populations than others. Secondary sources also confirm that while the number of doctors and health facilities in Pakistan grew in 1980 and 90, there is a dearth of qualified doctors in rural areas.

Measuring Health in Pakistan - Indicators, Analysis and Limitations

3.58 Measuring the health of a population is a complicated exercise, requiring numerous ways of gathering information- including self-reporting, clinical measures, and observation of daily life activities. In Pakistan, this problem is accentuated by the fact there is a high reliance on self-reported measurements that suffer threshold problems; richer households for instance have a lower threshold at which they would report a disease. There are also problems about definitions of morbidity, and specificities of the questionnaire used. In addition, like many developing countries, Pakistan also suffers from lack of data at district levels on mortality causes, making it hard to obtain accurate estimates of the toll exacted by specific diseases. Given these constraints, this section will focus on the specific health indicators outlined below.

3.59 Firstly, it will examine some process indicators: medical consultation, knowledge about medical practices at household level, and use of preventive medical services. These are useful in so much as they are indicative of the factors that may determine health outcomes. However, since they are jointly determined by demand, supply and knowledge, they do not tell a clear story. Some outcome indicators are therefore also analyzed. Particular attention is focused on anthropometrics - height and weight of growing children - since the nutritional well being of children is known to correlate to a number of long-term and short-term health variables. In looking at process and outcome indicators alike, equity issues will also be highlighted, across regions as well as levels of economic status.

3.60 The ensuing discussion helps identify some consequent policy priorities. Among the most basic ones it points to the importance of far better monitoring of health indicators and greater systematization of morbidity/mortality data than what is available at present, in order to provide a better analytical basis for detailed health strategies. From the policy perspective, it is also important to disentangle the sensitivity of health indicators to supply side interventions, such as improvements in access to medical care, from interventions that work through the household, either by providing income supplements or through other avenues, for instance through spreading awareness about sanitation. Notably, a number of development studies have suggested that it may actually be more beneficial to sponsor preventive public health schemes involving sanitation and clean water than to focus on access to facilities, for example by setting up new hospitals.³⁷ Indeed, it is surprising to note that there is actually very little evidence in the health literature that improvements in mortality and morbidity over the last 80 years are related more to improvements in access to health facilities rather than improvement in the overall living conditions of communities. However, as noted above and further detailed herein, an analysis of the determinants of anthropometric outcomes for children in sampled districts in Pakistan, appear to qualify this observation.

Some Process Indicators of Health in Pakistan

3.61 Self-reported process indicators of health obtained from Pakistani households point up a number of critical health issues. For some, progress has been made over the decade, though often not of sufficient magnitude. Moreover, a dearth of reliable data makes it difficult to decisively confirm such progress.

Table 3.8: Female Health Care (Related to Childbirth) -- 1998-99

	Pre-natal Consultation (%)³⁸	Delivery Occurred at Home (%)	Delivery Unassisted by Trained Personnel (%)³⁹	Post-natal Consultation (%)
All Pakistan	30.9	82.8	40.8	8.6
Rural	22.0	89.5	45.9	5.9
Urban	60.1	60.8	24.2	17.3
Rural Per Capita Exp. Quintiles:				
1 st Quintile	11.9	95.5	49.4	3.9
3 rd Quintile	21.8	90.3	47.4	5.2
5 th Quintile	31.9	80.3	38.3	9.7
Urban Per Capita Exp. Quintiles:				
1 st Quintile	36.4	80.7	38.7	8.4
3 rd Quintile	55.7	67.5	29.0	14.6
5 th Quintile	84.2	29.9	7.9	34.0
Literacy of Woman (Rural):				
Not Literate	18.3	..	..	4.8
Literate	49.1	..	..	14.2
Literacy of Woman (Urban):				
Not Literate	44.2	..	..	9.6
Literate	80.5	..	..	27.4

3.62 In the absence of detailed information at the individual level in Pakistan, information on *pre and post natal care*, and statistics on the *conditions surrounding childbirth* are expected to be indicative of female health. From the PIHS data of 1998-99, the incidence of pre-natal medical consultation in Pakistan is found to be low in general, with very large differences between rural and urban regions, and within regions among various expenditure groups as well as literacy status of women (Table 3.8). Similar patterns are observed in other related indicators, including the proportion of deliveries that occur at home,

the proportion that are not attended by any trained personnel, and the incidence of post-natal medical consultation. For example, among rural and urban women, 22 percent and 60 percent had pre-natal consultation respectively; in 90 percent and 61 percent of cases deliveries occurred at home; 46 percent and 24 percent of deliveries were not attended by any trained personnel; and only 6 percent and 17 percent of rural and urban women respectively went for post-natal check-up. For rural women in the lowest expenditure quintile the corresponding numbers are 12 percent, 96 percent, 49 percent and 4 percent.

3.63 The immunization rate – a significant process indicator for preventive health care – has improved significantly in Pakistan over the decade. Since immunization data are mainly self reported in surveys, monitoring the rate of completion of immunization courses (which typically involves multiple visits) can be difficult. Such monitoring can be better implemented by promoting awareness among households to maintain immunization cards for children. The PRHS survey suggests that cards were available for only about 20 percent of the children in the sample- symptomatic of lack of awareness, institutional lapses, or both.

3.64 Other important process indicators are the rate of medical consultation and the incidence of ORS, a vital and relatively inexpensive treatment used to arrest the fatal wasting effect of diarrhea among children (refer to Table 3.11 below). Stark differences are observed between urban and rural areas, and between poor and non-poor in the case of proportion of children with diarrhea who had access to medical consultation, and those who were administered ORS. 49 percent of poor and 52 percent of rural children with diarrhea were administered ORS, compared to 58 percent and 64 percent of non-poor and urban children respectively. The fact that a large proportion of so-called medical consultations are likely to comprise consultations with “informal” practitioners, including faith-healers, also suggest that the frequency of medical consultation is possibly lower than what the numbers in Table 3.11 indicate.

3.65 Finally, fertility indicators listed in Table 3.9 reveal that while knowledge of contraceptives has increased sharply among women (married, of age 15-49), increasing from 38 percent in 1991 to 92 percent in 1998-99, the increase in the related outcome indicator, namely the actual use of contraception, though substantial (from 10 percent to 20 percent), has not been proportional. As expected, there are also wide differences in use of contraception, across rural and urban areas, economic status and levels of women’s education. Such differences are also reflected in the average number of children born per woman, though the rural-urban difference in this respect is very small.

**Table 3.9: Knowledge and Use of Contraception, and Fertility
(Married Women, Age 15-49)**

	Knowledge of Contracep (%)		Ever Use Contracep (%)		Mean No. of Children Born	
	1991	1998-99	1991	1998-99	1991	1998-99
All Pakistan	38.4	92.3	10.3	19.5	5.9	4.2
Rural	..	90.1	..	14.3	..	4.2
Urban	..	98.5	..	34.1	..	4.1
By Per Capita Exp						
1 st Quintile	31.1	90.8	6.3	14.5	6.9	5.2
2 nd Quintile	35.6	92.5	8.9	17.5	6.4	4.8
5 th Quintile	41.0	94.1	11.8	24.6	5.8	3.0
By Woman’s Edu						
None	34.4	90.5	7.8	15.5	6.1	4.5
Some	63.7	98.5	26.0	33.1	4.5	2.9

Outcome Indicators for Health

3.66 While the process indicators outlined above can serve as rough and ready indicators of the status of health, particularly from the point of view of determining the spread of knowledge and awareness, it is crucial also to consider outcome indicators. *Infant mortality rate*, i.e. the mortality rate among infants of age 1 or less – is particularly critical. This indicator is also less likely to be complicated by the threshold problems discussed earlier. Encouragingly, Pakistan's infant mortality rate of 83 per 1000 live births in 1998-99 compares favorably with 127 in 1991 (Table 3.10). Furthermore, no significant gap exists between male and female children. However, there is a large rural-urban gap of 18 percentage points.⁴² An even larger gap of 34 percentage points distinguishes infants born of women with some education, and those born of women with no education, signifying the crucial role played by mother's education in the health of the child. Infant mortality rates are also significantly lower for households with access to facilities like piped drinking water, covered underground drainage systems, and toilets inside the residential building. Child (age 5 and below) mortality rates not listed here exhibit patterns very similar to that of infant mortality rates.

