

Caste as a Determinant of Educational Attainment in India: An Empirical Analysis

Abstract

This paper is an attempt to identify the existence of learning outcome gaps if any across castes in India. We analyze it using a representative sample of 14702 children aged 8-11 in 2012 to identify the test score gaps in reading, writing and mathematics between reserved and non-reserved castes and tribes. We use the Z-score methodology to normalize the scores and then regress over caste dummies. The results suggest that there has been a substantial gap between the Scheduled tribes and the general categories. In particular, in the pre primary schooling, Scheduled castes, tribes and other backward classes lose substantial ground relative to general castes. There is suggestive evidence that improved socio economic conditions help in reducing the gap substantially. However, when the sample is divided into geographical boundaries, it is observed that the gap vanishes in urban schools.

JEL Classification: I24, I28

Keywords: education quality; test score gap; caste reservation; educational attainment

I. Introduction

Education is one of the major facilitators of economic development. It leads to accumulation of human capital which in turn helps in increasing wages, income and also has an important role to play in informed decision making and hence important policy consequences (Glewwe, 2002; (Hanushek and Woessmann, 2008); (Lindahl & Krueger,2001). However, there has been a large disparity in educational attainment across gender, caste, religion and ethnic groups. This gap remains true across time and space. In particular India has been a good case study to examine the extent of this persistent gap in presence of societal stratification in terms of caste and religion.

Indian society has undergone stratification following the emergence of the caste system since ancient ages. Post-independence the Indian Constitution identified such “socially and educationally backward classes” and extended protection to them in various forms. These classes were categorized as Scheduled Castes, Scheduled Tribes and other backward classes. In spite of reservations for these groups in education sector, employment and other socio-political spheres, the discriminatory situation has not improved much. The asset ownership which was around 186% for others, remained at 40% for SC and STs even in 2012 as evitable from NSS and IHDS database. In the education sphere while 72.29% of the other castes enrolled into primary schooling only 17.83% and 9.86% were the gross enrolment ratios respectively for the SCs and STs in 2016-17(NIEPA,2016). This disparity in achievements motivated us to explore whether this was being transmitted through generations within these marginalized groups. As the Sachar Committee report (Sachar, 2006) points out lower castes and non-hindu faith groups in India have faced deprivation both educationally and economically. This difference has been reflected in the differential income opportunities as well since return to education in India is largely attributable to educational attainment¹.

While enrolment ratios appear to be considerably high with regard to the different caste groups it remains to be seen whether learning outcome display similar results. In other words, it has to be tested if there exists any type of gap between scholastic achievement among different caste groups which can be measured in terms of learning ability and the ability to reason through mathematics². Earlier while school enrolment or drop-out rates had been the

¹ See Colclough, Kingdon and Patrinos (2010); Dutta, (2006) and Duraisamy (2000)

² There has been different sets of variables which have been identified as parameters for learning outcome. Dustmann, Machin and Schonberg (2010) for example chose vocabulary, pictures and Patterns at school entry as the determinants of learning outcome. Fryer and Levitt (2004) estimated black-white test score gap in mathematics and writing in fall of kindergarten for USA. However, we have considered Mathematics and English test scores. Vernaculars could have been more relevant in the Indian context, but we were impaired by availability of data.

primary focus of educational attainment, eventually the quality of learning became more important. While it started with P. Heyneman and A. Loxley (1983) and Hanushek (2002) in the United States, in India this literature gathered momentum with Shukla et al (1994), Pratham (2005), Jalan and Panda (2010) and Das (2019). This paper is an attempt in this direction to identify the qualitative educational achievement gap between the general caste and the reserved castes in India based on secondary data.

There has been a number of literature which looks into this achievement gap across gender and ethnic groups. A comprehensive report by PISA (2003) infers that while girls outperform boys in reading, boys perform better when it comes to mathematics. However, Goldin, Katz, and Kuziemko (2006) conclude that in higher education girls perform better than boys in most subjects and particularly in verbal test scores³. Our paper is in line with Fryer Jr. and Levitt (2004) who investigate the achievement test score gaps in primary schooling between Black, White and children belonging to other races using the Early Childhood Longitudinal Study Kindergarten cohort in USA. Similar studies by Deshpande (2000), Bifulco & Ladd, (2007), Thorat (2010) and Hanna and Linden (2012) show how attitude, aspirations and actions of teacher, value system, behaviour, and work habits of students affect this test score. However, there has been a dearth of literature in the Indian context except few papers like Husain and Sarkar (2010)⁴. Though there are papers on educational attainment among the less privileged, there has not been much research with respect to qualitative disparity in education across castes in India⁵. This paper aims to fill this caveat by exploring the mathematics and English test scores of primary school going children aged 8-11 years in the light of their caste and gender.

One can also associate family-related socio-economic resources for the gap in educational achievement within the different social groups⁶. Student and household characteristics can have significant bearing on learning outcome⁷. Nambissan (1996), Chauhan (2008), Jeffery et al. (2005) and Driver (1962) among others infer that high dropout rate among poor Dalit students is the consequence of the high indirect cost of schooling. Parents of Dalit students consider their education as a luxury commodity and so they prefer to engage their child in

³Niederle and Vesterlund (2010) attribute this to the differential manner in which the different genders respond to competitive test taking environment.

⁴They showed that in spite of substantial gender gap in primary education, at higher levels, the outcome is reverse in major cases.

⁵Munshi (2019) points out that historical discrimination in educational attainment creates social isolation of the backward children from their non-backward counterparts. Not only are the backward children in most cases first generation learners, the monopoly of non-backward classes in education pushes them to inferior quality of schools.

