

Madrassa Metrics: The Statistics and Rhetoric of Religious Enrollment in Pakistan

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Madrassa Metrics

Although consensus on deep determinants of terrorism still eludes us, Islamic religious schools are widely cited as an important contributor to extremism. Nowhere have these statements been more strongly applied than to Pakistan, where religious schools -- commonly known as madrassas -- were responsible for educating the leadership of the Taliban during the 1980s. In recent years, these schools have been called “factories of jihad” and are commonly believed to churn out extremists by the millions. While discussions about Pakistani madrassas are deemed central to the war on terror, two distinct issues remain difficult to resolve: First, do madrassas, through their teaching and training, create terrorists by indoctrinating their students in a particular world-view? Second, are parents increasingly sending the vast majority of their children to madrassas?

The first question has spurred lively debate on a scholarly and a popular level. This debate is understandably complex, since, in order to determine madrassas’ role in shaping attitudes in Pakistan, one must know a considerable amount about the students who attend these schools, the modality of instruction and the effect that this instruction may have on the beliefs of students in such institutions. Despite a long history (and reams of data) in education of trying to understand the links between schooling inputs and student outcomes in public and private schools around the world, there is still considerable debate on (say) the importance of school funding on child test-scores; even starting to investigate the effects of madrassa education on madrassa-goers remains a distant possibility.

The second question regarding madrassa prevalence is one of *numbers* and is not nearly so difficult to answer. The techniques commonly available in an economist’s toolkit are perfectly amenable to the task. These tools are widely used to estimate a *mean* or a *proportion*, such as the percentage of households below a poverty line, the percentage of children enrolled in school or the distribution of enrollment across public and private schools. They have also been used for the task of *targeting*, which helps isolate populations that may require special attention. For instance, programs that are geographically targeted (providing school lunches in a village) often use regression analysis to ensure that they reach the population that benefits the most.

We make three claims. First, these standard statistical tools go a long way in answering challenging questions, like the extent of enrollment in religious schools: Estimating madrasa enrollment is no different from estimating enrollment in any other type of school and falls clearly within the ambit of estimating a mean or proportion. Second, such tools are currently under-used in research and policy reports on the topic of religious education. Third, using these tools provides a startlingly different picture from the one currently taken for granted and leads to very different policy implications.

In a detailed study on this topic, we applied these standard statistical tools to estimate the extent of madrasa enrollment in Pakistan and the geographical and socio-demographic correlates of such enrollment (Andrabi and others, 2006). The findings from this study showed that (a) less than 1 percent of Pakistani children attend madrassas, much lower than what had been previously reported; (b) there is little evidence of the greater use of madrassas by the poor and; (c) individual-specific rather than household factors largely determine who goes to madrassas—theories that relate household characteristics to the use of madrassas (children from poor/radical/isolated households send their children to madrassas) are therefore incomplete.

This note clarifies how data can be used to generate important insights regarding madrasa enrollment in Pakistan and addresses several issues raised in the popular press and academic writing since the publication of the original study. It presents the main ideas from an economist's viewpoint and serves as an invitation for further debate on the role of statistical data in answering complex social issues.²

The Madrasa Mystery or Where do Numbers Come From?

The three criteria we applied to ensure the reliability of the statistical estimate are widely agreed upon but often forgotten. First, one should follow a strict admissibility criterion for the data—it should be publicly verifiable and collected using established statistical methodologies. Second, care should be taken to ensure that the nature of the survey instrument does not alter the magnitude of the estimate. Researchers should make sure that the framing of questions,

² Detailed analysis of the results discussed here is presented in the original study, Andrabi and others (2006).

characteristics of the respondent, and affiliations of the surveyor do not lead to any significant biases. Third, wherever possible, multiple sources should be used to corroborate the estimates. In case the sources differ in their estimates, one should acknowledge and explain these differences and, if possible, address them. Each of these criteria can be met with existing data, at least in the case of Pakistan.

In our study, we examined three different sources of household-based data. The first was the “long” form of the official population census in 1998, which is a large sample-based survey with information on enrollment. This survey incorporates households from both the rural and urban areas in every district in Pakistan and provides comprehensive coverage of the entire country. The census is the primary source for population estimates and is the main document used for delimiting electoral constituencies and distributing tax revenues.

The second group of sources is different rounds of the Pakistan Integrated Household Survey (PIHS) carried out in 1991, 1998 and 2001. While the geographical coverage of the data is not as extensive as the census, the surveys contain more detailed household information on schooling and income. These data have been used extensively by researchers in both Pakistan and the United States. The PIHS is *the* main source for documenting enrollment in Pakistan.

The third source (LEAPS) is a complete census of all households with detailed information on schooling choices in over 100 rural and peri-urban communities in 3 districts of the Punjab province—Attock in the north, Faisalabad in the center and Rahim Yar Khan in the south. This survey was conducted in 2003 by our own research group composed of an international team of independent academics. While the first two surveys are nationally representative and therefore can be used to present accurate enrollment numbers for the country, the advantage of the third source is that it has enrollment information after 2001, provides more recent data, and as shall see below, is the only dataset that allows for meaningful correlations between household attributes and the use of madrassas given the low overall prevalence.

Our estimates of the total number of children enrolled in madrassas and the fraction of all enrolled children studying in madrassas are very similar across all three sources. We document

three patterns of madrassa enrollment in the data. First, overall enrollment is low, and children studying in madrassas account for less than 1 percent of all enrolled children. Across the data sources, madrassa enrollments are within 0.1 percentage points of each other (Table 1). Second, geographically, madrassas are most popular along the Western border with Afghanistan. In the rest of the country, madrassa enrollment is thinly but evenly spread (Appendix Figures A1 and A2). Third, there is no evidence in the data of a dramatic increase in madrassa enrollment during the last decade. Enrollment in madrassas decreased from 1947 onwards and then increased somewhat during the years of the resistance to the Soviet invasion of Afghanistan (see Andrabi and others, 2006).