Table 3.10: Infant Mortality (Per 1000 Live Births)

	1991 ⁴⁰	1998-99 ⁴¹
All Pakistan	127	83
Urban	..	70
Rural	..	88
Male	..	85
Female	..	81
By Mother's Education:		
No Education	134	90
Some Education	81	56
Drinking Water:		
Piped Indoor	117	70
Outside Home, Covered	121	90
Open Source (River, Pond)	156	83
Drains:		
Covered Underground	94	54
Uncovered Open	120	86
None	141	89
Toilet:		
Yes	105	73
No	132	95

3.67 While mortality rates are important, they provide no information about morbidity. This is a serious handicap because numerous studies show that it has strong implications for household income and labor.⁴³ Since diarrhea is an important cause of morbidity in developing countries, its *incidence* among children in Pakistan is therefore an important indicator linking health and developmental outcomes. The incidence of diarrhea among all children age 5 and under within 30 days of a survey showed a marked fall between 1991 to 1998-99, falling from 25 percent to 12 percent (Table 3.11). Such comparisons across years however may be sensitive to timing of surveys, particularly if propensity for diarrhea is more acute in certain seasons. For 1998-99, the largest gaps in incidence of diarrhea were between rural and urban areas, measured by the proportion of children who had the disease in the last month, and the average number of days of diarrhea per child. However, there are no discernible differences in the incidence of diarrhea either between the poor and non-poor, or between male and female children.⁴⁴

Table 3.11: Incidence of Diarrhea for Children of Age 5 and Below
(During 30 Days Preceding the Survey) – 1998-99

	% of Children Who Had Diarrhea	Average No. Of Days of Diarrhea Per Child	Those who had Diarrhea in Last 30 Days		
			Any Medical Consultation? (%)	Use of ORS (%)	First Consultation at Govt. Facility (%)
All Pakistan	12.3	0.83	82.1	54.5	28.9
Rural	12.7	0.87	80.8	52.0	30.4
Urban	11.1	0.71	87.2	64.0	23.6
Male	12.5	0.84	82.5	56.0	28.6
Female	12.2	0.84	81.9	52.6	29.2
Poor	12.7	0.86	79.3	48.5	27.5
Non-poor	12.1	0.81	83.9	58.3	29.8

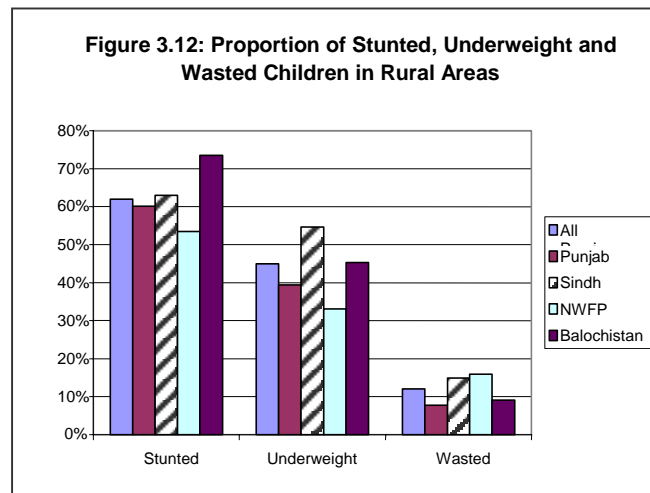
3.68 Given that child nutrition is a critical factor in determining child morbidity, as well as an individual’s future development in the course of a lifetime, it is also worthwhile to expand this inquiry into health in Pakistan, by looking at *anthropometric outcomes* among children, defined as aged less than six years. As a health indicator, these also have the advantage over data on diarrhea incidence that, while the latter suffers from concerns over the reliability of self-reporting,⁴⁶ anthropometrics, being clinical measures, are insulated from such concerns.

3.69 The specific data used draw on surveys conducted by the International Food Policy Research Institute (IFPRI) between 1986 and 1989 in four areas, and the recent PRHS (2001) survey.⁴⁷ Although the results from these surveys are not representative of the country as a whole, a key advantage in using these is that as a part of the PRHS study, a resurvey was conducted for the same households as those in the IFPRI sample, thus allowing accurate observations about changes in nutritional status over time. And although there are clear differences in household attributes over the 15 year time period, these differences are a reflection of time trends in income and infrastructure across half a generation rather than differences in the composition of the sample.⁴⁸

3.70 While it should be stressed that the results presented are preliminary and subject to revisions, they are nevertheless stark, pointing up a chronic malnutrition problem in the areas sampled, which has persisted over the 15 years covered by the IFPRI survey, without any improvement. Accordingly, by the time a child reaches age 5, they have a 62 percent probability of being stunted, 45 percent likelihood of being underweight, and 12 percent chance of being in a wasted condition. There are also significant regional variations, with Sindh uniformly faring worst of all major provinces. Notably, both female and male children appear equally affected by this trend. As will be discussed in short order, this is particularly worrying because as noted above, several studies in other developing countries argue both that poor nutrition in an individuals childhood impacts their subsequent productive life as an adult, *and* that later policy interventions are ineffective in remedying this.

3.71 The analysis uses three anthropometric measures: height-for-age, weight-for-age and weight-for-height, using data from the PRHS (2001). Each of these measures provides information on different facets of the health status of children. For instance, height-for-age is an indicator of long-term malnutrition; weight-for-height provides more information on acute or short-term fluctuations in nutritional status; and weight-for-age is an indicator of both acute and chronic malnutrition. For each of these measures, the *Z-score* based on standard growth charts are computed and used as an indicator of the nutritional status of the child, in terms of stunting, underweight and wasting.⁴⁹

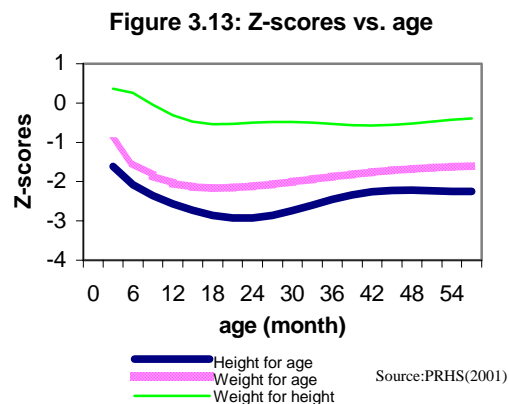
3.72 Figure 3.12 shows the overall nutritional status of children in the sample. For each child, the three measures of nutritional status are computed, each defined as a z-score of the variables less than 2 standard deviations from their respective median values. For all four districts, by the time a child reaches the age of 5, they have a 62 percent probability of being stunted, a 45 percent probability of being under-weight and a 12 percent probability of being wasted, representing high levels of chronic malnutrition in the population. More disturbing however is the complete lack of improvement in the four districts of the IFPRI sample over the 15-year period.



Indeed, there are now more children who are stunted and underweight compared to results obtained during the late eighties. As opposed to chronic nutritional deficiencies, short-term nutritional problems as measured through weight-for-height do not seem to be severe.

3.73 Furthermore, the aggregated statistics hide a significant amount of variation among the provinces. Among the four provinces surveyed, Balochistan and Sindh report the worst results, while Punjab and NWFP do significantly better in terms of weight-for-age and to a lesser extent, for height-for-age as well (Table A-3.12, Annex). Interestingly however, weight-for-height results do not follow the same patterns. Punjab reports less than the 5 percent one would expect from a normally distributed variable, and although the numbers are higher for NWFP and Sindh, they are still within reasonable bounds.⁵⁰

3.74 Figure 3.13 shows the impact of age on the z-score of the child, showing that there is a significant decline in their nutritional status from birth to an age of 2 years. As with Alderman and Garcia (1993), chronic malnutrition is found to start early in childhood with the z-score dropping rapidly from one standard deviation below the median (weight-for-age) and 1.5 standard deviations below the median (height-for-age), to between 3 and 2.5 standard deviations below the median by the second year of the child.



