

# Learning and Educational Achievement in Punjab Schools (LEAPS)



**A Joint Project between World Bank (South Asia and DEC), Harvard University, Pomona College and LEAPS (Pakistan)**

# Learning and Educational Achievement in Punjab Schools

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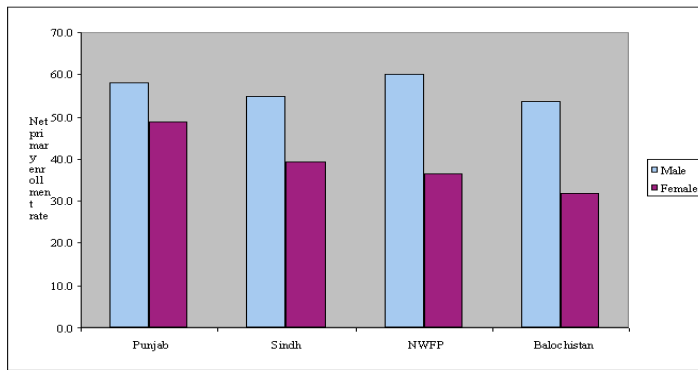
# Learning and Educational Achievement in Punjab Schools

## Introduction: The Country Context

Education is critical for development—both in terms of income growth as well as other aspects of well-being. Education leads to higher wages, and higher returns to investments. In addition, education has particularly high returns for the poor: they are better able to cope with unexpected crisis such as bad harvests and sickness and are able to find better jobs.

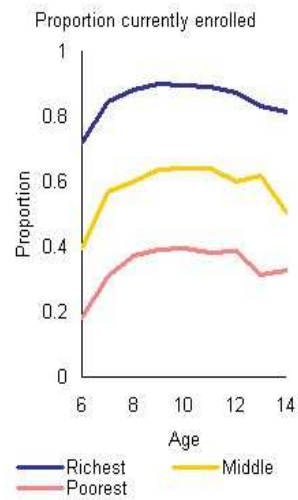
However Pakistan's educational system has been unable to harness the opportunities presented by an educated populace. Pakistan's primary enrollment rates are far below those expected for its level of income. Within the South Asian region, too, Pakistan lags

Figure 5 : Gender Inequality in Education



Source : PIHS 1998-99

Pakistan 1990-91



well behind its neighbors in enrollment. Large

gender discrepancies in the provision of education add to the problem. Less than half of those female children who are eligible for primary school are actually enrolled. Further, there are significant differences in primary enrollment rates by household wealth—rich households are almost four times as likely to send their children to school compared to the poor. While we have learnt a lot about enrollment and retention in Pakistani schools on the basis of household surveys (primarily the Pakistan Integrated Household Surveys in 1991,

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1998 and 2001), we know little about how education is provided and what the quality of education is.

### Who Provides Education?

Public schools are, and always have been, the mainstay of educational provision in the country. Since 9/11 there is a growing concern that a failing public system has been upended by religious schools, which have dramatically increased their enrollments in recent years. As part of the LEAPS project, we looked at religious schooling in the country and found that less than 1 percent of children were in these schools, commonly known as *madrassas*.

Instead, we discovered a quiet revolution in the Pakistani countryside, quite unrelated to the emergence of religious schools. After the denationalization of schools in 1979, the private sector started entering the education sector. Till 1990, the growth of private institutions was small and scattered. After 1990, private schools exploded—in 1999 alone, more than 8000 private schools were set up in the country. At current rates of growth, the private sector may well double over the next 5-10 years.

Whether one is in favor of private education or not, it is here to stay and there is a critical need to understand this new environment. Unfortunately, little is known about the private sector and what its growth implies for the provision of education. There are important questions we need to answer before engaging in productive debate about how education can be best provided in the Pakistani context. For instance:

- a. Where are private schools setting up? Are they only being established in urban areas and only for the elite?
- b. What is the quality of education in private sector schools? How does it compare to public schools?

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- a. Are the poor being left out? Is the private sector creating two classes of people in Pakistan—those who can afford private education and those who cannot?
- b. What is the effect of private schools on government schools?

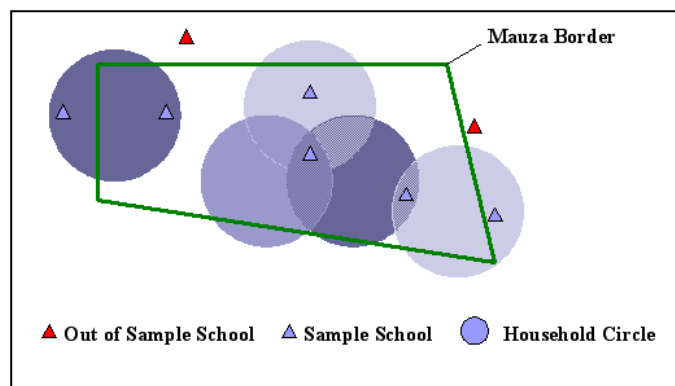
### The Learning and Educational Achievement in Punjab Schools Project

Towards answering these questions, the LEAPS project was started in 2002. This is a joint project between the World Bank, Pomona College and Harvard University in collaboration with the Government of Punjab and highly trained local counterparts.

