Misogyny or Rational Preferences of Households? An Analysis of Gender Gap in Private School Enrolment in India[1]

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Abstract: The paper provides new evidence of female disadvantage in private school enrolment in India: within household female disadvantage is significantly higher than that for across households. Household fixed effects estimates suggest that boys (especially the eldest ones) aged 7-14 years are significantly more likely to be enrolled in private schools than comparable girls in the same household, irrespective of castes/religion, parental education or expenditure. Beyond the age of 14, however, female disadvantage seems to disappear. Arguably, these results highlight a conscious choice of parents to balance various economic and non-economic considerations over time as children progress into adolescence.

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Misogyny or Rational Preferences of Households? An Analysis of Gender Gap in Private School Enrolment in India

Securing universal education is a key element of the Millennium Development Goals (MDG) 2000 – 15 and beyond. While there is an implicit understanding that the state has the primary responsibility to ensure that this MDG goal is attained, as budgets and resources in developing countries are stretched thin, states, including those in many low-income and emerging economies, are increasingly looking towards the private sector to fill in the holes. While for many years there was a consensus in the literature that private schools are more efficient than state (or government) funded schools in that they delivered higher test scores and/or higher earnings at a lower cost (see for example Bedi and Garg (2000); Muralidharan and Kremer (2006); Kingdon (2007); Goyal and Pandey (2009); Wadhwa (2009); and Tooley et al. (2010)), increasingly this view has come under scrutiny (see for example Beegle and Newhouse (2006), Chudgar and Quin (2012), Day Ashley et al. (2014) and Pal and Saha (2014)).[2] Researchers thus seem to be split about the impact of private school growth on universal literacy: some (see for example Tooley and Dixon (2003) and Tooley and Longfield (2014)) tend toadvocate for private provisioning of basic schooling, others voice concerns about this rapid growth of the private sector: 'it cannot take over the role that state schools are meant to play and have played in the educational transformation of most countries in the world' (Dreze and Sen (2013)). This paper is placed in the context of this overall policy debate and raises the key question: can private schools foster "education for all"? Specifically we consider the role of gender in determining private school enrolment, a key issue that remains little investigated.

[2] Day Ashley et al. (2014) argue that there is moderate evidence in support of the statement that *private school pupils achieve better learning outcomes when compared with state schools. However, there is ambiguity about the size of the true private school effect. In addition many children may not be achieving basic competencies even in private schools*.

It is now widely accepted that gender discrimination in educational opportunities hinders growth and economic development (see Duflo (2012)) and as such there is an urgency to secure education for both boys and girls. While parents choosing private schools are likely to be more motivated and altruistic and hence, may treat their boys and girls more equally than others, there is no denial of the fact that private schools are fee-paying schools and thus could potentially affect household budgets, given resource constraints, among households. Hence there is scope for within household discrimination by gender and other child characteristics among parents, especially when returns to schooling vary by gender. In the absence of any *a priori* evidence, using the recent India Human Development Survey data from India, we test if gender is a significant argument of private school enrolment at the household level.

The Indian case is particularly interesting in this context. Since the early 1990s, India has experienced a tremendous growth of private schools around the country: while about 16% of the villages surveyed in PROBE data used by Dreze and Kingdon (2001) had access to private schools, the corresponding figure rose to about 28% in 2003 (see Muralidharan and Kremer (2006)). Despite the absence of school fees, dismal state of the state schools has induced many households, even some poorer ones, to take advantage of the newly emerging private unaided schools in India to meet their educational needs. To a large extent, the latter has been facilitated by the modest private school fees in India (Tooley and Dixon (2003)).[3] Second, gender relations are known to be unequal in different walks of life in India and has come under further scrutiny after a number of widely reported recent cases of assaults on women. Recent data and studies (see for example Dreze and Sen (2013)) have highlighted the worsening human development situation and increasing gender inequality in this respect in the

[3] Despite significant success in improving its primary school enrolment over the last two decades (see Kingdon (2007)), there are worrying statistics showing that the Gender Inequality Index (GII) for India has worsened between 2008 and 2011. India now ranks 129 out of 146 countries on the GII, better only than Afghanistan in South Asia (Times of India). It is therefore imperative to address the gender gap in school enrolment, since education is central to redressing gender inequality.

post 1990s in India, a period which also witnessed the fastest growth of private schools in the country.

Our analysis is based on the 2005 India Human Development Survey (IHDS) data for 7–18 year old children born to household heads. A simple comparison with any school enrolment suggests that the female disadvantage is higher for private school enrolment (6% as against 2% for 7–9 year olds and 7% as against 5% for 10–14 year olds; see Table 2).[4] Further analysis suggests that the extent of the within household gender gap is significantly higher (about three times) than this cross-household gender gap figures reflect. There are three main features that distinguish our work from previous works. First, we argue that use of single cross-section data may potentially lead to two types of estimation biases: one is the bias generated from unobserved household characteristics (e.g., parental support/motivation, parental health information or specific family circumstances) and the second is the potential endogeneity of gender of the child arising from the quantity-quality trade-off within Beckerian set-up and parental preferences can have an important role to play, thus causing significant estimation bias. We consider a household fixed effects approach that exploits the variation in schooling choice of children born to same parents; the latter not only addresses the endogeneity of gender of the child but also the issue of potential bias arising from omitted household-level variables. This household fixed effects estimation gives us our preferred estimates relative to the standard pooled regression. Second, use of household fixed effects model allows us to particularly focus on within-household variation that remain much unexplored in the literature.[5] As such, we consider the role of individual characteristics of children that varies within households to explain the observed gender gap among the children born to same parents. Finally, we argue that significance of these individual characteristics in explaining private school choice highlights the parental preferences for human capital investment of their children. While

[4] The gender gap reduces beyond the age of 15, as boys tend to drop out of schools.

[5] In this respect the current paper updates the methodology used in Maitra, Pal and Sharma (2012).

Behrman (1988) has argued that parents are generally averse to inequality among children[2], there is evidence of 'son preference' among resource constrained parents in India (Sen and Sengupta (1983); Kishor (1993); Kingdon (2002)). It is, however, difficult to have a direct measure of parental preferences and most existing evidence in this respect is of indirect nature (e.g., see Garg and Morduch (1998); Das Gupta (1987)). The present paper focuses on the role of gender, age, birth order of the child and argues that the significance of these characteristics highlight the role of household preferences (see section 3 for hypotheses). We further explore if there is any economic/non-economic considerations inducing households to choose in favour of some children and against others, thus trying to isolate pure misogyny from rationality pertaining to some economic (e.g., returns to schooling) or non-economic (e.g., security concerns for adolescent girls) considerations. Clearly this is an important exercise because if the private school growth is associated with growing gender gap (within/across households) in school enrolment, the target of universal literacy would remain unfulfilled, especially if authorities continue to ignore the increasing importance of the private sector in the provision of basic schooling in India.

While there is a large literature on child schooling in low-income countries (see Glewwe (2002) for a survey), there is still a relatively limited literature on private schools growth and their performance around the world, especially in developing countries. Most of the existing literature focuses on the relative efficiency of public and private schools as measured by the effect of school type on various student test scores. Many studies find a large private school premium (selectivity corrected or otherwise) in most countries, developed as well as developing (see Jimenez, Lockheed and Wattanawaha (1988); Jimenez and Lockheed (1991); Jimenez and Lockheed (1995) and Kingdon (1996)). Beegle and Newhouse (2006) is an important exception – they suggest that junior secondary (grades 7–9) students in public schools in Indonesia out-perform their private school counterparts, primarily attributed to the unobserved higher quality of inputs used in public schools. Building on the case of greater

efficiency of private schools, there have been attempts by policy makers to explore the scope of private sector in delivering basic education in India (see Tooley and Dixon (2003) for a discussion). Muralidharan and Kremer (2006) argue that the single most distinguishing feature of the private schools in rural India is that they pay much lower salaries to teachers than the government schools. This allows the private schools to hire more teachers, thus ensuring a lower pupil-teacher ratio than state schools and hence better performance. Finally, Kingdon and Pal (2014) exploited the variation in the growth of new private schools across Indian districts over 1992 – 2002 to identify a causal effect of private school growth on aggregate district-level literacy and enrolment among 10 – 19 year olds.