That data that various reporting agencies -- ranging from the Pakistani government to international organizations and U.S. based academics -- have collected at different times yield the same estimates of madrassa enrollment lends considerable credibility to our numbers. These surveys varied in the specific manner in which madrassa enrollment was determined, in the timing of the survey, and in the agency that conducted the survey.³ Our estimates are therefore *not* sensitive to the framing of the question, when it was asked and by whom. While the data sources and statistical methodologies used can and do have shortcomings, which are discussed below, they are transparent and verifiable.

Absent Tools for Numbers

Existing estimates of madrassa enrollment in Pakistan have been reported in mainstream American and international newspapers; reports and articles by American and international scholars affiliated with international think tanks, institutes, and the government; and studies by Pakistani scholars working in Pakistan and abroad. Yet none of these studies meet the three criteria listed above. Numbers on madrassa enrollment have not been subject to the same statistical tools or scrutiny as other routine educational statistics like enrollment. All of the reports rely exclusively on secondary sources consisting mainly of reports by government

³ Each of our sources asks about madrassa enrollment in a slightly different but comparable way. The population census asks about field-of-education (“What is name’s field of education?”) with options that include engineering, medicine, or religious education. The PIHS rounds ask, “What type of school is name currently attending?” with options for government school, private school, or deeni-madrassa (religious schooling). The LEAPS census directly asks, “Is the child enrolled in a madrassa or an Islamic education school?”

ministries, intelligence agencies from Pakistan or interviews with policy-makers. None of the secondary sources use verifiable data sources or established statistical methodologies.

The 9-11 Commission Report is a good example. We quote in full the passage relating to madrassas:

“Pakistan's endemic poverty, widespread corruption, and often ineffective government create opportunities for Islamist recruitment. Poor education is a particular concern. Millions of families, especially those with little money, send their children to religious schools, or madrassahs. Many of these schools are the only opportunity available for an education, but some have been used as incubators for violent extremism. According to a Karachi's police commander, there are 859 madrassahs teaching more than 200,000 youngsters in his city alone.” (Section 12.2).

This report only provides a footnote quoting an interview with a police commander and does not validate the numbers provided. Similarly, Ahmed Rashid (2000), in his best-selling book on the Taliban, writes that “...in 1988 there were 8,000 madrassa and 25,000 unregistered ones, educating over half a million students” and cites as his source (Footnote 13, Chapter 6) an “Intelligence report presented to the cabinet of Prime Minister Nawaz Sharif in 1992.”

As a result of such casual empiricism, the reported enrollment figures for madrassas vary widely, ranging from 500,000 children to 1.7 million children. These numbers often vary for the same source even over short periods of time. For example, between March 2002 and July 2002, figures for madrassa enrollment cited in The Washington Post tripled from 500,000 to 1.5 million (Appendix Table A1 presents a summary of press reports on Madrassas between 2000 and 2004). While few reports present madrassa enrollment as a fraction of total enrollment, when presented there is even greater variation in these figures. The numbers range from ten percent (LA Times) to as large as 33 percent (International Crisis Group). If these estimates are to be believed, the latter suggests that *one out of every three* children enrolled in a Pakistani school is studying in a madrassa. Tellingly, the 33 percent estimate was the result of a transcription error—it used 1.9 million rather than 19 million as overall school enrollment—that inflated the percentage of madrassa enrollment by a factor of 10. The fact that such numbers are reported and re-reported without any “fact checking” shows a lack of understanding at the analyst level of

even the most basic facts about the Islamic world—such as the size of the Pakistani youth population.

Absent Tools for Theories

This basic lack of understanding and consistent misrepresentation of madrassa enrollment does not prevent the proliferation of theories explaining the use of such institutions. Two views predominate. One view is that madrassas cater to “radical” youth and promote extremism through their teaching. A second is that madrassas are often the only schooling option for children in an environment where government schools have broken down, and thus are part of a network of institutions that serve the under-privileged. Writing recently in *Foreign Affairs*, the second view is succinctly summarized by Alexander Evans:

“For young village kids, it may be their only path to literacy. For many orphans and the rural poor, madrasahs provide essential social services: education and lodging for children who otherwise could well find themselves the victims of forced labor, sex trafficking, or other abuse”

and previously, by Singer (2001):

“The reason for the madrassas new centrality stems from the weakening of the Pakistani state...the madrassas became immensely popular by targeting the lower class and refugee populations, whom the Pakistani state has failed to provide proper access to education.”

There is little evidence presented to support either theory. Indeed, the conclusions from our analysis of the school choices of over 100,000 children in the districts covered under the LEAPS study suggest that schooling options and household factors have little to do with the use of madrassas. We examined three different hypotheses: (a) are the poor more likely to send their children to madrassas; (b) is their greater use of madrassas in settlements without government schooling options and; (c) is their greater use of madrassas among certain types of households defined by religiosity or ethnicity.

Across all settlements, we found almost no relationship between poverty and the use of madrassas (Figure 1). The *only* exception was in settlements without any schooling options,

where the poor used madrassas somewhat more than the rich (4 percent of poor households sent their children to madrassas compared to 2.5 percent for the rich). However, the drop in enrollment in *any* type of school for these settlements was so large, that it swamped any aggregate relationship between poverty and the use of madrassas.