⁶See Magnuson and Duncan (2006) and Brooks-Gunn et al. (2010)

⁷See Govinda and Varghese (1993), Kindgon (1999) and Jalan and Panda (2010)

jobs rather than education. A surprisingly consistent result in the context of black white test score gap is that a collection of family-related socio-economic resources appears to account for little less than half a standard deviation of the black-white test score gap regardless of the evaluation used or the populations studied. (Magnuson and Duncan, (2006); Brooks-Gunn et al. (2010))⁸ Moreover, in a country like India, where the return to education is determined by the occupation, parental education and employment can be important determinants of the education of the child⁹. So we have used a composite measure of socio economic status of the family which includes parental education, parental occupational status and household income. We have also considered the household expenditure per student on education which is measured by amount spent on school fees, books/uniforms/other school materials, transportation and private tuition. It has been observed that household investment towards education is gender sensitive. (Dreze and Kingdon (2001) and Kingdon (2005))

School infrastructure and environment can also play an important role in shaping the learning outcome of students. There has been extensive literature which looks into the effect of supply side factors like school expenditures, teacher-student ratios, and teacher quality, performance of the teacher on educational attainment of children¹⁰. While Coleman et al. (1966) had showed that school inputs had relatively lesser impact on learning outcome, P.Heyneman and A. Loxley (1983) and Kingdon (1999) concluded that these are equally important in explaining educational attainment variance¹¹. Moreover school based discrimination and racial socialization can adversely affect learning ability according to Banerjee, Byrd and Rowlie (2018). In line with this literature we have identified variables like school fees paid by government and uniforms and books provided by government or other organizations.

This paper stems from our research interest in the factors affecting educational outcome gap across primary children belonging to different cast groups in India. We aim to understand the inequality existing in learning outcomes and identify the factors which may be responsible for this. We use Indian Human Development Survey 2012 (IHDS) to identify the test scores of reading, writing and mathematics for a representative sample of 14702 children aged 8-11 in 2012. While we bring in caste as gender to explain these gaps, we also include socio

⁸ Total inequality is not only a function of socioeconomic factors, but also a function of the intensity of schooling such that better trained teacher have less dispersion in achievement (Montt, 2011)

⁹ See Maitri and Sharma (2009), Hnatkovskay et al. (2013), Emran and Shilpi 2015; Jalan and Murgai (2008).

¹⁰ See Ferguson (1998), Hanushek (2002), Hoxby (2000), Krueger and Whitmore (2001), Jalan and Panda (2010)

¹¹ However, we have not been able to include these variables explicitly since these are individual household data and matching school infrastructure with these data is not possible.

economic status of the family, house hold expenditure on education and communal violence as other indicators. The students have then been divided in two age groups, i.e. 8-9 years which is categorized as the pre primary students (class III- IV) and 10-11 years which is categorized as primary students (class V – VI). We obtain that there is a substantial test score gap among scheduled tribe and non-scheduled students. This gap widens for all the three caste groups for relatively lower socio economic score and also across rural urban geographical differences and for pre primary students i.e. within the 8-9 years age group. However, the gap reduces to nearly negligible in the primary student category.

The rest of the paper will be organized as follows. Section II will provide the data utilized and the methodology. In section III we discuss the results. Section IV concludes the paper with the policy recommendations.

II. Data and Methodology

The data we use are taken from unit level survey data. We use The India Human Development Survey (IHDS-II) data¹² for the year 2012 in this paper. It is a nationally representative sample of 14702 children of age group 8-11 years. IHDS-II survey collects information on completed short reading, writing and arithmetic tests of the children of above-mentioned age group. After dropping the missing data on test scores, caste and age we have 11644 children level data. Standardized tests were administered to all available children aged 8-11 orally on short reading, writing and arithmetic knowledge in the household. These tests were developed in collaboration with researchers from Pratham, India and were pretested to ensure comparability across languages. The mathematics test evaluates number recognition, subtraction and division. Similarly, the reading test was used to measure basic skills on recognition of alphabets, words and reading paragraphs and story. The writing test score also evaluate the basic quality of students' writing skill on specific questions and were evaluated on three levels such as cannot write, write with 2 or less mistake and write with no mistake. Our analysis is based on the data at the individual level, household level as well as village level. At the individual level we have used information on age, sex, education level of mother, father and child, parent's occupational status, parents' college education or vocational training, birth weight of the children, time spent by the child on watching

¹² Data is available at <https://www.icpsr.umich.edu/web/DSDR/studies/36151/datadocumentation#>

television, private tuition, school and homework, attendance of the child in school in last 30 days, school starting age of the child, receipt of free books by the child, free uniforms from the government in the last year, information on caste, number of total children in household, sector of residence (rural/urban), number of rooms in the house, participation of any member of the household in PTA meeting in school, whether household belongs to below poverty line group or not and socio-economic status of the household¹³. Table 1 provides the summary statistics of all variables used in our analysis while the definitions are listed in a table in the appendix. We compare upper caste (UC) with socially backward castes like scheduled caste (SC) and scheduled tribes (ST). Our key outcome variables are standardized test scores of mathematics, reading & writing. The values reported of the test scores are associated to the questions which we have standardized to have mean 0 and standard deviation 1. In all cases we have used sample weights provided by IHDS.