To the best of our knowledge, ours is the first attempt to examine the gender gap in private school enrolment, as reflected in the school choice of individual children in our sample. Household fixed effects estimates suggest evidence of significant gender bias against girls in private school enrolment and also that the size of this gap is significantly larger (about three times- 18.7% as opposed to 6.6%) than the corresponding inter-household gender gap. This intra-household gender gap persists across household expenditure quantiles (though its magnitude is lower among richer households), different religion/castes and different levels of parental educational attainment. There is also systematic regional variation in the gender gap: it is significantly higher among children residing in northern and north-western states relative to those in the west, south and the east. The gender gap, however, seems to disappear if a child lives in urban regions and also if the mother has attained at least ten years of schooling. More interestingly, the boys, especially, those below age of 15 years and also the eldest boy in the household enjoy a premium at the cost of comparable girls within households, though the gender gap disappears for adolescent girls aged 15 years or more. These results highlight the presence of gender-based parental preferences that distinguish one child from the other in an attempt to balance income and other non-income considerations over time as children grow into adolescence.

2. Background, Data and Selected Descriptive Statistics

There are three broad types of recognized schools in India, namely government schools, private aided schools and private unaided schools. Government and private aided schools are typically government recognized, i.e., they have the government stamp of approval. They are similar in many respects since private aided schools are almost entirely financed by the government and have little control over staffing (hiring/firing decisions) and fees, despite being nominally privately managed. In our analysis we do not distinguish between government and private aided schools, instead we combine them under the broad umbrella of government schools.[6] Private unaided schools (whether recognized or not), in contrast, enjoy more autonomy compared to private aided schools and are typically self-funded out of fee income. Thus the private unaided schools are the truly private schools in India.[7] Table 1 compares main characteristics of private and government schools over the period 1992 and 2002. The biggest difference between private and government schools is in terms of infrastructure and pupil-teacher ratios. As of 2002, 71% of the private schools have a toilet, compared to 41% of government schools; 91% of private school have drinking water facilities compared to 78% of government schools. The pupil-teacher ratio in government schools is often twice that in private schools. All of this suggests that private schools offer better facilities than government schools in India. Further compared to government schools, a greater proportion of teachers in private schools are women and are likely to be of a higher caste. This is possibly because as of 2002, the private educational sector was not constrained by caste based affirmative action (reservation) policies operative in India.

This paper uses data from the 2005 Indian Human Development Survey (IHDS2). This is a nationally representative, multi-topic survey of 41,554 households in 1,503 villages and

[6] We examine the robustness of our results by excluding the private aided schools from our estimation sample. The results on gender bias remain unchanged. These results are available on request.

[7] Private unaided schools can be further categorized into religious and non-religious schools, though for the purposes of this paper we do not make this distinction as very few children in our sample attend religion schools.

971 urban neighbourhoods across India collected by the National Council of Applied Economic Research and the University of Maryland. The survey collected information on health, education, employment, economic status, marriage, fertility, gender relations, and social capital. The survey was conducted between November 2004 and October 2005 with a response rate of more than 90%. We consider the children aged 7–18 year olds born to household heads in our sample, thus allowing us to examine the nature of parental investment in private schooling of their children.

Figure 1 presents the enrolment rates by age and gender for the estimating sample. Two observations are worth noting. First, the enrolment rates are very high (more than 80%) for children aged 7–11; they start falling beyond the age of 11, going down to 25% for boys and 20% for girls by age 18. This drop in the later years is possibly a reflection of boys leaving schools in search of employment and girls leaving school because they have attained marriageable age. Second, the enrolment rates for girls are consistently lower compared to that of boys and this difference persists over the entire age range. This difference in enrolment rates us statistically significant for children aged 10 and higher.

Figure 2 presents the average enrolment in private schools by age and gender, conditional on enrolment. For children aged 7–15 (but not so for those aged more than 15), the private school enrolment rate for boys is consistently higher than that of girls; beyond age 15 however the gender gap appears to reverse in favour of girls. This is particularly interesting and we explore it further by considering the gender gap among 15–18 year age group (see Section 4). The (conditional) private school enrolment rate is generally significantly higher for boys aged 7–14 but not so for those aged 15 or higher.

Table 2 presents both overall school enrolment rates and private school enrolment rates (conditional on enrolment) by gender for different sub-samples of the population. On average 75% of males aged 7–18 are enrolled in school, compared to 70% of females in the same age group. When we separate this across different age groups, we see that the pro-male bias is small

for the 7–9 year olds (2.3 percentage points) and increases substantially for the 10–14 and the 15–18 year olds (6.2 and 17.5 percentage points respectively). Notice that there is a large drop in the overall rate of enrolment (from 83% to 44%) as we move from the 10–14 year olds to the 15–18 year olds. The pattern of pro-male bias in private school enrolment is somewhat different. For the sample as a whole, 31% of males are enrolled in a private school, compared to 25% of enrolled females. There is a systematic pro-male bias of about 6 percentage points for private school enrolment for the whole sample. The gender gap is high for the 7–9 and 10–14 year olds (5 percentage points and 4 percentage points respectively), but disappears for the 15–18 year olds in our sample.

This pro-male bias in private school enrolment exists for all population sub-groups; though they are lower for certain subgroups like Muslims. While children belonging to backward castes are not particularly less likely to be enrolled in school (compared to the overall sample average), private school enrolment rates of children who belong to backwards castes is significantly lower. This is possibly a reflection of income constraints as households belonging to backward castes are typically poorer and more resource constrained. Second, both total enrolment rates and private school enrolment rates are monotonically increasing over expenditure quantiles and this is true for both boys and girls; unfortunately pro-male bias in private school enrolment increases monotonically as we move up from the lowest to the highest expenditure quartile.

Table 3 presents the sample averages for the variables used in the analysis. 48% of children in the sample are girls. Mothers are on average about half as educated as fathers; 30 per cent of the sample resides in urban areas; 79% of children are Hindus and 30% belong to lower castes; 73% belong to mixed gender households (i.e., siblings are not of the same gender). Overall, 73% of children are enrolled in school, and conditional on enrolment, 28% are enrolled in private school.

3. Analytical Framework and hypotheses

3.1. Analytical Framework

The primary focus of this paper is on school choice and in particular private school enrolment of Indian children. A common problem in many empirical analyses pertains to the fact that some relevant variables, e.g., parental support/motivation or family specific health information may not be observable. More importantly, estimation biases arise if some of these unobservables are correlated with the residual error term, which is particularly difficult to tackle in cross-sectional or pooled data. As such existing estimates may suffer from some estimation bias: first is the potential bias generated from unobserved household characteristics and the second is the potential endogeneity of gender of the child arising from the quantity-quality trade-off in Beckerian set-up. The same unobserved parental characteristics that affect child gender can also systematically affect educational opportunities of children of different gender differently, thus causing significant endogeneity bias. While some use gender of the first child on the grounds that it is random, thereby restricting the analysis to the first-born (see for example Rosenzweig and Wolpin (2000)), we consider a household fixed effects approach because it not only addresses the endogeneity of gender of the child but also the issue of potential bias arising from omitted household-level variables. In particular, we consider households with 2 or more children aged 7–18 years, which allows us to exploit the intra-household variation in private school enrolment to identify the causal effect of gender (for children born to same parents) on private school enrolment, after controlling for the relevant and observable child, household and community characteristics in our sample.

Second, one has to account for the fact that private school enrolment is conditional on whether or not a child is enrolled (in any school). Given that almost 27% of 7–18 year olds in our sample are not enrolled in school, it is important to correct for the potential selectivity bias. Since standard Heckman type selection model is not sufficient in our case, we use a conditional

fixed effects logistic regression controlling for selection to estimate the private school enrolment equation within a household fixed effects model.

Define S_{ij}^{*} as the propensity of the i^{th} child from the j^{th} household to enrol in a private unaided (henceforth private) school at the time of the survey. This propensity is determined by the following equation:

$$S_{ij}^{*} = \beta' X_{ij} + \varepsilon_{ij} \quad (1)$$

Note that S_{ij}^{*} (the propensity of the child attending private school) is not observed; what we observe instead is a binary variable $S_{ij} = 1$ if the i^{th} child from the j^{th} household is enrolled in a private school at the time of the survey and 0 otherwise.

School choice is conditional on school enrolment: so school choice (S_{ij}) is observed only if the i^{th} child from the j^{th} household is enrolled in school at the time of the survey $(E_{ij} = 1)$. In estimating equation (1) we therefore have to account for a selection problem where the selection equation is defined in terms of decision to send the child to school (irrespective of school type) and is given by:

$$E_{ij}^{*} = \gamma' W_{ij} + u_{ij} \quad (2)$$

where E_{ij}^{*} (the propensity to attend school) is not observable. We only observe E_{ij} where $E_{ij} = 1$ if $E_{ij}^{*} > 0$; $E_{ij} = 0$ otherwise.