Neither did we find that the number of children going to madrassas in settlements without other schooling options was significantly higher than in settlements with either a private or public school (or both). The confusion is, in part, explained by the difference between percentages and numbers—while in percentages, a larger proportion *of those who are enrolled*, choose madrassas in settlements without other schooling options, it is also the case that far fewer children are enrolled in the first place when no public or private schools are available. Consequently, the total number of children using madrassas is roughly similar in all types of settlements.

A prerequisite for examining the link between religiosity or ethnicity and the use of madrassas assumes that there is some way in which we can classify households appropriately. This is hard to do. Following recent work on African-American identity and the naming of children, one option was to define households as more likely to be “radically religious” if they chose names for their children that reflected greater identification with radical causes. We thus defined households who had named their children “Osama” (and related spellings) as “radically religious”—this is, in part, supported by the relative frequency of the name, which is almost never used till 1998 and then peaks in 1998 with the embassy bombings in Kenya and Tanzania and in 2001 with 9/11. To examine the link between ethnicity and madrassa-use, we classified households into “Pashtun” or “not Pashtun”; the classification holds particular interest given the common discourse of the greater use of madrassas among Afghans and Pashtun families. Using these definitions, we found no relationship between the relative use of madrassas and household religiosity or ethnicity.

Could it be that we got it all wrong? Instead of assessing the link between specific household factors (poverty or religiosity) and the use of madrassas, an option often pursued by economists and educationalists has been to collapse all household factors into a black-box and

ask the extent to which *all* household factors could explain a phenomenon such as madrassa use. If explanations for madrassa use are ultimately to be found in household-level factors, it must be the case that we find *some* households (howsoever defined) send most of their children to madrassas while the majority send none. In fact, the data suggest the opposite with most variation within rather than across households (Figure 2). Tellingly, among households that send one child to a madrassa, 75 percent send another child to a public or private school. Thus, for the LEAPS data, only 0.8 percent of all households have all children enrolled in madrassas. Given this large variation within households, it appears that the use of madrassas is a *child* rather than household specific; theories that then seek to understand madrassa enrollment through household factors are necessarily limited to explaining a small portion of the overall variation in madrassa enrollment we see in the data.⁴

Understanding the Data: Different Data, Different Estimates

The use of estimates based on publicly available and verifiable data-sources also results in much needed discussion of the pros and cons of relying on different data sources. For instance, all three sources in our study are based on surveys of households. Household surveys use specially designed education modules to ask about enrollment in different kinds of schools for a representative sample of households. There is an established tradition of using such surveys to determine enrollment numbers (examples include the educational attainment site hosted by the World Bank and Eli Berman's work on religious extremism), particularly since household surveys are the only way to count the number of children who are *not* attending school. Why were our estimates different from those emerging from other sources?

One possible answer is that household-based surveys yield different results from establishment-based surveys. Most reports that do refer to data sources use establishment-based surveys such as the Ministry of Education's directory of madrassas, or lists of registered madrassas with the Ministry of Religious Affairs. While such sources carry more merit than personal interviews, further examination raises valid concerns, especially since these sources do

⁴ This distinction is quite subtle. Ali (2005) for instance, uses *village-level variation* and presents correlations between village electricity and water supply in one tehsil in Punjab to make inferences about prevalence of madrassas and linkages with police reports of violent activity. Given that 75 percent of the variation is within *households* (and 90 percent within villages), Ali's results can explain *at most* 10 percent of the observed variation in madrassas enrollment.

not agree with household-based ones. There are several avenues one could pursue in trying to understand the difference in numbers between household and establishment surveys.

First, asking schools for enrollment numbers as the schools tabulate them typically confound part-time with full-time students. Children who attend evening quranic classes—the equivalent of Sunday schools—may be (incorrectly) labeled as madrassa students. More detailed household surveys that focus on madrassa enrollment would include modules that detail the time spent in different types of schools during the week, and this could help understand the extent of part-time madrassa use among children.

Second, and this is a weakness of household surveys, children who are *not* affiliated with any household—such as orphans and the homeless—will not be accounted for in household surveys but will be counted in establishment data. This is a consistent problem with any household survey, including population censuses that use samples and extrapolation techniques to account for those without a fixed address. In our study, we provide an upper bound on madrassa enrollment by using the proportion of orphans in madrassas based on a single establishment survey, but this is clearly a topic that requires further research.

Third, even without these statistical problems, numbers from household and establishment can (and do) differ because of the different incentives that the respondents face. To the extent that madrassa funding relies on enrollment, madrassas could have a tendency to over-inflate the number of children enrolled. This has been a consistent problem in using establishment surveys for regular schooling numbers—Kingdon (1996), for instance, has argued that public school enrollments are much higher than what emerges from household surveys because of specific reporting incentives built into the system. In Pakistan, problems with using establishment data are exacerbated since there is no clear methodology regarding the establishment based data on madrassa enrollment.

Partly because of these problems, although almost every country has estimates of enrollment based on school (establishment) censuses, household censuses are generally preferable, since they allow an appropriate estimate for the denominator (typically the number of

children in a relevant age-group) to be computed accurately in the calculation of statistics such as the net-enrollment rate. One of the reasons why the majority of articles written on madrassas present numbers rather than percentages is that establishment surveys cannot tell us about the relative use of different types of schools, or estimate the number of children who are currently out of school. The two equivalent statements that 500,000 children are enrolled in madrassas or that 1 percent of enrolled children study in madrassas create very different perceptions, and indeed lead to erroneous conclusions.

