

Niaz Asadullah, M.; Kambhampati, Uma; López Bóo, Florencia

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Social divisions in school participation and attainment in India: 1983 - 2004

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SOCIAL DIVISIONS IN SCHOOL PARTICIPATION AND ATTAINMENT IN INDIA: 1983-2004

BY

M. NIAZ ASADULLAH*
UMA KAMBHAMPATI*
FLORENCIA LÓPEZ BÓO**

***UNIVERSITY OF READING**
****INTER-AMERICAN DEVELOPMENT BANK**

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Abstract*

This study documents the size and nature of “boy-girl” and “Hindu-Muslim” gaps in children’s school participation and attainments in India. Individual-level data from two successive rounds of the National Sample Survey suggest that considerable progress has been made in decreasing the Hindu-Muslim gap. Nonetheless, the gap remains sizable even after controlling for numerous socio-economic and parental covariates, and the Muslim educational disadvantage in India today is greater than that experienced by girls and Scheduled Caste Hindu children. A gender gap still appears within as well as between communities, though it is smaller within Muslim communities. While differences in gender and other demographic and socio-economic covariates have recently become more important in explaining the Hindu-Muslim gap, those differences altogether explain only 25 percent to 45 percent of the observed schooling gap.

Key words: gender inequality, India, religion, social disparity.

JEL classifications: I21, J16, Z12

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1. Introduction

Acknowledging the importance of education for economic growth and poverty reduction, a number of studies in recent years have sought to document the constraints facing households in India with respect to investment in children's education (e.g., De and Dreze, 1999; Dreze and Kingdon, 2001; Kingdon, 2007; Kochar, 2004). The reasons identified for low participation range from factors such as rural infrastructure (e.g., roads), conditions in the local village economy, the functioning and size of the relevant labor market, household credit constraints and sex discrimination to the poor quality and inadequate supply of schools. However, for multi-ethnic countries with less than universal coverage of education, an added Millennium Development Goal (MDG) challenge is that of closing school participation gaps across various social groups. For instance, educational progress in South Africa has suffered because of institutional discrimination under apartheid against black children, which in turn affected wages and employment of all South Africans (e.g. see Schultz and Mwabu, 2000).

In India, it is widely believed that people belonging to non-Hindu (e.g., Muslim) and lower-caste Hindu faith groups are economically deprived (Gang, Sen and Yun, 2008). If so, knowledge of the educational exclusion of children from these social groups is important from a policy viewpoint. Achieving universal primary education would require full participation of children from historically disadvantaged social groups and religious communities. Indeed, in the recent past, the government has introduced a range of policy interventions targeting social groups classified as Scheduled Caste (SC) and Scheduled Tribe (ST). There is some evidence that these interventions have been successful in decreasing the education disadvantage suffered by these groups (Jenkins and Barr, 2006). However, less is known about the educational progress of India's second largest religious group, Muslims.

Cross-country descriptive studies suggest that children growing up in Muslim communities in general have less schooling compared to those in non-Muslim communities (Bjørnskov, 2009; Stewart, 2008). This evidence of schooling gap in Muslim populations elsewhere has motivated some researchers to explain the Muslim "disadvantage" in India in terms of norms, preferences and practices intrinsic to Islamic faith that may inhibit household investment in secular education and skills valued in the labor market. In the case of India, for instance, it has been conjectured that the Muslim educational deficit may in part result from a preference for religious over secular education (e.g., Borooah and Iyer, 2005).

On the one hand, these Hindu-Muslim (H-M) educational gaps could be a result of differences in socio-economic background and preferences and norms specific to these two communities. On the other hand, such between-group inequality can also be explained by discrimination in the supply of public goods across communities. Recent studies that have examined the influence of state characteristics on the allocation mechanism of education services in rural India using district-level data report evidence of selectivity in the allocations against Muslims (e.g., see Betancourt and Gleason, 2000).

On the demand side, Muslim children may be more disadvantaged in terms of family factors such as poverty, lack of parental motivation or labor demands on children. Muslim parents have lower average levels of education compared to Hindus, and Muslim children are therefore often first-generation entrants into schooling. Muslims also have limited ownership of land in rural areas and hence are likely to be poor. They are primarily engaged in traditional trades such as weaving, trading and crafts where demand for child labor may be high. In addition, Muslims predominantly select into non-farm self-employment instead of formal salaried work (Das, 2003).

Similarly, Muslim communities are known to have a preference for larger families. Indeed, Muslim fertility in India is significantly higher than Hindu fertility (Dharmalingam and Morgan, 2004). To the extent that children from larger families are disadvantaged, this may explain the H-M gap in school participation. Indeed, research on the intra-household allocation of education expenditure in India yields evidence of lower budgetary allocation of household resources to education in Muslim households (Kingdon, 2005).¹ These group-specific background factors adversely affect both boys and girls in Muslim households.

Additional possible explanations for Muslim educational backwardness have been put forward in Sachar (2006), which lists a number of possible reasons such as under-provision of government schools in Muslim neighborhoods, a lack of political participation and representation of Muslims in governance structures, under-representation of Muslims in mainstream economic activities and occupations and inequality in access to credit between Muslims and non-Muslims. Therefore, apart from being poor and more credit-constrained, Muslim households are likely to be concentrated in states that are institutionally (e.g., schools, banks, roads and so on) under-

¹ Kingdon finds that religion matters in intra-household allocation in India, even amongst non-poor households: "...even after controls for household per capita expenditure and head's education, Muslim households have significantly lower education budget sub-shares than Hindus and Sikhs."

provided by the government and/or the local communities. Testing all the hypotheses requires detailed household data with community level information on Muslim populations across states in India. In the absence of such data, this paper focuses on household factors (e.g., parental education, household income and family size), individual attributes (e.g., gender of the child) and state influence in explaining Hindu-Muslim gap in school participation and completion using nationally representative household survey data.

At the same time, there may be gender-differentiated effects that adversely affect Muslim educational attainments. The gender penalty is often believed to be greater when it interacts with the female child's social identity (Lewis and Lockheed, 2007). Amongst Hindus, SC and ST girls may be more disadvantaged, and the gender gap can also cause between-religion inequality. This might arise because of the limited agency of females in Muslim communities combined with son-preference, which implies differential treatment of girls in the context of within-household allocation of resources in Muslim communities. International research, for instance, is suggestive of lower school enrollment (especially post-primary) by females in predominantly Muslim countries (e.g., see Bjørnskov, 2009). If so, the average Hindu-Muslim gap in schooling in India may be an artifact of educational disadvantage of girls in Muslim households. Thus, the within-household treatment of females may lead to lower average schooling in Muslim communities even in the absence of community-specific schooling norms (e.g., preference for religious education) and state policies that discriminate against Muslim communities in the provision of public infrastructure. On the other hand, however, to the extent that son-preference is an across-community phenomenon in India, female children are likely to be equally disadvantaged in Muslim and Hindu households. Therefore, it remains a matter for empirical investigation to establish to what extent the observed Hindu-Muslim gap is explained by covariate differences or between-community differences in disadvantage associated with demographic covariates such as gender.

Almost all the existing studies on determinants of school participation and attainment in India today acknowledge socio-religious differences in the population and document the profile of educational achievement by caste, religion and gender, albeit largely as a by-product (e.g., Dreze and Kingdon, 2001; Kingdon, 2002; Dostie and Jayaraman, 2006). Evidence from these studies is mixed. While Dreze and Kingdon (2001) find no evidence of intrinsic educational disadvantage among Muslim children, Kingdon (2002) and Dostie and Jayaraman (2006) report

some evidence of Muslim disadvantage in schooling even after netting out differences in family background and personal attributes. More recently, researchers have revisited the issue of determinants of school participation in India using large-scale nationally representative datasets. On the basis of these studies, there is considerable evidence of social disparity in educational outcomes in India. Girls lag behind boys, and children born into Muslim and Scheduled Caste families achieve much less than those from Upper Caste Hindu families (Desai and Darden, 2006; Boorah and Iyer, 2005; Bhalotra and Zamora, 2006; Rajaram and Jayachandran, 2007).² Studies that use multi-round household datasets even indicate that while the H-M gap in school attendance has been reduced, the gap in completion has actually widened (e.g., Bhalotra and Zamora, 2006).³

Acknowledging the importance of this issue, the Government of India recently carried out a large-scale study to better understand the extent and nature of Muslim educational disadvantage in the country (Sachar, 2006). The report highlighted a number of stylized facts about the Muslim population's deficits in educational participation and literacy. These include a national literacy rate amongst Muslims that is lower than the national average and higher drop-out rates amongst Muslims at the primary, middle and higher secondary school levels. Nonetheless, quantitative studies on the extent and evolution of Hindu-Muslim educational gap in India are limited, let alone studies explaining the underlying reasons for Muslim educational disadvantage. Apart from Boorah and Iyer (2005), none of the extant published studies emphasize the importance of one's religious group membership as a determinant of educational attainment. This paper attempts to fill this gap by looking into the nature of the educational disadvantage of Muslim children in India using multiple rounds of household datasets that span the period 1983-2004.

Our focus is on the evolution of schooling disadvantage associated with religious identity of the family and on its interaction with gender. We begin by systematically documenting the educational profile of children belonging to Hindu and Muslim households using two rounds (i.e., 1983 and 2004) of NSS data. Then estimates from descriptive regression models are used to explain the source of H-M gaps in school participation and attainment in terms of differences in

² Existing studies on determinants of children's health status also point out a Hindu-Muslim gap. Borooah (2004), for example, finds that Hindu children were 20 percent more likely than Muslim to be completely vaccinated than Muslim children.

³ Bhalotra and Zamora (2006) use two rounds of NFHS survey data spanning the period 1992/3 and 1998/9.

covariates such as gender of the child, household income, family size and parental education and state of residence. We ask how much the child's gender and differences in covariates relating to family background can explain the raw Hindu-Muslim gap in children's education in India and whether this has changed in recent years.

Our results indicate significant H-M gaps in school participation and completion, even after netting out differences in household and socio-economic characteristics. While these conditional gaps have narrowed over time, they remain significant for Muslim children: the Muslim educational disadvantage in India today is smaller than in 1983 but still remains larger than that experienced by SC Hindus and girls. We also consider a specific hypothesis—differential treatment of girls by Hindu and Muslim households—to explain this persistent educational disparity between India's two largest religious groups. We first demonstrate that the Muslim penalty was smaller among girls in 1983; although it has declined considerably by 2004, it still remained significant. Subsequently, we test whether this is owing to less sex discrimination within Muslim households. Our estimates suggest that the observed gender gap in India is a within as well as a between-household phenomenon. However, within household boy-girl differences are smaller for Muslim communities. Therefore, we conclude that the observed Hindu-Muslim schooling gap cannot be explained away by the hypothesis of differential treatment of girls by Muslim households in India. Neither can the H-M gap be explained by covariate (e.g., preference for larger family size) differences: most of the raw Hindu-Muslim gap remains unexplained by differences in socio-economic background of the two communities.

The rest of the paper is organized as follows. Section 2 explains the regression framework and discusses the data, and Section 3 presents the main results. Section 4 concludes.