Upper caste students are on an average score 0.235 standard deviation above the mean on math exam in the age group of 8-11 years, whereas other backward caste (OBC), scheduled caste (SC) and scheduled tribe (ST) students perform 0.023, 0.096 and 0.337 standard deviation below the mean respectively. The initial UC-OBC, UC-SC & UC-ST gaps in reading are 0.259, 0.331 and 0.573 standard deviation below the mean respectively. Similarly gaps in writing of UC and OBC, SC & ST are reported in table-1 as 0.254, 0.336 and 0.514 respectively.

Only upper caste students of age group 8-9 years (students of class III to IV) on an average, score 0.049 standard deviation more than mean on the math exam, whereas the other backward classes, scheduled caste and scheduled tribe students score 0.222, 0.292, 0.596 standard deviation below the mean on the math test respectively, yielding a upper caste and Backward castes (OBC, SC and ST) gaps of 0.271, 0.342 and 0.556 standard deviation respectively. For the next age group students (i.e. students of class V and VI) this gap decreases to 0.252 and 0.326 standard deviation for OBC and SC respectively but increases to 0.577 for ST group. The reading test score gap between upper caste and OBC, SC and ST decreases in the age group (10-11 years) compared to (8-9 years). The writing score gap on the other hand increases for SC and OBC students but decreases for ST students. The rest of the table1 represents the summary statistics for the other variables used in the analysis.

¹³ See Appendix Table A1

II. Results and discussions:

a. Estimating test score gaps for students of the age groups of 8-11 years

Table 2 below reflects the test score gaps for all reserved castes and factors responsible for variations in test scores for the students of age group of 8 to 11 years. Table 2A and Table 2B below represents series of estimates of the caste wise test score¹⁴ gaps in the students of the age groups of 8 to 9 years (class III and IV) and 10 to 11 years (class V and VI) respectively. The empirical model used for estimation is of the form

$$TESTSCORE_i = CASTE_i' B + X_i' \Phi + \varepsilon_i$$

Where i represents students. Caste dummies (SC, ST and OBC) are included in the regression, with upper caste as the omitted dummy variable. Therefore, the coefficients associated with different caste dummies capture the gap between that particular caste and upper caste. Our primary emphasis is on test score gap between upper caste & other backward caste, upper caste & scheduled caste and upper caste & scheduled tribes. The vector of other covariates included in the above model, denoted by the vector X_i , varies across columns in table 2A and table 2B. As we move to the right of the table, we find that the number of explanatory variables increases. In all cases, we apply the weighted least squares technique, with weights corresponding to the sampling weights provided in the data. The most important of these covariates are socioeconomic status index (SES) The SES index is constructed using parental education, parental occupational status and household income. Other control variables are time spent by child in doing homework, time spent in school, time spent in private tuition, number of days absent in school, age of the children at entry level, time spent in watching television, PTA participation, father's literacy (Yes or No), mother's literacy (Yes or No), gender of the child (male=1, female=0). There are significant differences across caste groups on many of these variables. Test score gaps in mathematics, reading and writing is highest between ST and upper caste and lowest between OBC and upper caste over all the model specifications. First column of the table 2, table2A and table 2B captures the racial test score gaps without including other explanatory variables. For overall sample the test score gap is highest for ST caste followed by SC group and least for

¹⁴Reading, writing and mathematics standardized(by z-score) test scores are our main dependent variables. Raw test scores werestandardized (by z-score) to have mean 0 and standard deviation 1. The formula of z-score is $Z_i^{test} = \frac{T_i - \bar{T}}{SD}$. The main advantage of z-score to the raw test score is that it allows us to compare two test scores that come from different distribution.

OBC group. Next, we add the variable composite measure of socio-economic status. This is the most important variable constructed by the authors. The components used in the SES measure are parental education, parental occupational status, and household income. Inclusion of this variable reduces test score gap in reading, writing and mathematics largely for all the backward castes (SC, ST, OBC). One standard deviation increases in the SES variable increases test score in math, reading and writing by 0.520, 0.510 and 0.489 points respectively. Test score gap in mathematics, reading and writing between upper caste and scheduled caste falls by 48%, 42% and 40% respectively (approximately). Composite SES variable similarly reduces test score gap between UC and ST in mathematics, reading and writing by 35%, 34%, 31% respectively. For OBC group compared to the UC group test score gaps in mathematics, reading and writing fall by 51%, 62%, 43%. Interestingly time spent in school does not affect Mathematics test score but time spent in private tuition significantly increases the Mathematics test score. More days a child is absent from school, the score gets significantly reduced. Effect of mother's literacy is higher than that of father for all types of test scores. Next, we divide the overall sample in two groups- pre-primary and primary level. Test score gaps of all backward classes decline at the primary level compared to pre-primary level. As we move from pre primary to primary level we find that average test score gap in mathematics and reading disappears for the OBC caste group.

b. Test score gaps across alternative specifications

Table 3 presents the sensitivity of the test scores gaps between backward case and the UC across alternative specifications. The estimated caste coefficient and corresponding standard error is only reported in the Table 3. The baseline result, that is, result reported in Table 2 is reported at the top row of the table. We find that in the urban area the test score gaps in mathematics, reading and writing are insignificant between all the backward castes and the UC (except reading score for SC). This does not hold in the rural areas. In rural area for all types of tests except in reading for OBC, backward caste students score lower than UC students. Similarly, in largest six metro cities as well as metro urban areas no significant gap