3.75 These findings are in accordance with research from other countries that show the importance of nutrition in early childhood and the relative inefficacy of interventions beyond the second year of the child. In light of this, it is particularly worrying that a number of studies now also show that poor nutrition in an individual's early childhood has lasting repercussions for the productive work-life of the adult.⁵¹ These findings reiterate the importance of policies that targeted nutritional programs during pregnancy and early childhood years. In areas with poor catch-up growth and when the cumulative effects of poor early nutrition on long run growth are prevalent, childhood nutrition programs can powerfully impact income growth, through their impact on morbidity and future work capacity.⁵²

3.76 In this regard, there are also important differences between the four provinces covered by the study (Figure A-3.3, Annex). While NWFP shows extremely strong catch-up growth, Balochistan shows a steep drop in the 2nd year followed by fluctuations around this level till the 5th year of the child. These results illustrate the need for a more thorough enquiry into inter-regional differences among provinces in Pakistan. Interestingly however, the gender of a child, which is typically important in several economic variables - particularly enrollment - does not seem to lead to statistically significant differences in nutritional status. One potential explanation for this result could be selection in the sample induced by higher mortality among young girls compared to boys.⁵³ While this possibility is currently under investigation, it is at this point difficult to say whether such patterns are prevalent in the infant mortality data.

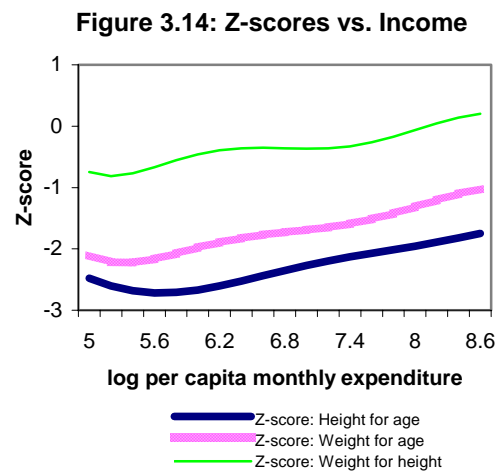
Nutritional Status and Household Expenditure

3.77 If these health outcomes are to be improved, it is vital to identify the determinants of nutritional status in Pakistan, in order to target policies accordingly. The following section addresses this imperative, focusing in particular on the potential role of household earnings vis-à-vis broader community specific factors. By decomposing the impact of income through nutrition into household effects, it asks whether better off households have children with better nutritional status - perhaps through their ability to afford

better food and health care - or whether better off communities have children with better nutritional status - through their ability to mobilize resources at the community level?

3.78 The sensitivity of nutritional status to household income is critical for the targeting of policy programs: high sensitivity would argue for the placement of programs that generate more income for households, leaving the choice of the consumption bundle and allocation of health care to the household itself. The converse would argue for the placement of programs that may be orthogonal to income with greater concentration on other correlates of nutritional status. As detailed below, this does indeed seem to be the case in Pakistan: the analysis evinces very strong community effects, and almost no household effects, indicating the prevalence of strong community based health externalities.

3.79 Figures 3.14 plots the impact of a measure of household's economic status, as measured by household consumption expenditure, on the three measures used as proxies for the nutritional status of the child. For all three there are significant positive correlations with income: an increase in the log of per-capita income from 6 to 9 improves the z-score of height-for-age by 1 standard deviation and the z-scores of weight-for-age and weight-for-height by over 1.5 standard deviations. One should note however that to draw causal implications for the importance of economic status in the determinant of childhood nutrition, there are two issues to be concerned about. First, it may be the case that average income in the community impacts on the nutritional status of the child through other resources that the community may be able to mobilize. Second, there may be concerns about the endogeneity of income at the household level: households may differ in inherent characteristics such as "entrepreneurship" that are correlated positively to both the economic status of the household, and to the well being of the child.



3.80 The first of these problems is addressed by examining specifically whether there are attributes of communities that cause them to differ systematically in the treatment of their children. Doing so yields surprising results, with profound policy implications.

3.81 Four different model specifications, including an OLS model and a model with community fixed-effects, in each case with and without instrumenting (log of) per capita expenditure, are estimated.⁵⁴ Moreover, the results for the 4 districts from the IFPRI sample are presented separately, in order to allow a comparison with results previously obtained (refer to results from these estimations in Table A-3.13a, b and c, Annex). For both height and weight-for-age, the OLS estimates of log per capita expenditure are significant and positive, particularly so in the case of the four IFPRI districts. Further, the gradient of the z-score with expenditure increases substantially once consumption expenditure is instrumented with household assets. Specifically, in the case of height-for-age, a one standard deviation increase in log per capita income improves the z-score and weight-for-age of a child at the mean of the sample by 0.23 and 0.14 respectively. The results for the IFPRI sample are far stronger, with equivalent numbers of 0.34 and 0.22.

3.82 The estimation results from the community fixed effects models show however that this strong relationship between expenditure and nutritional status, at least in the case of chronic malnutrition, is entirely driven by differences in the average per capita income across communities: richer communities have taller and less underweight children, but once the average per capita income of the community is

controlled for, there is no impact of household expenditure on z-scores of height and weight-for-age *across different households in the community*. This implies that a child in a poor household in a rich community will have a better nutritional status than a child in a rich household from a poor community, pointing towards the presence of strong externality effects within communities affecting the child's well-being.⁵⁵ This result occurs, *even though* over 70 percent of the variation in expenditure in the sample is generated by community differences, and less than 30 percent by differences across communities. In combination with the previous result, this provides strong evidence that most differences in nutritional status of children are driven by community-level, rather than household-level effects.⁵⁶

3.83 In summation, a distinct pattern can be ascribed to all of the health process and outcome indicators discussed so far.⁵⁷ Health indicators are generally much lower in rural areas than in urban areas; they also tend to improve with household characteristics like women's education, economic status and sometimes, and access to safe water and sanitation. While various other hard-to-measure household characteristics, like social attitudes, cultural mores and extent of isolation from information play a role in determining these outcomes, it is especially important to consider the importance of community characteristics, motivated by the observed importance of community-level fixed effects in explaining anthropometric outcomes.

3.84 Notably, the discussion so far begs the question of what the community level fixed effects are proxy for, i.e. what specific characteristics they represent. A reasonable hypothesis would be that that they can be seen as being interchangeable with the availability of health facilities and services.⁵⁸ According to this explanation, richer communities are in a better position to influence the location of a health facility, as well as ensure more regular, high quality operation compared to a poor village. This hypothesis is explored in the next section, in the context of an overall survey of the availability and quality of health facilities in Pakistan.

Access to Health Facilities

3.85 According to the available evidence, differences in access to health facilities, particularly for rural areas which as noted above suffer from particularly poor health indicators, are important in explaining variations in health outcomes, if not the specific nutritional status of children. In addition, quality is likely a significant problem. As a rough proxy for this variable, outpatient visits evince a considerable variation across facilities in terms of usage, with some catering to far higher populations than others. This overall pattern is supported by observations from secondary literature noting that while the number of doctors and health facilities in Pakistan grew in the 1980's and 1990's, there is still a shortage of qualified doctors in rural areas.

3.86 The PIHS (1998-99) provides information on overall access to health facilities in rural areas of Pakistan. While 38 percent of the rural population lives in villages with a government hospital, dispensary or clinic, the proportion rises to 69 percent if health workers, nurses and private practitioners are included (Table 3.12). However, availability of health facilities also varies widely among provinces.⁵⁹ In terms of the availability within a village of any kind of health facility or worker, the Northern Areas ranks the highest, while Balochistan and Sindh fare the worst. Availability of all kinds of health facilities also tends to be higher for communities in the higher expenditure deciles, indicating that relatively richer communities are also those where health facilities are more likely to be present. Such differences exist even with regards to the incidence of government facilities - less than 35 percent of the population in the bottom 2 deciles enjoy access to government health facilities in their village, compared to around 40 percent for the top 2 deciles. Such differences in the availability of health services would tend to accentuate the sharp differences in health outcomes between the poor and the relatively well off.