2. Methodology and Data

We use unit level NSS data for the years 1983 and 2004 to study social gaps in school enrollment (for children aged 6-18) and completion (for children aged 10-21).⁴ Because of a small proportion of Muslims in a handful of states, our analysis is restricted to the 11 major states in India with a sizable Muslim population. These are: West Bengal, Uttar Pradesh, Tamil Nadu,

⁴ Whilst NSS 1996 round contains detailed education data, this is not used for the sake of comparability with other rounds.

Rajasthan, Maharashtra, Madhya Pradesh, Kerala, Karnataka, Gujarat, Bihar and Andhra Pradesh.

Table 1 reports mean values of current enrolment and school completion variables by religion, caste and gender groups. Analysis of enrollment data for the past two decades reveals significant progress in schooling. For instance, enrollment rates for ST children more than doubled in the last 20 years, increasing from 26 percent in 1983 to 56 percent in 2004. In fact, with the exceptions of Hindu boys and children in the “other religion” category, enrollment rates have increased significantly across all gender, religion and caste groups in India. Nonetheless, as shown in Table 1, significant social gaps exist. First, irrespective of gender, enrollment of Muslim children is systematically lower when compared to Hindu (excluding ST and SC) children in 1983. Similar gaps also prevail amongst SC and ST children when compared to the non-caste Hindu sample. Second, irrespective of caste and religion groups, girls systematically have lower enrollment rate than boys in 1983. Third, the religion, caste and gender gaps that prevailed in 1983 had narrowed greatly by 2004. At the latter date the enrollment difference between Hindu and SC children was no longer statistically significant, and the ratio of Muslim-Hindu enrolment rates was 0.93 in 2004, up from 0.78 in 1983.

While the observed pattern in school completion is consistent with that of enrollment, the difference between the groups is starker. Thus, completion rates increased significantly across all gender, religion and caste groups. However, in contrast to the near convergence in enrolment statistics across social groups, progress in closing social and religion gaps in completion has been less rapid. For instance, the ratio of Muslim and Hindu completion rate increased from 0.73 to 0.83 between 1983 and 2004—compared to an increase in the ratio of the current enrollment rate from 0.78 to 0.93, as noted above. This is also true across gender groups: the ratio of Muslim and Hindu completion rates increased from 0.73 to 0.83 between 1983 and 2004 for boys while the same ratio changed from 0.74 to 0.84 for girls. In other words, the 2004 completion figures indicate wider social disparities than do the enrollment rates. This said, while the Muslim completion rate for girls is better than for SC/ST groups, the Muslim completion rate for boys is worse than for the SC group.

Table 1. Religion-Caste-Gender Schooling Gaps in Raw Data

		1983			2004		
		N	mean	Sd	N	Mean	Sd
Current enrollment (children aged 6-18 yr olds) <i>Pooled sample</i>	Muslim	19,465	0.427	0.495	18,063	0.552	0.497
	Hindu (no SC, no ST)	85,548	0.541	0.498	59,466	0.591	0.492
	SC	20,968	0.377	0.485	18,003	0.581	0.493
	ST	9,674	0.266	0.442	5,975	0.561	0.496
	Other religion	5,888	0.707	0.455	3,333	0.581	0.493
<i>Boys</i>	Muslim	10,071	0.497	0.500	9,403	0.569	0.495
	Hindu (no SC, no ST)	45,107	0.628	0.483	31,518	0.602	0.490
	SC	11,252	0.476	0.499	9,530	0.597	0.491
	ST	5,080	0.357	0.479	3,179	0.595	0.491
	Other religion	3,058	0.742	0.438	1,769	0.594	0.491
<i>Girls</i>	Muslim	9,394	0.353	0.478	8,660	0.535	0.499
	Hindu (no SC, no ST)	40,441	0.444	0.497	27,948	0.579	0.494
	SC	9,716	0.262	0.440	8,473	0.563	0.496
	ST	4,594	0.167	0.373	2,796	0.523	0.500
	Other religion	2,830	0.669	0.471	1,564	0.566	0.496
Grade completion (children aged 10-21 yr olds) <i>Pooled sample</i>	Muslim	14,935	1.210	1.267	14,825	1.908	1.130
	Hindu (no SC, no ST)	68,365	1.642	1.338	50,642	2.281	1.072
	SC	15,838	0.981	1.227	14,480	1.890	1.119
	ST	7,112	0.640	1.043	4,691	1.681	1.163
	Other religion	5,075	2.193	1.212	2,897	2.575	0.963
<i>Boys</i>	Muslim	7,793	1.379	1.278	7,707	1.950	1.098
	Hindu (no SC, no ST)	36,643	1.876	1.279	26,975	2.346	1.021
	SC	8,732	1.253	1.265	7,817	2.008	1.062
	ST	3,757	0.895	1.144	2,522	1.828	1.112
	Other religion	2,655	2.247	1.154	1,545	2.573	0.943
<i>Girls</i>	Muslim	7,142	1.024	1.228	7,118	1.863	1.161
	Hindu (no SC, no ST)	31,722	1.371	1.355	23,667	2.206	1.122
	SC	7,106	0.646	1.089	6,663	1.752	1.168
	ST	3,355	0.356	0.828	2,169	1.511	1.198
	Other religion	2,420	2.133	1.271	1,352	2.578	0.985

Note: (a) Calculation based on NSS data, restricted to 11 states with sizable Muslim population. (b) School completion is a categorical variable and takes 5 values; it is defined as follows: “0” if no schooling (never attended-school); “1” if 1-4 years of schooling (ever enrolled); “2” if 5 years of schooling (Completed Primary education); “3” if 5-12 years of schooling (Middle and secondary); “4” if 12 years of schooling or more.

In order to test whether the Hindu-Muslim schooling gaps (discussed above) capture covariate differences between the two groups, we estimate two separate regression models using school enrollment and school completion as the dependent variable. The first model is estimated using probit regression and the second using the ordered probit technique.⁵ These regressions are estimated separately using the NSS 1983 and 2004 rounds. Apart from child age and gender, our regression specification controls for a range of family factors and parental characteristics such as family size and composition, education of father, mother and highest educated non-parent (and non-sibling) member, household expenditure, female headship, economic activity of the household head and rural location, among other features. Thus, we control for a range of family characteristics that one may expect will influence children’s enrollment and performance in school. In addition, we also include a Muslim dummy (alongside controls for the household being a Scheduled-caste (SC), Scheduled-tribe (ST) or member of some non-Hindu community),

⁵ Our choice of estimation technique is consistent with other studies on India (e.g. see Dreze and Kingdon, 2001).

leaving Hindu as the base category.⁶ As such, the coefficient on the Muslim dummy captures the part of the observed Muslim disadvantage (if any) in the data that is not explained by these variables (i.e., the child's gender, socioeconomic background and/or state of residence).

In order to further explore the role played by observed covariate differences, the raw Hindu-Muslim differences in schooling are decomposed using the familiar Oaxaca method. The decomposition technique first involves estimating separate schooling equations for the relevant groups. Mean differences in the explanatory variables between the comparing groups are then weighted to estimate education differentials. Following this approach, one can examine how much of the average schooling gap between, say, Hindu and Muslim children can be explained by differences in personal/family characteristics and how much remains unexplained by between group characteristics differences (i.e., the residual component). If the unexplained component is substantial, then one may argue that there is an advantage enjoyed by Hindu children as compared with Muslim children's education, which is not warranted by their otherwise favorable background characteristics relative to Muslim children.

Appendix Tables 1A, 1B, 2A and 2B report mean values of outcome variables, current enrolment and grade completion, and other control variables by survey year and religious groups. Appendix Tables 1B and 2B reproduce the summary statistics by further disaggregating the non-Muslim sample into Hindu, SC, ST and other religious groups. Looking at the household background variable, there is a considerable increase in adult literacy and household socioeconomic conditions between 1983 and 2004. This is not surprising given that India has seen a steady fall in poverty during the 1980s and 1990s (Datt and Ravallion, 2002). At the same time, there is a clear socioeconomic gap between Muslim and non-Muslim children. For instance, while family size is on the decline in India, Muslim children continue to come from larger households than Hindu children. Similarly, despite an increase in adult school completion rate, household head's schooling remained significantly higher among Hindu than Muslim households. In the next section, we investigate whether these observed differences in socioeconomic backgrounds of Hindu and Muslim children translate into schooling gaps.

⁶ This means that the base category also includes "other backward caste" (OBC). There is no consensus in the literature on whether to explicitly treat this category as a separate social group. Jenkins and Barr (2006) consider SC and ST as separate from other backward castes on the grounds that completion rates are much lower than for other groups. We have however repeated our analysis separating out this group from the base category and explicitly controlling for OBC membership. This did not significantly alter our main conclusions (results available upon request).

3. Results

3.1 Analysis of School Attendance and Completion Regressions

Table 2 reports Probit estimates for selected determinants of current enrolment for children aged 6-18. Results are reported separately for 1983 and 2004 samples. Detailed results are reported in Appendix Table 4. Model 1 only controls for Muslim, SC, ST and other religion dummies and state dummies, while Model 2 fully controls for child and household characteristics.

Muslim children in general have lower rates of enrollment than other groups within India after controlling for their state of residence in 2004 (Table 2, Model 1) as well as family background (Table 2, Model 2), and this difference occurs in a context of very high labor market returns to post-primary schooling.⁷ Thus, the fact that Muslim households are likely to be more credit-constrained (which remains a valid explanation for low completion) and include adults with lower education levels seems to influence the enrolment rates of Muslims. The relative importance of overall family background is confirmed by a simple F-test which always returns a highly significant F-statistic. However, we do not discuss influence of household-specific correlates. For the sake of brevity, our discussion below only focuses on the Hindu-Muslim gap.

Our analysis shows that the probability of enrollment is significantly lower amongst Muslims than amongst Hindu children in 1983. However, we note that while, in both years, Muslim enrollment was lower than SC enrollment, it was higher than ST enrollment. By 2004, however, the Muslim position had improved relative to both Hindu and ST groups. Thus, the coefficient on Muslim dummy is reduced from -0.12 to -0.04. Further controls for various aspects of socioeconomic characteristics of the child's family and the child's age and gender do not significantly alter the coefficient size between/within survey rounds.

⁷ Given the link between education and poverty, it is hardly surprising that these educational gaps are also mirrored in economic disparity between the corresponding social groups. Moreover, given that returns to education in India rise with levels of education (Dutta, 2006), any H-M educational gap will translate into further H-M gaps in labor market earnings. Indeed, Bhaumik and Chakrabarty (2009) demonstrate that equalizing educational access can reduce H-M wage gap by as much as 45 percent. Similar effects of education are also documented for other social groups in India. For instance, Gang, Sen and Yun (2008) find that differences in educational attainment explain about 25 percent of the poverty gap for both Scheduled Caste and Scheduled Tribe households in India. If true, targeted educational investments could serve as an important policy lever to reduce economic inequality among religious groups in India. Knowledge of such gaps is particularly important in the context of liberalization of Indian economy in the recent past and the rise in economic returns to schooling.