in mathematics test score observed between any backward caste and the UC. Interestingly ST caste group of students also reported no significant test score gap in reading and writing as well but for OBC and SC caste groups the score gap is even higher than baseline study. The test score gap is significant in non-metro and rural areas. The place of residence plays an important role in closing the test score gap between backward caste and UC students specially for ST caste group. Similarly, for students studying in private school we find no significant gap in reading and writing test score exists. Interestingly, SC-UC gap in mathematics test score for students in private school is insignificant but this is not true for OBC and ST castes. The responsiveness of the socio-economic status (SES) distribution indicates for the ST caste group. The analysis over the subgroups of economic classes reveal an interesting result that the test score gap falls as we move upward the economic class from poor to middle and from middle to comfortable class. Within the comfortable class no significant gaps in test scores of readings, writing and mathematics exist. It seems economic improvement is playing a key role in eliminating test score gap. We also run the regression for two sub samples namely mother's age at child's birth below 18 years and more than or equal to 18 years. We observe that the size of the gap is higher if mother's age at marriage is below 18 years. We observe no significant test score gap in maths and reading for OBC caste group and only mathematics for SC caste group for the subgroups of population who are receiving free uniforms, free books and school fees paid by the government.¹⁵

In both the tables 2 and 3 we assume that test scores of students of different castes react equally to the change in other regressors of the model. Next, we have examined the cross-caste differences to interpret the results reported in table 2 and 3. The backward students have limited opportunities on average. If students of a particular backward class do not experience much gain from improvements in any one of the variables then we can conclude that our earlier results are overstating/understating the probable path of eliminating backward caste and upper caste test score gap. Coefficients of table 4 below reflect the extent to which variations in different controlling regressors within a caste group affect the test score. Compared to full sample we find variation in socio economic status index is more responsive for OBC and ST groups but UC and SC children are less responsive to such change. However, change in homework time by the children affect test score of ST children more

¹⁵ Taking selected variables like free uniforms, free books and school fees paid by the government does not alter the results and is in line with the existing literature. See table 3 for test values.

than other caste groups. If a SC child is present for one additional day in school, then his/her test score increases more than that of other caste groups. PTA participation, gender of the child and time spent on private tuition do not affect the test score of ST students but affect significantly the test score of UC, OBC and SC children. Thus, policies designed to improve some of the environmental characteristics may improve the test scores of the ST children more than what our baseline model predicts. On the other hand, our baseline estimates slightly overstate the benefit that the SC caste group will gain after policy intervention.

IV. Conclusion

An important objective of the educational policies of the Government of India has been to eradicate caste and gender discriminations. Our paper is an attempt to show how effective the reservation policies for the scheduled castes, tribes and other backward castes have been in achieving equality in proficiency in learning outcomes. Using unit level data we have first calculated the Z scores for all the three categories i.e. reading, writing and mathematics and then we have regressed using caste dummies. We find that the test score gap is the maximum for the scheduled tribes in both pre primary and primary schooling. This implies that in spite of the efforts undertaken by the government, the scenario has not improved much for the scheduled tribes. However, as the students move from pre primary to primary, the gap reduces for all the three reserved categories. This could be due to a number of reasons like being first generation learners and having no help at home, facing discriminations in school, socio economic environment non conducive to learning. But once these children start attending classes for longer periods of time they gather confidence and their performances improve.

Our analysis also conforms to the general hypothesis that with better socio economic status like higher household income and parental education the test score gap reduces. In particular mother's education level and the child bearing age also has a direct impact on this test score. An interesting find is that the gap reduces and becomes almost zero when we compare within groups across geographical locations i.e. between rural households and urban households. This once again suggests that when the opportunity set available to the different castes, general of otherwise is the same, then there is nearly no difference in educational outcome.

The results of this paper suggests that rather than having reservation for the sake of it, with time it has become more important to expand the opportunity set available to all. If the government can provide adequate support to these backward castes particularly in the rural areas with regard to their livelihoods, then the children may have a better future with similar skill sets as the other classes. But at the onset, there has to be some impetus to bring these children to the classes and treat them equally. An educated second generation can bring about the reforms in the society by bringing in the light of knowledge to their off springs.

This line of research can also be extended to include the effect of school infrastructure and other government policies.