An example illustrates. In a letter to the editor, Robert Templer (2005) of the International Crisis Group faults the LEAPS sample on the grounds that it is based on rural areas, whereas the majority of madrasa enrollment is in urban cities. While the criticism is correct, in that the largest *number* of children enrolled in madrassas are in urban areas (Karachi), this is only because the population of Karachi is much larger than that of most rural districts. In terms of *percentages*, all top-10 districts with high madrasa enrollment are rural, and Karachi is a distant 38th out of 102 districts in the country (compare, for instance, the differences in Appendix Figures A1 and A2, which map the *number* and *percentage* of children enrolled in madrassas respectively). Thus, if our interest lies in the relative use of madrassas among the population, rural areas would be given greater weight in the sample.

Although there is thus a strong case for using household surveys to understand madrasa enrollment from the data perspective, it is unclear whether this is a *feasible* option. The very low use of madrassas among Pakistani children implies that generating data to further research on madrasa use will be an exceedingly costly proposition. Traditional sample sizes in household based surveys (used, for instance, to understand the incidence of poverty in the PIHS) are too small to even present meaningful correlations of household factors and madrasa enrollment. In every round of the PIHS, less than 100 children are enrolled in madrassas; the only reason why we are able to present some correlations is because of an extraordinarily large survey that covered more than 80,000 households.

To the extent that further evidence based work on madrasa use is necessary, a clear discussion on the relative merits and demerits of alternate data sources is also necessary. A

starting point is to compare and contrast the methodologies of alternate sources, which is possible only if all generated data are publicly available and appropriately scrutinized. Unfortunately, while all the household surveys used in our analysis are readily accessible, none of the establishment-based data are.

No Child Left Behind

Why does all this matter? In the case of madrassa enrollment, using established methodologies and verifiable data makes a big difference. Contrary to popular claims, madrassa enrollment in Pakistan is low, accounting for less than 1 percent of total enrollment. In proportion to overall enrollment it has not increased during the 1990s nor since the events of 9/11 and beyond. Moreover, of the less than 1 percent of families that have at least one child in a madrassa, three fourths have another child in a public or a private school. Belief about the high prevalence of madrassa enrollment in Pakistan is an example of conventional wisdom in the classic Galbraithian sense—we accept these flawed estimates simply because they are acceptable. However, under a more demanding empirical lens, they fail to hold up. The reality is unrelated to conventional wisdom.

Madrassas are not making inroads into mainstream society in Pakistan. Instead, the alternative to public schools for the average Pakistani parent is increasingly affordable schools in the private sector (Table 2). Currently, almost 30 percent of children enrolled at the primary level are going to private schools, with the highest growth in rural areas. These schools are typically “mom-and-pop” managed, for-profit and independent of the government system. They are affordable, with monthly tuition fees less than a day’s wage for an unskilled worker. Moreover, these private schools are very much in the business of providing mainstream education. They teach a curriculum that is similar to the government’s and are not affiliated with any religious group or movement. The vast majority of these private schools teach English, are co-educational at the primary level, and an attitudinal survey on civic values conducted by our project team on third graders in these private schools finds no particular incidence of gender bias.

There are large policy implications to these findings. Current US policy and the aid package to Pakistan strongly emphasize madrassa reform. Indeed, a Rumsfeld memo asks his staff to consider a reform to “entice radical madrassas to a more moderate course.” But the data suggest that the problems faced by Pakistani school children and parents will not be solved by closing down or reforming a few vocal and prominent madrassas. We must therefore question the wisdom of a policy that makes its centerpiece a reform of the segment of the schooling system that does not educate the vast majority of Pakistani children.

Improving access to quality schooling for the bulk of the Pakistani population must be the focus of any reform of education in Pakistan. A good starting point is to reinforce the ongoing national debate on “education for all” in the country. We need to think deeply about poverty, gender bias and the quality of schooling in an economy that is yet to find its feet in the competitive, globalized world. Equally important, the national debate must focus on the long and tedious process of restructuring the public schooling system. We need to start talking about measuring student outcomes, working with teacher unions on accountability and using the option of private schools to increase school choice for the poor. From the point of view of the Pakistani child, it is the improvement in the quality of public and private schooling, which 99 percent attend, rather than reforms in madrassas that matters.

We acknowledge that for those concerned about global security issues, absolute numbers, however small, do matter and a pro-active policy toward madrassas may be deemed necessary. The first step in determining such a policy will be to generate accurate information on madrassas. Our main contention in this note is that this has not been done to any reasonable extent so far, can be done using existing data-sources, and if done properly, leads to a very different understanding of enrollment trends and schooling choices in Pakistan.

Additional References

Andrabi, Tahir, Jishnu Das, Asim Ijaz Khwaja and Tristan Zajonc. 2006. “Religious Enrollment in Pakistan: A Look at the Data.” *Comparative Education Review* 50 (3): 446-77

Ali, Saleem. 2005. "Islamic Education and Conflict: Understanding the Madrassahs of Pakistan." Unpublished Manuscript, University of Vermont. Available at <http://www.uvm.edu/~envprog/madrassah/Ali-Madrassah-draft-8-15-05.pdf>

Evans, Alexander. 2006. "Understanding Madrasahs." *Foreign Affairs*, Jan/Feb 2006

Kingdon, Geeta. 1996. "Private Schooling in India: Size, Nature and Equity-Effects." *Economic and Political Weekly*, 31 (51): 3306-3314.