3.87 In fact, based on available evidence from household data, it would seem that differences in access to health facilities are important factors in explaining variations in this health status. Infant mortality and child mortality rates, for males and females alike, are lower for villages in the PIHS sample if there is in the community a hospital, dispensary or clinic - in fact, these rates are lower if any health facility exists in the village (Table 3.13). Similarly, availability of health facilities in the PSU is also associated with a higher incidence of pre-natal medical consultation for women, and higher proportion of childbirths attended by trained personnel. Therefore, as is the case with educational indicators, some critical health indicators also tend to improve in areas where there is relatively easy access to relevant services.

Table 3.12: Proportion of Rural Population with Health Facilities in Village (1998-99)

Per Capita Exp. Deciles (Rural)	Govt. Hospital, Dispensary or Clinic ⁶⁰	Any Health Facility or Worker ⁶¹
1	31.7	60.0
2	35.8	64.7
3	43.4	72.4
4	35.2	69.6
5	38.4	68.8
6	40.2	69.9
7	41.7	70.1
8	35.4	72.0
9	39.7	71.6
10	39.7	72.4
Overall (Rural)	38.1	69.2

3.88 Access to facilities, however, does not seem to matter for the nutritional status of children, as derived from the PRHS study. Results from the OLS instrumented estimation (refer to Column 10 of Table A-3.13, Annex) show that the presence or absence of health services does not impact significantly on the nutritional status of the child. This of course does not rule out the possibility that what matters for the well-being of a child is not the presence of a facility per se, but the presence of a *well-functioning* facility close to the village. As mentioned before, the mere presence of a health institution is no guarantee for how well it functions, if at all. Quality characteristics, determined mainly by institutional factors, would thus be a critical element in explaining health status across the population.

Table 3.13: Access to Health Facilities and Selected Health Indicators (1998-99)

Selected Health Indicators	Any Hospital, Dispensary or Clinic		Any Health Facility or Worker	
	In PSU	Not in PSU	In PSU	Not in PSU
Infant Mortality per 1000:	80.9	93.3	83.2	99.4
Male	83.9	93.4	87.1	95.0
Female	77.8	93.1	79.0	103.8
Child Mortality per 1000:	104.5	117.0	104.0	129.5
Male	110.7	115.3	113.3	113.6
Female	98.1	118.8	94.0	145.9
Incidence of Pre-natal Consultation (%)	25.7	19.6	26.0	13.7
% of Births Unassisted by Trained Personnel	42.4	48.3	42.9	52.2

3.89 On this front, preliminary results from the PRHS show that there is significant variability across facilities in the sample. Importantly, it was found that record-keeping at the facility level was of insufficient quality to provide important data on availability of medicines and other process indicators. The variation in the quality of the facility is thus gauged at an anecdotal level by the number of outpatient (OPD) visits for a one-year period (separated by month) for each of these facilities. The results indicate that the health facilities in the sample differ considerably in terms of usage across communities, with some facilities consistently catering to far higher OPD populations than others (Box 3.5).

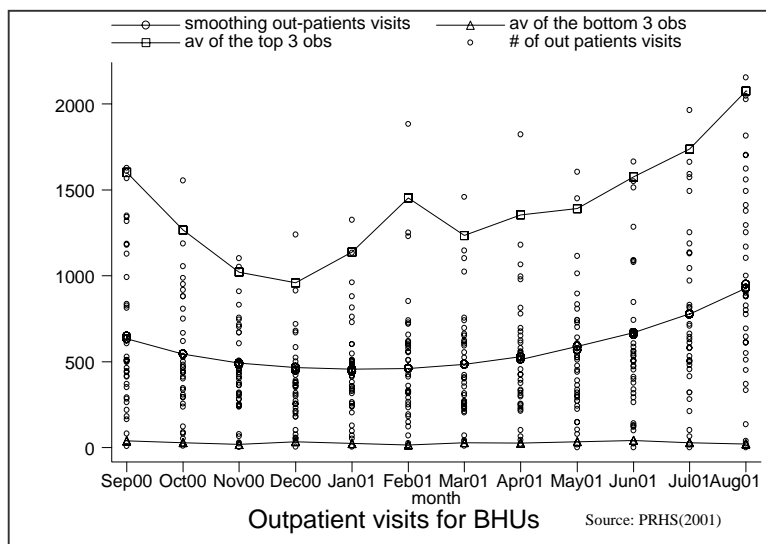
Box 3.5: Quality Variations Across Health Facilities in Rural Pakistan -- from PRHS (2001)

An evaluation to approximate the quality of health facilities in rural Pakistan was undertaken in the context of the PRHS, based on a survey component as a part of which the number of outpatient visits of facilities in sampled village were surveyed along with households. Accordingly, the total number of facilities in the sample is small, including only 12 Regional Health Centers (RHCs) and 38 Basic Health Units (BHUs). The results evince large differences across facilities.

Proportion of facilities whose rank (in terms of outpatient visits) changes by more than 4 places

month	RHCs	BHUs
Sep-Oct	0.25	0.00
Oct-Nov	0.25	0.00
Nov-Dec	0.25	0.00
Dec-Jan	0	0.1
Jan-Feb	0	0.1
Feb-Mar	0	0.1
Mar-Apr	0	0.00
Apr-May	0	0.00
May-Jun	0	0.00
Jun-Jul	0	0.1
Jul-Aug	0.25	0.00

Source: PRHS(2001)



The figure shows the pattern of outpatient visits for BHUs; for the median facility, for the average of the top 3 facilities, and for the average of the bottom 3 facilities. Both for the median and the top 3 facilities, visits follow a seasonal trend with declines during the winter months of November to March and increases during the summer and monsoon months of April to October. What is perhaps most striking however is the vast difference in the number of visits across the facilities. While the top 3 facilities regularly show more than 1,500 visits per month, the bottom 3 facilities consistently report 0 visits each month during the year preceding the survey. One explanation could be that this graph actually captures variation within facilities as opposed to variation across facilities.⁶² But the table above shows that this is not the case. For each month, less than 10 percent of BHUs change their relative ranking by more than 4 places, and the standard deviation of each facility's ranking is less than 2.

It should be noted with some caution, that the nature of information available from this component of the PRHS is limited by the lack of proper record-keeping in the facilities surveyed. This however also points to an area requiring strong improvement in these facilities, which will be critical for future attempts to monitor the functioning of such health facilities in rural Pakistan, and for identifying the specific weaknesses and bottlenecks within this system - for example with regards to availability of medicines and critical supplies.

3.90 To a certain extent, these results could be due to the number of health personnel in the facilities. As Table 3.14 shows, better facilities tend to have a greater proportion of positions filled as a fraction of positions sanctioned, although they have a lower proportion of personnel present over positions filled. Apart from this, there seem to be no systematic differences across facilities in terms of infrastructure: while the top facilities report more usable well-water and more reliable electricity, the differences remain insignificant in a sample of this size.

Table 3.14: Facility characteristics and outpatient visits

	In terms of avg. outpatient visits	positions filled/ sanctioned	persons present/ positions filled
RHC	Bottom 2	0.57	0.88
	Top 2	0.94	0.76
BHU	Bottom 5	0.77	0.97
	Top 5	0.99	0.71

Source: PRHS(2001)

3.91 Accordingly, the discussion so far, including that on the nutrition status of children and on the state of health facilities in the sample, points towards the importance of effects at the community level, including the quality and availability of health services, in determining the health status of the rural population. While measuring quality characteristics continues to be problematic due to the lack of proper records and the absence of health facility surveys with sufficient breadth and detail, anecdotal evidence provides some measure of such problems. Secondary sources indicate that while the number of doctors and health facilities has grown in the 1980s and the 1990s, a dearth of qualified doctors in rural areas remains a serious issue. There are also serious questions about public facilities, especially in rural ones like RHCs and BHUs, where rampant absenteeism of medical personnel and severe shortages of equipments and medicines are reported.⁶³ This underscores the serious quality problems that beset health service delivery, akin to those reported in its school facilities. The governance problems that underpin problems of access and quality in both these sectors are discussed in the following section.

