

INTRODUCTION

The Educational Setting

1. *The changing educational marketplace in Pakistan presents opportunities and challenges for education policy in the country.* Enrollment in primary schools is increasing and secular, co-educational private schools are locating in both urban and rural areas. Many rural Pakistani families no longer live in a village with one or two government schools—in rural Punjab, for instance, parents can now routinely chose among seven to eight schools in their village. The expansion of education providers in the private sector has implications for educating the poor not only in Pakistan, but also in the wider South-Asian context.

2. *The Learning and Educational Achievement in Punjab (LEAPS) report presents basic facts and a framework for an “evidence-based” debate around education performance and education policy in Pakistan.* This report is based on a large and independent survey and testing exercise that provides information on every aspect of the educational marketplace in selected districts of rural Punjab. This report presents findings from the first survey in 2003; a forthcoming report will incorporate information from all four survey rounds between 2003 and 2007. The first four chapters—on learning, schools, teachers, and households—present an overview of the education sector. The final chapter presents questions for debate and discussion based on these facts and suggests a new “modified” role government can play in this new educational landscape. The data collected through the LEAPS survey are publicly available at www.leapsproject.org and further analyses of these data are welcome and encouraged. This introduction presents a portrait of this new educational marketplace, provides an overview of the report’s focus and the types of villages included in the LEAPS sample.

Facts and features of the new educational marketplace

3. *Educational attainment is poor, but improving.* Educational performance, as measured by literacy and enrollment indicators reported in household survey data, is poor both in absolute terms and relative to the average income of the country. Adult literacy in Pakistan is 50 percent compared to 58 percent average for South Asia as a whole. The primary school net-enrollment rate was 66 percent in 2004 compared to 90 percent for India, 97 percent for Sri-Lanka and 78 percent for Nepal. Pakistan is struggling to meet the educational needs of its large population.

4. *Enrollment is on the rise.* Data from household and establishment surveys show that the number of children in school is increasing. Across the four main provinces of Punjab, Sindh, NWFP, and Balochistan,

the number of children in school has risen from 21.36 million in 2001 to between 27.67 million (National Educational Census, 2005) and 28.84 million (Pakistan Social and Living Standards Measurement Survey or PSLM, 2004-05). Net enrollment across the four provinces rose from 51 percent in 2001 (Pakistan Integrated Household Survey) to 61 percent in 2004-05 (PSLM).

5. *Of the three players in the educational marketplace—government, religious, and private schools—attendance in government and religious schools has increased slowly or stagnated since 1991 while private school enrollment has risen rapidly.* Parents who send their children to school have three options—government, religious, or private schools. Religious schools attract a small minority of school-going children, with enrollment ranging from 1-3 percent depending on the data source used. Enrollment in government schools has increased, but total share of enrollment in government schools declined between 1991 and 2001 (using comparable PIHS data) from 87.5 percent in 1991 to 74 percent in 2001. Between 2001 and 2005, the relative share of the public sector has either remained constant (according to the household survey data from PSLM 2004) or declined further to 66 percent (according to the National Education Census or NEC, 2005). The share of the private sector, which stood at 12.5 percent in 1991 and increased to 25.9 percent in 2001 has either stagnated since then (PSLM data), or increased further to 33 percent in 2005 (NEC, 2005). Whether the private sector maintained its share or increased it further between 2001 and 2005, it has made significant inroads into the education marketplace between 1991 and 2005, and is now teaching one out of every three children enrolled at the primary level.

6. *Private schools are locating in rural areas and the children in these schools are increasingly drawn from poorer segments of society.* Private schools were primarily an urban phenomenon before the early 1990s, but since 1995 they have increasingly located in rural areas. By 2000, 8,000 new private schools were being set up every year—half of them in rural areas. Not surprisingly, the growth in private school shares has been highest among the poor, a factor largely driven by the phenomenal growth rates among low and middle-income groups in rural areas (see Andrabi, Das and Khwaja, forthcoming).

7. *The typical rural private school operates out of the head-teachers' house with 2-3 teachers and a shoe-string budget.* These private schools are very different from the sprawling private institutions in urban centers such as Karachi or Lahore. Figure 1 is a picture of a typical rural private school. The small door in front leads to the courtyard and the biggest classroom. There are three more classrooms and a small office, each equipped with a blackboard

Figure 1: A typical rural private school



and desks. The head-teacher is typically an older educated male, sometimes retired from a previous job and or has returned to live in the village. The school shown in this picture is actually one of the best-performing schools in the village, and it charges Rs.100 per month (\$1.5).