#### The Sample

The sample comprises 112 villages in 3 districts of Punjab—Attock, Faisalabad and Rahim Yar Khan. The districts represent an accepted stratification of the province into North (Attock), Central (Faisalabad) and South (Rahim Yar Khan). The 112 villages in these districts were chosen randomly from the list of all villages *with an existing private school*. This allows us to look at differences between private and public schools in the same village. Although these villages are thus bigger and richer than average villages in these districts, we believe this is a forward-looking strategy and the insights earned here will soon be applicable to a significant fraction of *all* villages in the country.

For us, the main concern is the average child in the village. We want to know about the schools she can go to and the schools she attends. The first step was to construct boundaries that were 15 minutes walking distance from *any* house in



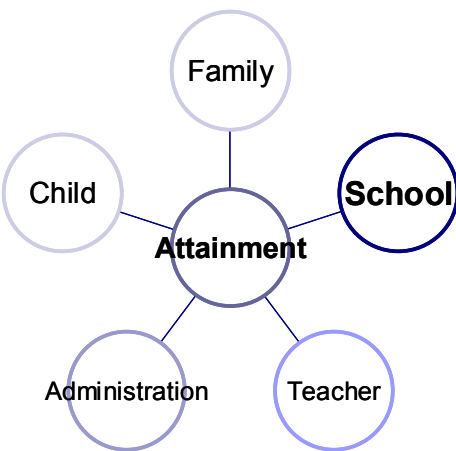
the village. All public and private institutions offering primary education within this boundary are then covered by the study. For instance, red schools in the diagram are not in our sample (they are more than 15 minutes from any household) while the ones in blue are.

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Under this scheme there are 838 public and private schools in our sample in these 112 villages. The large number of schools implies that a child can choose from among 8 different schools! Neither are these numbers exceptional; even in remote villages of the Sindh province, there are an average of 5 schools per village.

### ***The Design of the Survey***

How much a child learns depends on teachers, parents and the child herself. How these three coordinate and work together also depends on the head-teacher and the educational



institutes that support the delivery of education. Our research strategy reflects this belief. We survey both schools and households and test children to assess how much they are learning. Here is a brief overview of the survey structure:

- a. Teachers: Rosters with basic information for all teachers in the schools and detailed interviews with the class-teachers of the children tested.
- b. Head-teachers: A detailed questionnaire with the head-teacher with basic information about his/her background and teaching experience.
- c. Schools: We also collected information on schools, the children who come, the fees charged (private schools) and their current needs.
- d. Achievement Tests: Tests are administered in English, Urdu and Mathematics to all children in Grade 3 in the first year of the survey; these children are then followed in every subsequent year.
- e. Children: For a random sample of 10 children from those tested, we collect basic information on their households (parental education, assets and brothers and sisters), how far they travel to get to school, and their height and weight.
- f. Households: We complete household surveys for 16 households in every village, with information on what parents *know* and what parents *do* with regard to their

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children's education. In addition, these surveys contain basic socio-economic information that allows us to look at the household determinants of educational performance.

All these surveys and surveyor manuals are available on the LEAPS project website at [www.leapsproject.org](http://www.leapsproject.org).

### ***Constructing a Panel***

We also believe that information for a single year is not enough. We need to follow these children, their schools and their parents for a longer time. Originally, the LEAPS project was conceived for 3 years, but was then extended to a fourth. We follow the same schools, teachers, households and children over these years. The children who are being followed were first tested in Class 3, then in Class 4, Class 5, and finally in Class 6 in January 2007. In January 2006, we added a new cohort of children from Class 3 (testing both Class 3 and Class 5 children in the schools), and followed this cohort as well in the final year of the survey.

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### LEAPS Research

To inform policy discussions, we need to understand how children learn and how schools operate within the Pakistani environment. Towards this, we are working on several research projects using the longitudinal data collected thus far. These research and analytical projects fall in three categories.

The first category is *descriptive* work on the schooling environment, which provides a set of facts that can bookend the debate on educational provision and quality in the country. For instance, the LEAPS paper on religious schooling falls under this category.

The second category is *methodological and technical* analysis that tests a hypothesis regarding the data. These papers are written for an academic audience and are accompanied by a two-page non-technical summary. For instance, a forthcoming paper in this series will look at the difference in performance between public and private schools. The technical issue is that the children who go to public schools may be very different from those in private schools, leading to biases in simple mean comparisons.