The Political Economy of Service Delivery: Some Hypotheses

3.92 This section examines the political economy of poor educational and health outcomes in Pakistan, particularly in light of the 2000 devolution plan for local government in the country. As noted in Chapter 1, it is difficult to attribute Pakistan's gap in human development indicators to low income, since they suffer even in comparison to countries with similar income levels. Nor can this under-provision be attributed simply to feudal domination, as is commonly held in journalistic and policy circles in Pakistan. There is ample village-level evidence, also discussed in Chapter 1, that suggests that the rural poor do have political voice and have on occasion voted out local landlord-politicians. Moreover, the influence of landlords on local service delivery has not been uniformly pernicious. Indeed, the under-provision of education and health is particularly perplexing because there is evidence that elected officials have been eager and able to provide certain kinds of targeted goods to their constituents. As argued in Chapter 1 the problem is at least partly one of governance; decision makers have poor incentives to serve their constituents, which in the context of health and education, negatively impacts the poor.

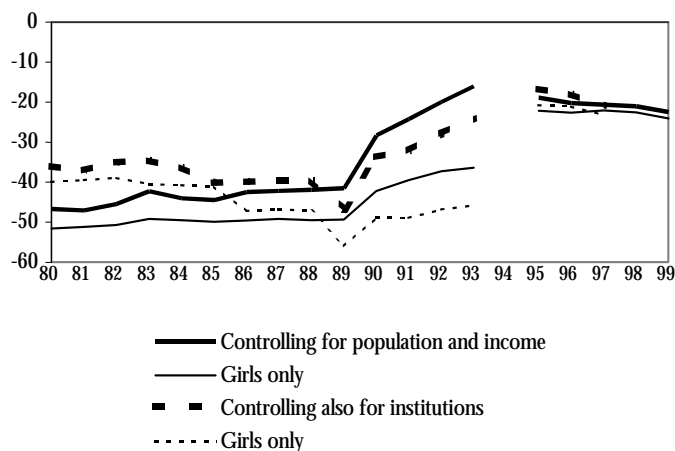
3.93 Although there are potentially many potential explanations for the failure of local service delivery, this section focuses on only two. First, elected officials demonstrate an extraordinary interest in providing targeted benefits to specific individuals or groups, rather than public goods to a wider and more anonymous set of beneficiaries.⁶⁴ Education and health have suffered in particular because of this since universal access to these services is, by definition, untargeted. Notably, the formal institutions of political competition and decision-making do not explain this incentive structure, but the unique informal rules of political competition do seem to shed light on it. Second, it also appears that many households seem to place a low value on education – particularly the education of girls – so that there may be little political incentive to enhance the access of girls to education.

Political Institutions and Governance Problems in Service Delivery

3.94 Both the formal and informal rules of political decision-making and competition influence political attitudes towards broad public goods. However, it turns out that such formal rules in Pakistan in the 1990s should have led elected officials to focus *less* on targeted benefits. Accordingly, it was informal political dynamics that seem to have mattered most.

3.95 With respect to formal institutions, in a cross-country statistical investigation, such attributes of political systems as whether they are parliamentary or presidential; whether they exhibit competitive elections; and whether they exhibit checks and balances within government -all influence decisions to provide broad public goods – in this case, encouraging primary school enrollment. This holds true even controlling for income per capita and other country characteristics, such as the percentage of the population of school age. Presidential systems have been found to discourage spending on public goods such as universal primary education; competitive elections have been found to encourage it; and multiple checks and balances, have been found - albeit more ambiguously - to reduce incentives to spend on public goods.⁶⁵ However, the gap between primary school enrollment and that of comparable countries is just as large or larger – up to ten percentage points larger – when Pakistan is compared to countries with both similar institutions and incomes as when it is compared only to countries with similar incomes. As Figure 3.15 shows, this is true both if one looks at total primary enrollment, and if one looks only at girls’ enrollment.⁶⁶

Fig. 3.15 : Actual is less than Expected Primary School Enrollment in Pakistan



Note: Negative numbers mean that actual primary enrollment in Pakistan is less than the enrollment expected based on other countries with similar characteristics. “Controlling for population and income” is actual total enrollment less the enrollment predicted by a regression. The “Girls only” line that follows in the legend charts expected enrollment for girls only. “Controlling also for institutions” is the gap using the enrollment predicted by another regression, and the paired “Girls only” line is expected enrollment for girls from that same regression.

3.96 However, while an analysis of formal institutions seems only to deepen the governance puzzle surrounding the failures of education and health in Pakistan, consideration of informal rules help to resolve it. Two features of such informal rules seem to be particularly important. First, politicians who enjoy personal credibility with voters have a significant advantage in a country where voters do not believe the promises of national political figures and parties with regard to the delivery of goods and services. However, under these circumstances, politicians have a strong incentive to provide targeted public goods only to those who believe their promises, and not to expend effort on public policies that help other citizens. Second, because of the unusually significant efforts needed to build up a personal constituency, to get people to vote, and simply to overcome a notable lack of information among voters about the political process and political competitors, elections in Pakistan are expensive. The concomitant need for campaign resources militates against policies that benefit broad interests, and favor policies targeted to narrow interests, who can in return fund political campaigns.

3.97 In order to get elected, a politician has to establish credibility with the voters, in particular the rural voters who have historically exercised significant influence on national politics in Pakistan. For example, rural constituencies have historically controlled a much larger number of seats in the legislature than their population would justify. To achieve this credibility, elected official have to provide targeted benefits to their supporters. This is particularly the case in rural areas, where voters are less concerned about ideological and national policy issues that mobilize voters in urban areas. At the same time, it is cheaper to buy the support of poor voters with targeted benefits, and rural voters are disproportionately poor. The distance between communities in rural areas also raises the political value of targeting benefits – it is easier to site schools and water pipes close to supporters and far from non-supporters.⁶⁷ Finally, rural areas are more completely dominated by voting blocs. Influential individuals are known to control a

precise number of votes, and whether those votes are cast and how they are cast is easy to monitor. Patronage, then, is a far more effective strategy in rural areas than political strategies that rely on quality public good provision. Because Pakistan's rural constituencies are particularly poor, particularly spread out and thoroughly organized into voting blocs, the relative political benefits of providing narrowly targeted rather than broadly available public goods, are high.

3.98 Pakistani legislators have argued publicly that the provision of targeted benefits unduly dominates their political life. Wilder (1999) quotes former Members of the National Assembly from Punjab as saying: "People now think that the job of an MNA and MPA is to fix their gutters, get their children enrolled in school, arrange for job transfers...[These tasks] consume your whole day...." (p. 196); "Look, we get elected because we are *ba asr log* [effective people] in our area. People vote for me because they perceive me as someone who can help them...Somebody's son is a matric fail and I get him a job as a teacher or a government servant..... If somebody has merit they very rarely come to me.....But it's the real wrongdoers who come to me"(p. 204).