The LEAPS sample

8. *The LEAPS report is based on data collected from 112 villages in Punjab province.* Following an accepted geographical stratification of the province into North, Center and South, these villages were located in the 3 districts of Attock (North), Faisalabad (center), and Rahim Yar Khan (South). Villages were randomly chosen from a list of villages with at least one private school according to the 2000 census of private schools. The survey team worked with all schools offering primary level education as well as a sample of households in each village. The survey covered 812 government and private schools, 12,000 students (in 2003), 5,000 teachers and 2,000 households.

9. *Although the findings of this report are from data on 3 districts in rural Punjab, the analysis and policy ideas raised are relevant for a wider population.* Both Punjab and NWFP have seen dramatic increases in private schooling since the mid-nineties. In addition, the geographical expansion of private schools means that the educational landscape described here will become relevant for a greater fraction of Pakistani villages over the next 10 years. While rural Sindh and Balochistan are currently different and need to be treated as such, many Pakistani households already live in the kinds of villages studied here—and their numbers will only increase over time. Beyond Pakistan, India, Bangladesh and Nepal have all seen an increase in private schooling over the last

decade. The issues discussed here are likely as relevant for this wider group and the LEAPS report brings together evidence on all aspects of the educational marketplace by using the following survey instruments.

- *School surveys.* The school surveys collected information on infrastructure, prices, costs, and other facilities available in the neighborhood of the school
- *Teacher surveys.* The LEAPS project administered three teacher surveys. A short *roster* of questions administered for all teachers in the school and for all teachers who had left the school in the previous two years yields information on about 5,000 teachers in the LEAPS project schools. A longer *questionnaire* administered to the teachers of the tested children includes detailed socioeconomic information about the teacher and yields data on roughly 800 teachers. A head-teacher questionnaire (where the head-teacher was different from the class teacher) included questions on management practices and bonus schemes, along with other modules.
- *Child tests.* All children in grade 3 (approximately 12,000) were tested in the LEAPS project schools with specially designed tests in Urdu, Mathematics, and English administered by the LEAPS team to ensure impartial test circumstances. Further, for a sample of 10 randomly selected children in every class (roughly 6,000), a short questionnaire was administered to collect information on parental literacy, family structure, and household assets (in classes with less than 10 children, all children were chosen).
- *Household surveys.* Finally, to cover the inputs that the child received from *home*, a full-fledged household questionnaire was fielded for 1,800 households in the sampled villages, with a special focus on households with grade 3 students. A similar stratified approach was used to sample households with school-age children who were not in school to ensure that we could compare the activities of enrolled and out-of-school children. The details of this sampling procedure are presented in Annex 1.

The aims of the LEAPS report

10. Opinions *about private schools in Pakistan generally fall into two camps.* One camp argues that private schooling is stratifying Pakistani society into those who can afford such schooling and those who cannot (see for instance, Rahman, 2005). Given that the provision of quality education is a constitutional responsibility of the government, there is little positive to say about the increasing penetration of such schools into rural areas. Further refinements of such a view advocate a strong regulatory policy and state oversight of such schools.

11. A second camp argues that private schools perform a valuable service by taking the “load off” government schools. Providing quality education for an increasing population entirely through government schools will be difficult; to the extent that private schools share the burden, their penetration may improve the education that *all* children receive. Those who cannot afford private schools will still benefit, the argument goes, because classrooms are less crowded than they would be otherwise and more resources are available. This camp argues for a more pragmatic stance about the relevant alternatives given Pakistan’s history.

12. *The LEAPS report considers these viewpoints and more.* The media, the multiple “Islamic education” experts in the West, and policymakers in Pakistan frequently express views and take passionate stands unsupported by data, albeit in many cases because the data are just not available. As a result, educational debate often fixates on the notion that Pakistan is a “failed state” and educational facilities, standards, and outcomes in the country are poor because of government apathy and an elitist mindset. Such pronouncements make it difficult for policy-makers and researchers to understand and effectively address a difficult yet critical topic affecting not just Pakistan but other South Asian countries as well. The educational lives of the poor and those who live in rural areas are best understood by examining the data. This report will have served its purpose if statements and views expressed in the country and by international experts become more consistent with the data from the households and schools in the villages.

THE FOCUS OF THE LEAPS REPORT

13. Efforts to enrich the debate on education policy focus on three areas: learning outcomes, the link between inputs and outcomes, and the role of private schools.

The centrality of learning outcomes

14. The main educational outcome that the LEAPS report focuses on is learning, as measured through test-scores of grade 3 children in English, Mathematics, and Urdu. This focus on “learning” offers several advantages over focusing on more conventional measures like enrollment rates.

15. Measures of enrollment are valued in large part because they are viewed to be good estimates of child learning – after all, children in school are almost certainly learning more than those not attending. But measures of enrollment fail to capture the tremendous variations in learning that we find between schools. It

may be true that students in school may be learning more than those out of schools, but it is also true that students in some schools are literally years behind students at other schools in the same grade.