Table 2. Estimates of Social and Gender Gaps in Current Enrollment

	1983		2004	
	(1)	(2)	(1)	(2)
Female		- 0.278*** (0.0040)		- 0.080*** (0.0050)
Muslim	- 0.124*** -0.004	- 0.121*** (0.0050)	- 0.042*** -0.004	- 0.049*** (0.0060)
Other religion	0.131*** -0.007	0.074*** (0.0080)	0.01 -0.009	-0.013 (0.0120)
Scheduled tribe (Hindu)	- 0.261*** -0.005	- 0.127*** (0.0060)	- 0.037*** -0.007	- 0.096*** (0.0090)
Scheduled caste (Hindu)	- 0.158*** -0.004	- 0.033*** (0.0050)	- 0.018*** -0.004	- 0.015*** (0.0060)
N	141543	141543	104846	104846
Pseudo R2	0.034	0.28	0.00297	0.461
Mean predicted enrolment probability	0.4890	0.4890	0.5810	0.5810
Chi-square test	10433	54903	465.7	65761
F-Test: Family and child attributes		34529		40534
F-Test: state dummies		3422		785

Note: (a) The coefficient on the Muslim dummy in 1983 is significantly different from that coefficient in 2004 (Chi-sq= 91.63 and Prob> chi2 = 0.0000). (b) For full specification and further notes on the estimates presented, see Appendix Table 4.

Similar estimates of conditional social gaps in grade completion are presented in Table 3. Detailed results are reported in Appendix Table 5. For the sake of brevity, we only focus on the Hindu-Muslim gap. Results are reported separately for 1983 and 2004 samples. As before, model 1 only controls for Muslim, SC, ST and other religion dummies and state dummies while Model 2 includes a full set of child and household-specific controls. The Muslim disadvantage in school completion is clear in all the regressions presented in Table 3, both for 1983 and 2004. On the basis of the Model 1 estimate, the Muslim penalty remains unchanged between the two survey rounds. However, estimates corresponding to full controls (for various aspects of socioeconomic characteristics of the child's family and the child's age and gender) show a significant reduction in Muslim disadvantage: the coefficient on the Muslim dummy falls from -0.32 in 1983 to -0.22 in 2004. Once again, we find that while in 1983, the Muslims were better off than SC/ST groups, by 2004, their position improved more than that of ST groups but became worse than that of SC groups.

Table 3. Estimates of Social and Gender Gaps in School Completion

	1983		2004	
	(1)	(2)	(1)	(2)
Female	-	0.621***	-	0.214***
		-0.008		-0.008
Muslim	0.386***	0.325***	0.383***	0.225***
	-0.01	-0.011	-0.01	-0.011
Other religion	0.321***	0.117***	0.137***	-0.028
	-0.016	-0.017	-0.021	-0.021
Scheduled tribe (Hindu)	0.880***	0.418***	0.590***	0.280***
	-0.015	-0.016	-0.016	-0.017
Scheduled caste (Hindu)	0.563***	0.169***	0.332***	0.073***
	-0.01	-0.011	-0.01	-0.01
Observations	111325	111325	87540	87540
Pseudo_R2	0.048	0.209	0.0399	0.183
Chi-square test	14786	64323	10275	46993
F-Test: Family and child attributes		48169		35533
F-Test: state dummies		3981		4049

Note: (a) The coefficient on the Muslim dummy in 1983 is significantly different from that coefficient in 2004 (Chi-sq= 93.63 and Prob> chi2 = 0.0000). (b) For full specification and further notes on the estimates presented, see Appendix Table 5.

The results shown in Tables 2 and 3 together present a mixed story. It is clear that Muslim disadvantage with respect to enrollment and completion has decreased between 1983 and 2004. However, there has been much more progress in decreasing this disadvantage on the enrollment front (where the Muslim coefficient has decreased from -0.121 to -0.049) compared to completion (-0.325 to -0.225). Thus, there is persistence in the Hindu-Muslim gap in school completion over time. This is consistent with other recent studies on school participation in India that have used multi-round household datasets, albeit for a more recent time period (e.g. Bhalotra and Zamora, 2006). In addition, the observed relative gain in Muslim communities in terms of enrollment is independent of their socio-economic background. However, this is not the case in case of completion. Here the coefficient between 1983 and 2004 remains unchanged when we do not control for family characteristics. It is only when we control for these characteristics that the Hindu-Muslim gap in completion decreases in 2004. Thus, Muslim households that have socio-economic profiles similar to that of Hindu households indeed have experienced considerable gains in school completion, as shown in Table 3. However, for other Muslim households there

has been no improvement. Equally important is the fact that even for the group for which some improvement has been observed, the gain remains modest. Therefore, the overall Hindu-Muslim gap in schooling enrollment and completion that we observe today is largely independent of differences in family backgrounds between the two communities.

The finding that additional controls for the child's family and personal characteristics such as gender have limited or no power in explaining is at contrast with large and sizable influences factors such as the child's gender and family size exert in our regression models. These variables therefore influence enrolment and completion more generally, though they do not significantly influence the extent to which Muslim disadvantage in enrollment exists. In what follows, we will consider one of these variables in more detail. The coefficient on gender is systematically negatively signed. Indeed, the gender penalty in school completion in 1983 was double that of Muslim penalty (see Table 3, Model 2). Nonetheless, the gender disparity coefficient decreased to almost the same level as the Muslim coefficient. This reflects a much larger decrease in gender disparity in enrollments during this period, from -0.27 to -0.08 between 1983 and 2004. There was additionally a decrease from -0.62 to -0.21 in the female coefficient in the grade completion equations during this period.

The above finding of weakening of gender disadvantage on one hand and persistence of the Muslim penalty in school completion independent of the child's gender and socio-economic conditions undermines one possible reason for the Hindu-Muslim gap. Our findings so far indicate that the Muslim penalty cannot be explained with reference to a gender disparity in schooling. In fact, the gender disparity seems, if anything, to have improved over this period. This result seems to indicate that female children are not more disadvantaged in Muslim households than in others. In fact, it is likely that girls' schooling equally improved across both communities, thereby cancelling out any potential impact on Hindu-Muslim gap via the gender channel. Alternatively, gender disparity is an across-community phenomenon in India. In other words, the substantial residual Muslim penalty observed in 2004 data in Tables 2 and 3 is *not* owing to the possibility that Muslim households gender discriminate more (compared to Hindus); thus, on average, a Muslim child is less likely to complete grades. These possibilities are further explored in the next section.

3.2 Can the Gender Gap Explain the Hindu-Muslim Schooling Gap?

As shown earlier, much of the progress in schooling in the last two decades has been achieved by attracting more girls to schools. Despite this, a sizable gender disparity prevails in schooling in India even after holding differences in socioeconomic backgrounds and religious membership of the household constant. In this section, we assess whether the observed schooling gap between Hindu and Muslim communities could be explained away by differential treatment of girls across the two communities. We first examine the size of Muslim penalty within gender group before looking at the extent of gender inequality within Muslim and Hindu households.

Table 4. Estimates of Social Gaps in Attendance by Gender, Children Aged 6-18

	1983		2004	
	Boys	Girls	Boys	Girls
Religion: Muslim	-0.121*** (0.0060)	-0.109*** (0.0060)	-0.059*** (0.0080)	-0.040*** (0.0080)
Religion: Other	0.038*** (0.0110)	0.118*** (0.0120)	-0.019 (0.0170)	-0.005 (0.0180)
Religion: Scheduled tribe	-0.134*** (0.0080)	-0.110*** (0.0090)	-0.089*** (0.0120)	-0.105*** (0.0130)
Religion: Scheduled caste	-0.019*** (0.0060)	-0.053*** (0.0070)	-0.007 (0.0080)	-0.024*** (0.0080)
N	74568	66975	55403	49443
Pseudo R ²	0.211	0.351	0.48	0.444
Chi-square test	35922	30073	35924	30076
F-Test: Family and child attributes	14955	17096	21962	18571
F-Test: state dummies	934	3338	420	469

Estimates of the Hindu-Muslim enrolment gap by gender are reported in Table 4. Detailed results are reported in Appendix Table 6. Irrespective of gender, children from Muslim and lower-caste households are disadvantaged in 1983, holding differences in family background and state of residence constant. This is particularly true for Muslims and ST members. By 2004, the extent of disadvantage is significantly reduced. Looking across gender groups, the Muslim penalty is larger for boys. The evidence of a smaller Muslim penalty in the female sample is not so surprising given that girls across all communities in India lag behind boys.

Table 5. Estimates of Social Gaps in Grade Completion by Gender, Children Aged 10-21

	1983		2004	
	Boys	Girls	Boys	Girls
Religion: Muslim	-0.371*** (0.0150)	-0.274*** (0.0170)	-0.257*** (0.0150)	-0.200*** (0.0160)
Religion: Other	0.040* (0.0230)	0.215*** (0.0250)	-0.02 (0.0300)	-0.033 (0.0310)
Religion: Scheduled tribe	-0.429*** (0.0200)	-0.428*** (0.0270)	-0.261*** (0.0230)	-0.320*** (0.0250)
Religion: Scheduled caste	-0.135*** (0.0140)	-0.247*** (0.0180)	-0.057*** (0.0140)	-0.097*** (0.0150)
N	59580	51745	46569	40971
Pseudo R ²	0.16	0.269	0.183	0.194
Chi-square test	27003	36300	24470	23819
Join test of significance: Family & child attributes	21465	24480	19211	17100
Joint test of significance: State dummies	1301	3632	1648	2631

Similar estimates of Hindu-Muslim completion gaps by gender are reported in Table 5. Detailed results are reported in Appendix Table 7. Once again, irrespective of gender, children are disadvantaged in Muslim and lower-caste households in 1983, holding differences in family background and state of residence constant. This is particularly true for Muslims and ST members. While this penalty decreased between 1983 and 2004, it remains very large. When compared to boys, the Muslim penalty is smaller in the girl sample both in 1983 and 2004. However, the Muslim penalty has been reduced by 45 percent (25 percent) for boys (girls) between 1983 and 2004.

On the basis of these results, it can be concluded that Muslim disadvantage in India is an across-gender phenomenon. Therefore, it is necessary to consider how girls' schooling within Muslim households compares with that of boys.

Table 6. Estimates of Social Gaps in Grade Enrollment by Gender, Children Aged 6-18

	1983		2004	
	MUSLIM	HINDU (no SC, ST or OR)	MUSLIM	HINDU (no SC, ST or OR)
Female	-0.222*** (0.009)	-0.281*** (0.005)	-0.048*** (0.011)	-0.083*** (0.007)
Pseudo_R2	0.258	0.273	0.395	0.515
Chi-square test	4088	21038	6389	24410
F-Test: Family and child attributes	976.5	1664	183.9	465.8
F-Test: state dummies	6949	32267	9940	41408
N	19719	85548	18279	59466

Note: (a) Underlying detailed regression models for Hindu and Muslim samples are not reported but are available from the authors upon request. (b) Standard errors in parenthesis.

Table 7. Estimates of Gender Gaps in Grade Completion by Gender, Children Aged 10-21

	1983		2004	
	MUSLIM	HINDU (excludes SC, ST or OR)	MUSLIM	HINDU (excludes SC, ST or OR)
Female	-0.480*** -0.021	-0.630*** -0.01	-0.131*** -0.02	-0.212*** -0.011
N	15131	68365	14995	50642
Chi-square test	7423	38441	7758	27830
F-Test: Family and child attributes	4608	30135	4735	22515
F-Test: state dummies	1344	1914	1193	1651
Pseudo_R2	0.184	0.199	0.175	0.191

Note: (a) Underlying detailed regression models for Hindu and Muslim samples are not reported but are available from the authors upon request. (b) Standard errors in parenthesis.