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TABLE1.- SUMMARY STATISTICS BY CASTE: STUDENT CHARACTERISTICS

Variable	Full Sample	Upper Caste	OBC	SC	ST
Reading Test Score	.001 (.999)	.199 (.924)	.016 (.996)	-.127 (1.030)	-.314 (1.021)
Male Reading Test score	.027 (.988)	.206 (.937)	.034 (.983)	-.090 (1.005)	-.239 (1.023)
Female Reading Test Score	-.026 (1.011)	.192 (.909)	-.003 (1.009)	-.166 (1.055)	-.391 (1.015)
At aged 8-9 years reading test score	-.192 (1.010)	.023 (.951)	-.182 (1.007)	-.331 (1.031)	-.505 (1.003)
At aged 10-11 years reading test score	.176 (.957)	.358 (.868)	.193 (.952)	.052 (.996)	-.126 (1.006)
Math Test Score	-.0008 (.999)	.235 (.978)	-.023 (.987)	-.096 (1.015)	-.337 (.926)
Male Math Test score	.057 (.995)	.278 (.975)	.024 (.992)	-.009 (.992)	-.275 (.934)
Female Math Test Score	-.064 (1.000)	.187 (.979)	-.076 (.978)	-.185 (1.031)	-.399 (.914)
At aged 8-9 years math test score	-.194 (.959)	.049 (.966)	-.222 (.939)	-.292 (.968)	-.506 (.855)
At aged 10-11 years math test score	.173 (1.003)	.405 (.959)	.152 (.995)	.079 (1.026)	-.171 (.963)
Writing Test Score	.0009 (.998)	.231 (.945)	-.022 (.944)	-.104 (1.007)	-.282 (1.014)
Male Writing Test score	.013 (.992)	.225 (.946)	-.018 (.984)	-.082 (1.000)	-.225 (1.030)
Female Writing Test score	-.012 (1.005)	.238 (.944)	-.026 (1.005)	-.127 (1.013)	-.342 (.995)
At aged 8-9 years writing test score	-.137 (1.016)	.102 (.981)	-.158 (1.006)	-.249 (1.018)	-.431 (1.014)
At aged 10-11 years writing test score	.125 (.965)	.349 (.895)	.098 (.968)	.026 (.978)	-.137 (.995)
UPPER CASTE	.258 (.437)	1.000	.000	.000	.000
OBC	.423 (.494)	.000	1.000	.000	.000
SC	.230 (.420)	.000	.000	1.000	.000
ST	.087 (.283)	.000	.000	.000	1.000
Socio Economic Status Index	-.043 (.564)	.175 (.624)	-.090 (.535)	-.124 (.503)	-.196 (.532)
Child Spends Homework (Hours)	7.368 (5.771)	8.782 (6.245)	6.984 (5.406)	6.951 (5.739)	6.558 (5.734)
Child Spends School (Hours)	30.959 (10.832)	30.561 (10.429)	31.741 (10.429)	30.443 (11.225)	29.199 (12.865)
Child Spends Private Tuition(Hours)	2.128 (4.752)	2.945 (5.350)	1.969 (4.458)	1.978 (4.846)	1.033 (3.737)
Child Absent School(days)	3.799 (4.876)	3.215 (4.426)	3.997 (4.841)	4.108 (5.363)	3.496 (4.680)
Child Television(Hours)	2.071 (1.207)	2.227 (1.451)	2.055 (1.774)	2.002 (1.041)	1.894 (.955)
Child School Starting Age(Years)	4.973 (1.064)	4.864 (1.131)	4.963 (1.043)	5.023 (1.032)	5.207 (1.025)
PTA Participation	.388 (.487)	.472 (.499)	.361 (.480)	.351 (.477)	.396 (.489)
Father Literacy	.633 (.481)	.725 (.466)	.624 (.484)	.586 (.492)	.551 (.497)
Mother Literacy	.505 (.499)	.678 (.466)	.481 (.499)	.422 (.494)	.369 (.482)
Female	.480 (.499)	.466 (.498)	.482 (.499)	.494 (.500)	.496 (.500)