The third category is the evaluation of specific interventions using randomized treatment-control designs. Under this design, some villages/schools are *randomly* assigned to receive an intervention, and the effect of the intervention is calculated by comparing the difference in outcome between the villages/schools that received the intervention and those that did not. These comparisons can be made 1-2 year after the initial intervention. The two interventions that the LEAPS project is evaluating are discussed next.



## LEAPS Evaluations

### *Improving Educational Performance through Information*

We are evaluating two programs in our sample villages: Improving Educational Performance through Information and Improving Educational Performance through School Based Management and Contracting-Out.

The first program distributes report cards on child and school performance. In a random sub-sample of villages, we give detailed report cards about child, school and village performance to parents and teachers. By comparing educational outcomes in the



villages where distribute report cards to those where we do not, we will be able to study the impact of this information. The randomized design is now the gold-standard for educational evaluations, and this is the first project that implements such a design in Pakistan.

Report cards have been very popular with schools and parents. Schools are trying to improve their performance on the basis of these cards by training teachers, spending more time with children on weak subjects and working on a concept rather than rote basis. Parents have started spending more time with their children and when possible, encouraging extra learning through private tutoring. Preliminary results suggest that the intervention improved learning in the villages where the information was given.

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### ***School Based Management and Contracting-Out***

At the same time, the Government of Punjab has made a concerted effort to improve the quality of education. They have distributed free textbooks, given stipends to girls in 15 districts, and started construction in schools that were missing facilities. The LEAPS data provides a unique opportunity to evaluate the impact of these interventions.

One ambitious program that the government is piloting in 400 schools in each of 6 districts is the handing over of the management of these schools to Rural Support Programs. In addition, the government is also giving budgetary support to the schools, to use as they see fit. Of these 6 districts, 3 overlap with the districts where the LEAPS project is operational.

We are trying to evaluate the impact of this policy on educational performance, parental involvement and on schools. As with the previous program of report card deliveries, we can only do this work if we can compare schools where the program is implemented to those where they are not. We are working closely with the Project Monitoring and Implementation Unit in Lahore as well as concerned officials to ensure the quality of the evaluation. Data collection was completed for the evaluations in late 2007, and a report is expected by the end of 2008.

This is the first time that both these evaluations are being conducted in such a scientific manner and to internationally recognized standards. The results of these evaluations will further the cause of education, both in Pakistan and worldwide. The knowledge from these evaluations will also allow us to understand what works and what does not in a setting as complex as that of Pakistan.

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### Outputs

Several major outputs have emerged ranging from extensive data collection, research output on specific topics, capacity building for survey methods and data compilation, and test-design for school-going children. The LEAPS report combines information from various sources in the extensive baseline survey. We are working on the evaluation results and aim for completing the project by end of 2008. As a guide to the outputs so far, we divide up the outputs thus far as follows:

1. Data Generation and Data Dissemination
2. Papers and Reports
  - (A) Already completed new research on the structure of schooling: What have we learnt so far?
  - (B) The LEAPS (completed) and Evaluation (expected late 2008) Reports
3. Dissemination of Findings
4. Capacity Building

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### ***Data Generation and Data Dissemination***

A significant fraction of our effort so far has been on data generation. The first step in engendering evidence-based policy making is to gather the evidence. The tracking, repeated testing of children, surveys of teachers, head-teachers and schools and the longitudinal database of households takes up to 6 months a year to produce among all the participants in the project. Some highlights of the data-generation process include:

1. Test Development: At the beginning of the LEAPS project, we piloted an extensive testing instrument that could be used in Pakistan at the primary level. The items in the test were then analyzed and the test was re-piloted prior to the first survey. In the second year, we added and piloted new items, leading to an increase in the total number of questions available through the item-bank for the project. This norm-referenced test has very high reliability, and is now being used in other provinces as well (Sindh).

The tests were designed after studying the curriculum. The design of the tests also ensures that we covered all concepts relevant to the subject. In Urdu and English we start with the alphabets, move on to word-recognition and then sentence construction and comprehension. In Mathematics we start with counting, move on to addition and subtraction, multiplication and division and then fractions and word problems. The tests are graded and analyzed using Item Response Theory, which is the international best-practice for evaluating test results. For a detailed description of the tests and an introduction to Item Response Theory, please see the "Test Feasibility Report" referenced below.

2. Tracking Children: In 2004 we tested 12,000 children in 838 public and private schools in Grade 3 and re-tested them in Grades 4 (2005), 5 (2006) and 6 (2007). In 2006, we also included Grade 3 children, increasing the total number of children tested to 25,000. These children were all tracked through the final year of the survey. The table below shows for

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instance, the status of child-tracking as they moved from Grade 3 to Grade 4. In the transition children could (a) drop-out (b) remain in the same school and be promoted; (c) remain in the same school and *not* be promoted; (d) switch schools within the village and be promoted (in which case they would be tested in another school) and be promoted; (e) switch to schools within the village and not be promoted and (f) switch to schools outside the village or leave the village all together. Although close to 1800 children out of 12,000 were no longer in the same class-school combination that they would have been if they did not switch schools and were promoted, we were able to determine the status of all except 500. In one previous study, authors could track only 10 percent of the children compared to our rate of above 95 percent.