In the household fixed effects framework we assume that the error terms in equation (1) and (2) each comprise of a component common across all children belonging to the same household *j* and an IID component so that

$$\begin{aligned} \varepsilon_{ij} &= \eta_j + v_{ij} \\ u_{ij} &= \xi_j + \zeta_{ij} \end{aligned} \quad (3)$$

The selection bias arises because of the fact that η_j is potentially correlated with ξ_j. Specifically the same unobserved household/parental characteristics – for example parental enlightenment – that affect the likelihood of school enrolment can also affect the likelihood of choosing a school type (i.e., enrolment in a private or a public school).

The set of explanatory variables X and Z in equations (1) and (2) include some common variables like age categories, gender of the child, age of the household head, whether the household head reads newspapers regularly, years of schooling of the mother and father, religion (Hindu, Muslim, Christian) and expenditure quartiles, urban/rural residence and state of residence to capture all other unobserved characteristics including policy effects. Following the recent literature on network and peer group effects on learning (Helmers and Patnam (2014)), we use the presence of a family acquaintance who is a teacher (this is measured by a binary indicator variable that takes the value of 1 if the household has friend or acquaintance who teaches in a school and 0 otherwise.) as an identifying restriction for any school enrolment at the first instance. The argument is that having a teacher in the social circle of the family may increase the awareness of schooling benefits and therefore the likelihood of school enrolment. We do not include this variable in the determination of private school enrolment; here we include the selection correction term (λ).

3.2. Hypotheses relating to private school enrolment

The second stage our empirical strategy exploits the variation in private schooling outcome among boys and girls born to same parents (which enables us to minimise any estimation bias arising from unobserved household-level characteristics) to identify the causal effect of gender on private school enrolment. This allows us to net out the effect of unobserved parental characteristics:

Child's gender and birth order

While Behrman (1988) has argued that parents are generally averse to inequality among children, there is evidence of 'son preference' among resource constrained parents in India (see for example Kishor (1993); Kingdon (2002)), which has been attributed to sons providing old-age security parents while girls leave the parents' house after marriage. The gender dummy

(GIRL) accounts for gender-based difference, if any, in private school enrolment among siblings born to same parents.

Additionally parents might choose to discriminate between sons and daughters in other ways as well. Garg and Morduch (1998) argue that children (irrespective of their gender) are better off on measured health indicators if they have sisters and no brothers because parents tend to allocate less for girls. Das Gupta (1987) finds that, in rural Punjab, girls with older sisters suffer most. Note however that the eldest child can be treated as exogenous while the lower birth orders are likely to be dependent on the family size which is endogenous to parental schooling decision within a Beckerian framework. Hence, we include a binary variable indicating if the context child is the eldest in the family (rather than the number of sisters/brothers a child have) with a view to test if the eldest child enjoys any premium in private schooling. The underlying idea is that the eldest child may get a preferential treatment from parents in their schooling decision because they are more likely to start earning earlier than other children, thus supplementing family earnings.

Child's age

Our data description in Section 2 highlights that the gender gap in private school enrolment varies with age of the child: it is high for the 7–9 and 10–14 year olds (5 percentage points and 4 percentage points respectively), but disappears for the 15–18 year olds in our sample. This observation induces us to explore if children of certain age category might receive preferential treatment from parents regarding their schooling choice. The latter may highlight the differential costs and benefits of schooling for male and female children, as they grow older. The primary benefit of schooling comes from earnings while there are a range of costs including those on school fees, books, uniform, transport and also the opportunity costs (foregone returns from alternative activities, e.g., participating in the labour market). It appears from our sample that both girls and boys tend to drop out of secondary schools at around 15 years of age. The reason for boys might be that they start supplementing family income

whereas for girls personal safety and security issues start becoming important at that age and this adds to the costs of travelling to and from schools.[8] While the central and state governments in India have succeeded in expanding access to primary schools such that over 95% of villages have a primary school, access to secondary schools is still rather limited. This might encourage some parents to choose local private schools for girls, if any, especially when they are adolescent.[9] In addition to local access to schools, another factor that may encourage adolescent girls' private school enrolment is the regular attendance of teachers in private, and not state, schools (Chaudhury et al. (2006)). In other words, the costs of schooling not only vary across the gender, but also vary with age for a given gender of the child. Accordingly, we include age dummies between 7–18 years in the baseline regression below.[10]

Therefore taking account of gender, birth order and age consideration, our baseline specification for determining private school enrolment is:

$$S_{ij}^{*} = \beta_1 * Female_k + \beta_2 * Eldest_{ij} + \Sigma_k \beta_{ak} Age_{kij} + \beta' X_{ij} + \eta_j + v_{ij} \qquad (4)$$

where η_j captures the household fixed effects. We compare the baseline regression results of (4) with variations in parental education, household expenditure, caste/religion and also selected community characteristics. Subsequently, we compare the role of gender in household fixed effects estimates of private school enrolment with the corresponding gender effect across households obtained from the pooled estimates. It also follows from the above discussion that

[8] There is now evidence from a number of different countries that supports the argument that reduced distance to schooling has significant effects on school enrolment of girls. See for example Alderman et al. (1997), Andrabi et al. (2008), Burde and Linden (2013) and Qureshi (2013). Duflo (2001) presents evidence from Indonesian school construction project to show that school construction, which reduces distance to the nearest school, also has a significant effect on school enrolment.

[9] The issue of local access is important. Long journeys, to and from school, put girls at additional risk regardless of age, race, class, caste or location because of the potential threat of rape, sexual harassment, intimidation and teasing (see for example UN (2000), Mirsky (2003)). The fact that somebody might need to accompany a girl on her walk to and from school creates a larger burden for girls' schooling. In other words, access to local private schools with less travelling time may enhance the likelihood of girls' private schooling. A greater distance to private (relative to government) schools is likely to increase the cost of attending private school for girls (relative to boys). This in turn might explain a female disadvantage in private school enrolment. In other words, access to local private schools for girls might reverse the gender gap in private school enrolment.

[10] Later we also interact the age dummies with the GIRL dummy.

within households private school enrolment may not only vary across gender (independent of other characteristics), but may also vary differentially across some individual characteristics (e.g., age, eldest child) by gender. Accordingly, we estimate a gender interacted household fixed effects model to consider the differential role of gender on the likelihood of private school enrolment for each individual characteristic considered.

4. Results

This section discusses the results using the conditional fixed effect logit estimation correcting for selection. We present results for the full sample and also those separately for the rural and urban sample. Standard errors are bootstrapped with 50 replications. [11]

4.1. First stage results of any enrolment

Before proceeding to the results on private school enrolment, it is worth briefly looking at the results on school enrolment as summarised in Table 5. First, the results highlight the relevance of the identifying variable in that the estimated coefficient of having a teacher as an acquaintance in the family's social circle is positive and statistically significant. We also find that girls are significantly less likely to be enrolled in any school. The likelihood of any school enrolment is significantly lower for children belonging to Muslim and Scheduled Caste and Scheduled Tribe households and for children more than 12 years of age. On the other hand, children belonging to wealthier households, to more educated and more liberal parents (characterised by households where women have greater exposure to TV, radio and newspaper and where parents value girls and boys equally) are significantly more likely to be enrolled in school.

4.2. Household Fixed Effects estimates of private school enrolment

[11] It is complicated to derive the robust standard errors for logit fixed effects estimates. In the absence of a well-defined theoretical distribution of the standard errors we bootstrap them.

The results on gender bias in private school enrolment are summarized in Table 6. Recall gender bias is captured by the GIRL dummy. In this table column 1 in each row presents the coefficient estimates associated with the GIRL dummy and column 2 the corresponding marginal effect from the selectivity corrected fixed effect logistic regression. Each row then presents the results from a different regression, and all regressions control for age of the child and birth order of the child (eldest child dummy).

Row 1 presents the results for the full sample, rows 2 and 3 separately for the urban and rural sample respectively. There is a large and statistically significant female disadvantage both in the overall sample and also separately in the urban and rural samples – the marginal effects associated with the GIRL dummy shows that for the full sample, the GIRL child is almost 19 percentage point less likely to attend private school. This gender gap is considerably higher for the rural sample (at 25 percentage points) than for the urban sample (at 11 percentage points).

