# Targeting Girls' Education: Effects of Gender Targeting on Enrollment, Retention, and Learning in Rural Rajasthan

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**Short Abstract (150 Words)**

Utilizing a randomized experiment in rural Rajasthan, India, we evaluate the effectiveness of an education program aimed to increase girls' retention, enrollment and learning. While enrollment and community sensitization were specifically aimed at promoting girls education, the learning component of the program involved and targeted boys and girls equally. Approximately 230 primary schools were randomly assigned to the program or to a control and we evaluate the effect after two years of program implementation. We find moderate gains in retention and enrollment after one year of the program, primarily among girls who are most likely to be disadvantaged. After the completion of the second year of the program, we find large gains in learning in Hindi, English, and Math, equivalent to approximately one additional year of schooling with no significant difference in learning across gender.

## INTRODUCTION

There have been drastic educational gains among girls over the past decades; yet, in some parts of the world, girls continue to face strong barriers to education that can be attributed to gender (WDR, 2012). In 2012, 4.6 percent of girls aged 7-10 are still not in school in rural Rajasthan compared to 2.2 percent of boys (ASER 2012). This gender gap widens considerably as students age, especially in rural India where marriage is seen as a substitute for schooling for many girls. Girls often have no say in when and who they marry, which often occurs at a young age. 68 percent of girls are married under legal age. In contrast to boys, girls often are forced to stay home to work on household chores and care for younger siblings. This translates into low enrolment rates and numerous drop-outs. 40 percent of girls leave school before they reach grade five (Educate Girls) In addition, quality of education is low with only 47.7 percent children in grades three to five able to read a grade one text in government schools in 2011and only 33.1 percent able to do subtractions in 2012 (ASER, 2012).

Educate Girls is an NGO based in Mumbai, India, working with government schools in the state of Rajasthan since 2006. Their program consists of a collection of programs aimed at increasing girls' educational outcomes given the large disparities outlined above. The program is directed in each village by a village volunteer, who typically is a young adult or an older member of the community who is particularly committed to girls' education. Before each school year, they engage in a house-to-house enrollment drive, targeting girls in the village who have never been enrolled or who have dropped out, to encourage their parents and the girl herself to come to school. With assistance of the volunteer and Educate Girls' full-time staff, School Management Committees (SMCs) at each school are strengthened through training and frequent communication, aimed at building village capacity and increasing local participation in schooling decisions as well as sensitizing the community to many of the issues related to girls' education and formulating an annual School Improvement Plan (SIP). These activities are focused on government primary schools.

The program further consists of a Creative Learning and Teaching (CLT) program. Village volunteers are intensively trained and supported by the NGO to conduct this program. This program does not focus explicitly on girls, rather aims to increase learning levels among all students (girls and boys) in grades three to five by supplementing the students' standard lessons with weekly "games-based" education. This program takes place over three months, starting with an NGO-administered CLT-pretest before any programs begin. Meetings take place during school hours for approximately two hours per day, over several days per week during the months of the program. Instruction takes place in the core subjects of Hindi, English, and Math. After three to six months of the program, students are further tested in English, Hindi and Math by the NGO staff and community volunteers. The strategy of the implementing organization is to scale up and roll out its program in an entire district at once.

As this program scales up across the state of Rajasthan, we examine the effectiveness of the Educate Girls programs. In particular, through a randomized experiment in which approximately 100 primary schools were randomly chosen as program schools, we compare retention, enrollment, and test scores among boys and girls with approximately 100 control schools. We examine which types of students benefit from the program. We address several main research questions: 1) Given the focus of Educate Girls as a whole, do boys also benefit from the general programmatic activities and from the CLT program – which is not gender specific? 2) If the enrollment drive and emphasis on retention are effective in attracting vulnerable (female) students – potentially increasing class size with lower ability students, what is the net impact of the CLT program on overall test scores? Using rich student-level data over two years and the randomized design, we are able to address these questions without the usual causal concerns that come from analysis with cross-sectional data. In accordance with the program design, we find a gender gap reduction in enrollment and retention, while learning improvements are similar for boys and girls.

## II. RESEARCH DESIGN AND DATA

### A. Research Design

As part of the rollout of the Educate Girls program into a new district in 2011, 100 villages were selected to be included in the impact evaluation – this included villages located in four administrative blocks of the district (Ahore, Jalore, Jaswantpura and Sayla). Prior to program implementation, rural villages with at least one government primary school were randomly selected; the final participating sample consists of a total of leaving 98 villages which were evenly and randomly divided between treatment and control villages. Randomization was stratified by school size. Because many villages have more than one primary school, our total sample consists of 230 primary schools, of which 117 are assigned to treatment and 113 are assigned to control (Table 1, Panel A).

The program was implemented during the 2011/2012 academic year (Running from July 2011 until April 2012) focusing the CLT activities on students in grades three, four, and five. The program continued the next academic year (2012/2013), also focusing on those who were in grades three, four, and five during that academic year. We present results from data available from the second year of the program – 2012/2013.

### B. Data

Data for this study were collected from a variety of sources. First, enrollment registers of pupils in grades three, four, and five from each school were collected at the beginning of the 2011/2012 academic school year. Data in the registers include limited information about each student's gender, age, caste and tribe.

Second, publicly-available school-level data were obtained from India's District Information System for Education (DISE). These data contain measures of school infrastructure such as the presence of electricity, computers, and number of students. These data were used primarily to define eligibility criteria as part of the selection process, sample stratification during randomization and are used as covariates in the analyses.

Third, two rounds of student-level test score data administered and collected by the NGO are used for the analyses. The first round of available tests was collected among third, fourth, and fifth graders at the beginning of the second academic school year (2012/2013), after the implementation of the first year of the program but before the second year of CLT implementation. The second round of test data was also collected during the 2012/2013 academic year, but was collected after the end of the second year of the CLT program implementation.

We match these two rounds of student-level test score data to the enrollment records from the 2011/2012 academic year. Each academic year, data were collected for students in grades three through five in each respective academic year. This implies that fifth grade students with enrollment data in 2011/2012 do not have test score data available in 2012/2013. Similarly, third grade students enrolled in 2012/2013 do not have baseline enrollment data from 2011/2012. This affects the sample of students available for full analyses – we discuss this further below. Students were matched by school, last and first name, birthdate, and father's name. In the case that there were multiple possible matches, we keep each observation in the data, but weight all analyses by the inverse of the number of possible matches (See Appendix A)

We study effects of the program on three distinct samples of students: 1) Longitudinal Sample: students from grades three and four who were enrolled at the baseline in 2011/2012; 2) Newly Enrolled Sample: students who were not enrolled at the baseline in 2011/2012 but are enrolled in either grades four or five in 2012/2013; and 3) New Grade Three Sample: students who were enrolled in 2012/2013 in grade three. The New Grade Three Sample consists of two types of students – those who were enrolled in second grade in 2011/2012 and those who were not enrolled in 2011/2012 but are new third grade enrollees. We present all results separately for each sample.