Estimates of Hindu-Muslim enrollment and completion gaps by gender are reported in Table 6 and Table 7, respectively. Interestingly enough, the gender penalty is always smaller in Muslim households compared to Hindu households. This is true irrespective of whether we look at current enrolment (Table 6) or school completion (Table 7). This suggests that relatively greater disadvantage of females in Muslim communities is unlikely to drive the overall Hindu-Muslim gap in school enrollment and completion in India. We explore this point further in the following section.

3.3 Decomposition Results

Our analysis so far has focused on Hindu-Muslim gaps conditional on differences in observed characteristics. The size of the gaps suggests that they cannot be explained by differences in socio-economic conditions of the two communities. They cannot be explained by variation in the

gender disparity across the religious groups. Thus, our results for gender groups imply that a significant Muslim disadvantage exists in India among gender groups independent of family background differences. This point is further analyzed in this section, where we decompose the Hindu-Muslim schooling gap in raw data into explained and unexplained (in terms of family background and child characteristics) components.

The decomposition exercise is based on the familiar Oaxaca technique, which assumes that underlying regression models are linear. Since the outcome variables are probabilities, the decomposition analysis should ideally be based on non-linear models. To this end, we follow Fairlie (2005), who has amended the Oaxaca method for non-linear models such as probit regression. For completion gaps, however, OLS models are estimated and the Oaxaca technique is applied assuming linearity. Decomposition results are reported in Table 8. For comparison purposes, we report the results for both religion and gender gaps.

Table 8. Decomposition of Hindu-Muslim and Gender Schooling Gaps

H-M	Enrollment gaps		Completion gaps	
	1983	2004	1983	2004
Mean prediction: Hindu	0.54	0.59	1.642	2.281
Mean prediction: Muslim	0.43	0.55	1.21	1.908
Raw differential: Hindu-Muslim	0.11	0.04	0.433	0.372
Total unexplained	0.10	0.03	0.319	0.199
(% unexplained)	(90.91)	(75)	(73.7)	(53.4)
Total explained	0.01	0.01	0.114	0.173
(% explained)	(9.09)	(25)	(26.3)	(46.6)
<hr/>				
B-G	1983	2004	1983	2004
Mean prediction: Boy	0.60	0.59	1.789	2.258
Mean prediction: Girl	0.43	0.57	1.308	2.127
Raw differential: Boy-Girl	0.18	0.03	0.482	0.13
Total unexplained	0.21	0.04	0.505	0.146
(% unexplained)	(116.67)	(133.33)	(104.9)	(111.6)
Total explained	-0.03	-0.01	-0.024	-0.015
(% explained)	(-16.67)	(-33.33)	(-4.9)	(-11.6)

Note: (a) Results based on 11 major states. (b) Regression specifications control for state dummies and household and child characteristics. (c) Enrolment gap estimates are based on Probit models whilst completion gap estimates are based on OLS. (d) Estimation sample for 1983 contains 105,013 observations (children aged 6-18 years) where 18 percent are Muslims and 52 percent are males. Estimation sample for 2004 contains 77,529 observations where 23 percent are Muslims and 52 percent are males. (e) Majority (i.e. Hindu in case of Hindu-Muslim gaps and boys in case of Boy-Girl gaps) coefficient vector is used as weights.⁸

⁸ The estimated value of the unexplained portion of Hindu-Muslim schooling differentials may depend on choice of weights, i.e., whether the coefficient vector is assumed to correspond to the Hindu or Muslim schooling structure or

The Oaxaca decomposition estimates reveal that explained variation in enrollment gaps increased between 1983 and 2004 from a mere 9 percent to a sizable 25 percent. The explained variation in the completion gap registered an even greater increase of 20 percentage points between 1983 and 2004. This was reflected in the Hindu-Muslim disadvantage coefficients in Tables 2 and 3, which indicated that there was an imperceptible improvement in the coefficient of enrollment between Models 1 and 2 in both 1983 and 2004. However, for grade completion, there is a substantial improvement in the Hindu-Muslim gap when we allow for socio-economic characteristics across these groups. Nonetheless, 75 percent of the enrolment gap and 53 percent of the completion gap remain unexplained by our covariates in 2004.

The unexplained variation may reflect unobserved factors which could not be directly captured in our covariate vector. Location-specific factors such as variation in public provision of schools and other infrastructure in Muslim communities could explain the remaining gap. In other words, the high percentage share of unexplained component in the Hindu-Muslim schooling gap implies that educational participation of Muslim children is likely to be constrained by factors such as supply of formal schools that are outside the influence of Muslim communities.

One could also attribute the residual gap to community-specific unobserved factors such as a preference among Muslims for Islamic education. Unobserved factors may include parental taste for educational investment. Hindu households may have greater preference for such investment, independent of their socio-economic status. This point is difficult to verify using available data. Besides, since the unexplained component is estimated as a residual, it is subject to measurement error problems in the data. But one way to approach the question is to think of a group for whom both communities historically have shown less preference for educational investment. One such demographic group is female.

It may be noted that the characteristics vector used to decompose Hindu-Muslim gaps includes not only family background variables, but also the child's gender. Decomposition estimates in the bottom panel of Table 8 confirm that gender disadvantage in enrollment and completion is primarily unexplained by background variables and hence suggestive of within-household discrimination. Therefore, if the unexplained part of the Hindu-Muslim gap is owing

some weighted function of the two. We experimented with different weights but our conclusions remained unchanged by the choice of alternative weights.

to preferences of Muslim households, it should be smaller in case of boys than girls. Table 9 reports decomposition estimates of Hindu-Muslim gaps separately for the samples of boys and girls.

Table 9. Decomposition of Hindu-Muslim Enrolment and Completion Gaps by Gender

	Enrollment gaps		Completion gaps	
	1983	2004	1983	2004
Boys				
Mean prediction: Hindu	0.63	0.60	1.88	2.35
Mean prediction: Muslim	0.50	0.57	1.38	1.95
Raw differential: Hindu-Muslim	0.13	0.03	0.50	0.40
Total unexplained	0.07	0.01	0.37	0.25
(% unexplained)	(56%)	(25%)	(74.6%)	(74.3%)
Total explained	0.06	0.02	0.12	0.08
(% explained)	(44 %)	(75 %)	(25.4%)	(25.7%)
Girls	1983	2004	1983	2004
Mean prediction: Hindu	0.44	0.57	1.37	2.20
Mean prediction: Muslim	0.35	0.53	1.02	1.86
Raw differential: Hindu-Muslim	0.09	0.04	0.35	0.34
Total unexplained	0.08	0.01	0.21	0.18
(% unexplained)	(85%)	(27%)	(54.5 %)	(53.2 %)
Total explained	0.01	0.03	0.18	0.16
(% explained)	(15 %)	(63 %)	(25.5 %)	(46.8 %)

Note: (a) Results based on 11 major states. (b) Regression specifications control for state dummies and household and child characteristics. (c) Enrollment gap estimates are based on Probit models while completion gap estimates are based on OLS. (d) Majority (i.e., Hindu excluding SC and ST) coefficient vector is used as weights.

In all cases (except enrollment in 2004), the Hindu-Muslim gap in boys sample remains mostly unexplained by characteristics and background differences. Similarly, more than 50 percent of the raw Hindu-Muslim schooling gap among girls cannot be explained by characteristics and background differences (except enrollment in 2004). More importantly, in the case of completion, the unexplained component of the Hindu-Muslim gap is always a larger percentage for boys than girls. This is surprising because, if discrimination is part of the unexplained component, then we would expect it to be greater for girls (for whom gender discrimination also exists) than for boys. The fact that this unexplained component is larger for boys indicates that, at least in explaining the Hindu-Muslim gap, gender discrimination is not an important issue. This finding therefore is inconsistent with the hypothesis that Muslim

households have a lower preference for human capital investment, independent of their socio-economic status.

4. Conclusion

For a multi-ethnic country like India with less than universal coverage of education, an important MDG challenge is that of closing school participation gaps across gender and social groups. We analyze schooling differences across groups of India's children, distinguished by religion, sex, and caste, with a focus on India's two largest religious groups, namely Hindu and Muslim. We also examined the role of gender as a possible explanation of the Hindu-Muslim schooling gaps in India, as female education in South Asia is still lagging far behind and needs special targeting. In this context, the interplay of two familiar social gaps—gender and religion—is topic of interest to researchers (particularly for those with an interest in Muslim communities in India). Muslim households have a preference for larger family size so that on average, girls from Muslim families are likely to be raised in larger, more resource-constrained families. Irrespective of religious membership of the household, girls may be additionally disadvantaged because of gender discrimination in intra-household resource allocations. These two processes together can drive a wedge between educational outcomes of Muslims and non-Muslim children in India.

Our analysis reveals that schooling of Muslim children has shown considerable improvement over the past two decades. Despite this, it remains significantly lower than that of Hindu children. Our analysis of household schooling decisions spanning the period of 1983-2004 reveals two things. First, there has been significant decline in the Hindu-Muslim gap in school participation, although a significant gap still persists in school completion over time. Second, the latter finding of a persistent Muslim penalty in completion is independent of socio-economic background differences. This is despite the fact that family and child-specific attributes together exercise significant influence on children's schooling decisions in Hindu as well as Muslim communities.

When compared to Hindus, the schooling of children from other socially disadvantaged groups such as SC and ST members continues to be low despite a similar improvement over the past two decades. However, the changes in the educational patterns across the various religious communities suggest that the SC and ST have reaped the advantages of various affirmative action programs supporting their educational progress. As a matter of fact, the relative penalty

experienced by SC children today is smaller than that experienced by Muslims. This pattern is more pronounced in school participation than completion. Within this overall pattern, we find a significant boy-girl disparity. Education outcomes for the majority of girls continue to be low, although there is a definite reduction for all religious and caste groups between the two rounds of NSS.

We test to what extent observed Hindu-Muslim schooling gap can be explained by differences in family background and differential treatment of girls across the two communities. Our analysis shows that there has been a significant decline in the educational gender gap in India between 1983 and 2004. The gender (Muslim) penalty (net of state and family influence) has been reduced by 71 percent (59 percent) in school enrollment. Similarly, the gender penalty (net of state and family influence) has been reduced by 67 percent in school completion. However, in contrast to changes in the gender gap, the Muslim penalty (conditional on state of residence) in school completion has remained unchanged between 1983 and 2004. The persistence of Muslim disadvantage in completion is significant even after netting out differences in socio-economic and demographic correlates of schooling: the conditional estimate of Muslim penalty is reduced by only 34 percent between 1983 and 2004. We find that this disadvantage cannot be solely explained away in terms of Muslim girls. The within-household gender penalty is smaller in Muslim (relative to Hindu) communities, even after controlling for in socio-economic backgrounds. Moreover, the Muslim penalty (conditional on socio-economic differences) is smaller in the case of females than males. This suggests that low schooling of Muslims in India is not an artifact of poor treatment of women in Muslim communities, as is often suggested in the international literature.⁹

Overall, we find that observed family backgrounds and gender of the child remain strong predictors of school participation and attainment in India. Nonetheless, these factors together do not fully explain the Muslim disadvantage in school participation and completion. Standard

⁹ Available evidence using data from other countries with large Muslim population is not conclusive of a systematic female disadvantage in school participation (see Hajj and Panizza, 2008). More importantly, in some countries where a gender gap existed, it was possible to reverse the gap in school participation and completion. One example is Bangladesh—a South Asian country with a large Muslim population in South Asia which had a very low level of female school participation two decades earlier (Asadullah and Chaudhury, 2009). Using a nationwide gender-targeted conditional cash transfer program, it was possible to reverse the gender gap in secondary schooling within only five years of the program's introduction of the program. Such international experience provides important lesson for education debate in India. This suggests that even when female disadvantage is explained by community-specific norms, households can be induced to send girls to schools irrespective of their community membership with proper policy interventions.

decomposition analysis of the schooling gaps show that Hindu-Muslim gaps cannot be explained by covariate differences across the two communities: 25-45 percent of the raw gap remains unexplained by differences in socio-economic background of the two communities. The residual gap is likely to be explained by a confluence of factors such as differences in preference and differential availability of public goods across the two communities, among other considerations.