3.99 Notably, in contrast to the near exclusive dedication to resolving individual problems that Pakistani legislators exhibited before suspension of the legislature, members of the United States Congress, well-known for their incessant efforts to secure re-election, have been found to spend on average fewer than six hours per week directly and personally intervening on behalf of constituents in order to obtain favors for them or help them solve bureaucratic difficulties.⁶⁸

3.100 Elected officials in Pakistan in the 1990s also de-emphasized public goods because of their high demand for resources to fund political campaigns – resources that generally come from narrow groups that benefit from government policies in some way. While there are no exact figures on the role and magnitude of campaign finance in Pakistani politics, vote buying and the growing expense of elections are widely noted.⁶⁹ Shafqat (1999) has argued that campaign spending rose to \$120,000 per parliamentarian in the 1997 elections. To provide some context, the electoral system that most closely resembles Pakistan's is the United Kingdom's. There, spending per constituency amounted to less than \$10,000 in the 1992 elections.⁷⁰

3.101 While the incentives of political decision makers have been helpful in ensuring better access to potable water and to market roads, as noted in Chapter one, they pose significant problems for health and educational policy in Pakistan. Good quality schooling and healthcare cannot be effectively targeted to a politician's supporters and therefore fail as mechanisms for generating political support. Unlike investments in infrastructure, such as road construction and the provision of potable water, as discussed in Chapter 1, higher teacher and doctor attendance, and better teaching materials and medical equipment benefit everyone in the village, supporters and non-supporters alike.⁷¹ And, to the extent that politicians do focus on educational and health provision, they do so in a manner that is more consistent with the patronage model: schools and hospitals are built for the jobs and profit opportunities that construction provides; teacher and doctor postings are based relatively less on merit and relatively more on the political calculation of how best to provide jobs to supporters or their relatives; and few efforts are made to extend schooling access to disfavored castes when the politician relies on votes from the favored castes, as in Box 3.3.

The Demand for Social Services and Governance

3.102 Beyond the political incentives created by informal rules of political competition, it is also the case that many Pakistani households seem to place a different value on education than households in comparator countries, particularly the education of daughters. The previous sections pointed to some of the evidence for the significant social and cultural barriers to improved access to education for girls. Nearly half of all girls between 10 and 20 years old have never attended school. When asked why, the

parents of nearly 40 percent of these girls indicated that parental or elder disapproval was the main reason, though as noted again, there are problems in interpreting these subjective responses due to outstanding uncertainties about whether these may mask supply-side problems and more complex parental trade-offs between the relative costs and benefits of sending their female children to school. While it is conceivable that there are similar cultural barriers to improving health, particularly with regards to contraceptive use, the demand component of the health sector is not as well understood.

3.103 It is clear however that even if formal and informal institutional obstacles to educational supply were removed, educational improvements may be conditional on an attitudinal change among parents. From the point of view of elected officials, pushing for expanded access for girls to existing educational facilities is therefore not only of limited political utility, but presents real political hazards. Parental resistance also has implications for the success of institutional reforms such as decentralization, since experience elsewhere suggests that local officials in areas where these norms are prevalent may be singularly unable to push through reforms that increase girls' access to education.

Devolution, Governance and Service Delivery

3.104 The above concerns are particularly fraught with significance in light of Pakistan's massive devolution effort, which was launched in 2000, and sees as its main objective precisely the improvement of availability of government services to all Pakistanis. While the concomitant political reforms are only an initial step, and the crucial areas of fiscal and administrative decentralization have yet to be tackled, the preceding discussion suggests that devolution will succeed only to the extent that it solves fundamental governance problems that have bedeviled earlier efforts to improve service delivery. In particular, devolution will only succeed to the extent that local government officials exhibit a notably greater interest in improving the provision of public goods than in targeting private goods, and if they are better placed to overcome any eventual parental resistance to the education of girls. A preliminary analysis suggests some reason for optimism on the first count, and some reason for pessimism on the second.

3.105 Some observers are pessimistic that local governments will have a greater incentive to improve access to and the quality of education in their jurisdictions. Press accounts of recent union council elections note that in many places familiar "old faces" seem to have dominated the election returns. Moreover, the prevalence of "old faces" is greatest in precisely those areas of the country in which patronage rather than public good provision has been the most intense focus of political competition (e.g., in rural areas). Still, depending on how they work in practice, the institutional changes introduced by devolution could reduce the patronage incentives even of the "old guard." Information that is currently being collected in the field will help to verify whether these positive effects are, in practice, actually being realized.

3.106 One potentially important change that could improve outcomes under devolution is that local officials may only be able to fund patronage by making transfers from one set of voters *inside their jurisdiction* to another. Before devolution, patronage could be funded by transferring resources from voters outside of their jurisdiction – for example, urban voters – reducing the political costs of providing benefits to supporters. Under devolution, then, the net number of votes that a local official wins by providing patronage may drop. This is all the more true the more homogeneous are voters in the jurisdiction (for example, with respect to income, ideological orientation, or ethnic group). In this regard it is notable that the constituencies of the members of the national and provincial legislatures were likely more heterogeneous than those of the Union Nazims who comprise the new District Councils. Consequently, the Union Nazims should find patronage somewhat less desirable than earlier political decision makers. Accordingly, a Union Nazim is still likely to find it politically useful to influence

teacher appointments, but he may have a stronger incentive than the previous MNA or MPA, to ensure that such teachers show up to teach.⁷²

3.107 A necessary pre-condition for optimism, though, is that the elections at the local level be competitive. If one or two families, *biraderis* or individuals dominate electoral competition in most Union Councils throughout a District, then we would expect little change in public good provision. The cross-country empirical results demonstrate strongly that the competitiveness of elections has an extremely strong and positive effect on enrollment in primary school; the same should be true in decentralized electoral settings. If the return of the “old guard” is a consequence of their extra-institutional influence over the electoral process – i.e. if they faced no real competition – then we should expect no change in educational outcomes.

3.108 A preliminary analysis of the recently concluded local government elections provides some evidence that the local contests were generally competitive. Overall, voter turnout was a respectable 52.5 percent, which indicates that the outcome was not a forgone conclusion in many or most constituencies, and did elicit the interest of a majority of voters. In general, several candidates competed for each union council seat, and only approximately 6 percent of the candidates for the unreserved seats were elected unopposed. However, further analysis, for example of vote shares of competing candidates and variations in turnout across union councils, is required before one can say definitively that the competitive election condition has been met in local elections.

3.109 Devolution may also have created more checks on local officials who try to provide patronage. During the 1990s, decisions regarding teacher postings or reactions to teacher absenteeism could be appealed only to the provincial government hierarchy, or the MPA or MNA for that district. Under the new system, there are two types of potential checks, whose efficacy must be verified (and enhanced, where possible). First, parents can appeal to members of the Union Council (a district or Zila is comprised of many unions), who are directly elected by voters and who in turn vote for the District, or Zila Nazim, who sits at the apex of decision-making under devolution. They can also appeal to the District Nazim, to the district educational bureaucracy, or to the District Council itself, whose members are comprised of the directly elected Union Nazims and others. In practice, however, the effectiveness of these additional avenues of appeal requires further investigation.

3.110 An additional and more obvious potential check is simply that decisions of the Nazims at each level may need to be approved by the appropriate council. If the new councils are independently powerful and not controlled by the Nazims, the sheer number of Union Council members will make it more difficult for Nazims, or any individual council members, to systematically tax some groups in order to provide patronage. However, the independence of the legislative branches under devolution, and their authority, is not yet clear. In addition, there is some evidence of rules that are intended to weaken the councils relative to the Nazims. Councils have the power to impeach nazims, but beyond this the extent to which the councils can reverse or block Nazim decisions regarding the district budget, the targeting of expenditures or the conduct of the district administration, are unclear. Moreover, there are a number of laws that weaken legislative oversight. The Naib Nazim – the deputy mayor – is required to be the chair or “speaker” of the Council – by definition; however, the Naib Nazim is close to the Nazim, since they are co-elected. Second, the law imposes significant risks on Council members who move for impeachment – the failure of an impeachment motion means that the council members who moved and seconded it lose their seats. To the extent that Council authority is weak, little will prevent the Nazim from targeting his supporters at the expense of his non-supporters, to the detriment of public good provision.

3.111 Therefore, devolution can provide a positive change to the incentives of government decision makers regarding education, but only under the conditions specified above. Even in theory, though, it is

unlikely that devolution can solve the demand problems in education: resistance to standard forms of educational provision for girls. Indeed, two examples, although not perfectly comparable, indicate that overcoming social barriers to girls' education will likely require significant resources and the continued, or even increased, involvement of higher-level governments.