Using the two rounds of test score data, we construct retention, enrollment, attendance, and test score outcomes. The first round of test score data collected at the beginning of the 2012/2013 academic year listed each of the students enrolled in grades three, four, and five during that academic year. This allows for measuring retention – among the Longitudinal Sample, and new enrollment among the Newly Enrolled Sample and the New Grade Three Sample.

Using each round of test score data, we measure attendance by whether or not the student was present on the (unannounced) days that the NGO administered the tests. Learning is measured from the CLT pre-

test and post-test administered before and after the implementation of the CLT program in the second academic year of the program (2012/2013). A standardized and validated test instrument was used to measure knowledge in three subjects – Hindi, English, and Math.[1] The tests are designed to be quick to administer, as they must be conducted individually and are scored categorically from A to E in which A is the highest score and E the lowest. For example, for Hindi, a score of A reflects the ability to read a short story, B the ability to read a sentence, C the ability to read words, and D the ability to recognize letters. If the student is unable to complete any of these tasks, then she is assigned a score of E. Our main analysis translates these categories into a one to five scale where five is the highest score and one the lowest.

## III. EMPIRICAL STRATEGY

The randomized design of the study leads to relatively straight-forward identification of the program's effects. To estimate the main treatment effects, we estimate

$$(1) \qquad Y_{ij} = \beta_0 + \beta_1 T_j + \varepsilon_{ij}$$

for student $i$ in village $j$ at time t. $T_j$ is an indicator for whether village $j$ was assigned to treatment. The dependent variable includes retention, enrollment, attendance, and test scores as discussed above. We cluster standard errors by village – the unit of randomization. In addition, we weight student observations by the inverse of the number of potential matches between 2011/2012 enrollment and 2012/2013 test score data.

An important identification assumption to attribute causal effects to the CLT and Educate Girls program is that there are no systematic differences between observations in the treatment and control groups. We present balancing tests of student level and school level characteristics from 2011/2012 in Table 1, Panels A and B – before the implementation of the program. Column 4 presents the p-value from testing the equality of means across treatment groups. We see no significant differences in treatment students across gender, caste, type of school (upper or lower secondary), or school characteristics such as having electricity, a computer, or drinking water. In addition, differences between treatment and control groups are all small in magnitude.

In addition to the main effects estimated in equation (1), we further estimate heterogeneous treatment by gender to test for differential effects of the program across boys and girls:

$$(2) \quad Y_{ij} = \beta_0 + \beta_1 T_j + \beta_2 Girl_{ij} + \beta_3 T_j * Girl_i + \varepsilon_{ij}$$

We present results from this specification with and without baseline student and school covariates, if the covariates are available for each analytical sample. For schools with missing covariates we impute the mean of the control and include an indicator of a missing covariate. For students in the Longitudinal

[1] See www.asercentre.org for more information about the ASER tool.

Sample without CLT pre-test data in 2012/2013, we impute their scores by gender, grade and school and include an indicator for missing pre-tests. In some specifications we also include student level interactions between covariates and the treatment indicator.

## III. RESULTS – LONGITUDINAL SAMPLE

We begin by presenting results among the Longitudinal Sample: students enrolled in third or fourth grade in 2011/2012 (recall that 2012/2013 data is unavailable for students who were in fifth grade during the first year of the program). We present retention, attendance, and test score outcomes.

Overall retention from those enrolled during the 2011/2012 academic year of the program in the control is 77.0 percent. Column 1 of Table 2 indicates that students in treatment schools are 4.2 percentage points more likely to be enrolled one year later, a 5.5 percent increase in enrollment from the control. The difference in the treatment effect between boys and girls is not statistically significant, (Column 2). Adding controls for caste and grade, and gender show that the main retention effects on the treatment are no longer significant and are close to zero, mainly driven by controlling for scheduled caste, scheduled tribe, or other backward caste (Column 3). Analysis by population group provides a more subtle view of the effects of the program. If we divide the sample by gender, we see that the largest effects on retention for boys are among general students while for girls, the largest gains are for schedule castes and other backward castes. Further, this effect, on OBC is very large at 10.4 percentage points.

Irrespective of the program, school characteristics have significant impacts on retention. Students in schools with water and electricity are 6 and 8.4 percentage points more likely to re-enroll the following year, as well as students in upper primary schools, schools with a smaller number of students and with a lower pupil-teacher ratio (not shown).

We next present the effect of the program on attendance – or whether the student was present on the day of the CLT pre- and post-tests – among those who were enrolled in the 2011/12 academic year. Overall attendance at visit one (pre-test) among the control is 54.3 percent and similar for the second visit (post-test) at 55.4 percent.

Table 3 shows the regression equations for attendance. Across each specification, there are no significant effects, nor any estimates of moderate magnitude, of the program on attendance. Attendance at visit two (post-test) shows similar results, despite our sample being large enough to allow for the detection of moderate effect sizes, and that this visit was conducted after the second year of program implementation.

Taken together, Educate Girls is effective at retaining students (vulnerable girls) on the enrollment list, but less effective in motivating their attendance.

Turning next to test results, we quantify results on a scale ranging from one to five, with five being the highest possible score. Test results are presented separately by subject, Hindi, English, or Math. Table 4 displays the results of estimating equations (1) and (2) for pre-test scores. Recall that the CLT program began in 2011 and that the CLT pre-tests were administered one year later, after the 2011-12 CLT program, but before the 2012-13 CLT program. Thus, the treatment students in this sample were exposed to one year of the program. Despite one year of implementation of the Educate Girls program in the treatment schools in 2011/12, there were no significant effects of the program on learning. This could be due to implementation failure, lack of initial effect, or lack of persistent effects.

In each subject, the point estimates on the treatment indicator are negative, and not statistically significant. Including controls indicates that schedule tribes and other backward castes are preforming worse on each subject exam, and boys are performing significantly better than girls. Further, it appears that girls fare significantly worse as measured by the "treatment" effect for girls on the beginning of year scores, in all three subjects – the p-value for this effect is shown at the bottom of each column. This could be due to the fact that more vulnerable girls (other backward castes) were more likely to be retained in the treatment schools than in the control, lowering average test scores in those schools.

Despite the significant negative results on learning on the CLT pre-test, there are large gains in learning at the end of year two of the program in 2012/13. CLT post-test results are presented in Table 5. Here there is a treatment effect of 0.17 in Hindi, 0.09 in English, and 0.15 in Math. These gains are robust to including student or school level controls. Without controlling for student-level characteristics, boys perform significantly better than girls and there is no significant treatment effect of the program on girls. After controlling for students' pre-test scores, however, girls experience the same gain from the program as boys.