16. Examining student learning is also important because it provides some insight into *why* parents choose to enroll (or not enroll) their children in school. If parents decide to send their children to school based on whether they think school will result in a better life for their children, then parents may not want to send their children to school because they feel that they will not learn much. And examination of student learning (and parental perceptions of schools) allows such an analysis.

17. The focus on learning rather than enrollment in this report is also a reflection of the quality of work already conducted on enrollment in Pakistan. From data collected through household surveys such as the PIHS or PSLM, the basic facts about spatial and household-level enrollment variation are well-documented, well understood and regularly updated (see for instance, Alderman and others 1995, Gazdar 2000, Shahid Kardar 1995, Lloyd and others 2005). Increasing enrollment remains *the* dominant paradigm for thinking about educational achievement in the country. Moreover, increasing Net and Gross Enrollment Rates (NER and GER) were seen (and to some degree are still seen) as the aim of public policy on education. But as *participation* improves, what children are actually learning is likely to become *the* defining issue in debates about education in the country.

18. In an early interview, an educational specialist on our team, Anila Asghar, asked a mother about the decision to send a child to school. The mother she interviewed had been through primary school but her husband was uneducated:

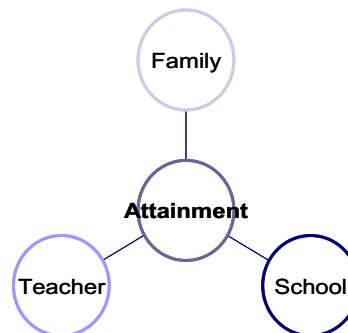
“We send our boys to the government school but actually we would like to send them to a private school. But we do not have money for tuition and other expenses. We want our children to learn because the poor are progressing because of education (gharib aagay jaa rahay hain taaleem ki wajah se).”

19. This finding—that parents look at their children’s performance and care deeply about what their children are learning—was echoed in interviews across all parts of Punjab. Despite this interest in the quality of children’s educations on behalf of parents, however, no systematic data on school quality has ever been collected. It is our hope that the data from the exams administered in LEAPS villages will stimulate a renewed and nationwide push toward systematic thinking about learning among practitioners/researchers (on test instruments, protocols and scoring techniques; discrepancies and commonalities among different tests, and broadening the scope of testing), policymakers (on the implications of differences in learning between private and public schools, and the impact of teacher training on test scores), and the public at large (on whether private schools lead to educational apartheid, and at what point age gaps in learning arise).

Linking inputs with learning outcomes

20. Focusing on learning as a key outcome of the educational system also allows us to think about inputs into the educational system in a systematic manner. The educational production function approach views learning outcomes as a function of the child's complete educational environment. This holistic look at the child's learning includes both school and household information (Figure 2). Thus, teacher qualifications and effort, school infrastructure, facilities and curriculum, household expenditures and time spent by parents on children, all need to be examined together to understand the variation in learning that exists among children.

Figure 2: Education Inputs



21. The report examines each components of the educational production function—schools, teachers, and households—using specifically designed survey instruments. The emphasis on *outcomes* implies that schooling inputs have to be evaluated not only for their own merits, but also through their effect on outcomes. The first chapter introduces the status of learning outcomes in Punjab and subsequent chapters complete each portion of Figure 2 with a systematic look at schools, teachers, and households.

The role of private schools

22. The third focus of the report is the structure of educational decisions and outcomes in villages with private schools. This focus provides a framework for debate on education in settings that will be increasingly relevant in the near future, as close to 50 percent of the rural population of Punjab currently lives in a village with a private school (as of 2000).

The advantages of focusing on educational achievements and inputs of all children in villages with private schools

23. *Advantage 1: It yields an important source of new data on private schools for which little is known, particularly when they are unregistered.* How are children in private schools performing? What is the experience and salary profile of teachers in private schools? What is the infrastructure like in these schools? All of these are key questions with little accompanying data in the context of framing education policy in the country.

24. *Advantage 2: It contextualizes the performance and inputs into the government schooling system within a broader framework.* Given that there is little *de jure* variation in the way that government schools operate (and in the case of teachers, little *de facto* variation as well), the entirely different management and teacher compensation systems of private schools provides a valuable point of comparison. On the question of teacher training, the comparison will show that nearly all government teachers are “trained” and nearly all private school teachers are “untrained”. Without the private comparison, we have no way of knowing how important this training is; comparing government and private schools provides some indication of whether (at the primary level) this training bears fruit in terms of learning achievements.