3. Tracking the Educational Triangle: The detailed tracking of children is combined with tracking teachers and schools, so that in every year, we know the identity of the teacher who taught each child and the school inputs that affected her learning.

4. Surveying Households: We have now created a longitudinal dataset of 1800 households across the 4 years, and in each of the years there are close to 750 children on whom we also have information on learning from the school testing exercise. This is the *first* database in low-income countries that combines detailed household information (including consumption aggregates) with school-level inputs and learning. The attrition has been remarkably small, averaging 3-4 percent in each year.

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### **Data Dissemination**

This is the first dataset that matches all the relevant inputs into the educational production function in low-income countries, and is also the first dataset that has successfully tracked children for 4 years. As such, it should become a valuable tool for generating research, not only on Pakistan but also for all educational work in low-income contexts. We believe that promoting the wide use of this data will yield significant positive externalities.

Towards this end, we have published all data from the first year of the LEAPS survey along with extensive documentation on the data and copies of all survey questionnaires on our website, [www.leapsproject.org](http://www.leapsproject.org). Interest in the data has been strong. In the week following the release of the LEAPS report alone, the data was accessed by researchers at Harvard University, Columbia University, American University, The World Bank, the Jinha Institution in Lahore, the Society for Advancement of Higher Education in Lahore and at the Federal Ministry of Education in Pakistan.

In addition to releasing our survey data to other researchers, we are also providing technical information on our exams so that future researchers will be able to compare their own test results with those of children in our survey.

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### ***Papers and Reports***

#### **New Research on the Delivery of Education: What have we learnt so far?**

Using both the data generated under the LEAPS project as well as other publicly available data sources, we have produced a number of papers and reports. Some highlights.

Less than 1 percent of enrolled children are in religious schools. There was no change in this trend after 9/11. Neither does it appear that children in these schools are from particularly "radicalized" families—indeed, in 3 out of 4 families with a child in a religious school, other children in the same family are in public or private schools.

The dramatic change during the 1990s was the rise of the private sector. There are four special characteristics about Pakistan's experience with the private sector in education:

1. Most private sector growth is in primary schooling (in most countries the share of private schooling is higher for secondary compared to primary)
2. A large fraction of the growth is in rural areas: indeed the fastest growth segment for private schools is the *rural poor*.
3. Most private schools are *cheap* and *used by a large segment of the population*. A typical private school in Punjab charges Rs.60-Rs.70 per month in fees.
4. Private sector schools are mostly co-educational and used both by girls and boys

At the same time, private schools don't arise in a vacuum. The primary constraint to the availability of private schools is the lack of an educated populace in rural areas. As a consequence, private schools are 4 times as likely to locate in villages with government secondary schools for girls rather than in villages with other types of schools. These secondary schools for girls educated the women yesterday who became the teachers in the private schools today.

#### **New Research on the Delivery of Education: What have we learnt so far?**

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The quality of learning in schools is low. By the end of *Grade 3*, most children have (just) mastered the curriculum for *Grade 1*. At the same time there is tremendous variation, with some children scoring less than 10 percent and others above 90 percent. There are important differences between Pakistan and other countries.

- a. Although household characteristics are undoubtedly important, schools matter a lot, accounting for between 50 and 60 percent of observed variation in test-scores.
- b. While there are large differences in enrollments across villages, most of the variation in learning is driven by differences across schools *in the same village*. Put another way, there are no good or bad villages in learning; rather, there are good and bad schools in every village.
- c. Private schools significantly outperform public schools, and these differences are unchanged after controlling for observed household characteristics. The difference between a child in a public and in a private school is **15** times the difference between children from poor and non-poor households.
- d. Not all government schools are poorly performing. While the worst schools are invariably public, the top schools are both public and private. What drives public school performance down are some outrageously poor performers. In these schools, after 3 years of formal schooling children cannot recognize alphabets in the vernacular or count single-digit numbers.



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### **The LEAPS Report and Evaluation Reports**

The LEAPS Report, which provides a comprehensive look at the state of education in LEAPS villages, was formally unveiled at a conference in Lahore on April 17<sup>th</sup>, and then also presented at a conference in Islamabad on April 19<sup>th</sup>. The report has chapters on enrollment and learning, schools, teachers and households. The report is not meant as an advocacy piece. We strongly believe that the country needs to engage in an active discussion on what they want their education system to achieve and how to structure the delivery of education in the country. At the same time, this debate has to be facilitated with facts from the ground that can "book-end" the policy and civil-society discussions. The report seeks to provide these place-holders. The report, a free-standing executive summary, and a summary brochure are all available both from the World Bank and at our website at [www.leapsproject.org](http://www.leapsproject.org).