## IV. RESULTS – NEWLY ENROLLED AND NEW GRADE THREE SAMPLES

We next turn to the sample of students who were not enrolled in grades three to five in 2011/2012. We divide these students into two samples – those who are newly enrolled in grades four or five in 2012/2013 who did not attend school the previous year and those who are grade three students in 2012/2013 who may or may not have been in second grade the previous year. While there are no significant differences in overall enrollment rates, the proportion of new girls enrolled was significantly higher in treatment schools. Among the Newly Enrolled Sample, 57.8 percent of the treatment and 46.7 percent of the control consists of female students, a difference of 11.2 percentage points (significant at the 0.05 level). However, this increase in females was simply substituting for fewer boys being enrolled (Table 6). In addition, Educate Girls' efforts have been significantly more beneficial to Grade 5 enrolment (54% in the treatment, compared to 43% in the control schools), again substituting for Grade 4 enrolment. Moreover,

turning to attendance at the 2012/2013 CLT pre- and post-tests, we see an overall negative effect of the program on attendance and test taking, driven by boys (Table 7, Panel A). Similar, although smaller in magnitude, effects on attendance are seen among the New Grade Three Sample (Table 7, Panel B).

Turning to the CLT pre- and post-test results in Table 8 and Table 9, the patterns on test scores are roughly similar to the effects on attendance. In general, we see negative effects on pre-test scores among boys, but no overall effect either positive or negative on girls. Again, the coefficients on the New Grade Three Sample are smaller and not statistically significant (Panel B). After the 2012/2013 CLT program, however, we see significant gains in learning among boys and girls, in both samples of newly enrolled students on the CLT pre-tests (Table 9).

The Educate Girls program had moderate effects on retention and enrollment after one year; the small significant effects are driven mainly by vulnerable girls – the target student for the NGO. After one year of the program, we see negative effects on learning – potentially due to negative selection into retention and enrollment. However, the second year of program implementation, we see relatively large gains in learning as measured by test scores. We can compare the treatment effects to the amount of learning that is implied by one additional year of schooling. In the Longitudinal Sample, students in fifth grade scored approximately 0.30 points higher on Hindi and Math and 0.20 points higher on English than those in fourt grade. Accordingly, the treatment effects from the Educate Girls and CLT program amount to approximately one additional year of schooling on all three subjects. Given this measure, these effects are quite meaningful.

## V. CONCLUSION

There has been a large number of studies rigorously evaluating the impact of educational programs in developing countries, including in India. Randomized experiments have looked into the effectiveness of programs aiming at increasing school participation (Banerjee et al. 2007; Bobonis et al, 2006; Duflo et al. 2012; Muralidharan and Prakash 2013) and improving teaching quality (Banerjee et al. 2007; Borkum et al. 2012; Das et al. 2013; Muralidharan and Sundararaman 2010). Our study adds to this flourishing literature by assessing the impact of a girls-targeted comprehensive program addressing the gender gap in schooling enrolment and levels.

We show that targeting girls is effective at bringing more girls into school. Un-enrolled girls benefited significantly more from the enrolment drive than un-enrolled boys. In addition, the program had large effects on learning levels in Hindi, English and Math, equivalent to one year of schooling. Interestingly, the program benefited both boys and girls while not targeting girls specifically. Indeed, once in school, the quality of learning program mainly consisted in implementing innovative creative and

learning teaching techniques through volunteers in the classroom and did not encompass any gender-specific component. Despite that, our results show that, once unequal baseline levels are controlled for, girls' learning levels are equally affected by the program than those of boys. The program showed a moderate impact on girls' retention, although vulnerable girls' drop-outs have been reduced. The bigger limitation of the program lies in its capacity to enforce students' attendance (newly enrolled or not).

All in all, girls benefited from the program targeting specifically their enrolment and drop-outs, more than boys. They also benefited from the learning program, not designed specifically for them, but not more than boys. In other words, while the program design was successful at reducing the enrolment gender gaps and at greatly improving boys' and girls' learning levels, it was less successful at addressing systematically lower girls' test scores and at bridging gender inequalities in schooling performance.

This paper presents preliminary findings based on two years of program implementation and data collection. Third-year program implementation is on-going and study improvements will be facilitated by access to additional data, including test scores, administrative data, secondary school enrolment and teacher transfers data. Student and parent follow-up surveys will allow for better understanding the mechanisms at stake. Further analysis will delve more into selection occurring in the enrollment and retention process.

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## APPENDIX A: Data Matching

For purposes of this project, data was matched from three data sources:

(1) Baseline enrollment list, collected in April – May 2011

(2) 2011-12 CLT data

(3) 2012-13 CLT data

Datasets (2) and (3) above were matched to (1) by the following hierarchical algorithm. If a match was made at a given step, then those observations were removed from consideration for matches at lower steps.

(1) Match if student's name, father's name, school and grade are consistent.

(2) Match if student's name, school, and grade are consistent.

(3) Match if student's name and school are consistent.

(4) Match if student's name, grade and village are consistent (to account for within-village transfers).

Due to common names and many missing father's names, we encountered a large number of situations in which a given observation from one dataset matched multiple observations from another one. To account for this, matched these "multiple matches" to all observations in the other dataset to which we found matches, and we created weights to account for the presence of multiple observations in the merged dataset corresponding to single observations in the raw data. For example, if two observations from the 2012-13 CLT data matched two observations from the baseline enrollment, list, we matched these, creating four total matches, and weighted each new "observation" by 0.5. In this way, the weighting scheme ensures that the sum of the weights of any observation from any dataset is 1. These weights are used in all results reported in this paper.

## Table 1 – Comparison of Treatment and Control

**Panel A: Sample**

| | Treatment | Control | Total |
|---|---|---|---|
| Number of Villages | 49 | 49 | 98 |
| Number of Schools | 117 | 113 | 230 |
| Number of Students in Longitudinal Sample | 3683 | 3644 | 7327 |
| Number of Newly-Enrolled Students in Grades 4 and 5 in 2012/13 | 281 | 302 | 582 |
| Number of Students in Grades 3 in 2012/13 | 2120 | 2320 | 4440 |

**Panel B: Student Characteristics**

| | Treatment | Control | Difference | P-value of balancing test |
|---|---|---|---|---|
| Girl | 0.517 | 0.547 | -0.030 | 0.120 |
| | (0.013) | (0.014) | (0.019) | |
| Grade 5 in 2012/13 | 0.460 | 0.459 | 0.001 | 0.925 |
| | (0.011) | (0.009) | (0.015) | |
| Scheduled Caste | 0.295 | 0.301 | -0.006 | 0.875 |
| | (0.025) | (0.030) | (0.039) | |
| Scheduled Tribe | 0.176 | 0.154 | 0.022 | 0.570 |
| | (0.032) | (0.022) | (0.039) | |
| Other Backwards Caste | 0.370 | 0.406 | -0.035 | 0.491 |
| | (0.038) | (0.035) | (0.051) | |

**Panel C: School/ Village**

| | Treatment | Control | Difference | P-value of balancing test |
|---|---|---|---|---|
| Upper Primary School (UPS) | 0.563 | 0.610 | -0.047 | 0.610 |
| | (0.053) | (0.076) | (0.092) | |
| Electricity | 0.401 | 0.385 | 0.016 | 0.868 |
| | (0.069) | (0.064) | (0.094) | |
| Computer | 0.086 | 0.105 | -0.019 | 0.703 |
| | (0.034) | (0.037) | (0.050) | |
| Drinking Water | 0.818 | 0.821 | -0.004 | 0.959 |
| | (0.050) | (0.057) | (0.075) | |
| Teacher/Pupil Ratio | 0.067 | 0.070 | -0.002 | 0.795 |
| | (0.005) | (0.007) | (0.008) | |
| Number of Students Enrolled in School | 81.218 | 88.859 | -7.641 | 0.212 |
| | (3.736) | (4.836) | (6.080) | |

Notes: Robust standard errors in parentheses, clustered by village.