Therefore, more research is needed to understand the origin of India's persistent Hindu-Muslim gap in educational attainment looking beyond observed socio-economic characteristics. Subsequent findings may have wider implications in light of socio-economic gaps across ethnic and religious communities in other countries.

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Appendix Table 1A. Summary Statistics of Regression variables (children aged 6-18 yrs)

	1983						2004					
	Non-Muslim		Muslim		ttest		Non-Muslim		Muslim		ttest	
	mean	sd	mean	sd	t	p value	mean	sd	mean	sd	t	p value
attendingschool_618	0.500	0.500	0.426	0.494	19.251	0.000	0.587	0.492	0.553	0.497	17.593	0.000
Age7	0.086	0.280	0.083	0.275	1.358	0.174	0.078	0.268	0.077	0.267	1.422	0.155
Age8	0.099	0.298	0.107	0.309	-3.466	0.001	0.092	0.288	0.093	0.290	-2.496	0.013
Age9	0.068	0.252	0.067	0.251	0.461	0.645	0.064	0.244	0.064	0.244	0.627	0.531
Age10	0.109	0.312	0.112	0.315	-1.303	0.193	0.098	0.297	0.097	0.296	-0.192	0.848
Age11	0.060	0.238	0.056	0.230	2.267	0.023	0.058	0.234	0.058	0.233	1.819	0.069
Age12	0.102	0.303	0.108	0.310	-2.318	0.021	0.096	0.295	0.100	0.300	-2.616	0.009
Age13	0.063	0.243	0.058	0.234	2.576	0.010	0.070	0.254	0.065	0.246	3.161	0.002
age14	0.069	0.253	0.072	0.258	-1.409	0.159	0.077	0.267	0.080	0.271	-2.266	0.024
age15	0.069	0.253	0.063	0.242	3.211	0.001	0.073	0.260	0.074	0.262	1.687	0.092
age16	0.065	0.247	0.064	0.246	0.346	0.729	0.070	0.256	0.073	0.260	-0.803	0.422
age17	0.045	0.207	0.040	0.195	3.153	0.002	0.056	0.230	0.056	0.229	1.689	0.091
age18	0.075	0.264	0.075	0.263	0.156	0.876	0.086	0.281	0.084	0.278	0.208	0.835
female	0.472	0.499	0.483	0.500	-2.897	0.004	0.470	0.499	0.481	0.500	-3.9	0.000
hhheadedu	3.477	4.390	2.876	3.902	18.112	0.000	5.031	5.315	3.788	4.473	30.421	0.000
hhspouseedu	1.411	3.028	1.012	2.457	17.611	0.000	2.417	4.094	1.822	3.278	22.19	0.000
logpce	9.247	0.571	9.188	0.555	13.594	0.000	8.081	0.553	8.149	0.522	16.769	0.000
femalehead	0.077	0.266	0.095	0.293	-8.601	0.000	0.088	0.283	0.123	0.328	-17.215	0.000
highesteducadul	2.623	3.033	2.312	2.582	13.609	0.000	4.209	3.415	3.878	2.777	12.055	0.000
ruralresident	0.686	0.464	0.482	0.500	56.674	0.000	0.685	0.465	0.539	0.499	67.292	0.000
farmhh	0.335	0.472	0.169	0.375	47.121	0.000	0.264	0.441	0.147	0.354	58.94	0.000
agriclabhh	0.191	0.393	0.122	0.327	23.331	0.000	0.114	0.318	0.084	0.277	27.732	0.000
schtribe	0.083	0.276					0.070	0.256				
schcaste	0.174	0.379					0.218	0.413				
loghhsze	1.866	0.380	1.977	0.376	-37.978	0.000	1.779	0.394	1.907	0.385	-52.374	0.000
otherreligion	0.048	0.214	0.000	0.000	31.646	0.000	0.039	0.193	0.000	0.000	41.957	0.000
own_land	0.458	0.498	0.256	0.437	53.664	0.000	0.489	0.500	0.296	0.456	71.331	0.000
propfemaleunder5	0.044	0.081	0.057	0.088	-20.902	0.000	0.037	0.078	0.050	0.085	-27.003	0.000
propmaleunder5	0.046	0.080	0.057	0.085	-18.806	0.000	0.040	0.078	0.052	0.087	-25.748	0.000
propfemale616	0.187	0.149	0.197	0.145	-8.867	0.000	0.185	0.156	0.201	0.154	-15.007	0.000
propmale616	0.208	0.154	0.210	0.147	-1.763	0.078	0.205	0.158	0.216	0.157	-6.796	0.000
propfemale50more	0.046	0.079	0.039	0.072	10.7	0.000	0.045	0.078	0.037	0.069	17.148	0.000
propmale50more	0.054	0.082	0.047	0.073	10.484	0.000	0.046	0.080	0.041	0.070	13.815	0.000
N	121,824		19,719				86,567		18,279			

Appendix Table 1B. Summary Statistics of Regression Variables (Children Aged 6-18 yrs), by Religion-Caste

	1983										2004									
	Muslim		Hindu (noSCnoST)		SC		ST		OR		Muslim		Hindu (noSCnoST)		SC		ST		OR	
	mean	sd	mean	sd	mean	sd	Mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd
attendingschool_618	0.427	0.495	0.541	0.498	0.377	0.485	0.266	0.442	0.707	0.455	0.552	0.497	0.591	0.492	0.581	0.493	0.561	0.496	0.581	0.493
female	0.483	0.500	0.473	0.499	0.463	0.499	0.475	0.499	0.481	0.500	0.479	0.500	0.470	0.499	0.471	0.499	0.468	0.499	0.469	0.499
muslim	1.000	0.000	0.000	0.000	0.008	0.088	0.009	0.097	0.000	0.000	1.000	0.000	0.000	0.000	0.009	0.093	0.010	0.098	0.000	0.000
hhheadedu	2.889	3.907	4.015	4.571	1.780	3.179	1.271	2.807	5.256	4.601	3.786	4.463	5.608	5.417	3.414	4.551	2.894	4.423	7.224	5.654
hhspouseedu	1.013	2.453	1.661	3.237	0.439	1.628	0.253	1.353	3.129	3.982	1.823	3.276	2.755	4.293	1.251	2.833	0.942	2.627	5.279	5.477
hhspouseedu_miss	0.144	0.351	0.140	0.347	0.145	0.352	0.120	0.325	0.142	0.349	0.152	0.359	0.128	0.334	0.135	0.342	0.116	0.320	0.141	0.348
logpcce	9.189	0.556	9.319	0.560	9.044	0.525	8.932	0.509	9.439	0.620	8.150	0.521	8.147	0.558	7.902	0.476	7.868	0.488	8.254	0.627
femalehead	0.095	0.293	0.077	0.267	0.078	0.268	0.054	0.225	0.102	0.302	0.122	0.328	0.085	0.279	0.096	0.295	0.078	0.268	0.106	0.308
highesteducadult	2.321	2.593	2.858	3.225	1.948	2.241	1.640	1.917	3.176	3.337	3.878	2.770	4.491	3.640	3.502	2.527	3.217	2.524	4.756	3.883
highesteducadult_miss	0.540	0.498	0.504	0.500	0.548	0.498	0.523	0.500	0.601	0.490	0.625	0.484	0.565	0.496	0.631	0.483	0.598	0.490	0.629	0.483
ruralresident	0.481	0.500	0.656	0.475	0.755	0.430	0.888	0.316	0.537	0.499	0.538	0.499	0.670	0.470	0.717	0.451	0.822	0.383	0.533	0.499
farmhh	0.169	0.375	0.369	0.482	0.192	0.394	0.455	0.498	0.160	0.367	0.147	0.354	0.298	0.457	0.161	0.367	0.311	0.463	0.129	0.335
agriclabhh	0.122	0.328	0.128	0.335	0.392	0.488	0.309	0.462	0.186	0.389	0.084	0.277	0.078	0.269	0.199	0.399	0.212	0.409	0.109	0.311
schtribe	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.088	0.283	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.050	0.217
schcaste	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.070	0.255	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.301	0.459
loghhsze	1.977	0.376	1.880	0.385	1.826	0.368	1.847	0.378	1.840	0.344	1.908	0.384	1.785	0.408	1.783	0.359	1.799	0.369	1.640	0.341
otherreligion	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000
own_land	0.256	0.437	0.487	0.500	0.298	0.458	0.639	0.480	0.299	0.458	0.295	0.456	0.524	0.499	0.361	0.480	0.622	0.485	0.313	0.464
propfemaleunder5	0.057	0.088	0.043	0.079	0.049	0.085	0.050	0.084	0.036	0.077	0.050	0.085	0.035	0.075	0.045	0.087	0.046	0.084	0.026	0.069
propmaleunder5	0.057	0.085	0.045	0.078	0.052	0.085	0.051	0.084	0.035	0.073	0.052	0.087	0.038	0.076	0.045	0.084	0.052	0.088	0.028	0.070
propfemale616	0.198	0.145	0.187	0.149	0.184	0.147	0.190	0.152	0.192	0.152	0.200	0.154	0.183	0.156	0.194	0.156	0.183	0.149	0.175	0.159
propmale616	0.211	0.147	0.208	0.154	0.211	0.154	0.209	0.154	0.207	0.157	0.216	0.157	0.202	0.157	0.213	0.158	0.216	0.160	0.198	0.164
propfemale50more	0.039	0.072	0.047	0.078	0.042	0.079	0.042	0.079	0.045	0.080	0.037	0.069	0.047	0.079	0.039	0.075	0.038	0.074	0.054	0.088
propmale50more	0.047	0.073	0.055	0.082	0.053	0.085	0.048	0.080	0.051	0.081	0.041	0.070	0.048	0.080	0.041	0.077	0.039	0.074	0.047	0.087
Andhra_Pradesh	0.065	0.246	0.097	0.297	0.077	0.266	0.050	0.218	0.069	0.253	0.062	0.242	0.095	0.294	0.074	0.261	0.084	0.277	0.058	0.233
West_Bengal	0.127	0.333	0.077	0.267	0.146	0.353	0.058	0.234	0.024	0.154	0.176	0.381	0.062	0.242	0.133	0.340	0.070	0.255	0.040	0.196
Uttar_Pradesh	0.255	0.436	0.176	0.381	0.217	0.412	0.033	0.179	0.037	0.188	0.269	0.443	0.210	0.408	0.244	0.429	0.017	0.130	0.044	0.206
Tamil_Nadu	0.052	0.223	0.086	0.280	0.080	0.272	0.011	0.106	0.130	0.337	0.027	0.161	0.082	0.274	0.083	0.276	0.004	0.062	0.126	0.332
Rajasthan	0.051	0.220	0.067	0.249	0.076	0.266	0.081	0.273	0.047	0.211	0.048	0.214	0.083	0.276	0.101	0.302	0.175	0.380	0.063	0.243
Maharashtra	0.100	0.301	0.113	0.316	0.062	0.242	0.150	0.357	0.251	0.434	0.095	0.294	0.123	0.328	0.066	0.249	0.169	0.375	0.299	0.458
Madhya_Pradesh	0.037	0.190	0.093	0.291	0.092	0.290	0.347	0.476	0.065	0.247	0.053	0.225	0.091	0.287	0.089	0.285	0.268	0.443	0.044	0.205
Kerala	0.087	0.282	0.039	0.194	0.032	0.175	0.006	0.075	0.249	0.433	0.096	0.295	0.034	0.181	0.026	0.161	0.006	0.078	0.247	0.431
Karnataka	0.068	0.252	0.069	0.253	0.055	0.228	0.042	0.200	0.049	0.215	0.053	0.224	0.058	0.234	0.058	0.234	0.064	0.245	0.037	0.189
Gujarat	0.038	0.191	0.062	0.241	0.045	0.207	0.101	0.301	0.027	0.163	0.035	0.183	0.057	0.232	0.028	0.164	0.132	0.339	0.033	0.179
Bihar	0.118	0.323	0.122	0.327	0.117	0.322	0.121	0.326	0.052	0.222	0.084	0.277	0.105	0.306	0.097	0.295	0.010	0.097	0.009	0.096
N	19,465		85,548		20,968		9,674		5,888		18,063		59,466		18,003		5,975		3,333	

Source: Authors' calculation based on NSS data for 11 major states.