25. *Advantage 3: The dynamics of villages with private schools are entirely different from rural village with a single school.* These issues range from the type of data necessary to monitor educational outcomes and draw conclusions about the effects of government programs to the type of planning required, say for, the location of government schools or the complexity of household decisions about school choice.

26. For example, in a village with a single school, if enrollment in the school decreases, it is reasonable to assume that enrollment in the village has also fallen. This is no longer true when there are private schools as well. In such a case, decreased enrollment in a government school could just as well reflect a movement of children to private schools without any overall change in enrollment levels. For this, we need data on private school enrollments, and this information is not collected as part of the standard Educational Management Information Systems (EMIS) data.

27. Consider next the issue of where to locate a school. In a village without a school, it probably makes sense to locate the school in the middle of the most densely populated settlement. But this is not necessarily the case in villages with a private school. If private schools are already located in densely populated settlements, it might make more sense to locate a government school further out to serve populations not currently served by the private school. Yet, as will be discussed in the chapter on schools, there is currently no data at the provincial level on the location or number of schools (public and private) in a village, which is an important factor for improving school access.

28. Finally, the decisions that households need to make are infinitely more complex when there is school choice. With a single school in a village, a household needs to decide whether to send the child to school or not. When there are multiple schools, households need to decide whether to enroll their child and figure out *which* school to send their child to. This requires a completely different set of information (location of schools, cost of each school, and quality of teaching at each school) and interacts in complex ways with the government’s education policy.

CONTEXTUALIZING THE LEAPS REPORT

Inter-District Variation

29. *The three different districts of the LEAPS sample vary in measures of wealth, education, and occupation.* Rahim Yar Khan is the poorest of the three districts with much lower per-capita expenditures and household wealth than Faisalabad and Attock. Faisalabad reports the highest per capita expenditures and Attock the highest household wealth.

30. *The lowest adult educational achievement is in Rabim Yar Khan for males and Attock for females.* Faisalabad reports the highest levels of male and female education. Along a number of measures, male education in Attock is similar to that in Faisalabad with Rahim Yar Khan following; for female education, Faisalabad is a consistently strong performer with Attock coming last. This division may be the result of enrollment patterns from the past—if boys have had high enrollment rates in the past and continue to have high enrollment rates today then we would observe high enrollment for boys as well as a high proportion of adult men who can read or write (as is observed in Attock). Similarly the pattern in Faisalabad is suggestive of high enrollment by girls in the past that continues today.

31. *One-half of all household heads in Rabim Yar Khan report no education and one-third are farmers with 20 percent self-employed and 11 percent salaried workers.* Household heads in Faisalabad are somewhat more educated with a significantly lower proportion engaged in farming (19 percent) and greater number reporting salaried employment (16 percent). Household heads in Attock report higher educational levels than in Rahim Yar Khan, but lower than Faisalabad; 23 percent report farming as their main occupation followed by self-employment (16 percent) and salaried jobs (12 percent). In all three districts, farming remains the single largest occupation, but a transition toward self-employment and salaried jobs is evident in the central and Northern districts compared to in the South.

Enrollment patterns in the LEAPS villages

32. Enrollment patterns are well understood in the literature on education in Pakistan, and provide a natural starting point for comparisons with other samples. The enrollment patterns in the report are based on the LEAPS household census of over 150,000 children between the ages of 5-15 in the project villages.

33. The average enrollment rate in the surveyed villages is 76 percent for boys and 65 percent for girls between the ages of 5-15, which is somewhat higher than those reported by the PSLM for all of rural Punjab,

primarily as a reflection of the LEAPS sampling strategy. These overall enrollment rates, however, mask tremendous variation both across and within villages.

Variation by wealth, literacy, and gender

34. *Across the sample villages, male enrollment ranges between 26 percent to 97 percent and female enrollment ranges between 14 percent and 94 percent.* The average wealth of households in a village—as measured by the monthly household expenditure—and the overall literacy rate of adults in the village is strongly correlated with both the overall enrollment rate and the enrollment gap between boys and girls. As Table 1 shows, enrollment in villages classified as poor and with low literacy is 28 percentage points lower for boys and 44 percentage points lower for girls than in villages classified as rich and with high literacy. These classifications are based on the top one-third and bottom one-third of wealth and literacy and thus do not even represent the full range of differences between villages. In the LEAPS villages, male enrollment ranges between 26 percent and

Table 1: Percentage of Children Enrolled by Gender, Village Literacy Level, and Wealth

Village Wealth	Gender	Village Literacy		
		Low	Medium	High
Poor	Male	56	75	83
	Female	38	65	75
Middle	Male	82	77	88
	Female	62	66	80
Rich	Male	73	82	84
	Female	53	73	82

Note: Computed from LEAPS Census, 2003. Village wealth categories are quintiles based median monthly household expenditures. Village literacy categories are quintiles based on the percentage of literate adults (25 years or above) in the village. Percentages reported are the percent of children ages 5-15 currently enrolled in school in each village. Averages are across villages. The male enrollment rate is reported above the female enrollment rate in each category.