Results are conditional on enrollment in 2011/12. These results are matched to test score data and weighted. See Appendix A.

**Table 2 -- Retention**

| Dependent var: Enrolled in 2012-13 | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| T | 0.042* | 0.031 | -0.020 | 0.006 |
| | (0.024) | (0.028) | (0.030) | (0.045) |
| Girl | | 0.024 | -0.006 | -0.006 |
| | | (0.019) | (0.012) | (0.012) |
| T * Girl | | 0.023 | 0.016 | 0.017 |
| | | (0.025) | (0.016) | (0.016) |
| Grade 5 | | | -0.003 | -0.003 |
| | | | (0.006) | (0.010) |
| SC | | | 0.060** | 0.095* |
| | | | (0.029) | (0.050) |
| ST | | | 0.053** | 0.043 |
| | | | (0.025) | (0.041) |
| OBC | | | 0.045 | 0.056 |
| | | | (0.028) | (0.050) |
| T * Grade 5 | | | | 0.001 |
| | | | | (0.011) |
| T * SC | | | | -0.072 |
| | | | | (0.051) |
| T * ST | | | | 0.017 |
| | | | | (0.049) |
| T * OBC | | | | -0.022 |
| | | | | (0.051) |
| Constant | 0.770*** | 0.757*** | 1.348*** | 1.335*** |
| | (0.019) | (0.022) | (0.051) | (0.064) |
| School-level Controls | N | N | Y | Y |
| Observations | 7,595 | 7,595 | 7,595 | 7,595 |
| R-squared | 0.003 | 0.005 | 0.719 | 0.721 |
| Mean of dep var in control | 0.770 | 0.770 | 0.770 | 0.770 |
| P-value for test of coefficient of T + coefficient on T * girl | | 0.047 | 0.902 | 0.600 |

Notes: Robust standard errors in parentheses, clustered by village.

*** p<0.01, ** p<0.05, * p<0.1

Results are conditional on enrollment in 2011/12. These results are matched to test score data and weighted. See Appendix B.

School-level Controls include Number of Students enrolled in 2011/12, Teacher-Pupil Ratio, and indicators for Upper Primary School and having a Computer, Electricity, and Drinking Water.

Missing School-level Controls are imputed as the mean of the Control group.

**Table 3 -- Attendance at 2012/13 CLT Tests**

| Dependent var: | Attended Pre-test | | | | Attended Post-test | | | | Attended Both |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| T | 0.016 | 0.012 | -0.024 | 0.012 | -0.010 | -0.028 | -0.062* | 0.024 | 0.026 |
| | (0.027) | (0.031) | (0.028) | (0.044) | (0.029) | (0.032) | (0.032) | (0.044) | (0.042) |
| Girl | | -0.029 | -0.059*** | -0.058*** | | -0.038** | -0.066*** | -0.063*** | -0.061*** |
| | | (0.023) | (0.018) | (0.018) | | (0.018) | (0.015) | (0.016) | (0.018) |
| T * Girl | | 0.007 | -0.000 | -0.002 | | 0.033 | 0.024 | 0.017 | 0.001 |
| | | (0.032) | (0.026) | (0.026) | | (0.025) | (0.020) | (0.021) | (0.024) |
| Grade 5 | | | 0.011 | 0.013 | | | 0.014 | 0.021* | 0.018 |
| | | | (0.010) | (0.015) | | | (0.009) | (0.012) | (0.014) |
| SC | | | -0.016 | 0.013 | | | -0.010 | 0.049 | 0.000 |
| | | | (0.029) | (0.042) | | | (0.030) | (0.045) | (0.035) |
| ST | | | -0.143*** | -0.129** | | | -0.139*** | -0.073 | -0.149*** |
| | | | (0.034) | (0.055) | | | (0.033) | (0.045) | (0.045) |
| OBC | | | 0.004 | 0.019 | | | -0.025 | 0.000 | -0.004 |
| | | | (0.028) | (0.043) | | | (0.031) | (0.043) | (0.036) |
| T * Grade 5 | | | | -0.003 | | | | -0.013 | -0.009 |
| | | | | (0.019) | | | | (0.017) | (0.018) |
| T * SC | | | | -0.059 | | | | -0.120** | -0.082* |
| | | | | (0.050) | | | | (0.051) | (0.045) |
| T * ST | | | | -0.030 | | | | -0.131** | -0.064 |
| | | | | (0.067) | | | | (0.060) | (0.059) |
| T * OBC | | | | -0.029 | | | | -0.050 | -0.059 |
| | | | | (0.052) | | | | (0.054) | (0.050) |
| Constant | 0.543*** | 0.559*** | 1.124*** | 1.106*** | 0.554*** | 0.575*** | 1.062*** | 1.020*** | 0.912*** |
| | (0.021) | (0.024) | (0.040) | (0.052) | (0.020) | (0.023) | (0.044) | (0.058) | (0.049) |
| School-level Controls | N | N | Y | Y | N | N | Y | Y | Y |
| Observations | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 |
| R-squared | 0.000 | 0.001 | 0.269 | 0.270 | 0.000 | 0.001 | 0.252 | 0.254 | 0.188 |
| Mean of dep var in control | 0.543 | 0.543 | 0.543 | 0.543 | 0.554 | 0.554 | 0.554 | 0.554 | 0.443 |
| P-value test of T + T * girl =0 | | 0.564 | 0.417 | 0.831 | | 0.873 | 0.240 | 0.311 | 0.516 |

Notes: Robust standard errors in parentheses, clustered by village.

*** p<0.01, ** p<0.05, * p<0.1

Results are conditional on enrollment in 2011/12. These results are matched to test score data and weighted. See Appendix B.

School-level Controls include Number of Students enrolled in 2011/12, Teacher-Pupil Ratio, and indicators for Upper Primary School and having a Computer, Electricity, and Drinking Water.