Appendix Table 2A. Summary Statistics of Regression Variables (Children Aged 10-21 years)

	1983						2004					
	Non Muslim		Muslim		ttest		Non Muslim		Muslim		ttest	
	mean	sd	mean	sd	t	p value	mean	sd	Mean	sd	t	p value
attainment	1.489	1.347	1.208	1.269	24.054	0.000	2.177	1.104	1.908	1.130	27.041	0.000
Age	14.682	3.389	14.566	3.369	3.926	0.000	15.051	3.398	14.940	3.335	3.659	0.000
female	0.463	0.499	0.478	0.500	-3.436	0.001	0.465	0.499	0.481	0.500	-3.577	0.000
muslim	0.000	0.000	1.000	0.000			0.000	0.000	1.000	0.000		
hhheadedu	3.522	4.398	2.880	3.882	16.949	0.000	5.127	5.355	3.946	4.525	25.195	0.000
hhspouseedu	1.405	2.995	0.986	2.428	16.385	0.000	2.402	4.058	1.855	3.273	15.498	0.000
hhspouseedu_miss	0.156	0.363	0.156	0.363	-0.038	0.970	0.141	0.348	0.159	0.366	-5.799	0.000
logpcce	9.294	0.573	9.224	0.556	13.885	0.000	8.124	0.558	8.195	0.523	-14.417	0.000
femalehead	0.084	0.277	0.096	0.295	-5.046	0.000	0.095	0.294	0.126	0.332	-11.313	0.000
highesteducadult	2.798	3.290	2.441	2.861	12.632	0.000	4.339	3.563	4.018	2.983	10.295	0.000
highesteducadult_miss	0.464	0.499	0.484	0.500	-4.431	0.000	0.556	0.497	0.593	0.491	-8.311	0.000
ruralresident	0.664	0.472	0.462	0.499	48.501	0.000	0.669	0.471	0.517	0.500	35.577	0.000
farmhh	0.332	0.471	0.168	0.374	40.752	0.000	0.265	0.441	0.149	0.356	30.174	0.000
agriclabhh	0.178	0.383	0.115	0.319	19.327	0.000	0.108	0.310	0.077	0.267	11.329	0.000
schtribe	0.078	0.267					0.066	0.248				
schcaste	0.167	0.373					0.211	0.408				
loghhsze	1.871	0.391	1.988	0.390	-34.203	0.000	1.758	0.400	1.901	0.390	-40.019	0.000
otherreligion	0.053	0.224	0.000	0.000	29.03	0.000	0.040	0.196	0.000	0.000	24.996	0.000
own_land	0.458	0.498	0.258	0.437	46.691	0.000	0.491	0.500	0.304	0.460	42.457	0.000
propfemaleunder5	0.036	0.071	0.048	0.081	-19.582	0.000	0.027	0.065	0.036	0.071	-15.617	0.000
propmaleunder5	0.037	0.070	0.047	0.075	-16.564	0.000	0.029	0.066	0.040	0.074	-17.462	0.000
propfemale616	0.170	0.148	0.184	0.145	-10.746	0.000	0.156	0.155	0.181	0.153	-17.613	0.000
propmale616	0.191	0.154	0.196	0.148	-3.905	0.000	0.178	0.160	0.192	0.159	-10.026	0.000
propfemale50more	0.052	0.085	0.045	0.078	9.146	0.000	0.049	0.085	0.041	0.075	10.242	0.000
propmale50more	0.066	0.089	0.058	0.079	11.338	0.000	0.059	0.091	0.053	0.079	7.407	0.000
N	96,194		15,131				72,545		14,995			

Source: Authors' calculation based on NSS data for 11 major states.

Appendix Table 2B. Summary Statistics of Regression Variables (Children Aged 10-21 Years), by Religion-Race

	1983										2004									
	Muslim		Hindu (noSCnoST)		SC	ST		OR		Muslim	Hindu (noSCnoST)		SC	ST		OR				
	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd		
attainment	1.210	1.267	1.642	1.338	0.981	1.227	0.640	1.043	2.193	1.212	1.908	1.130	2.281	1.072	1.890	1.119	1.681	1.163	2.575	0.963
Age	14.564	3.368	14.732	3.387	14.487	3.395	14.448	3.370	14.960	3.387	14.943	3.335	15.107	3.398	14.875	3.391	14.921	3.398	15.139	3.395
female	0.478	0.500	0.464	0.499	0.449	0.497	0.472	0.499	0.477	0.500	0.480	0.500	0.467	0.499	0.460	0.498	0.462	0.499	0.467	0.499
muslim	1.000	0.000	0.000	0.000	0.008	0.089	0.010	0.099	0.000	0.000	1.000	0.000	0.000	0.000	0.009	0.093	0.010	0.097	0.000	0.000
hhheadedu	2.887	3.884	4.040	4.565	1.733	3.146	1.256	2.770	5.258	4.600	3.945	4.514	5.695	5.445	3.433	4.581	2.945	4.487	7.113	5.683
hhspouseedu	0.984	2.418	1.635	3.185	0.416	1.565	0.231	1.279	3.030	3.936	1.856	3.271	2.729	4.246	1.223	2.793	0.930	2.638	4.920	5.384
hhspouseedu_miss	0.156	0.363	0.155	0.362	0.164	0.371	0.133	0.339	0.172	0.377	0.159	0.365	0.138	0.345	0.149	0.356	0.139	0.346	0.158	0.365
logpce	9.226	0.557	9.361	0.561	9.084	0.526	8.968	0.516	9.489	0.622	8.196	0.523	8.185	0.563	7.948	0.483	7.907	0.498	8.281	0.624
femalehead	0.097	0.295	0.084	0.277	0.084	0.278	0.058	0.233	0.121	0.326	0.126	0.331	0.091	0.288	0.104	0.305	0.093	0.291	0.123	0.328
highesteducadult	2.452	2.873	3.051	3.463	2.021	2.518	1.599	2.093	3.448	3.563	4.018	2.976	4.629	3.773	3.608	2.726	3.249	2.818	4.674	3.697
highesteducadult_miss	0.483	0.500	0.455	0.498	0.478	0.500	0.447	0.497	0.575	0.494	0.593	0.491	0.543	0.498	0.591	0.492	0.546	0.498	0.635	0.482
ruralresident	0.462	0.499	0.635	0.481	0.739	0.439	0.877	0.328	0.520	0.500	0.515	0.500	0.656	0.475	0.699	0.459	0.803	0.398	0.535	0.499
farmhh	0.168	0.374	0.362	0.481	0.196	0.397	0.458	0.498	0.163	0.370	0.148	0.355	0.298	0.457	0.162	0.368	0.306	0.461	0.130	0.337
agriclabhh	0.115	0.319	0.120	0.324	0.378	0.485	0.300	0.458	0.171	0.376	0.077	0.266	0.074	0.262	0.191	0.393	0.211	0.408	0.113	0.316
schtribe	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.082	0.274	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.047	0.212
schcaste	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.069	0.253	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.319	0.466
loghhsze	1.989	0.390	1.883	0.394	1.835	0.384	1.857	0.390	1.837	0.353	1.902	0.390	1.761	0.412	1.769	0.370	1.779	0.383	1.626	0.346
otherreligion	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000
own_land	0.258	0.438	0.484	0.500	0.307	0.461	0.650	0.477	0.297	0.457	0.301	0.459	0.526	0.499	0.366	0.482	0.614	0.487	0.317	0.465
propfemaleunder5	0.048	0.081	0.035	0.070	0.040	0.075	0.041	0.075	0.027	0.066	0.036	0.071	0.026	0.062	0.032	0.071	0.033	0.071	0.017	0.057
propmaleunder5	0.047	0.075	0.036	0.069	0.042	0.076	0.042	0.074	0.025	0.062	0.040	0.074	0.028	0.064	0.032	0.070	0.038	0.075	0.016	0.053
propfemale616	0.184	0.145	0.170	0.148	0.170	0.147	0.177	0.151	0.169	0.150	0.180	0.154	0.153	0.155	0.169	0.156	0.158	0.151	0.147	0.157
propmale616	0.196	0.148	0.190	0.154	0.194	0.154	0.195	0.155	0.184	0.157	0.192	0.159	0.174	0.159	0.188	0.162	0.193	0.164	0.167	0.166
propfemale50more	0.045	0.078	0.053	0.085	0.049	0.086	0.048	0.085	0.053	0.088	0.042	0.075	0.051	0.085	0.043	0.082	0.042	0.079	0.057	0.096
propmale50more	0.058	0.079	0.067	0.088	0.066	0.092	0.058	0.087	0.065	0.089	0.053	0.079	0.062	0.092	0.054	0.088	0.049	0.084	0.061	0.099
Andhra_Pradesh	0.066	0.249	0.096	0.294	0.073	0.260	0.047	0.211	0.063	0.243	0.062	0.242	0.099	0.298	0.076	0.265	0.077	0.266	0.058	0.233
West_Bengal	0.121	0.327	0.082	0.274	0.146	0.353	0.060	0.238	0.026	0.158	0.174	0.379	0.068	0.251	0.139	0.346	0.073	0.261	0.040	0.195
Uttar_Pradesh	0.249	0.432	0.168	0.374	0.214	0.410	0.032	0.176	0.036	0.187	0.253	0.435	0.195	0.397	0.229	0.420	0.015	0.123	0.039	0.194
Tamil_Nadu	0.054	0.227	0.091	0.288	0.083	0.275	0.013	0.114	0.127	0.333	0.028	0.166	0.086	0.281	0.093	0.290	0.004	0.062	0.122	0.327
Rajasthan	0.051	0.219	0.066	0.248	0.077	0.267	0.083	0.276	0.046	0.210	0.049	0.217	0.083	0.275	0.097	0.296	0.164	0.370	0.065	0.246
Maharashtra	0.106	0.308	0.116	0.320	0.069	0.253	0.154	0.361	0.238	0.426	0.101	0.302	0.129	0.336	0.071	0.257	0.185	0.388	0.318	0.466
Madhya_Pradesh	0.041	0.198	0.090	0.287	0.089	0.285	0.338	0.473	0.062	0.242	0.053	0.224	0.089	0.285	0.086	0.280	0.260	0.439	0.041	0.199
Kerala	0.094	0.292	0.044	0.205	0.037	0.189	0.007	0.084	0.273	0.445	0.107	0.310	0.036	0.187	0.030	0.170	0.006	0.076	0.232	0.422
Karnataka	0.067	0.250	0.070	0.255	0.053	0.224	0.041	0.197	0.051	0.220	0.061	0.239	0.063	0.242	0.065	0.247	0.068	0.252	0.040	0.197
Gujarat	0.043	0.202	0.066	0.247	0.051	0.219	0.105	0.307	0.029	0.167	0.037	0.189	0.060	0.237	0.031	0.175	0.138	0.345	0.035	0.184
Bihar	0.108	0.311	0.112	0.315	0.109	0.312	0.121	0.326	0.049	0.215	0.075	0.263	0.092	0.289	0.083	0.276	0.009	0.096	0.011	0.103
N	14,935		68,365		15,838		7,112		5,075		14,825		50,642		14,480		4,691		2,897	