In rows 4 and 5 we present the results on private school enrolment by age group – for children aged 14 or less (likely to be primary school children) in row 4 and for children aged 15 and higher (likely to be secondary and post-secondary school children) in row 5. Note that consistent with the averages presented in Figure 2, although the extent of bias against the GIRL child is relatively lower for children aged 15 and higher (estimated marginal effect is insignificant too), after controlling for an extensive set of individual characteristics, the gender gap persists (row 5).

Role of household/parental characteristics

Parental preferences may not always be aligned; for example, mothers may have more empathy for daughters and fathers for sons. Lillard and Willis (1994), in the context of Malaysia find that the mother's education has a larger effect on the daughters' education (than on sons') and the father's education seems to have greater impact

on sons. Arguing that each parent's education may be taken as indicator of his/her individual preference, Kambhampati and Pal (2001) also suggest that higher women's literacy encourages female education in rural Bengal. Accordingly, we test if the gender gap in private school enrolment varies with educational attainment of the father and the mother. Similarly religion and caste could also have a significant effect on gender bias in private school enrolment.

Panel B of Table 6 summarises gender gap results for different sub-samples defined by specific household characteristics: mother has completed at least secondary school (row 6), father has completed at least secondary school (row 7), scheduled caste or scheduled tribe households (row 8), Hindu household (row 9) and Muslim household (row 10). The marginal effects associated with the GIRL dummy (column 2) show that that the gender gap ceases to be significant when the mother has completed at least secondary school (see row 6). This is consistent with the existing evidence in the literature that argues that mother's education is crucial for the human capital accumulation of the next generation (see for example Schultz (2001)). For all other subsamples, the marginal effect associated with the GIRL dummy continues to be negative and statistically significant. It is worth noting however that compared to the full sample, the extent of bias in private school enrolment is lower for the sample of children where the father has completed at least secondary schooling (as seen by comparing the marginal effect presented in column 2 of row 1 with that presented in row 7). Educated parents therefore are significantly less likely to discriminate against the GIRL child, and not the effect of mother's education is stronger.

Becker and Lewis (1965) argue that investment in the quality of children increases at higher levels of income, which also received some empirical support (see for example Pal (1999) and Filmer (2005)). We test this proposition by examining if within household gender gap in private school enrolment changes with household expenditure quintiles. The results presented in Panel C show that there is a monotonically increasing positive effect of permanent income of the household (captured by per capita household expenditure) on bias against the girl child.

While girls in the poorest households are more than 27 percentage points less likely to attend private schools compared to boys (see row 11), the gap is more than 50 per cent lower (at 12 percentage points) for girls in households in the highest expenditure quantile (see row 14). Thus household resource constraints do matter.

Role of community characteristics

Panel D presents the effects of selected community characteristics in this respect. First, we examine whether and how the observed gender bias is affected by returns to schooling. There is a general consensus in the literature that parental decision about whether and how much to invest in their children's human capital depends on the child's potential future earnings. Duraisamy (2002) find evidence of presence and persistence of gender differences in returns to schooling in India. Kingdon (1998) and Kingdon and Theopold (2006) argue that lower female school participation in India is significantly linked to lower returns to female schooling. If returns to schooling are higher for boys, ceteris paribus, parents may choose fee-paying private schools only for boys with a view to boost expected earnings. In other words, one can expect a reversal of gender discrimination against girls in private school enrolment only when relative expected returns to girls schooling is higher. Empirically, we generate female to male hourly wage rate for those who have ever attended a school in the primary sampling unit (which we consider as the immediate community of the child). We prefer this to individual level wage earnings as the latter is likely to suffer from potential endogeneity while determining private school enrolment. In particular, we generate a binary variable FM_wage_1 that takes the value of 1 if the ratio of female to male market hourly wage rate in the community exceeds 1, i.e., when labour market returns for women are higher than that for men. The variable takes a value 0 otherwise. We also consider a variant of this returns measure by restricting ourselves to males and females with some spoken English skills. Finally, we examine the effect of the distance to the nearest private school relative to the nearest government school, which is likely to affect

the cost of attending private schools. As already discussed (see footnote 8), distance to school has a negative and statistically significant effect on school enrolment of the female child.

The results presented in Rows 15–17 show that the bias against the GIRL child persists even when returns to schooling (in the form of higher market wages) is greater for women and also when the cost of attending a private school is lower. While it is true that higher returns and lower costs of attending private schools reduces the extent of gender bias (compare the marginal effects in rows 15 and 17 to those in row 1), the effect continues to be statistically significant.

Inter-state variation in gender gap

Inter-state variation in human development in India is striking which not only reflects the variations in history, politics and geography of these states, but also those in class, caste, religion and institutions (see Dreze and Sen (2013)). Gender inequity continues to remain a serious problem in all the states, though the heterogeneity is striking – for example the gender gap in private schooling is only about 7% in Kerala while it is more than four times (30%) in Rajasthan and Bihar. Thus it is important to explore if the gender gap in private school enrolment varies across the regions in India. Table 4 presents evidence (using administrative and census data) on the regional variation in the share of private school and also on literacy rates. Clearly there is considerable variation across regions. The share of primary school students attending private schools varies from 12% in the North to 0.3% in the East. At the secondary school level, this share varies from 35% in the North to 10% in the East (see Panel A). Panel B shows a similarly large heterogeneity in literacy rates by region and by gender for the different age groups. In general the Eastern states perform quite poorly, while the Western and Southern states do considerably better than the average.

Panel E of Table 6 examines the effects across different regions of the country. [12] While there is clear evidence of gender bias all over India (the marginal effect associated with the

[12] East: Assam, Bihar, Jharkhand, Orissa, West Bengal; West: Gujarat and Maharashtra; North: Chhatisgarh, Madhya Pradesh, Rajasthan, Uttar Pradesh and Uttaranchal; North-West: Himachal Pradesh, Haryana, Jammu and Kashmir and, Punjab; South: Andhra Pradesh, Karnataka, Kerala and

GIRL dummy is negative and statistically significant), there is a large variation across the different regions: girls are almost 25 percentage point less likely to attend private school in the Northern or the North Western regions of the country (rows 19 and 20 in Table 5), the corresponding effect is almost 50% lower in the Southern and South Western regions of the country.

4.3. Comparison with Pooled Probit Estimates

An important objective of the paper is to identify and compare the extent of gender gap across households (inter-household gender gap) with that within households (intra-household gender gap). We thus compare the household fixed effects logit estimates (Table 6) with the corresponding pooled probit estimates (Table 7) that reflect the inter-household variation in private school enrolment.

Table 7 shows the selectivity corrected estimates for the full sample and also by the different geographic regions. After controlling for all other factors, the GIRL dummy is negative and statistically significant and the selection corrected marginal effects show that girls are almost 7 percentage points less likely to attend private school compared to boys. Further, the extent of female disadvantage in private school enrolment varies across the regions: the maximum is -0.11 for households residing in the Northern region while the minimum is about -0.04 in the eastern regions. Interestingly, the female disadvantage is not statistically significant in the western region. A comparison of these pooled probit estimates with the corresponding FE-logit estimates summarized in Table 6 suggest that FE-logit estimates are significantly higher not only for the pooled sample, but also for various subsamples considered. We thus conclude that compared to inter-household female disadvantage the intra-household female disadvantage is significantly larger. This finding of intra-household female disadvantage is a

Tamil Nadu. We get very similar estimates for the North-West region even when we drop households from Jammu and Kashmir.

significant contribution to the existing literature that predominantly focuses on inter-household comparisons, using pooled estimates.

4.4. Fully interacted Fixed Effects Logit Estimates

Following our argument in Section 3, we finally extend the baseline regression and interact the GIRL dummy with each of the individual child level characteristics with a view to exploring if each of the individual characteristics entail a differential effect for girls while explaining private school enrolment, as presented in Table 8. Column (1) shows the coefficient estimates for all, while column (4) shows the corresponding marginal effects of fixed effects logit model. Considering the full sample estimates, we find that the GIRL dummy is negative and statistically significant, thus identifying the female disadvantage in private school enrolment as before.

These interacted results, however, highlight some additional inferences that were not apparent in Table 6. Consider for example the effect of being the eldest child. We find that the coefficient estimate of GIRL × Eldest child is negative implying that the eldest girl child is significantly less likely to be enrolled in a private school. The coefficient estimate associated with the non-interacted term Eldest child is positive and statistically significant, indicating that the eldest male child is however significantly more likely to be enrolled in a private school.