Rashid, Ahmed. 2000. *Taliban: Militant Islam, Oil and Fundamentalism in Central Asia*. New Haven, Connecticut. Yale University Press

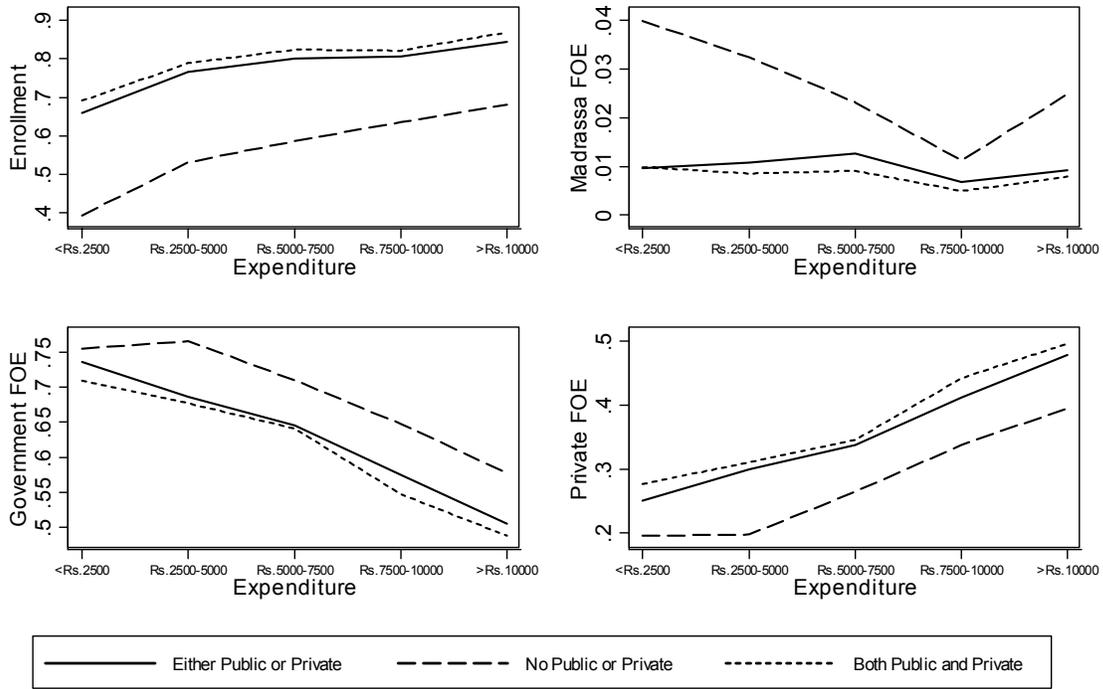
Singer, Peter W. 2001. "Pakistan's Madrassahs: Ensuring a System of Education not Jihad." Brookings Institutions Analysis Papers 41. Washington DC.

Templer, Robert. 2006. Letter to the Editor. *Foreign Policy*, July/August 2005.

Figures and Tables

FIGURE 1

Enrollment by Presence of School and Expenditure

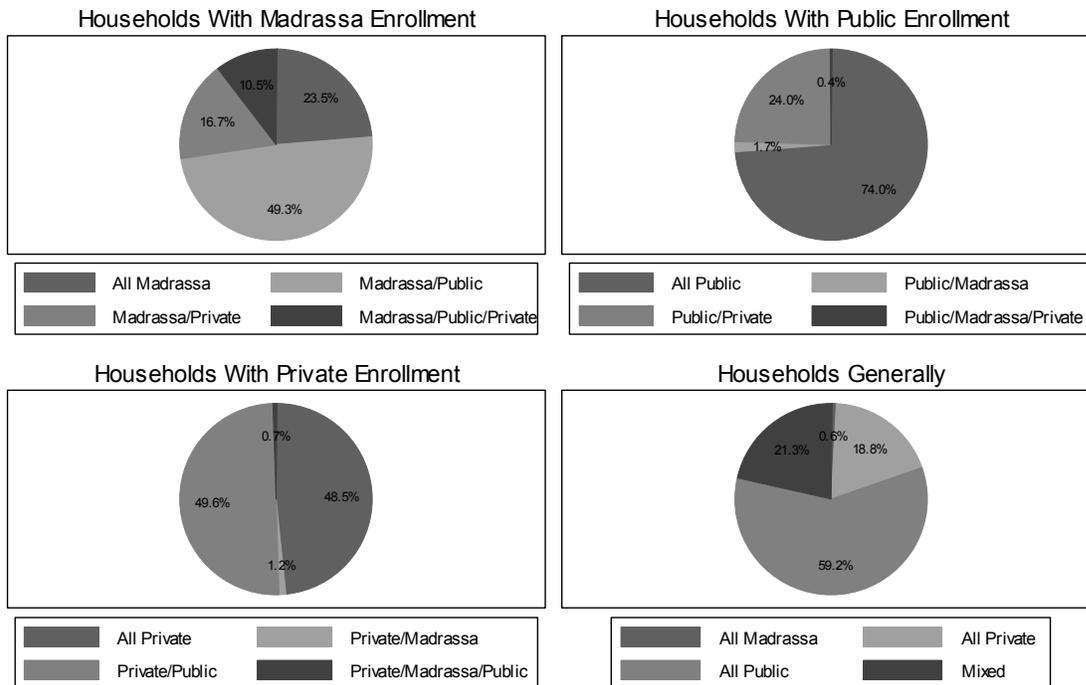


Source: LEAPS Population Census, 2003

Note: The figure is reproduced from the original study, Andrabi and others (2006), and shows the fraction of children enrolled (top-left) and the share of each sector in that enrollment. The figure on the top-right shows the share of madrassas, the bottom-left the share of government and the bottom-right the share of the private sector. In every figure, we show the appropriate fraction for three types of settlement—those with both a private and a public school, those with either a private or public school (including settlements with both) and those with neither a private nor a public school. These settlements were constructed through a mapping exercise in every village, and for the 125 villages in our sample, we have 253 settlements. We plot the shares against the self-reported monthly expenditures of the household. More than 95 percent of all households fall below the Rs.7,500 to Rs.10,000 cut-off.