Along with the LEAPS report, we are also focused on producing the impact evaluations of the two interventions. The extensive data collected through the project will allow us to present the results of the intervention; in addition, we are also in position to ask questions about *why* certain interventions work (or not).

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### ***Dissemination of Findings***

The dissemination of these outputs is as important as their production. We envision three main stakeholders in the dissemination process—policymakers, academic audiences in Pakistan and abroad as well as civil-society. Policymakers provide valuable feedback and to the extent that the findings clarify issues regarding the provision of education, help in the design of better delivery systems for the future. At the same time, we also need to ensure that the research stands up to critical academic scrutiny, both in Pakistan and abroad; feedback and critique from the academic audience is therefore critical. Finally, the voices of the ultimate recipients of educational systems in the country—civil society—needs to actively engage with the research process so that the research is placed within a collaborative environment.

Early dissemination focused primarily on policymakers and academic audiences, and we have actively disseminated our findings on the extent of religious education and the rise of private schools. The paper on religious schooling was covered in all national newspapers, as well as the L.A. Times, the New York Times, The Washington Post, Foreign Policy and The Economist. The paper on the rise of private schools and the critical importance of teachers has been presented in various conferences and seminars both in Pakistan and in the United States. These venues include the Center for Global Development (Washington, DC), Harvard University, and George Washington University, Indiana University at Purdue, Lahore University of Management Sciences, Michigan University, Maryland University and The World Bank.

With the launch of the LEAPS Report, the focus of our dissemination efforts shifted to Pakistan. The LEAPS Report was unveiled at two conferences, one in Lahore and the other in Islamabad. The conferences were co-hosted by The World Bank, the Lahore University of Management, and the Center for Economic Research Pakistan (CERP). The conferences were attended important policymakers from across the country, including the former

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Punjab Education Minister, the Chairman of the National Commission on Government Reforms, the Punjab Special Education Secretary (Schools), and MPAs from Punjab and the North West Frontier Province.

The report has been well covered in the Pakistani news. Eleven different news stories in five different major Pakistani papers were written on the LEAPS report within two days of the conferences. (All are available at our website at [www.leapsproject.org](http://www.leapsproject.org).) The LEAPS team has also put together a series of editorials that are designed to provoke continued discussion of the report findings which will appear in various papers shortly.

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### ***Capacity Building***

A critical objective of the LEAPS project is to build in-country capacity for surveys of educational facilities and households. Towards this, the Principal Investigators in the project have worked with local staff and researchers to build up a world-class team that is now fully trained and exceptionally committed to this important task.

In the first year, we focused on questionnaire design and survey techniques. The principal investigators developed questionnaires and led pilot surveys. They then trained surveyors over a three-week period with intensive field-work and daily workshops. The investigators also developed the logistic plan and monitored the surveys in the field. Finally, data-entry was completed using programs developed by the Federal Bureau of Statistics with Tristan Zajonc, the data-manager for the project. This was a highly intensive work-phase with the investigators spending close to 10 months in the field.

In the second year, the LEAPS team handled the logistic plan and monitoring, although we remained engaged in questionnaire development and training. Tristan Zajonc handled the post-survey data management and cleaning. Over the first and the second year, Tristan spent one month in Pakistan working with local staff on training and programming for data management.

In the third year, the LEAPS team independently managed the pilot phase, the translation and printing of questionnaires, the training of surveyors, the logistic plan, the implementation of the survey and monitoring in the survey phase. The team also developed the data-entry program for data from student tests and the household survey. Finally, at the end of the survey, the team produced a report detailing the entire survey activity. While further capacity development is necessary (see below), the LEAPS team has matured considerably, and is now starting to implement educational surveys in other parts of the country.

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These efforts are already bearing fruit. The surveyors originally hired and trained by the LEAPS principle investigators have now formed a survey company known as Research Consultant Group (RCONS). This group has conducted numerous surveys for other researchers, including Ghazala Mansuri and Xavier Gine at the World Bank.

Ghazala [Mansuri] and I [Xavier Gine] started working with RCONS in November 2006 when we commissioned the implementation of a baseline survey to members of about 400 Community Organizations and 600 Credit Groups of NRSP in four different geographical areas in Pakistan. We provided the questionnaires and they took care of the formatting, pilot testing, implementation and data entry. Since then, they have implemented a voting field experiment, which required learning and delivering two different scripts about the importance of voting to a random set of women in rural villages and are currently implementing a post-election follow-up survey. [...] In sum, RCONS has the ability to put a team together quickly and deliver on complicated tasks like no other firm we've worked with in Pakistan.

And public data from the LEAPS exams is being used by other researchers. Michael Walton, who served as Chief Economist for East Asia and the Pacific (1995-97), Director for Poverty Reduction (1997-2000), and Chief Economist for Human Development (1999-2000) at the World Bank, has made use of the LEAPS exam data in his work in India.