Rural-urban differences are pronounced in India in many respects. In order to test if this holds in private school enrolment, we also obtain separate estimates for rural and urban households (see columns 2 and 3 of Table 8); the corresponding marginal effects are shown in columns 5 and 6. Note that the GIRL dummy is negative and statistically significant for the rural sector while it is not so for the urban sector in this gender interacted model. This contrasts with Table 6 where we find that the GIRL dummy is negative and statistically significant for both rural and urban areas though in terms of magnitude the effect is stronger for rural residents. Second, the birth order effect for eldest male that we see for the full sample is, however, absent

when we split the sample into rural and urban areas. In contrast, we find age differentiated gender effect for private school enrolment among both rural and urban boys. As before, the non-interacted age coefficients 13–18 years are significant for both rural and urban areas, thus suggesting that the likelihood of private school enrolment starts declining for boys between ages 13-18 (in fact this falling private school enrolment among boys starts from age 12 in rural areas). In general returns to schooling are higher in urban areas, which may explain why the falling private school enrolment is initiated a year later in urban areas. In contrast, the interaction of GIRL and age dummies are not consistently significant, especially among older girls (aged 13–18) neither in rural nor in urban areas; in other words, this may be taken as evidence that the female disadvantage is much weaker among older girls in our sample. Two possible factors that may explain this result are higher returns to girls' schooling at the secondary level (Duraisamy, 2002) and greater security concerns for adolescent girls not only while travelling to/from state schools, but also within the school premises where teacher's absence may worsen the situation (Chaudhury et al., 2006).

5. Concluding comments

The last two decades have seen an impressive growth of private schools in India though researchers are split about their effectiveness for ensuring universal education. This has led to the public debate whether private school growth can secure 'education for all'. On the one hand, private school growth may ameliorate the extent of the gender gap in schooling because parents who choose private schools are likely to be more motivated and altruistic; these parents may therefore not discriminate between boys and girls. On the other hand, private schools are fee-paying schools and parents choosing private schools are likely to choose them only when the returns from schooling is higher. We use the 2005-06 IHDS data to explore the role of individual characteristics like gender, age, birth order that reflects household preferences for some children on gender gap in private school enrolment.

In contrast to the use of single cross-section pooled regression models used in much of the literature, we prefer household fixed effects estimates that captures the within household variation in private school enrolment among boys and girls born to same parents. The advantage of household fixed effects model is that these estimates help us to minimize the bias arising from the potential endogeneity of child's gender as well as the omitted household-level characteristics. First, we show that the within household female disadvantage is significantly larger than that exists between households though it tends to be overlooked in the literature in general. Second, we find significance of gender, age, birth order and their interactions to explain intra-household variation in female disadvantage in private school enrolment and argue that these reflect the nature of parental preferences for some children against others in human capital investment. In particular, parents prefer to invest in sons relative to daughters and in this respect prefer the eldest sons from others: this seems to be a conscious choice as eldest sons are more likely to start working earlier and would thus be able to supplement family income earlier. The male advantage however disappears beyond the age of 15 and this seems to be driven by the fact that older boys drop out of school in search of jobs when parents appear to prefer investment in girls' private schooling. The latter can be attributed to higher returns to girls' secondary schooling and/or also increasing parental concerns for safety and security of adolescent and unmarried girls. Taken together, it appears that misogyny alone cannot explain the gender gap in private school enrolment in our sample as parents appear to balance various economic and non-economic considerations, as boys and girls move from childhood to adulthood, in an attempt to maximize family's welfare over time.

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Figure 1: Proportion Enrolled in School, by Age and Gender

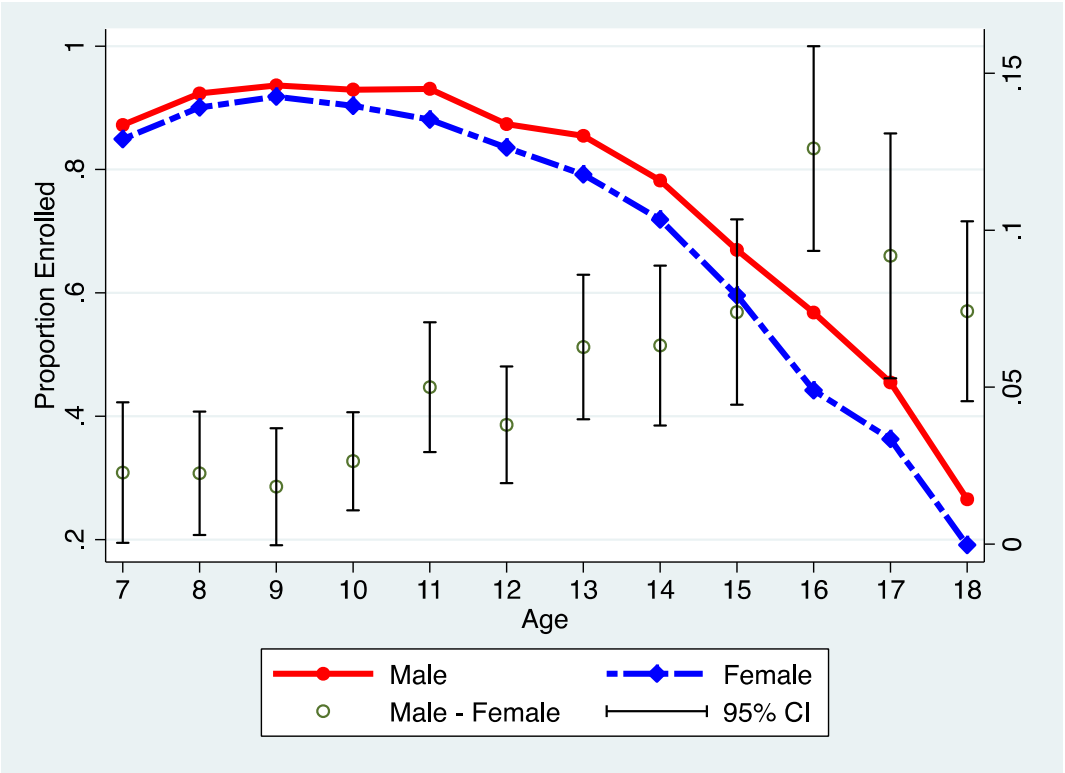
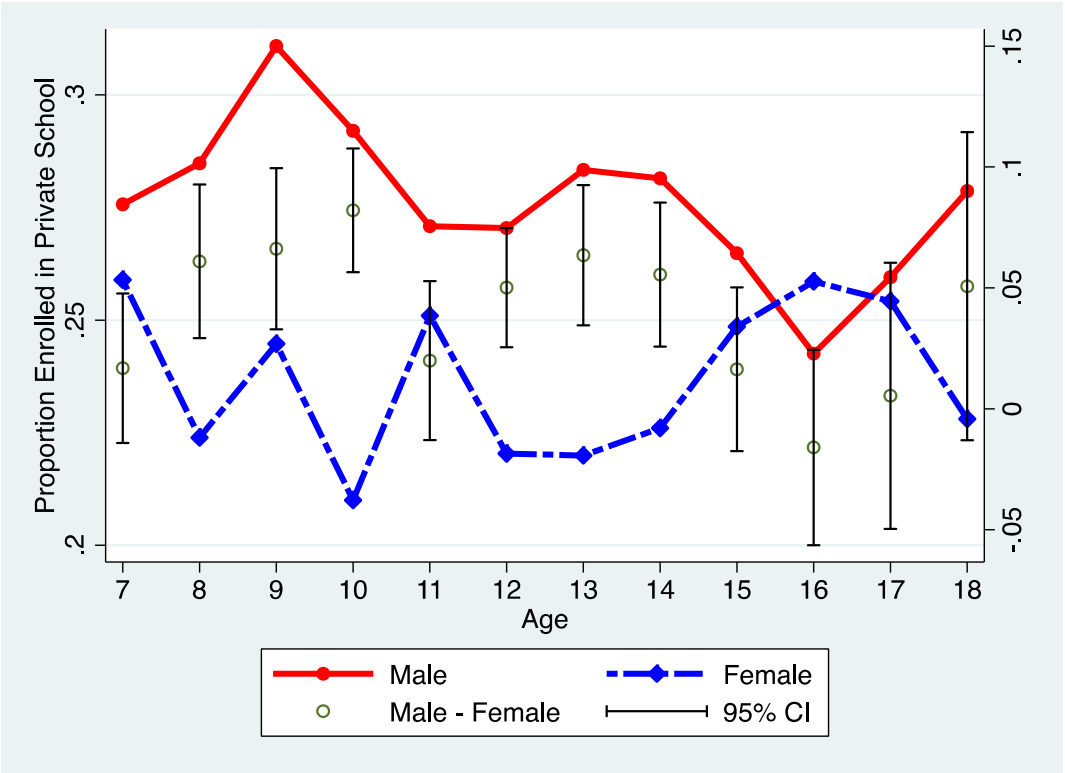
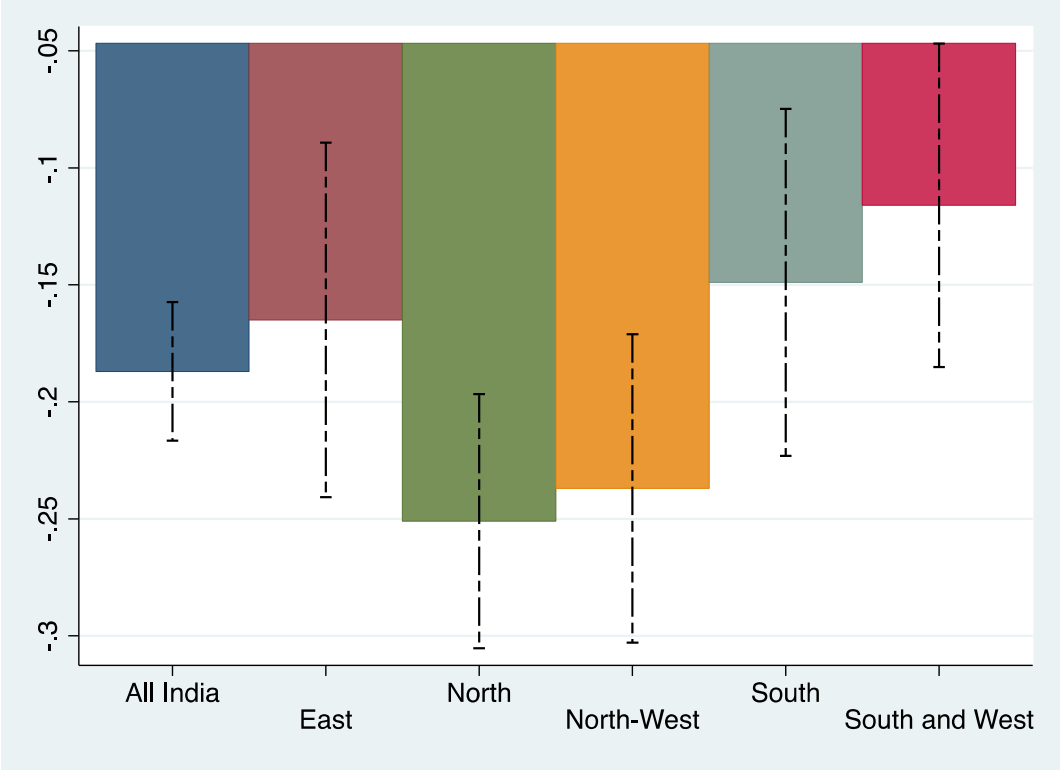