97 percent and female enrollment ranges between 14 percent and 94 percent – dramatic differences indeed.

35. *Villages that have high literacy and wealth also have smaller gender gaps in enrollment.*

This is particularly true for high levels of literacy. In villages classified as high literacy, the gap between boys and girls narrows to a few percentage points and is uncorrelated (or even slightly negatively correlated) with wealth. By comparison, villages classified as low literacy have a gender gap approaching 20 percent.

36. *It is better for a village to be literate and poor than rich and illiterate.* The importance of literacy as a protection against poverty’s effects is pronounced. Even in poor villages, high levels of literacy are associated with male and female enrollment rates above 75 percent. Although both high village literacy and wealth are associated with high enrollment and a small gender gap, literacy is significantly more correlated than wealth. At least with respect to education, it is better for a village to be literate and poor than rich and illiterate. Education, it seems, truly builds on itself.

37. *As is well known in the Pakistani context, correlations between village attributes and enrollment mirror those between household characteristics and enrollment.* As with the results for villages, differences in household and child characteristics are strongly correlated with enrollment. One way to explore the relationship between enrollment and these characteristics is with enrollment profile curves (Box 1). These curves show the relationship between age, demographic characteristics, and enrollment.

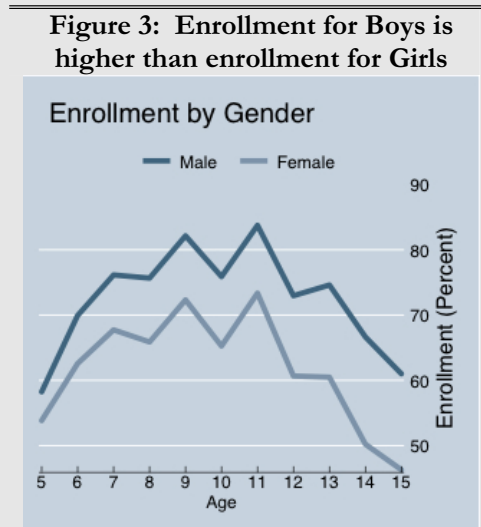
Box 1: Reading Cross-Sectional Enrollment Profiles

Cross-sectional enrollment profiles for children ages 5 to 15 show the percentage of children of each age who are currently enrolled in school. This number is computed from answers to the LEAPS household census question “is this child enrolled in school?” and other household and child attributes.

Enrollment profiles allow one to easily see the ages at which children tend to enroll in school, and subsequently drop out. They also illustrate how differences in child and household attributes affect the rates of enrollment at different ages.

For example, the graph above shows enrollment by age and gender. From this graph one can easily see that at all ages female enrollment is significantly below – in the order of 10% points – male enrollment. Enrollment peaks at age 11 with female enrollment at 73% and male enrollment at 84%. Enrollment drops below 50% for girls around age 14 and falls to around 60% for 15-year-old males.

For more information on enrollment profiles see the World Bank’s Educational Attainment and Enrollment Around the World website at: <http://www.worldbank.org/research/projects/edattain/edattain.htm>.



38. *Across all ages boys are more likely to be enrolled in school than girls.* This divergence is slightly larger for older children than for younger children. For children ages 5 to 15 the enrollment rate for females is on average 10 percent below the male enrollment rate – 62 percent compared to 72 percent. Children ages 9, 10 and 11 are the most likely to be enrolled (Figure 3). The inverted “u” relationship between enrollment and age marks another key facet of Pakistan’s primary schooling system—the wide range in ages for each grade. Because initial enrollment can be delayed, especially for girls, each grade has children of many ages. The makeup of grade 3, for example, has 10 percent of children ages 7 and below and 17 percent of children ages 12 and above.

39. *The wealth and education of a household (defined by household head's literacy) and the presence of a public or private school in a settlement are strongly correlated with a child's chance of being enrolled.* With respect to wealth, a child from a household with monthly expenditure below Rs.2500 is about 25 percent less likely to be enrolled in school than a child from a household that spends more than Rs.5000 monthly (Figure 4(a)). The correlation with literacy is even stronger (Figure 4(b)). In households where the head of household is literate 82 percent of children are enrolled compared to only 54 percent of children in households led by an illiterate adult. Even when controlling for age, gender, wealth, and income simultaneously, moving from a household spending less than Rs.2500 to a household spending more than Rs.5000 is associated with a 12-percentage point increase in enrollment rate; moving from an illiterate to literate household is associated with a 29-percentage point increase.