My experience of the LEAPS item bank flowed from an evaluation I am involved in of the major Read India program--a massive effort of an NGO, Pratham, to work with India's state schools to get all primary school age children to basic reading and maths and beyond. [...] The LEAPS test proved invaluable as a point of departure, especially because of the work that had gone into analyzing its statistical properties. As a major component of our test development, we adapted the LEAPS item bank to Hindi and took directly much of the item bank for maths. [...] This is clearly a public good that institutions such as the World Bank should be financing. The cost is small relative to World Bank lending, but large relative to easily available other sources.

This data and more is publicly available on the LEAPS website ([www.leapsproject.org](http://www.leapsproject.org)) for any and all researchers.

## **APPENDIX**

### ***LEAPS Publications – all available online at [www.leapsproject.org](http://www.leapsproject.org)***

Andrabi, Tahir, Jishnu Das and Asim Ijaz Khwaja. 2006. "A Dime a Day: The Possibilities and Limits of Private Schooling in Pakistan."

Andrabi, T., J.Das and A.I.Khwaja (2003) "Test Feasibility Report" (Background Technical Report for Pakistan Project).

Andrabi, Tahir, Jishnu Das, Asim I. Khwaja, Tristan Zajonc 2008. "Do Value-Added Estimates Add Value? Accounting for Learning Dynamics."

Andrabi, Tahir, Jishnu Das, Asim I. Khwaja and Tristan Zajonc 2007. "Madrassa Metrics: The Statistics and Rhetoric of Religious Enrollment in Pakistan." [Forthcoming in *Beyond Crisis: A Critical Second Look at Pakistan*, Routledge.]

Andrabi, Tahir, Jishnu Das, Asim I. Khwaja and Tristan Zajonc 2005. "Religious Schooling in Pakistan: A Look at the Data." [Published in *Comparative Education Review*. Winner of the George Bereday Award for Outstanding Paper of the Year.]

Andrabi, Tahir, Jishnu Das, Asim Ijaz Khwaja and Tristan Zajonc. 2005. "Report Card Methodology: LEAPS project." Tool-Book. Will be shortly available: currently available on request from the authors.

Andrabi, Tahir, Jishnu Das, Asim I. Khwaja. 2006. "Students Today, Teachers Tomorrow: The Rise of Private Schools in Pakistan."

Das, Jishnu, Priyanka Pande and Tristan Zajonc. 2006. "Learning Levels and Gaps in Pakistan."

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While these are stand-alone outputs, the findings from our projects are also incorporated into other documents. For instance, findings from the paper on private schooling are discussed in the *Pakistan Poverty Assessment (2002)* and on the rise of private schools in the recently released *Country Gender Assessment (2006)*.

### ***Detailed Paper Abstracts***

Andrabi, Tahir, Jishnu Das, Asim I. Khwaja, Tristan Zajonc 2008. "Do Value-Added Estimates Add Value? Accounting for Learning Dynamics."

#### **Abstract**

Value-added estimates—estimates based on the evolution rather than level of achievement are viewed by most researchers as more reliable than cross-sectional comparisons since they ostensibly "difference out" the influence of omitted fixed inputs, such as wealth and ability. We show that the restricted value-added model, which assumes that past achievement carries over with no loss, is clearly rejected by the data, and that the more flexible lagged value-added model is biased by measurement error and omitted heterogeneity that enters each period. Using dynamic panel methods that address these biases and data on public and private schools in Pakistan, we find that the restricted value-added model yields wildly biased estimates for the private school effect, sometimes even flipping the sign. The lagged value-added model performs better due to countervailing measurement error and heterogeneity biases. More generally, rapid and potentially heterogenous achievement decay or "fade-out", which evidence suggests underlies our results, has broad implications for experimental and non-experimental program evaluation, and value-added accountability systems.

Andrabi, Tahir, Jishnu Das and Asim Ijaz Khwaja. 2006. "A Dime a Day: The Possibilities and Limits of Private Schooling in Pakistan."

#### **Abstract**

This paper looks at the private schooling sector in Pakistan, a country that is seriously behind schedule in achieving the Millennium Development Goals. Using new data, we document the phenomenal rise of the private sector in Pakistan and show that an increasing segment of children enrolled in private schools are from *rural* areas and from middle-class and poorer families. The key element in their rise is their low fees-- the average fee of a rural private school in Pakistan is less than a dime a day (Rs.6)! They hire predominantly local, female and moderately educated teachers who have limited alternative opportunities outside the village. Hiring these teachers at low cost allows the savings to be passed on to parents through very low fees. This mechanism—the need to hire teachers with a certain demographic profile so that salary costs are minimized—defines the possibility of private schools—where they arise, fees are low. It also defines their limits. Private schools are *horizontally* constrained in that they arise in villages where there is a pool of secondary-educated women. They are also *vertically* constrained in that they are unlikely to cater to the secondary levels in rural areas, at least until there is an increase in the supply of potential teachers with the required skills and educational levels.