FIGURE 2

Household Enrollment Choices



Source: LEAPS Population Census, 2003

Note: The figure is reproduced from the original study, Andrabi and others (2006) and shows enrollment choices among households with at least two enrolled children that have one or more children attending a madrasa (top-left), a government school (top-right), a private school (bottom-left) and any school (bottom-right). By construction, households with private, government and madrasa enrollment (Madrasa/Public/Private) must have at least three enrolled children. Thus, *among* households with at least one child in a madrasa, close to 50% have another child who is enrolled in a government school. The last graph (Households Generally) shows how prevalent every type of household is—for instance, only 0.6% of all households have *all children* enrolled in madrassas.

TABLE 1
COUNTRY-WIDE MADRASSA ENROLLMENT – DIFFERENT SOURCES

Data Source	Madrassa Enrollment	Madrassa as Fraction of Enrolled
Census of Population, 1998		
Total	159,225	0.70%
Male	111,085	0.82%
Female	48,140	0.53%
PIHS 1991	151,546	0.78% [0.16%]
PIHS 1998	178,436	0.74% [0.089%]
PIHS 2001	176,061	0.7% [0.093%]

Note: The table is reproduced from the original study, Andrabi and others (2006). Survey standard errors in [brackets] where applicable. The census of population covers all of Pakistan except the Federally Administered Tribal Area (FATA). Included are Punjab, Balochistan, North-West Frontier Provinces (NWFP) and Sindh, plus the federal capital Islamabad and the federally administered Northern Areas and Azad Jammu and Kashmir (AJK). The Census of Population, 1998 estimates are based on the census “long-form”, which was administered on a sample basis to a large number of households. This data is representative at the district level for both rural and urban regions. The next three rows show estimates from the Pakistan Integrated Household Survey (PIHS) which is a household survey and is representative only at the provincial level for the four main provinces, which account for 97% of the country’s population—Punjab, Sindh, Balochistan and NWFP.

TABLE 2
ENROLLED CHILDREN IN 3 DISTRICTS

School Type	Data Source	Attock	Faisalabad	Rahim Yar Khan
Government (%)	LEAPS	67.73	71.96	71.38
Private (%)	LEAPS	31.56	27.33	24.92
Madrassa (%)	LEAPS	0.71	0.70	3.70
	Population Census, 1998	0.50	0.49	1.03

Source: The table is reproduced from the original study, Andrabi and others (2006) and is based on data from LEAPS, 2003 and Population Census, 1998. LEAPS reports school type for enrolled children ages 5 – 15. Population Census reports field of education for children 5-14. LEAPS sample villages were randomly drawn from a list-frame of rural villages with at least one private school and thus are not representative of the district as a whole.