Figure 3: Enrollment for Boys is higher than enrollment for Girls

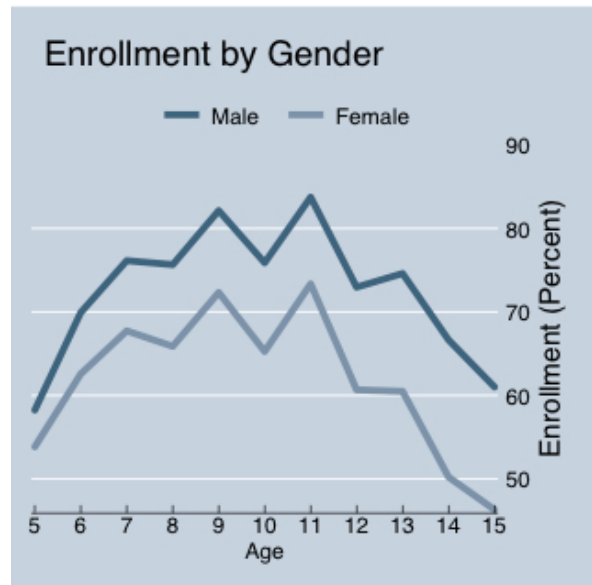
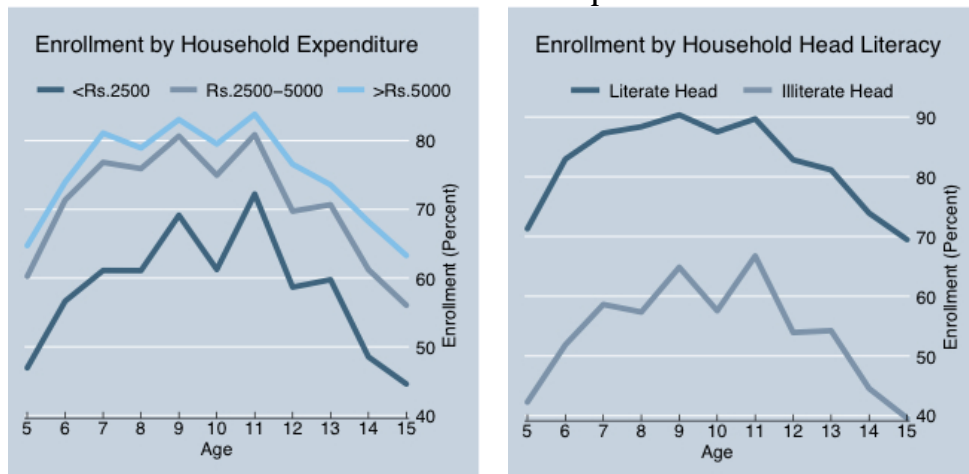
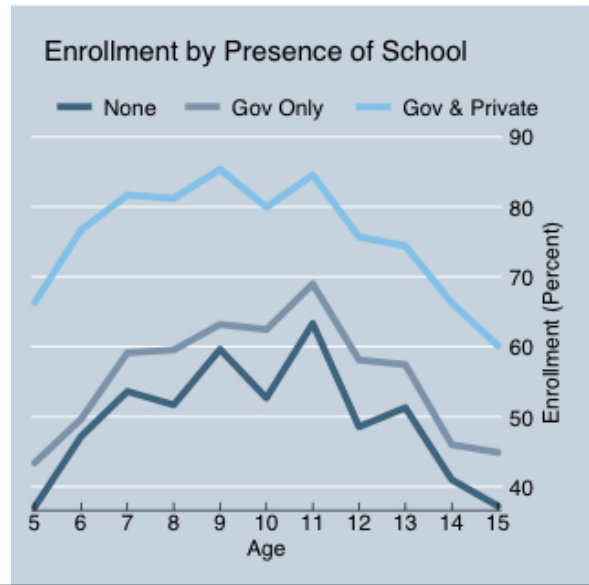


Figure 4: Household wealth and literacy are strong predictors of enrollment in the LEAPS sample