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Das, Jishnu, Priyanka Pande and Tristan Zajonc. 2006. "Learning Levels and Gaps in Pakistan."

### Abstract

This paper reports on a survey of primary public and private schools in rural Pakistan with a focus on student achievement as measured through test scores. Absolute learning is low compared to curricular standards and international norms. Tested at the end of the third grade, a bare majority have mastered the K-I mathematics curriculum and 31 percent can correctly form a sentence with the word "school" in the vernacular (Urdu). As in high-income countries, bivariate comparisons show that higher learning is associated with household wealth and parental literacy. In sharp *contrast* to high-income countries, these gaps decrease dramatically in a multivariate regression and once we look at differences between children in the *same* school. Consequently, the largest gaps are *between* schools. The gap between government and private schools, for instance, is 15 times the gap between children from rich and poor families. To contextualize these results within a broader South-Asian context, we use data from public schools in the state of Uttar Pradesh in India. Levels of learning and the structure of the educational gaps are similar in the two samples. As in Pakistan, absolute learning is low and the largest gaps are between schools: the gap between good and bad government schools, for instance, is 5 times the gap between children with literate and illiterate mothers.

Andrabi, Tahir, Jishnu Das, Asim I. Khwaja. 2006. "Students Today, Teachers Tomorrow: The Rise of Private Schools in Pakistan."

### Abstract

Private schools comprise an increasingly large and growing share of primary enrollment in low-income countries. For example, in Pakistan, the focus of this paper, 35 percent of children at the primary level are in mainstream private schools. This paper highlights the crucial role of the public sector in facilitating private investments in education: Instrumental variable estimates indicate that private schools are three times as likely to be found in villages with a girls' secondary school, an increase of 35 percentage points. There is little or no relationship between the presence of a private school and pre-existing girls' primary, or boys' primary and high schools. Supply-side factors play a role---private school teacher's wages are 20 percent lower in villages with girls' secondary schools. In an environment with low female mobility due to cultural restrictions, and lower wages for women in the labor market, private schools locate in villages with a greater supply of local secondary-school educated women. These findings bring together three related concepts to explain where private schools locate--the inter-generational impact of public schools, the role of cultural labor market restrictions, and the prominent role of women as teachers. They also suggest the continuing importance of the government sector in creating a cohort of women with secondary school education who will become future teachers in private schools.

Andrabi, Tahir, Jishnu Das, Asim I. Khwaja and Tristan Zajonc 2005. "Religious Schooling in Pakistan: A Look at the Data." Forthcoming, *Comparative Education Review*

### Abstract

Bold assertions have been made in policy reports and popular articles on the *high* and *increasing* enrollment in Pakistani religious schools, commonly known as madrassas. Given the importance placed on the subject by policy makers in Pakistan and those internationally, it is troubling that none of the reports and articles reviewed based their analysis on publicly available data or established statistical methodologies. This paper uses published data sources and a census of schooling choice to show that existing estimates are inflated by an order of magnitude. Madrassas account for less than 1 percent of all enrollment in the country and there is no evidence of a dramatic increase in recent years. The educational landscape in Pakistan *has* changed substantially in the last decade, but this is due to an explosion of private schools, an important fact that has



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been left out of the debate on Pakistani education. Moreover, when we look at school choice, we find that no one explanation fits the data. While most existing theories of madrassa enrollment are based on household attributes (for instance, a preference for religious schooling or the household's access to other schooling options) the data show that among households with at least one child enrolled in a madrassa, 75 percent send their second (and/or third) child to a public or private school or both. Widely promoted theories simply do not explain this substantial variation within households.

Andrabi, Tahir, Jishnu Das, Asim Ijaz Khwaja and Tristan Zajonc. 2005. "Report Card Methodology: LEAPS project."

### **Abstract**

The Learning and Educational Achievement Project in Punjab, Pakistan (LEAPS) is carrying out an experimental evaluation of information dissemination through report cards of children and schools in 800 schools of the Punjab province. We are currently half-way through the project, and this document summarizes the trials and tribulations of designing report cards in low-income settings and distributing them to parents. Finally, we use the baseline data to study where and how such interventions may have effects. Parents are very good at assessing how their child is doing in school, as well as a number of characteristics of the child's teacher. To the extent that information has a direct effect, it is likely to come from added information on the ranks of all schools in the village. In addition, there may be indirect effects through better coordination and monitoring. The document is intended primarily as a discussion paper for other groups planning similar interventions and to share knowledge in the interim stage of this study.