Missing School-level Controls are imputed as the mean of the Control group

**Table 4 -- 2012/13 CLT Pre-test Scores**

| Dependent var: CLT Pre-test Score | Hindi | | | | English | | | | Math | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| T | -0.172* | -0.089 | -0.090 | 0.008 | -0.147 | -0.121 | -0.121 | -0.103 | -0.191* | -0.133 | -0.136 | -0.010 |
| | (0.091) | (0.092) | (0.091) | (0.136) | (0.095) | (0.094) | (0.095) | (0.120) | (0.099) | (0.106) | (0.106) | (0.153) |
| Girl | | -0.088* | -0.098** | -0.040 | | -0.088* | -0.094* | -0.042 | | -0.091** | -0.099** | -0.034 |
| | | (0.046) | (0.046) | (0.043) | | (0.049) | (0.049) | (0.045) | | (0.039) | (0.040) | (0.034) |
| T * Girl | | -0.165** | -0.161** | -0.158** | | -0.056 | -0.054 | -0.057 | | -0.117* | -0.112* | -0.118** |
| | | (0.068) | (0.068) | (0.062) | | (0.070) | (0.070) | (0.061) | | (0.065) | (0.065) | (0.058) |
| Grade 5 | | | 0.183*** | 0.197*** | | | 0.108*** | 0.135*** | | | 0.155*** | 0.179*** |
| | | | (0.040) | (0.036) | | | (0.034) | (0.035) | | | (0.042) | (0.034) |
| SC | | | -0.139* | -0.188 | | | -0.093 | -0.206 | | | -0.147** | -0.229* |
| | | | (0.072) | (0.132) | | | (0.071) | (0.135) | | | (0.072) | (0.133) |
| ST | | | -0.203** | -0.220** | | | -0.119 | -0.149 | | | -0.157* | -0.210** |
| | | | (0.084) | (0.106) | | | (0.076) | (0.103) | | | (0.087) | (0.104) |
| OBC | | | -0.092* | -0.159 | | | -0.041 | -0.181 | | | -0.094 | -0.180 |
| | | | (0.050) | (0.109) | | | (0.054) | (0.115) | | | (0.058) | (0.123) |
| T * Grade 5 | | | | -0.024 | | | | -0.051 | | | | -0.045 |
| | | | | (0.058) | | | | (0.051) | | | | (0.056) |
| T * SC | | | | 0.058 | | | | 0.180 | | | | 0.083 |
| | | | | (0.153) | | | | (0.155) | | | | (0.155) |
| T * ST | | | | -0.121 | | | | -0.103 | | | | -0.122 |
| | | | | (0.139) | | | | (0.130) | | | | (0.149) |
| T * OBC | | | | 0.031 | | | | 0.180 | | | | 0.040 |
| | | | | (0.134) | | | | (0.136) | | | | (0.143) |
| Constant | 3.690*** | 3.739*** | 3.770*** | 2.751*** | 2.782*** | 2.830*** | 2.847*** | 1.884*** | 3.562*** | 3.612*** | 3.652*** | 2.361*** |
| | (0.054) | (0.061) | (0.076) | (0.164) | (0.062) | (0.063) | (0.081) | (0.168) | (0.065) | (0.070) | (0.091) | (0.213) |
| School-level Controls | N | N | N | Y | N | N | N | Y | N | N | N | Y |
| Observations | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 |
| R-squared | 0.006 | 0.014 | 0.024 | 0.314 | 0.006 | 0.009 | 0.014 | 0.331 | 0.007 | 0.013 | 0.020 | 0.369 |
| Mean of dep var in control | 3.690 | 3.690 | 3.690 | 3.690 | 2.782 | 2.782 | 2.782 | 2.782 | 3.562 | 3.562 | 3.562 | 3.562 |
| P-value test of T + T * girl =0 | | 0.012 | 0.011 | 0.278 | | 0.098 | 0.101 | 0.209 | | 0.015 | 0.016 | 0.371 |

Notes: Robust standard errors in parentheses, clustered by village.

*** p<0.01, ** p<0.05, * p<0.1

Results are conditional on enrollment in 2011/12. These results are matched to test score data and weighted. See Appendix B.

Drinking Water.

Missing School-level Controls are imputed as the mean of the Control group.

**Table 5 -- 2012/13 CLT Post-test Scores**

| Dependent var: CLT Post-test | Hindi | | | | English | | | | Math | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Score | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| T | 0.119 | 0.171** | 0.526*** | 0.566*** | 0.089 | 0.122 | 0.234 | 0.272* | 0.151* | 0.198** | 0.605*** | 0.647*** |
| | (0.077) | (0.076) | (0.150) | (0.151) | (0.096) | (0.095) | (0.154) | (0.143) | (0.081) | (0.083) | (0.147) | (0.146) |
| Girl | | -0.086** | -0.027 | -0.015 | | -0.089** | -0.030* | -0.022 | | -0.083** | -0.024 | -0.014 |
| | | (0.038) | (0.021) | (0.021) | | (0.034) | (0.017) | (0.017) | | (0.033) | (0.021) | (0.021) |
| T * Girl | | -0.105* | -0.005 | -0.012 | | -0.068 | -0.023 | -0.031 | | -0.095* | -0.025 | -0.033 |
| | | (0.061) | (0.036) | (0.036) | | (0.058) | (0.034) | (0.035) | | (0.051) | (0.033) | (0.033) |
| Grade 5 | | | 0.015 | 0.024 | | | 0.015 | -0.023 | | | 0.030** | 0.033 |
| | | | (0.016) | (0.023) | | | (0.018) | (0.027) | | | (0.015) | (0.023) |
| SC | | | -0.061* | -0.049 | | | -0.046 | -0.003 | | | -0.063* | -0.064 |
| | | | (0.032) | (0.049) | | | (0.030) | (0.043) | | | (0.032) | (0.057) |
| ST | | | -0.072* | -0.082 | | | -0.072* | 0.002 | | | -0.089** | -0.066 |
| | | | (0.038) | (0.053) | | | (0.041) | (0.047) | | | (0.038) | (0.058) |
| OBC | | | -0.021 | -0.055 | | | -0.033 | -0.048 | | | -0.050* | -0.081 |
| | | | (0.030) | (0.046) | | | (0.031) | (0.038) | | | (0.029) | (0.051) |
| Subject Pre-test Score | | | | -0.010 | | | | 0.074** | | | | -0.002 |
| | | | | (0.030) | | | | (0.034) | | | | (0.029) |
| Pre-test Score Imputed | | | | -0.018 | | | | -0.065 | | | | 0.006 |
| | | | | (0.062) | | | | (0.056) | | | | (0.068) |
| T * Subject Pre-test Score | | | | 0.050 | | | | -0.098 | | | | -0.033 |
| | | | | (0.069) | | | | (0.081) | | | | (0.075) |
| T * Pre-test Score Imputed | | | | 0.083 | | | | 0.058 | | | | 0.070 |
| | | | | (0.059) | | | | (0.058) | | | | (0.063) |
| T * Grade 5 | | | 0.686*** | 0.654*** | | | 0.688*** | 0.688*** | | | 0.685*** | 0.660*** |
| | | | (0.025) | (0.028) | | | (0.027) | (0.029) | | | (0.025) | (0.030) |
| T * SC | | | -0.107*** | -0.171*** | | | -0.061 | -0.080* | | | -0.061 | -0.113** |
| | | | (0.039) | (0.040) | | | (0.040) | (0.043) | | | (0.050) | (0.052) |
| T * ST | | | -0.063* | -0.079** | | | 0.017 | -0.007 | | | -0.069** | -0.085** |
| | | | (0.032) | (0.032) | | | (0.046) | (0.046) | | | (0.032) | (0.033) |
| T * OBC | | | -0.154*** | -0.156*** | | | -0.176*** | -0.157** | | | -0.181*** | -0.173*** |
| | | | (0.053) | (0.055) | | | (0.063) | (0.064) | | | (0.061) | (0.061) |
| Constant | 3.993*** | 4.041*** | 1.557*** | 1.623*** | 3.081*** | 3.129*** | 1.243*** | 1.325*** | 3.851*** | 3.896*** | 1.492*** | 1.533*** |
| | (0.041) | (0.049) | (0.125) | (0.146) | (0.055) | (0.060) | (0.101) | (0.106) | (0.052) | (0.056) | (0.121) | (0.150) |
| School-level Controls | N | N | N | Y | N | N | N | Y | N | N | N | Y |
| Observations | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 | 7,595 |
| R-squared | 0.004 | 0.011 | 0.609 | 0.624 | 0.003 | 0.008 | 0.627 | 0.635 | 0.007 | 0.013 | 0.604 | 0.612 |
| Mean of dep var in control | 3.993 | 3.993 | 3.993 | 3.993 | 3.081 | 3.081 | 3.081 | 3.081 | 3.851 | 3.851 | 3.851 | 3.851 |
| P-value test of T + T * girl =0 | | 0.450 | 0.001 | 0.000 | | 0.605 | 0.153 | 0.083 | | 0.232 | 0.000 | 0.000 |