Figure 2: Proportion Enrolled in Private School, by Age and Gender



Notes:
Enrolment in Private School is conditional on school enrolment.

Figure 3: Gender Bias and associated 95% Confidence Interval



Notes:
The bars represent the marginal effects of GIRL from the fixed effects logit regression results. The associated 95% confidence intervals are presented by the dashed lines.

Table 1. A comparison of government and private unaided schools, 1992 – 2002

	Private schools		Government schools	
	1992	2002	1992	2002
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Percentage of female teachers in total				
Primary	0.55 (0.26)	0.55 (0.24)	0.35 (0.23)	0.38 (0.15)
Upper primary	0.50 (0.27)	0.50 (0.24)	0.30 (0.21)	0.32 (0.17)
Secondary	0.45 (0.26)	0.44 (0.22)	0.28 (0.20)	0.24 (0.19)
Percentage of low caste teachers				
Primary	0.09 (0.13)	0.11 (0.13)	0.22 (0.19)	0.24 (0.19)
Upper primary	0.08 (0.13)	0.10 (0.12)	0.17 (0.14)	0.23 (0.17)
Secondary	0.07 (0.11)	0.08 (0.08	0.15 (0.13)	0.17 (0.12)
Percentage of schools with:				
Pucca building	0.78 (0.17)	0.77 (0.39)	0.66 (0.24)	0.79 (0.34)
Lavatory	0.66 (0.23)	0.71 (0.22)	0.33(0.26)	0.41 (0.27)
Drinking water	0.84 (0.17)	0.91 (0.13)	0.58 (0.24)	0.78 (0.17)
Pupils per teacher				
Primary	30.7 (12.5)	34.3 (31.6)	39.1 (16.2)	67.1 (70.5)
Upper Primary	30.8 (11.2)	20.6 (50.0)	31.5 (11.5)	35.3 (58.3)
Secondary	29.1 (10.9)	13.7 (23.0)	28.1 (8.4)	29.7 (19.1)

Notes:

Source: Kingdon and Pal (2014). Government schools do not include private aided schools.

Table 2. Enrolment and Private school enrolment rates

	Enrolment			Private School Enrolment♠		
	All	Females	Males	All	Females	Males
Sample Average	0.73	0.70	0.75	0.28	0.25	0.31
Rural	0.71	0.68	0.74	0.19	0.15	0.21
Urban	0.76	0.75	0.77	0.50	0.47	0.53
Hindu	0.76	0.73	0.78	0.27	0.24	0.29
Muslim	0.56	0.53	0.58	0.36	0.35	0.37
SC/ST	0.68	0.66	0.70	0.17	0.14	0.19
Father's Education (Q1)	0.54	0.50	0.56	0.16	0.13	0.18
Father's Education (Q2)	0.67	0.65	0.69	0.29	0.26	0.32
Father's Education (Q3)	0.77	0.75	0.79	0.28	0.24	0.34
Father's Education (Q4)	0.87	0.85	0.89	0.40	0.37	0.42
Mother's Education (Q1)	0.60	0.57	0.63	0.20	0.16	0.23
Mother's Education (Q2)	0.74	0.73	0.74	0.43	0.39	0.46
Mother's Education (Q3)	0.78	0.75	0.80	0.32	0.31	0.34
Mother's Education (Q4)	0.90	0.89	0.90	0.38	0.35	0.41
Q1 (Poorest Households)	0.61	0.59	0.63	0.15	0.13	0.18
Q2	0.68	0.65	0.70	0.21	0.19	0.23
Q3	0.75	0.73	0.77	0.28	0.26	0.29
Q4 (Richest Households)	0.85	0.83	0.86	0.43	0.40	0.46
Age 7 – 9	0.88	0.87	0.89	0.29	0.26	0.32
Age 10 – 14	0.83	0.80	0.85	0.28	0.24	0.31
Age 15 – 18	0.44	0.40	0.47	0.28	0.28	0.28

Notes:

♠: Private School Enrolment, conditional on Enrolment; source: IHDS data

Table 3. Selected Sample Characteristics

	Mean	Std. Dev.
Panel A: Individual Characteristics		
Female	0.48	0.50
Household Size	7.04	3.00
Number of Children	2.90	1.81
Number of Adults	2.94	1.56
Per Capita household Consumption Expenditure	721.64	609.32
Per Capita household Income	7671.31	9656.27
Age	12.37	3.24
Years of Schooling Father	5.30	4.67
Years of Schooling Mother	2.79	4.02
Urban	0.30	0.46
Hindu	0.79	0.41
Muslim	0.15	0.36
SC/ST	0.29	0.46
Head: Reads newspaper regularly	0.60	0.76
Head Age	46.08	10.99
Enrolled	0.73	0.45
Enrolled in Private School	0.28	0.45

Table 4. Regional variation in literacy and private school share: Means and standard deviations for the (1992 and 2002) pooled data