Appendix Table 4. Determinants of Current Enrollment, Children Aged 6-18

	1983		2004	
	(1)	(2)	(1)	(2)
age7		0.152*** (0.0070)		0.135*** (0.0090)
age8		0.177*** (0.0060)		0.149*** (0.0080)
age9		0.212*** (0.0070)		0.204*** (0.0090)
age10		0.160*** (0.0060)		0.130*** (0.0080)
age11		0.158*** (0.0080)		0.160*** (0.0100)
age12		0.083*** (0.0070)		-0.065*** (0.0090)
age13		0.033*** (0.0080)		-0.317*** (0.0080)
age14		-0.049*** (0.0080)		-0.486*** (0.0050)
age15		-0.141*** (0.0070)		-0.581*** (0.0040)
age16		-0.240*** (0.0070)		-0.625*** (0.0030)
age17		-0.307*** (0.0070)		-0.637*** (0.0020)
age18		-0.398*** (0.0050)		-0.678*** (0.0020)
Female		-0.278*** (0.0040)		-0.080*** (0.0050)
Religion: Muslim	-0.124*** -0.004	-0.121*** (0.0050)	-0.042*** -0.004	-0.049*** (0.0060)
Religion: Other	0.131*** -0.007	0.074*** (0.0080)	0.01 -0.009	-0.013 (0.0120)
Religion: Scheduled tribe	-0.261*** -0.005	-0.127*** (0.0060)	-0.037*** -0.007	-0.096*** (0.0090)
Religion: Scheduled caste	-0.158*** -0.004	-0.033*** (0.0050)	-0.018*** -0.004	-0.015*** (0.0060)
Household head's schooling		0.033*** (0.0010)		0.010*** (0.0010)
Schooling years of head's spouse		0.021*** (0.0010)		-0.001 (0.0010)
log (monthly pc expenditure)		0.117*** (0.0030)		0.018*** (0.0050)
Female head		0.132*** (0.0080)		0.011 (0.0120)
Schooling of highest-educated adult		0.022*** (0.0010)		0.009*** (0.0010)
Rural area		-0.089*** (0.0050)		0.033*** (0.0060)
Farm household		-0.041*** (0.0050)		0 (0.0060)
Agricultural labor household		-0.124*** (0.0050)		-0.082*** (0.0070)
log of HH size		0.081*** (0.0060)		-0.027*** (0.0090)
Household owns more 1 acre land		0.020*** (0.0040)		0.036*** (0.0050)
Proportion of HH member being female & under 5		-0.252*** (0.0220)		-0.124*** (0.0290)
Proportion of HH member being male & age< 5		-0.272*** (0.0220)		-0.170*** (0.0290)
Proportion of HH member being female & age 6-16		0.004 (0.0150)		0.080*** (0.0210)
Proportion of HH member being male & age 6-16		-0.144*** (0.0150)		0.014 (0.0210)
Proportion of HH member being female & age>50		0.062*** (0.0230)		-0.007 (0.0350)
Proportion of HH member being male & age>50		0.084*** (0.0210)		-0.142*** (0.0310)
West Bengal	0.089*** (0.0060)	0.100*** (0.0070)	0.085*** (0.0070)	0.155*** (0.0090)

Appendix Table 4., continued

	1983		2004	
	(1)	(2)	(1)	(2)
Uttar Pradesh	-0.045*** (0.0060)	-0.042*** (0.0060)	0.051*** (0.0060)	0.027*** (0.0080)
Tamil Nadu	0.095*** (0.0070)	0.072*** (0.0070)	0.053*** (0.0080)	0.088*** (0.0100)
Rajasthan	-0.067*** (0.0070)	-0.053*** (0.0080)	0.072*** (0.0070)	0.073*** (0.0100)
Maharastra	0.132*** (0.0060)	0.126*** (0.0070)	0.009 (0.0070)	0.023** (0.0090)
Madhya Pradesh	-0.032*** (0.0060)	0.001 (0.0070)	0.073*** (0.0070)	0.103*** (0.0090)
Kerala	0.309*** (0.0060)	0.329*** (0.0070)	0.015* (0.0090)	0.012 (0.0120)
Karnataka	0.01 (0.0070)	-0.015* (0.0080)	0.001 (0.0080)	0.018 (0.0110)
Gujarat	0.086*** (0.0070)	0.083*** (0.0080)	0.025*** (0.0080)	0.030*** (0.0110)
Bihar	-0.074*** (0.0060)	-0.057*** (0.0070)	0.043*** (0.0070)	-0.055*** (0.0100)
N	141543	141543	104846	104846
Pseudo R ²	0.034	0.28	0.00297	0.461
Mean predicted enrolment probability	0.4890	0.4890	0.5810	0.5810
Chi-square_test	10433	54903	465.7	65761
Join test of significance: Family & child attributes		34529		40534
Join test of significance: State dummies		3422		785

Note: (a) Omitted state category is Andhra Pradesh. (b) Results based on 11 major states. (c) Join test statistics refers to F-test. (c) The variable “Schooling of highest-educated adult” is calculated excluding parents and siblings. (d) All regressions additionally control for a missing data dummy for the variable “Schooling of highest-educated adult” and “household landholding”. (e) Marginal effects instead of coefficients are reported. (f) Omitted religion category is “Hindu”. (f) The coefficient on the Muslim dummy in 1983 is significantly different from that coefficient in 2004 (Chi-sq= 91.63 and Prob> chi2 = 0.0000).

Appendix Table 5. Determinants of Grade Completion, Children Aged 10-21

	1983		2004	
	(1)	(2)	(1)	(2)
female		-0.621***		-0.214***
		-0.008		-0.008
Religion: Muslim	-0.386***	-0.325***	-0.383***	-0.225***
	-0.01	-0.011	-0.01	-0.011
Religion: Other	0.321***	0.117***	0.137***	-0.028
	-0.016	-0.017	-0.021	-0.021
Religion: Scheduled tribe	-0.880***	-0.418***	-0.590***	-0.280***
	-0.015	-0.016	-0.016	-0.017
Religion: Scheduled caste	-0.563***	-0.169***	-0.332***	-0.073***
	-0.01	-0.011	-0.01	-0.01
hhheadedu		0.089***		0.055***
		-0.001		-0.001
hhspouseedu		0.029***		0.016***
		-0.002		-0.001
hhspouseedu_miss		-0.132***		-0.134***
		-0.015		-0.018
logpcce		0.256***		0.268***
		-0.007		-0.01
Age		0.358***		0.591***
		-0.011		-0.011
Agesq		-0.010***		-0.015***
		0		0
femalehead		0.416***		0.241***
		-0.019		-0.021
highesteducadult		0.091***		0.078***
		-0.001		-0.001
highesteducadult_miss		0.278***		0.231***
		-0.009		-0.011
ruralresident		-0.241***		-0.024**
		-0.011		-0.01
farmhh		-0.086***		-0.016
		-0.012		-0.011
agriclabhh		-0.397***		-0.189***
		-0.013		-0.014
loghhsze		0.159***		-0.229***
		-0.012		-0.016
own_land		0.054***		0.083***
		-0.01		-0.01
propfemaleunder5		-0.809***		-0.985***
		-0.054		-0.062
propmaleunder5		-0.791***		-1.068***
		-0.056		-0.061
propfemale616		0.099***		-0.093***
		-0.032		-0.034
propmale616		-0.276***		-0.424***
		-0.032		-0.033
propfemale50more		0.228***		0.371***
		-0.047		-0.054
propmale50more		0.530***		-0.036
		-0.046		-0.048
own_land_miss				-0.089***
				-0.014
West_Bengal	0.223***	0.049***	-0.114***	-0.290***
	-0.016	-0.017	-0.017	-0.017
Uttar_Pradesh	-0.031**	0.012	-0.289***	-0.361***
	-0.014	-0.015	-0.015	-0.016
Tamil_Nadu	0.386***	0.301***	0.261***	0.178***
	-0.016	-0.017	-0.018	-0.019
Rajasthan	-0.207***	-0.185***	-0.363***	-0.444***
	-0.018	-0.019	-0.017	-0.018
Maharashtra	0.384***	0.282***	0.349***	0.174***
	-0.015	-0.016	-0.016	-0.017

Appendix Table 5., continued

	1983		2004	
	(1)	(2)	(1)	(2)
Madhya_Pradesh	0.066***	0.024	-0.258***	-0.356***
	-0.016	-0.017	-0.017	-0.018
Kerala	0.864***	0.872***	0.641***	0.388***
	-0.018	-0.019	-0.02	-0.022
Karnataka	0.086***	0.002	0.062***	-0.031
	-0.017	-0.018	-0.019	-0.019
Gujarat	0.338***	0.228***	0.134***	-0.070***
	-0.018	-0.018	-0.02	-0.02
Bihar	-0.139***	-0.060***	-0.484***	-0.477***
	-0.016	-0.017	-0.018	-0.019
Observations	111325	111325	87540	87540
Pseudo_R2	0.048	0.209	0.0399	0.183
Chi-square test	14786	64323	10275	46993
F-Test: Family and child attributes		48169		35533
F-Test: state dummies		3981		4049

Note: (a) Omitted state category is Andhra Pradesh. (b) Results based on 11 major states. (c) Join test statistics refers to F-test. (d) The variable “Schooling of highest-educated adult” is calculated excluding parents and siblings. (e) All regressions additionally control for a missing data dummy for the variable “Schooling of highest-educated adult”. (f) Omitted religion category is “Hindu”. (g) The dependent variable is categorical and takes 5 values; it is defined as follows: 0 if no schooling (never attended-school); 1 if 1-4 years of schooling (ever enrolled); 2 if 5 years of schooling (Completed Primary education); 3 if 5-12 years of schooling (Middle and secondary); 4 if 12 years of schooling or more. (h) Note: The coefficient on the Muslim dummy in 1983 is significantly different from that coefficient in 2004 (Chi-sq= 93.63 and Prob> chi2 = 0.0000).