Notes: Robust standard errors in parentheses, clustered by village.

*** p<0.01, ** p<0.05, * p<0.1

Results are conditional on enrollment in 2011/12. These results are matched to test score data and weighted. See Appendix B.

School-level Controls include Number of Students enrolled in 2011/12, Teacher-Pupil Ratio, and indicators for Upper Primary School and having a Computer, Electricity, and Drinking Water.

Missing School-level Controls are imputed as the mean of the Control group.

Missing 2012/13 CLT Pre-test Scores are imputed as the mean of the school Pre-test Score.

## Table 6 – Comparison of Treatment and Control for New Sample of Students

| **Panel A: Newly-Enrolled in Grades 4 and 5 in 2012/13** | Treatment | Control | Difference | P-value of balancing test |
|---|---|---|---|---|
| Girl | 0.578 | 0.467 | 0.112 | 0.051 |
| | (0.034) | (0.045) | (0.057) | |
| Grade 5 in 2012/13 | 0.541 | 0.433 | 0.108 | 0.067 |
| | (0.041) | (0.042) | (0.058) | |
| Upper Primary School (UPS) | 0.601 | 0.609 | -0.008 | 0.995 |
| | (0.081) | (0.111) | (0.137) | |
| Electricity | 0.474 | 0.390 | 0.084 | 0.503 |
| | (0.091) | (0.086) | (0.125) | |
| Computer | 0.086 | 0.127 | -0.041 | 0.609 |
| | (0.050) | (0.062) | (0.079) | |
| Drinking Water | 0.866 | 0.867 | -0.001 | 0.986 |
| | (0.046) | (0.053) | (0.070) | |
| Teacher/Pupil Ratio | 0.070 | 0.068 | 0.002 | 0.787 |
| | (0.004) | (0.008) | (0.009) | |
| Number of Students Enrolled in School | 64.112 | 71.494 | -7.382 | 0.436 |
| | (6.331) | (7.062) | (9.436) | |

| **Panel B: Students in Grade 3 in 2012/13** | Treatment | Control | Difference | P-value of balancing test |
|---|---|---|---|---|
| Female | 0.537 | 0.544 | -0.007 | 0.776 |
| | (0.016) | (0.018) | (0.024) | |
| Upper Primary School (UPS) | 0.561 | 0.622 | -0.061 | 0.523 |
| | (0.054) | (0.079) | (0.096) | |
| Electricity | 0.411 | 0.385 | 0.026 | 0.787 |
| | (0.074) | (0.062) | (0.096) | |
| Computer | 0.081 | 0.129 | -0.048 | 0.399 |
| | (0.035) | (0.045) | (0.057) | |
| Drinking Water | 0.802 | 0.837 | -0.035 | 0.629 |
| | (0.052) | (0.051) | (0.073) | |
| Teacher/Pupil Ratio | 0.068 | 0.071 | -0.003 | 0.788 |
| | (0.006) | (0.007) | (0.009) | |
| Number of Students Enrolled in School | 59.578 | 65.192 | -5.614 | 0.418 |
| | (4.286) | (5.459) | (6.905) | |

Notes: Robust standard errors in parentheses, clustered by village.

## Table 7 -- Attendance at 2012/13 CLT Tests

**Panel A: New Enrollees in Grades 4 and 5 in 2012/13**

| Dependent var: | Attended Pre-test | | | | | Attended Post-test | | | Attended Both |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| T | -0.102* | -0.186*** | -0.191*** | -0.193*** | -0.076 | -0.129* | -0.136** | -0.202** | -0.175** |
| | (0.052) | (0.052) | (0.053) | (0.062) | (0.061) | (0.066) | (0.066) | (0.089) | (0.083) |
| Girl | | -0.113** | -0.107** | -0.107** | | -0.107** | -0.100** | -0.099** | -0.074 |
| | | (0.055) | (0.052) | (0.052) | | (0.043) | (0.042) | (0.041) | (0.054) |
| T * Girl | | 0.167** | 0.170** | 0.169** | | 0.113 | 0.116* | 0.109* | 0.087 |
| | | (0.082) | (0.079) | (0.079) | | (0.069) | (0.065) | (0.065) | (0.077) |
| Grade 5 | | | -0.002 | -0.004 | | | -0.024 | -0.093 | -0.045 |
| | | | (0.038) | (0.046) | | | (0.048) | (0.057) | (0.053) |
| T * Grade 5 | | | | 0.004 | | | | 0.145 | 0.070 |
| | | | | (0.080) | | | | (0.099) | (0.083) |
| Constant | 0.673*** | 0.725*** | 0.887*** | 0.888*** | 0.663*** | 0.713*** | 0.817*** | 0.850*** | 0.680*** |
| | (0.040) | (0.031) | (0.116) | (0.115) | (0.030) | (0.029) | (0.107) | (0.113) | (0.116) |
| School-Level Controls | N | N | Y | Y | N | N | Y | Y | Y |
| Observations | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| R-squared | 0.011 | 0.020 | 0.040 | 0.040 | 0.006 | 0.013 | 0.033 | 0.039 | 0.034 |
| Mean of dep var in control | 0.673 | 0.673 | 0.673 | 0.673 | 0.663 | 0.663 | 0.663 | 0.663 | 0.528 |
| P-value test of T + T * girl =0 | | 0.811 | 0.772 | 0.775 | | 0.828 | 0.783 | 0.349 | 0.300 |