Level	East	West	North-west	North	South	All
			Mean (SD) share of recognized private schools (in total schools)			
Primary	0.003(0.007)	0.084 (0.11)	0.05 (0.07)	0.12 (0.09)	0.047 (0.07)	0.07 (0.09)
Upper primary	0.023 (0.04)	0.058 (0.08)	0.16 (0.17)	0.28 (0.15)	0.096 (0.11)	0.15 (0.16)
Secondary	0.10 (0.12)	0.22 (0.12)	0.18 (0.15)	0.35 (0.23)	0.22 (0.15)	0.22 (0.20)
			Mean (SD) literacy rates			
Female 10-14	0.53 (0.17)	0.82 (0.12)	0.81 (0.11)	0.55 (0.20)	0.80 (0.17)	0.66 (0.21)
Male 10-14	0.71 (0.13)	0.910.05)	0.89 (0.06)	0.78 (0.13)	0.89 (0.09)	0.81 (0.13)
Female 15-19	0.47 (0.17)	0.74 (0.14)	0.73 (0.14)	0.46 (0.19)	0.72 (0.20)	0.59 (0.21)
Male 15-19	0.70 (0.12)	0.88 (0.07)	0.85 (0.08)	0.76 (0.12)	0.84 (0.12)	0.79 (0.13)
Female 10-19	0.54(0.17)	0.78 (0.13)	0.77 (0.13)	0.51 (0.19)	0.76 (0.18)	0.63 (0.21)
Male 10-19	0.72 (0.12)	0.89 (0.06)	0.87 (0.07)	0.77 (0.13)	0.86 (0.11)	0.80 (0.13)

Source: 6th and 7th AISES data and 1991 and 2001 Census data. Source: Kingdon and Pal (2014)
Note: Indian regions: south-Andhra Pradesh, Tamil Nadu, Kerala, Karnataka; West- Gujarat, Maharashtra; East- Assam, Bihar, Orissa, West Bengal;
North-west: Punjab, Haryana; North-Madhya Pradesh, Rajasthan, Uttar Pradesh.
Numbers in parenthesis denote standard deviations.

Table 5. First stage probit estimates of school enrolment, various samples

VARIABLES	(1) All Enrolled
GIRL	-0.301***
	(0.0299)
Have acquaintance with a school teacher	0.160**
	(0.0652)
Age 8	0.713***
	(0.191)
Age 9	0.518***
	(0.180)
Age 10	0.418***
	(0.135)
Age 12	-0.473***
	(0.102)
Age 13	-0.766***
	(0.101)
Age 14	-1.080***
	(0.0984)
Age 15	-1.451***
	(0.0977)
Age 16	-1.813***
	(0.0978)
Age 17	-2.036***
	(0.101)
Age 18	-2.621***
	(0.101)
Urban	-0.0486
	(0.0380)
Hindu	-0.0905
	(0.0798)
Muslim	-0.457***
	(0.0876)
Christian	-0.0721
	(0.141)
SC/ST	-0.0576*
	(0.0338)
Girl's schooling valued same as boys	0.167***
	(0.0430)
Media exposure women	0.139***
	(0.0203)
Father’s schooling years	0.0257***
	(0.00392)
Mother’s schooling years	0.0609***
	(0.00550)
Monthly expenditure quartile 2	0.0946**
	(0.0381)
Monthly expenditure quartile 3	0.261***
	(0.0422)
Monthly expenditure quartile 4	0.459***
	(0.0514)
Constant	2.143***
	(0.135)
PSU control	Yes
Observations	28,785

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 6. Gender Bias in Private School Enrolment: Coefficient estimates and marginal effects from selectivity corrected fixed effects logit estimates

		Coefficient Estimate	Marginal Effect	Sample Size	Number of Households
1.	Full Sample	-0.873***	-0.187***	3,194	1,116
		(0.090)	(0.018)		
	Panel A: Child Characteristics				
2.	Age 7 – 14	-1.042***	-0.239***	1,671	663
		(0.117)	(0.020)		
3.	Age 15 – 18	-0.657	-0.105	261	122
		(0.433)	(0.087)		
	Sector of Residence				
4.	Urban	-0.541***	-0.111***	1,443	495
		(0.133)	(0.027)		
5.	Rural	-1.141***	-0.248***	1,751	621
		(0.127)	(0.032)		
	Panel B: Parental/Household Characteristics				
6.	Mother Secondary Schooling and Higher	-0.307	-0.060	425	162
		(0.216)	(0.037)		
7.	Father Secondary Schooling and Higher	-0.588***	-0.108***	1103	379
		(0.152)	(0.027)		
8.	Scheduled Caste or Scheduled Tribe Household	-1.057***	-0.231***	704	250
		(0.226)	(0.037)		
9.	Hindu Household	-0.964***	-0.198***	2242	816
		(0.101)	0.0183		
10	Muslim Household	-0.680**	-0.168**	487	155
		(0.290)	(0.065)		
	Panel C: Household Permanent Income				
11.	Expenditure Quartile 1	-1.178***	0.276***	449	162
		(0.265)	(0.0756)		
12.	Expenditure Quartile 2	-0.928***	-0.2096***	644	226
		(0.230)	(0.035)		
13.	Expenditure Quartile 3	-0.862***	-0.183***	900	305
		(0.131)	(0.029)		
14.	Expenditure Quartile 4	-0.688***	-0.125***	924	347
		(0.137)	(0.025)		
	Panel D: Effects by Community Characteristics				
15.	Relative Female wage in cluster = 1 or higher	-0.887***	-0.136***	738	256
		(0.197)	(0.029)		
16.	Relative wage of females with English skills in cluster = 1 or higher	-0.871***	-0.191***	2155	743
		(0.103)	(0.020)		
17.	Relative distance to private school	-0.786***	-0.150***	1580	529
		(0.136)	(0.023)		
	Panel E: Region of Residence				

18.	East	-1.050***	-0.165***	449	157
		(0.278)	(0.046)		
19.	North	-1.196***	-0.251***	1193	399
		(0.147)	(0.033)		
20.	North-West	-1.137***	-0.237***	579	197
		(0.219)	(0.040)		
21.	South	-0.623***	-0.149***	535	203
		(0.201)	(0.045)		
22.	South and West	-0.481***	-0.116***	784	296
		(0.180)	(0.042)		

Notes: Bootstrapped standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Coefficient estimates from fixed effects logit regression are presented. Dependent variable takes the value of 1 if the child attends private school and 0 otherwise. Column 1 in each row presents the coefficient estimates of the GIRL dummy and column 2 the corresponding marginal effects.

Table 7. Pooled probit marginal effects estimates with selection correction

	All	East	West	North	Northwest	South
	(1)	(2)	(3)	(4)	(5)	(6)
GIRL	-0.0663***	-0.0374***	-0.0173	-0.111***	-0.0931***	-0.0632***
	(0.00616)	(0.0107)	(0.0144)	(0.0131)	(0.0182)	(0.0140)
Eldest	0.0291***	0.00555	0.0300**	0.0579***	0.0584***	0.0153
	(0.00633)	(0.0106)	(0.0149)	(0.0146)	(0.0184)	(0.0129)
Above average ability	0.0428***	0.0290	0.0796**	0.0420	0.0769*	-0.00570
	(0.0158)	(0.0300)	(0.0389)	(0.0379)	(0.0423)	(0.0289)
Age 8	-0.00162	-0.00467	-0.0550**	0.00500	0.0162	0.00178
	(0.0116)	(0.0197)	(0.0233)	(0.0230)	(0.0373)	(0.0251)
Age 9	-0.00422	-0.00665	-0.0353	0.0289	-0.0174	-0.00545
	(0.0108)	(0.0181)	(0.0221)	(0.0227)	(0.0321)	(0.0246)
Age 10	-0.00769	0.0189	-0.00871	0.0139	-0.0180	-0.0316
	(0.0101)	(0.0187)	(0.0255)	(0.0203)	(0.0304)	(0.0219)
Age 12	-0.0502***	-0.0209	-0.0412*	-0.0773***	-0.0354	-0.0587***
	(0.00958)	(0.0157)	(0.0230)	(0.0197)	(0.0309)	(0.0206)
Age 13	-0.0580***	-0.0430***	0.0119	-0.0890***	-0.0598*	-0.0782***
	(0.0105)	(0.0156)	(0.0271)	(0.0226)	(0.0318)	(0.0216)
Age 14	-0.0742***	-0.0603***	0.0443	-0.0973***	-0.129***	-0.0907***
	(0.0110)	(0.0146)	(0.0341)	(0.0253)	(0.0310)	(0.0220)
Age 15	-0.0919***	-0.0602***	-0.0295	-0.188***	-0.176***	-0.0400
	(0.0125)	(0.0162)	(0.0310)	(0.0230)	(0.0346)	(0.0318)
Age 16	-0.138***	-0.0739***	-0.0578*	-0.217***	-0.241***	-0.114***
	(0.0127)	(0.0157)	(0.0327)	(0.0248)	(0.0314)	(0.0294)
Age 17	-0.162***	-0.0811***	-0.0904***	-0.257***	-0.241***	-0.140***
	(0.0124)	(0.0166)	(0.0277)	(0.0173)	(0.0372)	(0.0282)
Age 18	-0.191***	-0.0982***	-0.126***	-0.276***	-0.295***	-0.183***
	(0.0125)	(0.0106)	(0.0194)	(0.0142)	(0.0277)	(0.0263)
Father's schooling	0.0128***	0.00868***	0.00798***	0.0151***	0.00517	0.0122***
	(0.00120)	(0.00222)	(0.00304)	(0.00233)	(0.00387)	(0.00260)
Mother's schooling	5.75e-06	-0.00160	0.0100***	-0.00429	0.00969**	0.0103***
	(0.00131)	(0.00238)	(0.00307)	(0.00304)	(0.00391)	(0.00282)
Hindu	-0.0979***	-0.0431	0.0200	0.0246	-0.119***	0.114