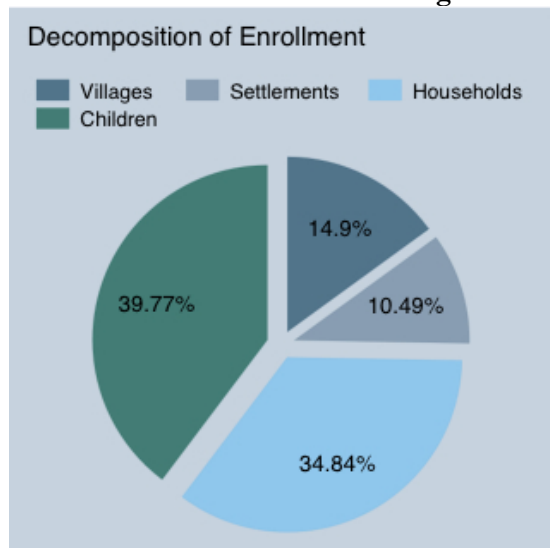
40. Regardless of a household's wealth or literacy, characteristics of the settlement in which a household is located (most villages are divided into multiple settlements or *mohallas/dbokas*) also affect the chance of a child attending school. Most significantly, the enrollment rate in settlements with both a public and private school is 27-percentage points higher than in settlements with no school—76 vs. 49 percent. Even after controlling for the age and gender of the child and the wealth and education of the household, the presence of both public and private schools is associated with an increase in enrollment of over 20-percentage points. As would be expected given that younger children find it more difficult to travel large distances to school, this difference is slightly larger for

Figure 5: The presence of a school in the settlement is strongly correlated with enrollment



younger children than older children (Figure 5). Although the presence of a government school by itself is associated with higher enrollment compared to settlements without any schools, the association between enrollment and settlements with both government and private schools is much stronger.

Figure 6: Decomposition of Enrollment Variation in the LEAPS villages



due to differences across settlements (15 + 10) and approximately 60 percent is explained by differences between households. The remaining 40% comes from the fact that households do make the same enrollment

41. Another way to look at the role of village, settlement, household, and child attributes is to measure how well different factors predict whether a child will be enrolled. For example, if every child in village A is enrolled and every child in village B is not then all the variation in enrollment can be explained by differences across villages. By contrast, if 50 percent of children in both villages enroll in school then village differences explain nothing and the variation must stem from differences in settlements, households, or children. Figure 6 shows this decomposition of variation across villages, settlements, households, and children. It shows that 15 percent of the variation in enrollment is explained by differences across villages, 25 percent is

decisions for all of their children. Rather, a significant number of households send only some of their children to school. One possible explanation for this result—considered further in chapter 4 is that families pick “winners” and send only their “best” children to school. The differences in enrollment between children in the same households are important to understand if one hopes to increase overall enrollment rates.

Private school enrollment patterns

42. In the LEAPS project villages, 70 percent of enrolled children attend government schools, 29 percent attend private schools, and around 1 percent attends religious madrassas. Private school enrollment in this sample is thus somewhat higher than the 22 percent in rural areas reported by the PSLM; surprisingly, the difference is not as high as one might have imagined given that the LEAPS sample did not include villages without private schools. Mirroring the trends in overall enrollment, richer and more literate villages have a higher percentage of children enrolled in private schools (Table 2).

43. For example, in villages classified as poor and with low literacy private schools account for only 19

Table 2: Percentage of Children Enrolled in Private Schools by Gender, Village Literacy and Village Wealth

Village Wealth	Gender	Village Literacy		
		Low	Medium	High
Poor	Male	17	33	20
	Female	22	32	19
Middle	Male	30	26	29
	Female	33	27	28
Rich	Male	25	21	30
	Female	31	26	30

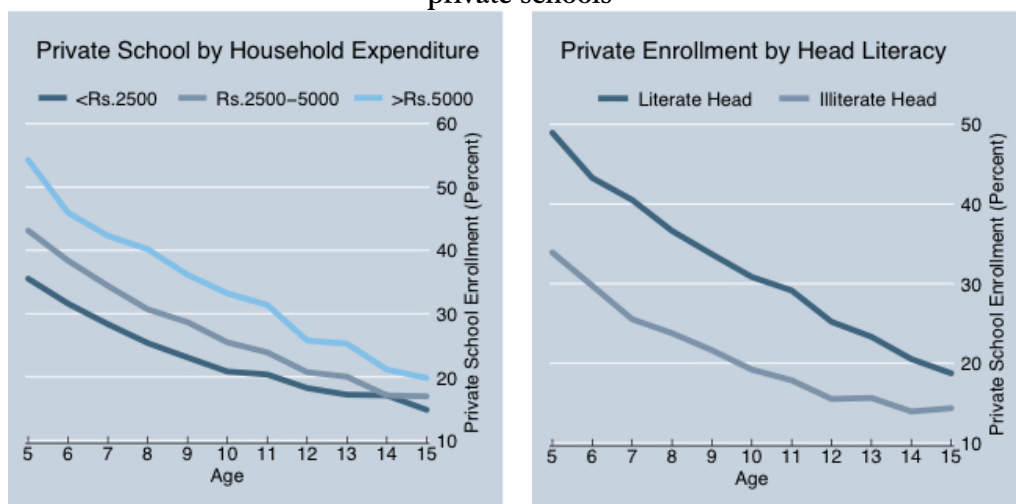
Note: Computed from LEAPS Census, 2003. Village wealth categories are quintiles based median monthly household expenditures. Village literacy categories are quintiles based on the percentage of literate adults (25 years or above) in the village. Percentages reported are the percent of children ages 5-15 currently enrolled in school in each village. Averages are across villages. The male enrollment rate is reported above the female enrollment rate in each category.

percent of enrollment compared to 30 percent of enrollment in rich and highly literate villages. Notably, private schools also serve a greater fraction of enrolled girls than enrolled boys in villages classified as low literacy.