Appendix Table 6. Determinants of Attendance by Year and Gender

	1983		2004	
	Boys	Girls	Boys	Girls
age7	0.158*** (0.0080)	0.124*** (0.0110)	0.152*** (0.0110)	0.117*** (0.0130)
age8	0.188*** (0.0070)	0.135*** (0.0100)	0.166*** (0.0110)	0.130*** (0.0120)
age9	0.224*** (0.0070)	0.160*** (0.0110)	0.233*** (0.0110)	0.172*** (0.0140)
age10	0.199*** (0.0070)	0.080*** (0.0100)	0.166*** (0.0110)	0.091*** (0.0130)
age11	0.203*** (0.0080)	0.068*** (0.0120)	0.205*** (0.0120)	0.109*** (0.0150)
age12	0.149*** (0.0080)	-0.024** (0.0100)	-0.014 (0.0120)	-0.119*** (0.0120)
age13	0.118*** (0.0090)	-0.087*** (0.0100)	-0.281*** (0.0120)	-0.348*** (0.0100)
age14	0.054*** (0.0090)	-0.172*** (0.0090)	-0.475*** (0.0080)	-0.492*** (0.0070)
age15	-0.034*** (0.0100)	-0.245*** (0.0070)	-0.585*** (0.0050)	-0.573*** (0.0050)
age16	-0.138*** (0.0110)	-0.304*** (0.0060)	-0.640*** (0.0040)	-0.608*** (0.0040)
age17	-0.236*** (0.0120)	-0.327*** (0.0050)	-0.658*** (0.0030)	-0.616*** (0.0030)
age18	-0.353*** (0.0090)	-0.378*** (0.0030)	-0.704*** (0.0030)	-0.649*** (0.0030)
Religion: Muslim	-0.121*** (0.0060)	-0.109*** (0.0060)	-0.059*** (0.0080)	-0.040*** (0.0080)
Religion: Other	0.038*** (0.0110)	0.118*** (0.0120)	-0.019 (0.0170)	-0.005 (0.0180)
Religion: Scheduled tribe	-0.134*** (0.0080)	-0.110*** (0.0090)	-0.089*** (0.0120)	-0.105*** (0.0130)
Religion: Scheduled caste	-0.019*** (0.0060)	-0.053*** (0.0070)	-0.007 (0.0080)	-0.024*** (0.0080)
Householdhead's schooling years	0.030*** (0.0010)	0.034*** (0.0010)	0.008*** (0.0010)	0.012*** (0.0010)
Schooling years of head's spouse	0.015*** (0.0010)	0.024*** (0.0010)	-0.002* (0.0010)	0 (0.0010)
log (monthly per capita consumption expenditure	0.105*** (0.0040)	0.126*** (0.0050)	0.023*** (0.0070)	0.013 (0.0080)
Whether household head female	0.096*** (0.0100)	0.177*** (0.0130)	-0.002 (0.0160)	0.025 (0.0170)
Schooling years highest-educated adult	0.021*** (0.0010)	0.022*** (0.0010)	0.007*** (0.0010)	0.010*** (0.0010)
Whether rural resident	-0.040*** (0.0060)	-0.143*** (0.0070)	0.048*** (0.0080)	0.018** (0.0080)
Whether farm household	-0.031*** (0.0070)	-0.055*** (0.0070)	0.003 (0.0080)	-0.004 (0.0090)
Whether agricultural labor household	-0.118*** (0.0070)	-0.122*** (0.0070)	-0.075*** (0.0100)	-0.088*** (0.0100)
log HH size	0.039*** (0.0070)	0.119*** (0.0080)	-0.055*** (0.0120)	-0.004 (0.0130)
owns more 1 acre land	0.034*** (0.0050)	0 (0.0060)	0.046*** (0.0070)	0.026*** (0.0080)
propfemaleunder5	-0.143*** (0.0280)	-0.377*** (0.0310)	-0.071* (0.0420)	-0.171*** (0.0420)
propmaleunder5	-0.182*** (0.0290)	-0.378*** (0.0320)	-0.150*** (0.0420)	-0.178*** (0.0420)
propfemale616	0.037* (0.0200)	-0.072*** (0.0220)	0.121*** (0.0290)	0.035 (0.0300)
propmale616	-0.156*** (0.0200)	-0.102*** (0.0220)	0.002 (0.0280)	0.029 (0.0310)
propfemale50more	0.02 (0.0300)	0.097*** (0.0340)	-0.031 (0.0480)	0.021 (0.0520)
propmale50more	0.064** (0.0270)	0.106*** (0.0320)	-0.139*** (0.0410)	-0.144*** (0.0450)

Appendix Table 6., continued

	1983		2004	
	Boys	Girls	Boys	Girls
West_Bengal	0.055*** (0.0090)	0.155*** (0.0110)	0.144*** (0.0120)	0.167*** (0.0120)
Uttar_Pradesh	-0.008 (0.0080)	-0.090*** (0.0090)	0.038*** (0.0120)	0.014 (0.0120)
Tamil_Nadu	0.061*** (0.0100)	0.079*** (0.0110)	0.083*** (0.0140)	0.095*** (0.0150)
Rajasthan	0.021** (0.0100)	-0.153*** (0.0100)	0.132*** (0.0120)	0.008 (0.0140)
Maharashtra	0.109*** (0.0080)	0.137*** (0.0100)	0.015 (0.0130)	0.031** (0.0130)
Madhya_Pradesh	0.026*** (0.0090)	-0.033*** (0.0100)	0.121*** (0.0120)	0.081*** (0.0140)
Kerala	0.238*** (0.0090)	0.434*** (0.0110)	0.008 (0.0170)	0.02 (0.0180)
Karnataka	-0.041*** (0.0110)	0.018 (0.0110)	0.01 (0.0150)	0.025 (0.0160)
Gujarat	0.062*** (0.0100)	0.110*** (0.0120)	0.046*** (0.0150)	0.011 (0.0170)
Bihar	-0.007 (0.0090)	-0.121*** (0.0090)	-0.024* (0.0130)	-0.092*** (0.0140)
Observations	74568	66975	55403	49443
Pseudo_R2	0.211	0.351	0.48	0.444
Chi-square test				
F-Test: Family and child attributes	14955	17096	21962	18571
F-Test: state dummies	934	3338	420	469

Appendix Table 7. Determinants of Completion by Year and Gender

	1983		2004	
	Boys	Girls	Boys	Girls
Age	0.396*** (0.0140)	0.308*** (0.0170)	0.624*** (0.0160)	0.573*** (0.0170)
Agesq	-0.011*** 0.0000	-0.009*** (0.0010)	-0.015*** (0.0010)	-0.015*** (0.0010)
Religion: Muslim	-0.371*** (0.0150)	-0.274*** (0.0170)	-0.257*** (0.0150)	-0.200*** (0.0160)
Religion: Other	0.040* (0.0230)	0.215*** (0.0250)	-0.02 (0.0300)	-0.033 (0.0310)
Religion: Scheduled tribe	-0.429*** (0.0200)	-0.428*** (0.0270)	-0.261*** (0.0230)	-0.320*** (0.0250)
Religion: Scheduled caste	-0.135*** (0.0140)	-0.247*** (0.0180)	-0.057*** (0.0140)	-0.097*** (0.0150)
Household head's schooling	0.086*** (0.0020)	0.096*** (0.0020)	0.055*** (0.0010)	0.056*** (0.0010)
Schooling years of head's spouse	0.015*** (0.0020)	0.041*** (0.0020)	0.010*** (0.0020)	0.021*** (0.0020)
log (monthly pc expenditure)	0.234*** (0.0090)	0.295*** (0.0110)	0.289*** (0.0130)	0.251*** (0.0140)
Female head	0.368*** (0.0250)	0.506*** (0.0290)	0.249*** (0.0290)	0.246*** (0.0310)
Schooling of highest-educated adult	0.079*** (0.0020)	0.109*** (0.0020)	0.059*** (0.0020)	0.097*** (0.0020)
Rural area	-0.144*** (0.0150)	-0.370*** (0.0170)	0.035** (0.0140)	-0.087*** (0.0150)
Farm household	-0.066*** (0.0160)	-0.117*** (0.0190)	0.013 (0.0150)	-0.048*** (0.0160)
Agricultural labor household	-0.394*** (0.0170)	-0.434*** (0.0210)	-0.198*** (0.0190)	-0.180*** (0.0200)
log of HH size	0.084*** (0.0160)	0.233*** (0.0200)	-0.279*** (0.0220)	-0.211*** (0.0230)
Household owns more 1 acre land	0.094*** (0.0130)	0.006 (0.0150)	0.129*** (0.0140)	0.033** (0.0150)
Proportion of HH member being female & under 5	-0.519*** (0.0730)	-1.138*** (0.0840)	-0.583*** (0.0890)	-1.288*** (0.0870)
Proportion of HH member being male & age< 5	-0.418*** (0.0750)	-1.187*** (0.0860)	-0.809*** (0.0890)	-1.204*** (0.0850)
Proportion of HH member being female & age 6-16	0.090** (0.0440)	-0.131*** (0.0500)	-0.091* (0.0490)	-0.384*** (0.0490)
Proportion of HH member being male & age 6-16	-0.181*** (0.0410)	-0.207*** (0.0520)	-0.252*** (0.0440)	-0.325*** (0.0520)
Proportion of HH member being female & age>50	0.02 (0.0630)	0.434*** (0.0740)	0.008 (0.0740)	0.675*** (0.0790)
Proportion of HH member being male & age>50	0.437*** (0.0590)	0.727*** (0.0730)	-0.013 (0.0650)	-0.02 (0.0730)
West Bengal	-0.007 (0.0220)	0.126*** (0.0260)	-0.307*** (0.0240)	-0.277*** (0.0250)
Uttar Pradesh	0.122*** (0.0200)	-0.167*** (0.0240)	-0.341*** (0.0220)	-0.397*** (0.0230)
Tamil Nadu	0.314*** (0.0230)	0.291*** (0.0260)	0.145*** (0.0260)	0.213*** (0.0270)
Rajasthan	0.009 (0.0240)	-0.534*** (0.0310)	-0.304*** (0.0250)	-0.605*** (0.0270)
Maharashtra	0.280*** (0.0210)	0.296*** (0.0240)	0.150*** (0.0230)	0.201*** (0.0240)
Madhya Pradesh	0.087*** (0.0220)	-0.071*** (0.0270)	-0.342*** (0.0240)	-0.381*** (0.0260)
Kerala	0.715*** (0.0270)	1.045*** (0.0290)	0.329*** (0.0300)	0.457*** (0.0310)
Karnataka	-0.056** (0.0240)	0.077*** (0.0280)	-0.046* (0.0270)	-0.013 (0.0280)
Gujarat	0.226*** (0.0250)	0.244*** (0.0280)	-0.017 (0.0280)	-0.123*** (0.0300)
Bihar	0.101*** (0.0220)	-0.316*** (0.0270)	-0.408*** (0.0250)	-0.578*** (0.0270)
Observations	59580	51745	46569	40971
Pseudo_R2	0.16	0.269	0.183	0.194
Chi-square test	27003	36300	24470	23819
F-Test: Family and child attributes	21465	24480	19211	17100
F-Test: state dummies	1301	3632	1648	2631