Appendix Tables and Figures

TABLE A1
ARTICLES ON MADRASSAS IN PAKISTAN MAJOR NEWSPAPERS, DECEMBER 2000 -JUNE 2004

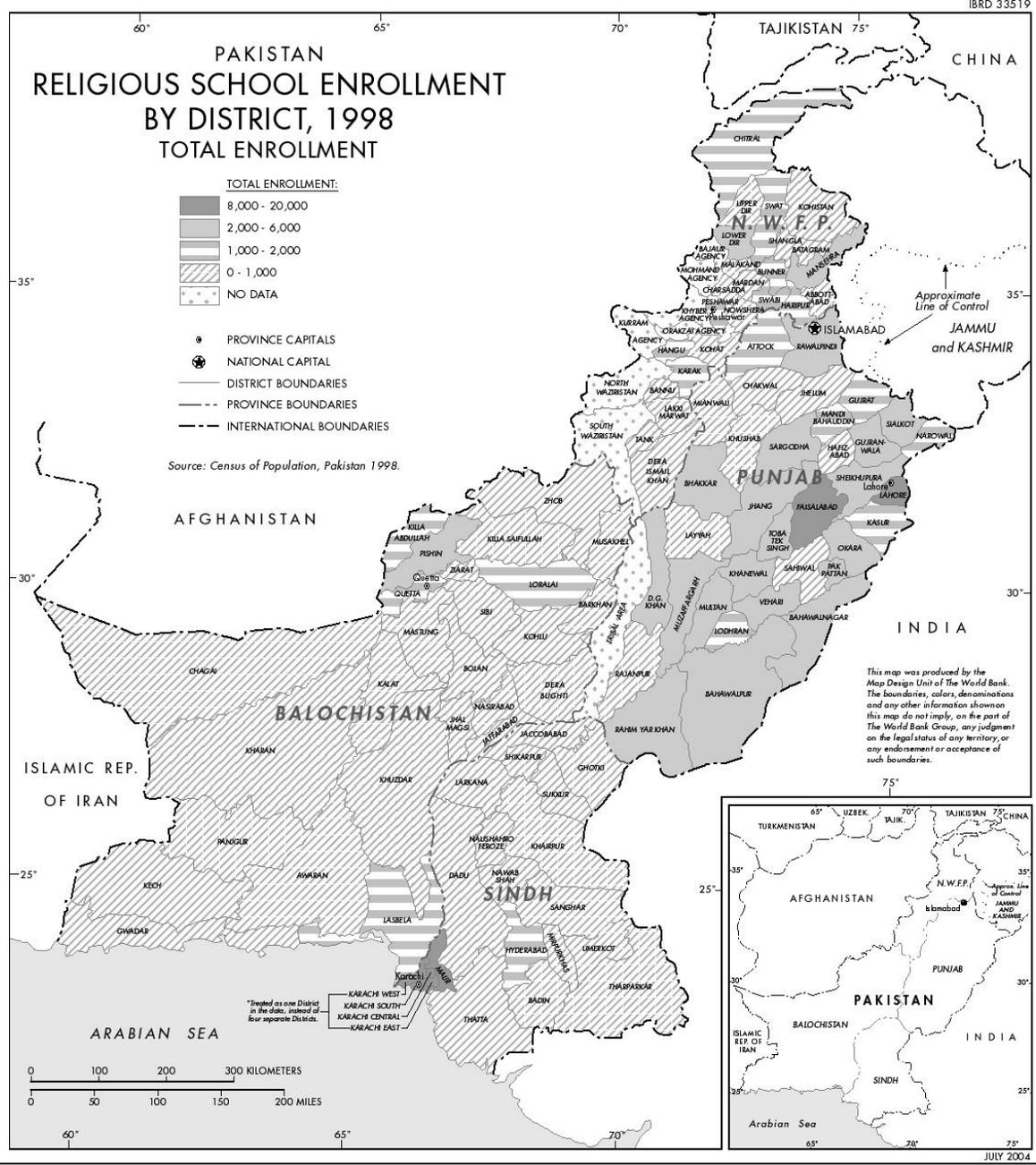
Source	Date	Type of study	Numbers	Reasons for Madrassa Enrollment
L.A. Times	28 December 2000	Case-Study	8,000 Madrassas	Studied Madrassa was originally set up for Afghan refugees
Financial Times	6 March 2001	Interview with President Musharraf	10,000 Madrassas, 1 million students	Welfare service to the poor
L.A. Times	12 August 2001	General article	None	Welfare service to the poor
L.A. Times	19 September 2001	Case-Study	18,000 in Peshawar	Religious indoctrination
The Washington Post	20 September 2001	Case-Study	None	Religious indoctrination
The Boston Globe	4 October 2001	Case Study	11,000 Madrassas, 1 million students	Boom during Afghan war. Fills a gap due to failed government education.
Financial Times	17 October 2001	Discussion of meeting between Colin Powell and President Musharraf	10,000 Madrassas	Religious Extremism
The Philadelphia Inquirer	9 November 2001	General article	7,000 – 8,000 Madrassas 700,000 students	None
Financial Times	17 November 2001	General article and interviews	4,000 Deobandi Madrassas	Religious teaching
The Philadelphia Inquirer	25 November 2001	General article and interviews	8,000 registered + 25,000 unregistered	On tribal border areas, madrassas instill Islam and preach hatred for non-Muslims
The Boston Globe	29 November 2001	General article		Fill gap in public. education, provide religious indoctrination
L.A. Times	10 December 2001	General article and interviews	10,000 madrassas that dominate education throughout rural Pakistan	Religious indoctrination
The Philadelphia Inquirer	16 December 2001	Interviews in Pishin district	None	Religious indoctrination in radical Islam
Chicago Tribune	23 December 2001	General article and interviews	None	Fill gap in public education, private schools too expensive.

Source	Date	Type of study	Numbers	Reasons for Madrasa Enrollment
Chicago Tribune	23 December 2001		None	Overwhelmingly popular with Pakistan's poor, fill a gap in public education
The Boston Globe	25 December 2001	General article and interviews	10's of thousands, 1 million children	Humanitarian aid for poor
L.A. Times	3 January 2002	General article and interviews	5,000 madrassas	Religious indoctrination. Madrassas as training ground for Afghan was with Soviet Union
L.A. Times	4 January 2002	General article and interviews	None	
The Philadelphia Inquirer	5 January 2002	News item on government	6,000 madrassas	None
Chicago Tribune	13 January 2002	News item on government	None	None
The Boston Globe	14 January 2002	News item + Interview	None	Religious indoctrination
Chicago Tribune	18 January 2002	Case Study	None	Radical religious indoctrination
L.A. Times	19 January 2002	News Item	None	See next
The Philadelphia Inquirer	23 January 2002	New Item	Thousands of madrassas	Explosion during the 1980s due to Afghan refugees + Radical religious indoctrination
Chicago Tribune	24 January 2002	Case Study	None	Radical Islam
Washington Post	14 March 2002	General article	500,000 plus children	Failed public educational system; Religious studies Poor children + orphans
Boston Globe	18 March 2002	General article	Thousands of madrassas	
L.A. Times	23 March 2002	Case Study	3,700 (NWFP only)	Islamic studies based on a reactionary curriculum; service to the extremely poor; failed public educational system
Washington Post	28 April 2002	General article + Case Study	7,000 madrassas	Built for Afghan war against Soviet Union
L.A. Times	29 June 2002	General article	1.5 million students	Resistance to Soviet Union + Only schooling option for boys from poor families