44. *Private schools educate a significant fraction of children*

from all socioeconomic groups. As Figure 7 shows, richer and more educated households are more likely to send their children to private school, and there is a clear drop-off in private school usage with age. But private schools do not only serve the elite. Even in households with monthly expenditure below Rs.2500, 24 percent of enrolled children attend private schools; in households with illiterate household heads, 22 percent attend private schools.

Figure 7: Younger children from richer and more educated families use private schools more...but even among the poorest, 24 percent of enrolled children are in private schools



45. *The enrollment numbers, the choice of private schools and the characteristics of households in the LEAPS villages suggest two things about the wider applicability of the LEAPS sample. On average these villages are somewhat richer and larger than the representative village in rural Punjab—a difference that stems more from the restriction of the sample to villages with a private school rather than the choice of the three districts. At the same time, not all villages in the LEAPS sample are uniformly richer than the average Punjab village; the range of indicators in these villages covers most of the spectrum in Punjab other than the poorest 10 percent. As such the facts presented here are a reasonable starting point for debate about the general state of education in the province.*

LIMITATIONS OF THE LEAP REPORT

Limitations of the sampling strategy

46. *Private schools are overwhelmingly located in larger villages with greater access to infrastructure and more literate and richer populations. Private schools have not penetrated many parts of the country. The provinces of Punjab, and to some extent NWFP, are clearly becoming the heartland of private schooling. Rural Sindh and Balochistan, where only 4 and 1 percent children are enrolled in private schools, need to be treated separately. Even within Punjab and NWFP, private schools are overwhelmingly located in larger villages (both in population and land-area) with greater access to infrastructure (water and electricity) and more literate and richer populations (see Andrabi, Das and Khwaja 2006). Villages with private schools thus represent the upper-end of the spectrum in rural areas.*

47. *Extrapolating the facts in this report beyond these two major provinces merits some caution.* On the one hand, certain facets of the educational system, such as the compensation of government teachers, are unlikely to be very different in villages without private schools. On the other hand, the absolute levels of learning reported here may not represent the country at large. Government test scores in LEAPS village could be higher than average as a result of competition from private schools, or lower than average if private schools are locating in villages with failing government schools.

48. Table 3 highlights another characteristic of private school location patterns. Private schools are three times as likely to be located in villages with both a girls' primary *and* secondary school. This relationship arises because the teachers

in private schools are almost exclusively women who were educated in government secondary schools (Andrabi, Das, Khwaja (2007), Pakistan Country Gender Assessment 2005). Private

Table 3: Percentage of Children Enrolled by Gender, Village Literacy Level, and Wealth

	Villages with Private Schools	Number of educated women per village	Number of educated women per 1000 population
Does not have girls primary or secondary school	12%	12.27	12.9
Received girls primary only in last 20 years	13%	12.41	16.2
Received girls primary and secondary in last 20 years	31%	27.71	18.8

Source: Population Census 1998, PEIP 2000, EMIS 2000

schools tend to arise in locales where such teachers are available. This relationship has clear implications for the role of the government in hiring teachers and deploying them to areas with chronic teacher shortages, a point that will be explored in greater detail in chapter 3.

49. *The relationships documented in this report are associations, and do not necessarily indicate causal relationships.* The data may show that higher wages for teachers in the private sector are associated with better learning outcomes among their students, but this does not necessarily imply that increasing private sector teacher's wages will lead to better learning. It could be that certain types of schools attract better students and better teachers, or that better paid teachers in a particular school teach the students who score higher in tests. Similarly, differences between different types of schools could arise either because some schools are better at teaching children or because the children enrolled at these schools are better at learning. That said, we have made every attempt to ensure that the relationships presented in this report are robust to multivariate regression techniques and to relevant geographical and household fixed-effects. Proving causality a hard task in empirical economics and requires considerable work.

50. *The report does not talk about important issues such as grade repetition and school drop-outs.* Although the longitudinal data is used in places to compare the situation in 2006 to that in 2003, only the insights from the cross sectional information from 2003 are presented here. The longitudinal data and changes between 2003 and 2007 may be explored in a separate report.