	(0.0229)	(0.0451)	(0.0410)	(0.0889)	(0.0391)	(0.164)
Muslim	-0.0921***	-0.0692**	0.0249	-0.0259	-0.132***	0.120
	(0.0192)	(0.0295)	(0.0656)	(0.0913)	(0.0418)	(0.263)
Christian	-0.0594**	0.0429	-0.128***		0.0198	0.118
	(0.0277)	(0.0822)	(0.0305)		(0.135)	(0.270)
Media exposure women	0.0371***	0.0395***	0.0199*	0.0730***	0.0492***	0.0424***
	(0.00540)	(0.0101)	(0.0116)	(0.0119)	(0.0178)	(0.0116)
SC/ST	-0.0863***	-0.0281*	-0.0431*	-0.129***	-0.172***	-0.0579***
	(0.00957)	(0.0160)	(0.0239)	(0.0187)	(0.0280)	(0.0219)
Expenditure quartile 2	0.0418***	0.0213	-0.0283	0.0621**	0.118*	0.00804
	(0.0148)	(0.0218)	(0.0364)	(0.0245)	(0.0707)	(0.0422)
Expenditure quartile 3	0.0985***	0.0362	-0.0292	0.177***	0.184***	0.0926**
	(0.0154)	(0.0231)	(0.0358)	(0.0286)	(0.0674)	(0.0431)
Expenditure quartile 4	0.192***	0.0914***	0.0580	0.189***	0.345***	0.183***
	(0.0172)	(0.0315)	(0.0443)	(0.0349)	(0.0626)	(0.0440)
Urban	0.179***	0.127***	0.160***	0.274***	0.280***	0.206***
	(0.0111)	(0.0194)	(0.0285)	(0.0250)	(0.0437)	(0.0224)
λ	0.296***	0.194***	0.304***	0.475***	0.433***	0.380***
	(0.0432)	(0.0698)	(0.0971)	(0.0926)	(0.134)	(0.115)
PSU control	Yes	Yes	Yes	Yes	Yes	Yes
Observations	21,198	3,650	2,541	6,029	3,245	4,053

Notes: Dependent variable takes the value of 1 if the child attends private school and 0 otherwise. Sample restricted to the household head's children aged 7 – 18. Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 8. Selectivity Corrected household Logit FE estimates of private school enrolment with gender interactions

	Coefficient estimates			Marginal effects		
	All	Urban	Rural	All	Urban	Rural
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
GIRL	-0.693***	-0.365	-1.007***	-0.147***	-0.068	-0.216***
	(0.176)	(0.323)	(0.278)	(0.042)	(0.062)	(0.052)
Eldest	0.344**	0.194	0.367*	0.079**	0.042	0.074
	(0.137)	(0.215)	(0.220)	(0.038)	(0.056)	(0.046)
GIRL × Eldest	-0.362*	-0.251	-0.260	-0.076*	-0.049	-0.057
	(0.217)	(0.290)	(0.294)	(0.043)	(0.073)	(0.061)
Age 8	0.232	0.581	-0.0116	0.054	0.132	-0.001
	(0.220)	(0.471)	(0.285)	(0.061)	(0.106)	(0.082)
Age 9	0.254	0.326	0.169	0.059	0.071	0.040
	(0.274)	(0.367)	(0.293)	(0.071)	(0.084)	(0.071)
Age 10	0.316	0.447	0.252	0.073	0.096	0.060
	(0.220)	(0.366)	(0.320)	(0.056)	(0.091)	(0.074)
Age 12	-0.520**	-0.251	-0.795**	-0.107***	-0.050	-0.161***
	(0.207)	(0.343)	(0.368)	(0.039)	(0.061)	(0.042)
Age 13	-0.554**	-0.701	-0.447	-0.113***	-0.133***	-0.093
	(0.220)	(0.439)	(0.342)	(0.036)	(0.046)	(0.058)
Age 14	-0.686***	-0.992**	-0.461	-0.137***	-0.174***	-0.097**
	(0.212)	(0.390)	(0.365)	(0.035)	(0.041)	(0.051)
Age 15	-1.105***	-1.160***	-0.831**	-0.202***	-0.196***	-0.163***
	(0.279)	(0.355)	(0.407)	(0.035)	(0.044)	(0.059)
Age 16	-2.343***	-1.836***	-2.537***	-0.324***	-0.264***	-0.342***
	(0.345)	(0.461)	(0.604)	(0.024)	(0.039)	(0.032)
Age 17	-2.489***	-1.853***	-2.705***	-0.321***	-0.259***	-0.337***
	(0.418)	(0.587)	(0.653)	(0.028)	(0.045)	(0.034)
Age 18	-4.594***	-3.849***	-4.420***	-0.379***	-0.339***	-0.380***
	(0.650)	(0.971)	(0.922)	(0.029)	(0.047)	(0.041)

GIRL × Age 8	-0.601*	-0.153	-0.827	-0.121*	-0.030	-0.163*
	(0.345)	(0.690)	(0.506)	(0.068)	(0.117)	(0.088)
GIRL × Age 9	0.0123	-0.243	0.188	0.005	-0.042	0.043
	(0.396)	(0.457)	(0.482)	(0.078)	(0.107)	(0.121)
GIRL × Age 10	-0.0366	-0.386	0.0661	-0.009	-0.072	0.012
	(0.320)	(0.482)	(0.367)	(0.077)	(0.090)	(0.106)
GIRL × Age 12	-0.127	-0.526	0.185	-0.032	-0.105	0.037
	(0.242)	(0.453)	(0.479)	(0.069)	(0.080)	(0.106)
GIRL × Age 13	0.0207	0.0268	0.0799	0.002	0.008	0.014
	(0.359)	(0.531)	(0.431)	(0.074)	(0.082)	(0.101)
GIRL × Age 14	-0.469	0.172	-0.846*	-0.099*	0.032	-0.167**
	(0.294)	(0.515)	(0.434)	(0.054)	(0.103)	(0.073)
GIRL × Age 15	-0.220	0.0832	-0.570	-0.052	0.013	-0.122
	(0.301)	(0.463)	(0.396)	(0.078)	(0.114)	(0.010)
GIRL × Age 16	0.461	0.127	0.791	0.105	0.023	0.188
	(0.317)	(0.597)	(0.486)	(0.081)	(0.112)	(0.127)
GIRL × Age17	-0.443	-1.098	0.122	-0.094	-0.185*	0.026
	(0.486)	(0.679)	(0.609)	(0.089)	(0.094)	(0.156)
GIRL × Age 18	0.296	0.362	0.147	0.063	0.072	0.029
	(0.601)	(1.124)	(0.790)	(0.137)	(0.196)	(0.209)
λ	3.434***	0.978	4.200***			
	(0.583)	(0.986)	(0.849)			
Sample size	3,194	1,443	1,751	3,194	1,443	1,751
Number of households	1,116	495	621	1,116	495	621

Notes: Bootstrapped standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Coefficient estimates from fixed effects logit regression are presented. Dependent variable takes the value of 1 if the child attends private school and 0 otherwise. Columns 4 – 6 present the marginal effects.