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### *The People*

#### Principal Investigators

**Tahir Andrabi** is Associate Professor of Economics at Pomona College. Professor Andrabi is a graduate of Swarthmore College and holds a Ph.D. degree in Economics from the Massachusetts Institute of Technology. In his research, Professor Andrabi analyzes the education of young women in Pakistan, industrial subcontracting in developing countries and private and NGO provision of education. He was the founding director of the ALIF project, which aimed to develop learning initiatives in Pakistan through creative uses of the media. He was a member of the economic advisory board of the government of Pakistan in 1999-2000. He has been a visiting scholar at MIT, a research associate at LSE and a consultant for the World Bank. Along with Asim Khwaja, he is the Principal Investigator for the LEAPS project. You can download his c.v. at <http://www.economics.pomona.edu/Andrabi/>

**Asim Ijaz Khwaja** is Associate Professor of Public Policy. His areas of interest include economic development, contract theory, industrial organization, mechanism design, and computational economics. His recent work ranges from understanding what determines a group's collective success and the private provision of public services, to examining contracts between firms, business groups, and financial markets in low-income countries. He received BS degrees in economics and mathematics with computer science from MIT, and a PhD in economics from Harvard. You can download his c.v. from [http://ksgfaculty.harvard.edu/asim\\_khwaja](http://ksgfaculty.harvard.edu/asim_khwaja)

**Jishnu Das** graduated from St. Stephen's College in Delhi in 1992, completed his masters from Cambridge University in 1994 and his Ph.D. from Harvard in 2001. He is now in the research department at the World Bank in Washington DC. His interests are education and health, and he has worked in a number of countries, including India, Zambia, Nepal, Paraguay and Pakistan. Some of his recent work includes work on doctors in Delhi and schools in Zambia. You can see some of his recent work at <http://econdev.forumone.com/staff/jdas/>

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**Tara Vishwanath** is a lead economist at the World Bank in the South Asia Poverty Reduction and Economic Management group. Before joining the Bank, she was a professor at Northwestern University and has published widely in international journals. She has been actively involved in Pakistan and was the task team leader for the Poverty Assessment and recently completed the Gender Assessment for the country.

**Tristan Zajonc** has been with the project since its inception, and is the overall data manager and coordinator. He has a MPA in International Development from Harvard's Kennedy School of Government and a BA from Pomona College. He is currently pursuing a PhD in Public Policy at Harvard University. You can see some of his recent work at [http://papers.ssrn.com/sol3/cf\\_dev/AbsByAuth.cfm?per\\_id=447643](http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=447643).

### The LEAPS Team, Pakistan

**Irfan Ahmed** graduated from Punjab University in 1996 and then joined the Ali Institute where he studied a post-graduate diploma in primary education. After completing his studies, Irfan continued with the Ali Institute and was closely involved in establishing and improving training and resource centers for teachers in 12 districts of Punjab in a project funded by UNDP. He joined the LEAPS team in 2002 with the piloting of our tests, and is currently the Punjab Coordinator for the project.

**Kashif Abid** graduated from Helliay College Punjab University in 1999 and completed his masters from SYSTEX College for Computer sciences in 2001. He then joined the Idera Taleem o Agahi as IT coordinator. He joined the LEAPS team in 2003 and is currently the District Coordinator, Faisalabad for the project.

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**Sarfraz Bhatti** graduated from Punjab University in 1996 and completed his masters from Imperial College for Business Studies in 2002. He joined the LEAPS team in 2003 and is currently the District Coordinator, Attock for the project.

**Abdul Basit** graduated from Punjab University in 1995. After that, Abdul gained valuable experience in the private sector by forming and running his own company for 8 years. He joined the LEAPS team in 2004 and is currently the District Coordinator, Rahim Yar Khan for the project.

**Babar Raza** graduated from Punjab University in 1998 and completed his masters from Imperial College for Business Studies in 2002. He joined the LEAPS team in 2004 and is currently the Assistant District Coordinator, Attock for the project.

**Tanveer Asghar** graduated from Punjab University in 1994. He joined the LEAPS team in 2004 and is currently the Assistant District Coordinator, Faisalabad for the project.

**Tahir Ansari** completed his Intermediate in 1998 and then He joined Fatima Jinnah Old Graduate Association as accountant. He joined the LEAPS team in 2004 and is currently the Accountant for the project.

**Syed Ali Asjad Naqvi** graduated from Lahore University of Management and Sciences and has since been working as data manager of various projects at LUMS and as a lecturer. He joined the team in 2005, and is the data manager in Lahore.

**Intzar Hussain Butt** graduated from Islamia College in 1989, completed his masters in Mathematics from Government College Lahore in 1993 and his masters in education in 1999 from Teachers College, Columbia University, USA. Currently working at the University of

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Education Lahore as Academic Project Manager. He joined the LEAPS team in 2002 and was with the project till 2004 as project coordinator.

### Research Assistants

**Nick Eubank**, **Ina Ganguly** and **Amer Hasan** are the newest members of the team. All three joined in 2006 and work part-time on the LEAPS project, along with completing their courses at Pomona College, Harvard University and University of Chicago respectively.

**Samia Amin** and **Zahra Siddique** worked previously on various components of the LEAPS report and the household datasets.

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