3.112 First, experience in Nepal and other places shows that girls' education can be dramatically improved by paying families to send their daughters to school. In these instances, poor families saw little economic return to educating girls, and monetary compensation was a natural means to persuade them to decide otherwise. In Pakistan, however, any similar program would have to set compensation at a level sufficient not only to offset the economic costs of girls' education, but also the disutility that parents attribute to sending their daughters to school.

3.113 Second, in the United States, efforts to persuade states to provide education to African-American students in the same facilities as other students eventually required federal intervention, over the objections of the representatives of these states in the national legislature. Again, the parallels with Pakistan are inexact, since African-American families were eager to educate their children and frustrated by the lack of access. The key point, though, is that significant local opposition to an education reform did not naturally dissipate as a consequence of local reform efforts, but required the intervention of a higher level government.

3.114 Difficulties in enforcing accountability for service provision emerge under devolution if local constituencies do not place a high priority on education. For example, central government efforts to reward high-performing districts with extra education funding are likely to be ineffective if parents in particular districts are uninterested in educating girls. However, solutions to this problem are available, and need not involve the level of coercion that was required to integrate schools in the US. One involves outright subsidies to households to overcome the demand problem, as in Nepal. Another involves cross-sectoral linkages: central government rewards to high-performing districts could take the form of increased assistance in the provision of goods – such as infrastructure – that are heavily demanded in the constituency. Again, however, further information is needed to evaluate the extent to which officials in the new local governments have the incentive and resources to improve educational provision on all dimensions.

3.115 The demand issue reveals another, broader concern regarding the success of devolution, which is the continuing important role of the central government. To the extent that governance problems noted above and in Chapter One are not addressed, central government efforts to, for example, provide incentives to local officials to educate girls are likely to be poorly implemented. Even more seriously, the formal institutional rules of the new system of local government may not be self-enforcing – they may require central government oversight to ensure, for example, that Nazims do not invoke extra-legal or illegal authority to circumvent formal rules. Only a central government that is itself relatively free of governance problems will reliably intervene in such cases to protect the integrity of the devolution process. Similarly, the central government can best ensure the integrity of the devolution process by allowing local governments to make their own decisions about how to implement education, health and other objectives in their jurisdictions. The central government's role would be to closely observe, to test, and to collect and publicize information about outcomes and “value for money” across the union councils. This role will be undercut if governance failures that have crippled central government performance in the past are not addressed in the future.

3.116 In concluding this chapter, it is important to note that the human development diagnostics and their implications for policy outlined here will form the basis for the discussion in Chapter 5 on the education and health sector strategies adopted by the government, in the overall framework of the I-PRSP. The objective there will be to focus on the critical issues that are likely to determine how

particular strategies of institutional reform, including the broad devolution exercise, are able to address the policy challenges identified here.

¹ Pakistan Rural Household Survey (PRHS), 2001

² All findings from PIHS (1991 to 1996-97) are from “PIHS Education Sector Performance in the 1990s” by Federal Bureau of Statistics, Government of Pakistan, Islamabad, and from Pakistan Poverty Assessment (1995), World Bank. Figures for 1998-99 are from staff calculations on PIHS/HIES (1998-99).

³ **Note:** Data source for all tables and graphs in this chapter, *unless otherwise specified*, is PIHS for the relevant years

⁴ For urban males, primary GER increased from 86 percent to 95 percent; for urban females, the increase was from 77 percent to 88 percent.

⁵ Table A-3.1, Annex

⁶ See Table A-3.2, Appendix for 1998-99 figures

⁷ Filmer et al (1998)

⁸ See Alderman and Garcia (1994), Behrman and Deolalikar (1995) and Quisumbing (1996)

⁹ Andrabi et al (2002)

¹⁰ All numbers in Figures 4.1 and 4.2, and Table 3 have been calculated taking the 4 main provinces – Punjab, Sindh, NWFP and Balochistan only – to ensure comparability between 1991 and 1998-99, since the 1991 numbers took into account these provinces only. It is easy to see that the numbers for 1998-99 by per capita expenditure deciles are very similar whether the 4 main provinces or all provinces are counted.

¹¹ The Census of Private Schools was conducted by the Federal Bureau of Statistics, GOP in 2000

¹² In urban areas, the absolute enrollment in government schools for both sexes fell by about 11 percent during 1991 to 1995-96, while that in the non-government sector increased by as much as 60 percent. In rural areas, boys’ enrollment in the non-government sector increased by 131 percent over this period, while for girls the increase was 61 percent.

¹³ The share of deeni madrassas is 1.2 and 0.8 percent in primary enrollment for urban and rural regions respectively, and that in secondary enrollment is less than 0.5 percent for either region.

¹⁴ *Okay for Age:* Currently enrolled in school in a grade suitable for age or higher; *Behind for Age:* Currently enrolled in a grade lower than suitable for age; *Left School:* Have attended school, but not currently enrolled; *Never Attended:* Never went to school. Target age for Grade 1 is taken to be 6 years; target age for Grade 12 is 17 years. This is done even though technically the age for grade 1 is 5 years, to allow for more leeway in judging whether a child is enrolled in the right grade for his/her age. The same rule was adopted by the PIHS Education Report of the 1990s by the FBS.

¹⁵ Refer to Figures A-3.1 and A-3.2, Annex for enrollment profiles in urban areas.

¹⁶ Refer to Table A-3.3, Annex

¹⁷ According to PRHS (2001), 63 percent of women between ages 5 and 21 have never attended school, compared to 34 percent of males. These numbers are similar to what is seen for the same age groups in rural Pakistan from PIHS (1998-99) – a survey that is representative for the country.

¹⁸ Existing literature has found evidence that having a literate family member is like being partly literate oneself (Green et al, 1985), and that the advantages of literacy can spread to others in the household by virtue of certain kinds of decision-making on behalf of the household shifting toward the literate (Drèze and Saran, 1995); an attempt has also been made to develop a theoretical measure of literacy which captures these natural externalities (Basu and Foster, 1998)

¹⁹ The difference in wages between male literate and non-literate workers is statistically insignificant in the farm sector.

²⁰ The estimation exercise uses the maximum-likelihood Heckman selection model to correct for any “selection bias”, arising out of the fact that one only observes wage earnings for those who have chosen to enter the (paid) work force, and that some of the variables that affect earnings also affect the “participation” of the worker in the paid labor force.

²¹ A possible challenge to the findings on education externalities would be on the grounds of endogeneity of educational status of household members with respect to earnings. The so-called externality would then be the result of a positive effect of higher earnings of a wage-earner on school participation of other household members. The observed differences in externalities between farm and non-farm sector however suggest that the endogeneity argument is unlikely to explain the entire measured effects. For if it were so, one would have to believe that the effect of earnings on education is stronger for non-farm earnings than for farm earnings.

²² This exercise is similar to what has been conducted in recent literature using household data from Bangladesh (Basu et al, 2001). Some of the results from that study are qualitatively similar, e.g. that education externalities are relatively stronger in the non-farm sector and almost absent in the farm sector. That study however finds that externality benefits confer more strongly to women than to men, which is the opposite of what is found for Pakistan.

²³ However, the results should be interpreted with caution, since the analysis cannot distinguish between the supply and demand factors that interact to produce the observed patterns in enrollment, as well as endogeneity issues, for example the possibility that supply of schools may respond to demand for schools represented by existing school participation rates. In that sense, these results provide only a rough indication of the precise roles played by different factors.

²⁴ This exercise is similar to the models estimated in Filmer and Pritchett (1994). Their results for India are comparable; they estimate that the probability of a child attending school is 10 percent, 17 percent, 24 percent and 31 percent higher if his/her household belongs to the 2nd, 3rd, 4th and 5th deciles respectively, defined by wealth (and not expenditure).