Source	Date	Type of study	Numbers	Reasons for Madrassa Enrollment
Chicago Tribune	30 June 2002	General article	8,000 to 10,000 Madrassas	Resistance to Soviet Union + Only schooling option for boys from poor families
Washington Post	14 July 2002	General article and interviews	10,000 madrassas 1.5 million students Rapid growth in recent years	Resistance to Soviet Union; fighters for Kashmir; failure of public education system; social charity function
The Times	10 August 2002	Report	1.5 million students from poor rural families	Hard-line Islamic schools
L.A. Times	12 October 2002	Report	8,000 to 10,000 madrassas with 1.5 million students	
L.A. Times	2 February 2003	Interview with Foreign Minister Mian Khursheed Mehmood Kasuri		Madrassas reflect poverty of the state. Cater to poor people. Public educational system has failed
Financial Times	8 February 2003	General article and interviews	40,000 to 50,000 madrassas	None
L.A. Times	14 April 2003	Report	10,000 madrassas, educate 10% of all Pakistani students	Provide education for the poor; failures in public education system
Financial Times	19 August 2003	Expert comment		Most madrassas on border with Afghanistan. Concentrates on Pashtun belt.
Washington Post	2 September 2003	Report	None	Talks about madrassas in the Pashtun tribal belt
L.A. Times	5 March 2004	Report on politics regarding Musharraf	Madrassas are not the focus	Madrassas are not the focus
Washington Post	13 June 2004	General article and interviews	10,000 madrassas	Social safety net; Radical religious indoctrination
The Philadelphia Inquirer	15 June 2004	General article and interviews	8,000 madrassas	Afghan refugees moving into Pakistan

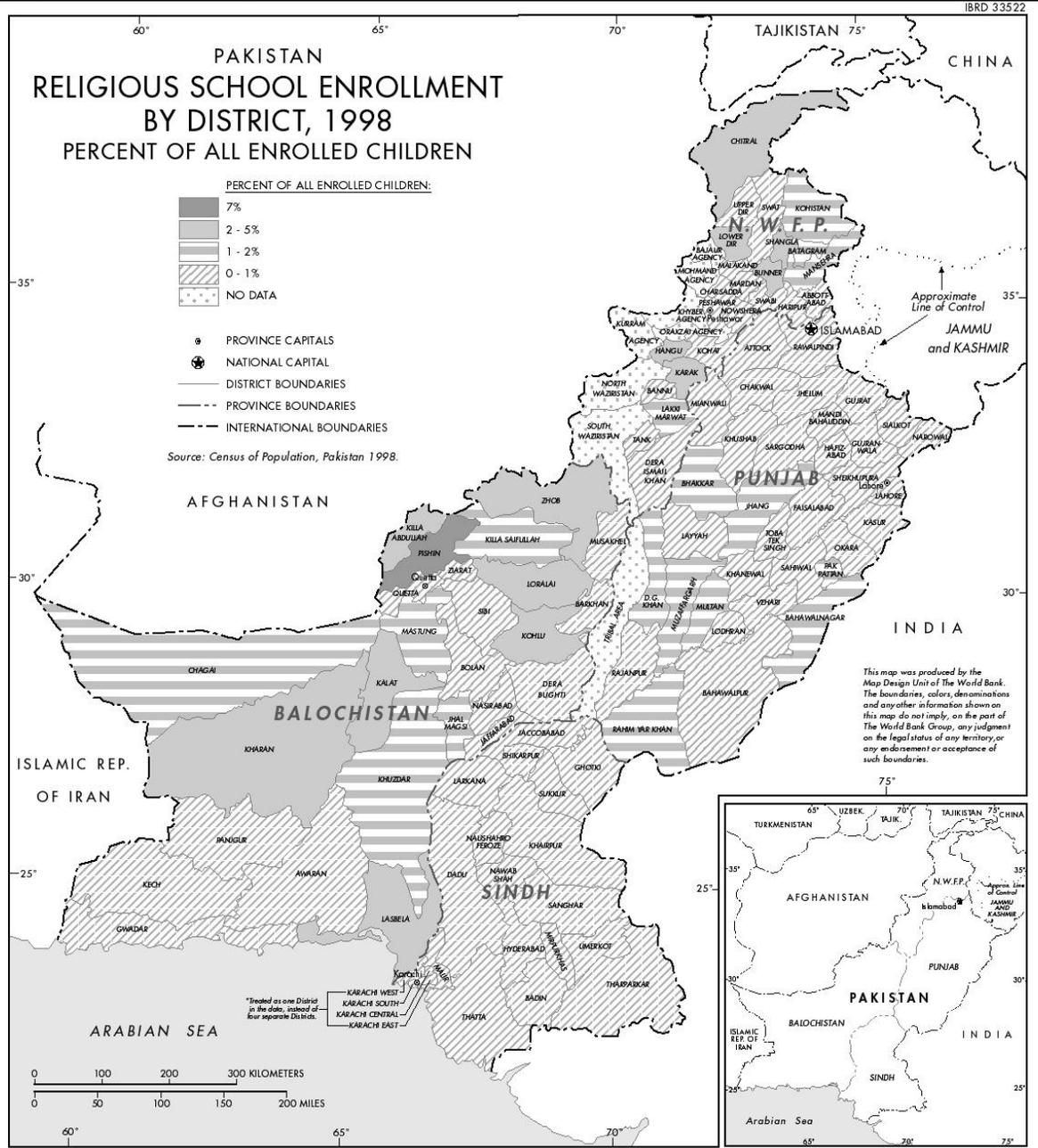
Figures

Figure A1: Number of Children Enrolled in Religious Schools, Pakistan 1998



Source: The data for the districts is based on the “long-form” of the population census 1998. The long-form is administered to a sample of households in the census and is representative at the district/rural-urban level. We classify a child as enrolled in religious school if he/she reports her “main field of education” as “religious education”. The map is reproduced from the original study, Andrabi and others (2006).

Figure A2: Percentage Children Enrolled in Religious Schools, Pakistan 1998



Source: Population Census, 1998. The percent of all enrolled children in religious schools is defined as the total number of children enrolled in religious schools divided by the total number of children enrolled in any school. The map is reproduced from the original study, Andrabi and others (2006).