**Panel B: Students in Grade 3 in 2012/13**

| Dependent var: | Attended Pre-test | | | | | Attended Post-test | | | Attended Both |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| T | -0.016 | -0.038 | -0.055* | -0.055* | -0.022 | -0.026 | -0.037 | -0.037 | -0.068** |
| | (0.032) | (0.034) | (0.028) | (0.028) | (0.030) | (0.037) | (0.034) | (0.034) | (0.032) |
| Girl | | -0.073*** | -0.082*** | -0.082*** | | -0.076*** | -0.078*** | -0.078*** | -0.097*** |
| | | (0.023) | (0.023) | (0.023) | | (0.024) | (0.024) | (0.024) | (0.024) |
| T * Girl | | 0.040 | 0.046 | 0.046 | | 0.008 | 0.007 | 0.007 | 0.050 |
| | | (0.030) | (0.030) | (0.030) | | (0.035) | (0.034) | (0.034) | (0.032) |
| Constant | 0.674*** | 0.714*** | 0.932*** | 0.932*** | 0.663*** | 0.704*** | 0.816*** | 0.816*** | 0.772*** |
| | (0.024) | (0.024) | (0.047) | (0.047) | (0.019) | (0.023) | (0.048) | (0.048) | (0.052) |
| School-level Controls | N | N | Y | Y | N | N | Y | Y | Y |
| Observations | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 |
| R-squared | 0.000 | 0.004 | 0.027 | 0.027 | 0.001 | 0.006 | 0.016 | 0.016 | 0.024 |
| Mean of dep var in control | 0.674 | 0.674 | 0.674 | 0.674 | 0.663 | 0.663 | 0.663 | 0.663 | 0.523 |
| P-value test of T + T * girl =0 | | 0.956 | 0.780 | 0.780 | | 0.575 | 0.360 | 0.360 | 0.518 |

Notes: Robust standard errors in parentheses, clustered by village.

*** p<0.01, ** p<0.05, * p<0.1

Results in Panel A are conditional on not being enrolled in 2011/12.

School-level Controls include Number of Students enrolled in 2011/12, Teacher-Pupil Ratio, and indicators for Upper Primary School and having a Computer, Electricity, and Drinking Water.

Missing School-level Controls are imputed as the mean of the Control group

## Table 8 -- 2012/13 CLT Pre-test Scores

**Panel A: New Enrollees in Grades 4 and 5 in 2012/13**

| Dependent var: CLT Pre-test | Hindi | | | English | | | Math | | |
|---|---|---|---|---|---|---|---|---|---|
| Score | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| T | -0.238* | -0.290* | -0.279 | -0.158 | -0.228 | -0.289* | -0.163 | -0.208 | -0.268 |
| | (0.120) | (0.153) | (0.174) | (0.147) | (0.179) | (0.160) | (0.154) | (0.203) | (0.199) |
| Girl | | -0.262** | -0.270** | | -0.136 | -0.128 | | -0.159 | -0.187 |
| | | (0.113) | (0.120) | | (0.098) | (0.094) | | (0.121) | (0.119) |
| T * Girl | | 0.141 | 0.128 | | 0.148 | 0.128 | | 0.110 | 0.100 |
| | | (0.157) | (0.160) | | (0.147) | (0.134) | | (0.173) | (0.173) |
| Grade 5 | | | 0.194 | | | -0.015 | | | 0.126 |
| | | | (0.140) | | | (0.117) | | | (0.115) |
| T * Grade 5 | | | -0.078 | | | 0.149 | | | 0.041 |
| | | | (0.183) | | | (0.153) | | | (0.160) |
| Constant | 3.466*** | 3.589*** | 3.436*** | 2.535*** | 2.598*** | 2.642*** | 3.230*** | 3.304*** | 3.107*** |
| | (0.077) | (0.102) | (0.240) | (0.090) | (0.119) | (0.231) | (0.108) | (0.134) | (0.245) |
| School-Level Controls | N | N | Y | N | N | Y | N | N | Y |
| Observations | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| R-squared | 0.018 | 0.032 | 0.070 | 0.010 | 0.014 | 0.115 | 0.009 | 0.014 | 0.104 |
| Mean of dep var in control | 3.466 | 3.466 | 3.466 | 2.535 | 2.535 | 2.535 | 3.230 | 3.230 | 3.230 |
| P-value test of T + T * girl =0 | | 0.261 | 0.362 | | 0.583 | 0.341 | | 0.510 | 0.274 |

**Panel B: Students in Grade 3 in 2012/13**

| Dependent var: CLT Pre-test | Hindi | | | English | | | Math | | |
|---|---|---|---|---|---|---|---|---|---|
| Score | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| T | -0.072 | -0.069 | -0.087 | -0.026 | -0.063 | -0.053 | -0.082 | -0.078 | -0.070 |
| | (0.110) | (0.119) | (0.113) | (0.120) | (0.132) | (0.120) | (0.120) | (0.132) | (0.120) |
| Girl | | -0.046 | -0.063 | | -0.054 | -0.069 | | -0.041 | -0.042 |
| | | (0.056) | (0.051) | | (0.058) | (0.049) | | (0.062) | (0.049) |
| T * Girl | | -0.007 | 0.014 | | 0.068 | 0.078 | | -0.007 | -0.007 |
| | | (0.068) | (0.064) | | (0.072) | (0.062) | | (0.072) | (0.062) |
| Constant | 2.907*** | 2.931*** | 2.968*** | 2.163*** | 2.193*** | 2.163*** | 2.786*** | 2.808*** | 2.599*** |
| | (0.088) | (0.095) | (0.156) | (0.090) | (0.101) | (0.169) | (0.103) | (0.113) | (0.196) |
| School-level Controls | N | N | Y | N | N | Y | N | N | Y |
| Observations | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 |
| R-squared | 0.002 | 0.002 | 0.046 | 0.000 | 0.001 | 0.049 | 0.002 | 0.003 | 0.052 |
| Mean of dep var in control | 2.907 | 2.907 | 2.907 | 2.163 | 2.163 | 2.163 | 2.786 | 2.786 | 2.786 |
| P-value test of T + T * girl =0 | | 0.501 | 0.473 | | 0.963 | 0.814 | | 0.476 | 0.472 |

Notes: Robust standard errors in parentheses, clustered by village.

*** p<0.01, ** p<0.05, * p<0.1

Results in Panel A are conditional on not being enrolled in 2011/12.

School-level Controls include Number of Students enrolled in 2011/12, Teacher-Pupil Ratio, and indicators for Upper Primary School and having a Computer, Electricity, and Drinking Water.

Missing School-level Controls are imputed as the mean of the Control group.