²⁵ Only a small proportion of rural mothers of boys and girls alike are literate, implying that the results for those groups should be interpreted with caution. The sample sizes are much larger for all groups of fathers.

²⁶ The presence of a school is defined as the existence of a school meant for child of a particular sex. For example, for a girl child in community A, a primary school is defined to be present if there exists a girls only or co-ed school offering primary education, in or within 1 km. of the community.

²⁷ Such observations are not meaningful with net primary enrollment rates for boys, since access to primary schools for boys is very high overall, as well as quite uniform across provinces.

²⁸ Refer to Table A-3.9, Annex.

²⁹ Refer to Table A-3.10, Annex for access figures by province.

³⁰ Alderman et al (1999)

³¹ Gazdar (2000) reports that out of 125 schools visited by the survey team, only 47 out of 125 schools were classified as “fully functional” by the survey. The poor quality of schools has strong detrimental effects on attendance of students, a fact usually not reflected by the enrollment figures quoted so far.

³² This added up to 206 primary schools, mostly public.

³³ These findings from the PRHS, although based on a different sample, are roughly similar to Gazdar’s findings. The latter found that 14 percent of the 125 schools visited (i.e., 17 schools) had either a building but no school, or were reported to be “generally closed”.

³⁴ There is an interesting discrepancy in student attendance rates between those reported by headmasters and those directly observed by the survey staff. The headmaster survey revealed a much higher number – approximately 78 percent for both boys and girls. Other sources (Gazdar 2000) suggest that the true figure is closer to the one reported by direct observation. This difference perhaps highlights the incentives that headmasters have in misreporting school performance indicators.

³⁵ Note that the finding that enrollments are higher when just a facility is present in the community is consistent with previously reported findings from the PIHS (98-99).

³⁶ Figures from recurring expenditures in education (Economic Survey of Pakistan, 2000)

³⁷ Scrimshaw 1995; Filmer and Pritchett; Jensen 2001; Riley

³⁸ Pre-natal as well as post natal consultation includes any consultation with medical personnel, including traditional birth attendants.

³⁹ Refers to the proportion of deliveries not assisted by any doctor, nurse, trained birth attendant or dai, or lady health worker; these deliveries are assisted only by family members, neighbors or traditional birth attendants.

⁴⁰ From Poverty Assessment for Pakistan (1995), World Bank

⁴¹ Infant mortality rates were calculated as averages for children born in the period 1993-97, to ensure that only infants who would be of age 1 and above (if they were alive) are considered.

⁴² The rural-urban gap persists across almost all provinces, with the exceptions of Balochistan and Azad J & K, where infant mortality is actually higher in urban areas than in rural areas (see Figure A-3.6, Annex).

⁴³ Examples of such studies include Foster (1995), Case and Deaton (1998), Gertler and Grueber (1997), Schultz and Tansel (1997), and Dow et al. (1997).

⁴⁴ Moreover, curiously enough, no clear relationship between incidence of diarrhea, and indicators of sanitation, or source of drinking water for the household emerges from the household data.

⁴⁵ For detailed discussion on analysis of child nutrition using PRHS(2001), see Annex 3.2

⁴⁶ Dow et al., Murray and Chen (1992)

⁴⁷ The results presented here build on the work by Alderman and Garcia (1993), Alderman et al (2001), Haddad et al (1996), Hughes and Dunleavy (2000) and Alderman, Grosh and Glewwe (2000). The body of work by Alderman

et al. (2001) on Pakistan is particularly relevant, and will form the basis of the comparisons undertaken in this section

⁴⁸One area of particular concern is the number of observations that are unusable at this moment. For this reason, the results are presented at the 10 percent level of significance in addition to the standard 1 percent and 5 percent levels. The analysis will be updated later by using the expanded sample following an extensive round of cleaning and re-matching (see Annex for details).

⁴⁹All variables used in the study were measured by the surveyors and measurement error in the weight of the child was significantly reduced through the use of electronic scales with an error margin of <100 gm.

⁵⁰These results match up with those reported by Alderman and Garcia (1993) for the IFPRI survey

⁵¹A longitudinal study in Guatemala reported in Martorell et al. (1990 and 1995) showed that while supplements in the first two years of the childhood had significant impacts on adolescent intelligence and adult work-capacity, interventions during the later childhood years did not have any such benefits

⁵²Scrimshaw (1995)

⁵³If it is the case that infant mortality among girls is significantly higher, the sample of children observed for each cohort will select on 'more-healthy' girls compared to boys, and this could lead us to (erroneously) conclude that there is no gender discrimination in nutrition status in our sample.

⁵⁴Estimations are based on a reduced form household maximization program as in Alderman et al (2001). The community fixed effects model implicitly argues that there may be attributes of communities that determine the nutritional status of the child, and that may be correlated positively with expenditure.

⁵⁵Such results have been noted, both in Alderman et al (2001) with regard to anthropometry and Hughes and Dunleavy (2000) for mortality data in Peru and India respectively. This result occurs for the PRHS sample, *even though* over 70 percent of the variation in income is generated by within community differences, and less than 30 percent by differences across communities.

⁵⁶At this stage, one might be interested in knowing more about what the community level fixed effects proxy for (see Annex for the possible ways this can be done)

⁵⁷See Table A-16 (Appendix) for a comparison of selected health indicators across provinces.

⁵⁸See for instance, Thomas et al (1992)

⁵⁹See Table A-3.14, Annex

⁶⁰Including government hospitals, dispensaries, BHUs, RHCs, Mother & Child Clinics, and Family Welfare Clinics

⁶¹Includes health workers, private practitioners and nurses

⁶²In other words, the number of OPD patients in each facility fluctuates with other services (such as the availability of medicines) and hence the identity of the top 3 and the bottom 3 facilities changes across the sample period

⁶³See Chapter 7 of the report by SPDC (2000)

⁶⁴This focus on the incentives of elected officials should not suggest that centralized, authoritarian regimes are better at providing public goods. The educational achievement gap in Pakistan was much higher under the military government in the 1980s than in the 1990s; there is no evidence that elections per se are responsible for the gap, but rather that the incentives of elected officials were not as directed as they could have been to the provision of public goods.

⁶⁵Checks and balances reduce incentives to spend on public goods to the extent that, as the number of individuals exercising veto power over government decision-making rises, their interests become narrower and less coincident with the provision of broad public goods.

⁶⁶The difference between the two gaps (girls only and all children) seems to have disappeared in the late 1990s. However, this is likely an artifact of the data. Through 1993, the data comes from World Development Indicators; from 1995 on, the data has been calculated from the PIHS data reported in the earlier part of this chapter. The resulting data series exhibits an unexplained jump in gross primary school enrollment for girls between 1993 and 1995 from 45.4 percent to 60 percent, and a decline in the enrollment of boys from 100 percent to 81 percent. Note also that average per capita incomes (purchasing power parity adjusted) rose 9.5 percent or \$US740 from 1995 to 1999, but only 3.3 percent in Pakistan, or \$US58. This effect alone would have caused all gaps to converge somewhat.

⁶⁷Gazdar also points out several examples where even the intra-village location of a school was contentious and dictated by political influences, underlining the significance of the targeting influence in the location of development projects, and the political obstacles to government activities that are not easily targeted. Also see Dixit and Londregan (1996).

⁶⁸This is the time they spend while in Washington, as opposed to their districts, to make the appropriate comparison with the citations from Pakistan: Johannes (1983)

⁶⁹ see, e.g., Wilder, page 206

⁷⁰ The information comes from Pattie et al (1995)

⁷¹ Potable water has some of the characteristics of a private good, in that it can be targeted to specific groups. Although a road per se is a public good, the construction of it can be contracted out to specific private parties in exchange for political support.

⁷² An additional advantage of devolution operates on the demand side. In Chapter 1, the point was made that more ethnically or linguistically heterogeneous jurisdictions may provide fewer public goods. The entire country of Pakistan is likely to be considerably more heterogeneous than most districts that are the focal point of government decision making under devolution.