TABLE 2:- The Estimated Backward-Forward Caste Test Score Gap in Mathematics, Writing and Reading of 8-11 Years Student																											
Variable	Mathematics									Writing									Reading								
SC	-.331*** (.026)	-.173*** (.025)	-.131*** (.025)	-.115*** (.025)	-.106*** (.024)	-.100*** (.024)	-.099*** (.024)	-.077*** (.024)	-.076*** (.024)	-.336*** (.026)	-.201*** (.026)	-.166*** (.025)	-.152*** (.025)	-.146*** (.025)	-.141*** (.025)	-.140*** (.025)	-.118*** (.025)	-.118*** (.025)	-.327*** (.026)	-.189*** (.025)	-.152*** (.025)	-.141*** (.025)	-.132*** (.025)	-.128*** (.025)	-.126*** (.025)	-.104*** (.025)	-.103*** (.025)
ST	-.573*** (.035)	-.371*** (.034)	-.326*** (.034)	-.304*** (.034)	-.273*** (.033)	-.282*** (.033)	-.276*** (.033)	-.255*** (.033)	-.255*** (.033)	-.514*** (.035)	-.343*** (.035)	-.304*** (.034)	-.289*** (.034)	-.270*** (.034)	-.276*** (.034)	-.272*** (.034)	-.250*** (.034)	-.250*** (.034)	-.514*** (.035)	-.339*** (.035)	-.298*** (.034)	-.286*** (.034)	-.256*** (.034)	-.263*** (.034)	-.254*** (.034)	-.232*** (.034)	-.232*** (.034)
OBC	-.259*** (.022)	-.128*** (.022)	-.092*** (.021)	-.077*** (.021)	-.073*** (.021)	-.062*** (.021)	-.064*** (.021)	-.051*** (.021)	-.051*** (.021)	-.254*** (.023)	-.144*** (.022)	-.112*** (.022)	-.103*** (.022)	-.099*** (.022)	-.089*** (.022)	-.091*** (.022)	-.078*** (.022)	-.078*** (.022)	-.183*** (.023)	-.070*** (.022)	-.037*** (.022)	-.029 (.022)	-.025 (.022)	-.016 (.021)	-.019 (.021)	-.006 (.021)	-.006 (.021)
Socio Economic Status Index	-	.518*** (.015)	.464*** (.015)	.438*** (.015)	.383*** (.015)	.348*** (.015)	.316*** (.017)	.229*** (.018)	.228*** (.018)	-	.440*** (.015)	.393*** (.015)	.366*** (.015)	.333*** (.016)	.303*** (.016)	.274*** (.017)	.191*** (.019)	.191*** (.019)	-	.448*** (.015)	.400*** (.015)	.375*** (.015)	.324*** (.015)	.297*** (.016)	.241*** (.017)	.156*** (.018)	.155*** (.018)
Child Spends Homework(Hours)	-	-	.030*** (.001)	.027*** (.002)	.025*** (.001)	.024*** (.001)	.024*** (.001)	.022*** (.001)	.022*** (.001)	-	-	.026*** (.001)	.022*** (.001)	.022*** (.001)	.020*** (.001)	.020*** (.001)	.019*** (.001)	.019*** (.001)	-	-	.027*** (.001)	.022*** (.001)	.021*** (.001)	.019*** (.001)	.019*** (.001)	.018*** (.001)	.018*** (.001)
Child Spends School(Hours)	-	-	-	-.000 (.000)	-.000 (.000)	-.001 (.000)	-.001 (.000)	-.000 (.000)	-.000 (.000)	-	-	-	.001** (.000)	.001* (.000)	.001 (.000)	.001 (.000)	.001* (.000)	.001* (.000)	-	-	-	.003*** (.000)	.003** (.000)	.003*** (.000)	.002*** (.000)	.003*** (.000)	.003*** (.000)
Child Spends Private Tuition (Hours)	-	-	-	.016*** (.001)	.015*** (.001)	.014*** (.001)	.014*** (.001)	.012*** (.001)	.012*** (.001)	-	-	-	.010*** (.001)	.009*** (.001)	.008*** (.001)	.008*** (.001)	.007*** (.001)	.007*** (.001)	-	-	-	.014*** (.001)	.012*** (.001)	.012*** (.001)	.012*** (.001)	.010*** (.001)	.010*** (.001)
Child Absent School(Days)	-	-	-	-.014*** (.001)	-.013*** (.001)	-.012*** (.001)	-.012*** (.001)	-.011*** (.001)	-.011*** (.001)	-	-	-	-.017*** (.001)	-.016*** (.001)	-.016*** (.001)	-.016*** (.001)	-.015*** (.001)	-.015*** (.001)	-	-	-	-.017*** (.002)	-.017*** (.002)	-.016*** (.001)	-.016*** (.001)	-.015*** (.001)	-.015*** (.001)
Child Television(Hours)	-	-	-	.014** (.007)	.010 (.007)	.006 (.007)	.005 (.007)	.003 (.007)	.003 (.007)	-	-	-	.027*** (.007)	.024*** (.007)	.021*** (.007)	.020*** (.007)	.018*** (.007)	.018*** (.007)	-	-	-	.006 (.007)	.002 (.009)	-.000 (.007)	-.001 (.007)	-.003 (.007)	-.003 (.007)
Child School Starting (in Years)	-	-	-	-	-.136*** (.008)	-.129*** (.008)	-.127*** (.008)	-.123*** (.008)	-.122*** (.008)	-	-	-	-	-.081*** (.008)	-.075*** (.008)	-.074*** (.008)	-.070*** (.008)	-.070*** (.008)	-	-	-	-	-.125*** (.008)	-.120*** (.008)	-.117*** (.008)	-.113*** (.008)	-.113*** (.008)
PTA Participation	-	-	-	-	-	.185*** (.018)	.181*** (.018)	.163*** (.018)	.162*** (.018)	-	-	-	-	-	.159*** (.018)	.155*** (.018)	.138*** (.018)	.138*** (.018)	-	-	-	-	-	.144*** (.018)	.137*** (.018)	.119*** (.018)	.119*** (.018)
Father Literacy	-	-	-	-	-	-	.094*** (.020)	.050*** (.020)	.049*** (.020)	-	-	-	-	-	-	.086*** (.020)	.043** (.020)	.043** (.020)	-	-	-	-	-	-	.165*** (.020)	.121*** (.020)	.120*** (.021)
Mother Literacy	-	-	-	-	-	-	-	.250*** (.020)	.250*** (.020)	-	-	-	-	-	-	-	.240*** (.029)	.240*** (.029)	-	-	-	-	-	-	-	.249*** (.021)	.249*** (.021)
Female	-	-	-	-	-	-	-	-	-.082*** (.016)	-	-	-	-	-	-	-	-	.004 (.017)	-	-	-	-	-	-	-	-	-.020 (.017)
R ²	.026	.115	.144	.155	.175	.182	.184	.194	.196	.023	.088	.110	.120	.128	.133	.134	.144	.144	.022	.089	.113	.126	.143	.148	.153	.162	.163
Number of Observations	11514									11417									11501								

Note: Standard errors reported in parentheses. *,** and *** indicate significance at 10%, 5% and 1% respectively.