## Table 9 -- 2012/13 CLT Post-test Scores

**Panel A: New Enrollees in Grades 4 and 5 in 2012/13**

| Dependent var: CLT Post-test | Hindi | | | | English | | | | Math | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Score | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| T | 0.143 | 0.074 | 0.291 | 0.323 | 0.141 | 0.100 | 0.146 | 0.118 | 0.206 | 0.180 | 0.648** | 0.530* |
| | (0.099) | (0.113) | (0.269) | (0.240) | (0.130) | (0.156) | (0.221) | (0.251) | (0.131) | (0.159) | (0.299) | (0.316) |
| Girl | | -0.250*** | -0.115* | -0.121* | | -0.093 | -0.009 | -0.019 | | -0.205* | -0.097 | -0.109 |
| | | (0.079) | (0.064) | (0.073) | | (0.096) | (0.078) | (0.077) | | (0.105) | (0.097) | (0.095) |
| T * Girl | | 0.167 | 0.064 | 0.086 | | 0.089 | -0.021 | -0.006 | | 0.084 | -0.020 | -0.008 |
| | | (0.138) | (0.105) | (0.113) | | (0.140) | (0.100) | (0.100) | | (0.141) | (0.117) | (0.116) |
| Grade 5 | | | 0.006 | 0.074 | | | 0.052 | 0.038 | | | -0.021 | 0.021 |
| | | | (0.059) | (0.081) | | | (0.049) | (0.065) | | | (0.059) | (0.071) |
| T * Grade 5 | | | | -0.147 | | | | 0.038 | | | | -0.048 |
| | | | | (0.114) | | | | (0.097) | | | | (0.122) |
| Subject Pre-test Score | | | 0.437*** | 0.431*** | | | 0.513*** | 0.495*** | | | 0.511*** | 0.467*** |
| | | | (0.052) | (0.048) | | | (0.044) | (0.039) | | | (0.058) | (0.056) |
| Pre-test Score Imputed | | | -0.183** | -0.157** | | | -0.126 | -0.107 | | | -0.236** | -0.236*** |
| | | | (0.077) | (0.076) | | | (0.090) | (0.083) | | | (0.096) | (0.089) |
| T * Subject Pre-test Score | | | 0.014 | 0.016 | | | 0.065 | 0.057 | | | -0.081 | -0.050 |
| | | | (0.066) | (0.062) | | | (0.085) | (0.091) | | | (0.082) | (0.083) |
| T * Pre-test Score Imputed | | | -0.219* | -0.234* | | | -0.134 | -0.139 | | | -0.140 | -0.124 |
| | | | (0.126) | (0.125) | | | (0.131) | (0.121) | | | (0.144) | (0.137) |
| Constant | 3.817*** | 3.934*** | 2.413*** | 2.591*** | 2.895*** | 2.938*** | 1.616*** | 1.863*** | 3.539*** | 3.635*** | 2.020*** | 2.278*** |
| | (0.066) | (0.063) | (0.208) | (0.248) | (0.076) | (0.093) | (0.117) | (0.150) | (0.095) | (0.107) | (0.197) | (0.229) |
| School-Level Controls | N | N | N | Y | N | N | N | Y | N | N | N | Y |
| Observations | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| R-squared | 0.009 | 0.026 | 0.367 | 0.390 | 0.010 | 0.012 | 0.408 | 0.424 | 0.018 | 0.030 | 0.366 | 0.392 |
| Mean of dep var in control | 3.817 | 3.817 | 3.817 | 3.817 | 2.895 | 2.895 | 2.895 | 2.895 | 3.539 | 3.539 | 3.539 | 3.539 |
| P-value test of T + T * girl =0 | | 0.055 | 0.199 | 0.107 | | 0.179 | 0.594 | 0.676 | | 0.063 | 0.049 | 0.106 |

**Panel B: Students in Grade 3 in 2012/13**

| Dependent var: CLT Post-test | Hindi | | | | English | | | | Math | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Score | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| T | 0.239** | 0.238** | 0.272 | 0.282 | 0.201 | 0.154 | 0.035 | 0.086 | 0.278*** | 0.289** | 0.429** | 0.398** |
| | (0.101) | (0.115) | (0.199) | (0.179) | (0.127) | (0.141) | (0.215) | (0.201) | (0.106) | (0.119) | (0.185) | (0.175) |
| Girl | | -0.022 | 0.028 | 0.008 | | -0.046 | -0.001 | -0.018 | | 0.005 | 0.046 | 0.022 |
| | | (0.065) | (0.042) | (0.040) | | (0.068) | (0.049) | (0.048) | | (0.069) | (0.041) | (0.039) |
| T * Girl | | 0.001 | -0.001 | 0.015 | | 0.086 | 0.043 | 0.058 | | -0.020 | -0.022 | -0.004 |
| | | (0.076) | (0.051) | (0.048) | | (0.079) | (0.056) | (0.053) | | (0.078) | (0.052) | (0.050) |
| Subject Pre-test Score | | | 0.576*** | 0.575*** | | | 0.581*** | 0.603*** | | | 0.551*** | 0.538*** |
| | | | (0.044) | (0.038) | | | (0.053) | (0.048) | | | (0.039) | (0.038) |
| Pre-test Score Imputed | | | -0.318*** | -0.299*** | | | -0.186*** | -0.171*** | | | -0.247*** | -0.237*** |
| | | | (0.053) | (0.049) | | | (0.049) | (0.045) | | | (0.046) | (0.043) |
| T * Subject Pre-test Score | | | 0.024 | 0.010 | | | 0.100 | 0.066 | | | -0.014 | -0.013 |
| | | | (0.052) | (0.050) | | | (0.080) | (0.080) | | | (0.060) | (0.060) |
| T * Pre-test Score Imputed | | | -0.155** | -0.149** | | | -0.159** | -0.152** | | | -0.152** | -0.142** |
| | | | (0.072) | (0.068) | | | (0.071) | (0.068) | | | (0.076) | (0.071) |
| Constant | 3.344*** | 3.355*** | 1.759*** | 1.976*** | 2.595*** | 2.620*** | 1.401*** | 1.581*** | 3.195*** | 3.192*** | 1.716*** | 1.963*** |
| | (0.073) | (0.086) | (0.174) | (0.169) | (0.087) | (0.099) | (0.162) | (0.175) | (0.083) | (0.093) | (0.141) | (0.150) |
| School-level Controls | N | N | N | Y | N | N | N | Y | N | N | N | Y |
| Observations | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 | 4,440 |
| R-squared | 0.020 | 0.020 | 0.408 | 0.422 | 0.017 | 0.017 | 0.443 | 0.455 | 0.030 | 0.030 | 0.363 | 0.376 |
| Mean of dep var in control | 3.344 | 3.344 | 3.344 | 3.344 | 2.595 | 2.595 | 2.595 | 2.595 | 3.195 | 3.195 | 3.195 | 3.195 |
| P-value test of T + T * girl =0 | | 0.021 | 0.142 | 0.079 | | 0.058 | 0.684 | 0.429 | | 0.014 | 0.027 | 0.029 |

Notes: Robust standard errors in parentheses, clustered by village.

*** p<0.01, ** p<0.05, * p<0.1

Results in Panel A are conditional on not being enrolled in 2011/12.

Water.

Missing School-level Controls are imputed as the mean of the Control group.

Missing 2012/13 CLT Pre-test Scores are imputed as the mean of the school Pre-test Score.