TABLE 2A:- The Estimated Backward-Forward Caste Test Score Gap in Mathematics, Writing and Reading of 8-9 Years Student																												
Variable	Mathematics									Writing								Reading										
SC	-.342*** (.036)	-.173*** (.035)	-.139*** (.034)	-.124*** (.034)	-.123*** (.034)	-.116*** (.034)	-.115*** (.034)	-.093*** (.033)	-.093*** (.033)	-.352*** (.039)	-.197*** (.038)	-.172*** (.037)	-.158*** (.037)	-.155*** (.037)	-.149*** (.037)	-.148*** (.037)	-.126*** (.037)	-.126*** (.037)	-.355*** (.038)	-.190*** (.037)	-.159*** (.037)	-.146*** (.037)	-.144*** (.036)	-.137*** (.036)	-.135*** (.036)	-.111*** (.036)	-.111*** (.036)	
ST	-.556*** (.049)	-.344*** (.047)	-.304*** (.046)	-.287*** (.046)	-.262*** (.046)	-.268*** (.045)	-.263*** (.045)	-.240*** (.045)	-.238*** (.045)	-.534*** (.052)	-.336*** (.051)	-.306*** (.050)	-.293*** (.050)	-.271*** (.050)	-.276*** (.050)	-.270*** (.050)	-.247*** (.049)	-.248*** (.049)	-.529*** (.052)	-.322*** (.050)	-.284*** (.049)	-.272*** (.049)	-.248*** (.049)	-.254*** (.049)	-.244*** (.048)	-.220*** (.048)	-.221*** (.048)	
OBC	-.271*** (.032)	-.133*** (.030)	-.102*** (.030)	-.087*** (.030)	-.086*** (.029)	-.074*** (.029)	-.075*** (.029)	-.065*** (.029)	-.064*** (.029)	-.261*** (.034)	-.132*** (.033)	-.110*** (.033)	-.100*** (.032)	-.097*** (.032)	-.086*** (.032)	-.087*** (.032)	-.076*** (.032)	-.076*** (.032)	-.206*** (.033)	-.070*** (.032)	-.041 (.032)	-.030 (.032)	-.028 (.032)	-.017 (.031)	-.019 (.031)	-.007 (.031)	-.007 (.031)	
Socio Economic Status Index	-	.520*** (.020)	.466*** (.022)	.442*** (.021)	.384*** (.021)	.349*** (.021)	.319*** (.023)	.217*** (.025)	.217*** (.025)	-	.489*** (.022)	.447*** (.022)	.420*** (.022)	.373*** (.023)	.342*** (.023)	.313*** (.025)	.216*** (.027)	.216*** (.027)	-	.510*** (.022)	.459*** (.022)	.434*** (.022)	.379*** (.022)	.346*** (.023)	.293*** (.025)	.186*** (.026)	.187*** (.026)	
Child Spends Homework(Hours)	-	-	.028*** (.002)	.026*** (.002)	.025*** (.002)	.023*** (.002)	.023*** (.002)	.022*** (.002)	.022*** (.002)	-	-	.022*** (.002)	.019*** (.002)	.018*** (.002)	.016*** (.002)	.016*** (.002)	.015*** (.002)	.015*** (.002)	-	-	.026*** (.002)	.023*** (.002)	.022*** (.002)	.020*** (.002)	.020*** (.002)	.018*** (.002)	.018*** (.002)	
Child Spends School(Hours)	-	-	-	-.002** (.001)	-.002** (.001)	-.003*** (.001)	-.003*** (.001)	-.002** (.001)	-.002** (.001)	-	-	-	.000 (.001)	.000 (.001)	-.000 (.001)	-.000 (.001)	.000 (.001)	.000 (.001)	-	-	-	.000 (.001)	.000 (.001)	-.000 (.001)	-.000 (.001)	.000 (.001)	.000 (.001)	
Child Spends Private Tuition (Hours)	-	-	-	.015*** (.002)	.014*** (.002)	.013*** (.002)	.013*** (.002)	.011*** (.002)	.010*** (.002)	-	-	-	.011*** (.002)	.009*** (.002)	.008*** (.002)	.008*** (.002)	.006*** (.002)	.006*** (.002)	-	-	-	.016*** (.002)	.014*** (.002)	.013*** (.002)	.013*** (.002)	.011*** (.002)	.011*** (.002)	
Child Absent School(Days)	-	-	-	-.011*** (.002)	-.011*** (.002)	-.010*** (.002)	-.010*** (.002)	-.008*** (.002)	-.008*** (.002)	-	-	-	-.014*** (.002)	-.013*** (.002)	-.013*** (.002)	-.013*** (.002)	-.011*** (.002)	-.011*** (.002)	-	-	-	-.016*** (.002)	-.015*** (.002)	-.015*** (.002)	-.015*** (.002)	-.013*** (.002)	-.013*** (.002)	
Child Television(Hours)	-	-	-	.008 (.009)	.005 (.009)	.000 (.009)	.000 (.009)	-.002 (.009)	-.002 (.009)	-	-	-	.024 (.010)	.021** (.010)	.016 (.010)	.016 (.010)	.013 (.010)	.013 (.010)	-	-	-	-.006 (.010)	-.009 (.010)	-.014 (.010)	-.015 (.010)	-.018* (.010)	-.018* (.010)	
Child School Starting (in Years)	-	-	-	-	-.136*** (.011)	-.130*** (.011)	-.128*** (.011)	-.122*** (.011)	-.121*** (.011)	-	-	-	-	-.110*** (.011)	-.105*** (.012)	-.104*** (.012)	-.097*** (.012)	-.097*** (.012)	-	-	-	-	-.128*** (.012)	-.122*** (.012)	-.120*** (.012)	-.113*** (.011)	-.113*** (.011)	
PTA Participation	-	-	-	-	-	.189*** (.025)	.184*** (.025)	.164*** (.025)	.163*** (.025)	-	-	-	-	-	.168*** (.027)	.164*** (.027)	.144*** (.027)	.145*** (.027)	-	-	-	-	-	.182*** (.026)	.175*** (.026)	.153*** (.025)	.153*** (.025)	
Father Literacy	-	-	-	-	-	-	.091*** (.027)	.033 (.028)	.032 (.028)	-	-	-	-	-	-	.088*** (.030)	.033 (.030)	.033 (.030)	-	-	-	-	-	-	.159*** (.029)	.099*** (.030)	.099*** (.030)	
Mother Literacy	-	-	-	-	-	-	-	.306*** (.029)	.307*** (.029)	-	-	-	-	-	-	-	-	.293*** (.031)	.293*** (.031)	-	-	-	-	-	-	-	.321*** (.031)	.321*** (.031)
Female	-	-	-	-	-	-	-	-	-.043*** (.023)	-	-	-	-	-	-	-	-	.011 (.025)	-	-	-	-	-	-	-	-	.021 (.024)	
R ²	.029	.129	.168	.165	.187	.195	.197	.213	.214	.029	.104	.119	.126	.139	.145	.146	.160	.160	.024	.112	.133	.144	.162	.169	.173	.189	.189	
Number of Observations	5463									5420									5456									

Note: Standard errors reported in parentheses. *,** and *** indicate significance at 10%, 5% and 1% respectively.

TABLE 2B:- The Estimated Backward-Forward Caste Test Score Gap in Mathematics, Writing and Reading of 10-11 Years Student																											
Variable	Mathematics									Writing									Reading								
SC	-.326*** (.036)	-.169*** (.035)	-.125*** (.034)	-.110*** (.034)	-.094*** (.034)	-.089*** (.034)	-.088*** (.034)	-.066** (.034)	-.063** (.034)	-.322*** (.035)	-.203*** (.034)	-.160*** (.034)	-.149*** (.034)	-.141*** (.034)	-.137*** (.034)	-.136*** (.034)	-.114*** (.034)	-.114*** (.034)	-.306*** (.034)	-.187*** (.034)	-.149*** (.034)	-.141*** (.033)	-.126*** (.033)	-.123*** (.033)	-.122*** (.033)	-.100*** (.033)	-.099*** (.033)
ST	-.577*** (.050)	-.378*** (.048)	-.333*** (.048)	-.310*** (.047)	-.270*** (.047)	-.281*** (.047)	-.276*** (.047)	-.254*** (.047)	-.257*** (.046)	-.486*** (.048)	-.336*** (.047)	-.293*** (.047)	-.278*** (.047)	-.260*** (.046)	-.269*** (.046)	-.264*** (.046)	-.243*** (.046)	-.243*** (.046)	-.485*** (.048)	-.344*** (.047)	-.296*** (.046)	-.284*** (.046)	-.248*** (.046)	-.254*** (.046)	-.245*** (.045)	-.225*** (.045)	-.226*** (.045)
OBC	-.252*** (.031)	-.125*** (.030)	-.086*** (.030)	-.074*** (.030)	-.065** (.029)	-.055** (.029)	-.057** (.029)	-.043 (.029)	-.043 (.029)	-.250*** (.030)	-.155*** (.030)	-.117*** (.030)	-.109*** (.029)	-.105*** (.029)	-.096*** (.029)	-.097*** (.029)	-.083** (.029)	-.083** (.029)	-.165*** (.030)	-.069** (.029)	-.036 (.029)	-.033 (.029)	-.025 (.029)	-.019 (.029)	-.022 (.029)	-.008 (.028)	-.009 (.028)
Socio Economic Status Index	-	.530*** (.021)	.481*** (.021)	.456*** (.021)	.399*** (.021)	.364*** (.022)	.329*** (.024)	.251*** (.026)	.250*** (.026)	-	.403*** (.021)	.355*** (.021)	.331*** (.021)	.307*** (.021)	.277*** (.022)	.246*** (.024)	.172*** (.026)	.172*** (.026)	-	.402*** (.020)	.359*** (.020)	.339*** (.021)	.287*** (.021)	.265*** (.021)	.204*** (.023)	.131*** (.025)	.130*** (.025)
Child Spends Homework(Hour s)	-	-	.029*** (.002)	.025*** (.002)	.023*** (.002)	.021*** (.002)	.021*** (.002)	.020*** (.002)	.020*** (.002)	-	-	.027*** (.002)	.023*** (.002)	.023*** (.002)	.021*** (.002)	.021*** (.002)	.020*** (.002)	.020*** (.002)	-	-	.025*** (.001)	.019*** (.002)	.017*** (.002)	.016*** (.002)	.016*** (.002)	.015*** (.002)	.015*** (.002)
Child Spends School(Hours)	-	-	-	.001 (.001)	.001 (.001)	.000 (.001)	.000 (.001)	.000 (.001)	.000 (.001)	-	-	-	.002** (.001)	.002** (.001)	.002** (.001)	.002* (.001)	.002** (.001)	.002** (.001)	-	-	-	.006** (.001)	.006*** (.001)	.006*** (.001)	.005*** (.001)	.006*** (.001)	.006*** (.001)
Child Spends Private Tuition (Hours)	-	-	-	.016*** (.002)	.014*** (.002)	.014*** (.002)	.014*** (.002)	.012*** (.002)	.012*** (.002)	-	-	-	.009*** (.002)	.008*** (.002)	.008*** (.002)	.008*** (.002)	.006*** (.002)	.006*** (.002)	-	-	-	.011*** (.002)	.009*** (.002)	.009*** (.002)	.009*** (.002)	.008*** (.002)	.008*** (.002)
Child Absent School(Days)	-	-	-	-.015*** (.002)	-.014*** (.002)	-.014*** (.002)	-.013*** (.002)	-.013*** (.002)	-.013*** (.002)	-	-	-	-.018*** (.002)	-.018*** (.002)	-.018*** (.002)	-.017*** (.002)	-.017*** (.002)	-.017*** (.002)	-	-	-	-.018*** (.002)	-.017*** (.002)	-.017*** (.002)	-.017*** (.002)	-.016*** (.002)	-.016*** (.002)
Child Television(Hour s)	-	-	-	.013 (.010)	.008 (.010)	.004 (.009)	.004 (.010)	.001 (.010)	.001 (.010)	-	-	-	.026*** (.010)	.024** (.010)	.021** (.010)	.021** (.010)	.018** (.010)	.018** (.010)	-	-	-	.013 (.010)	.008 (.010)	.006 (.010)	.006 (.010)	-.003 (.009)	-.003 (.009)
Child School Starting (in Years)	-	-	-	-	-.147*** (.011)	-.140*** (.011)	-.138*** (.011)	-.135*** (.011)	-.134*** (.011)	-	-	-	-	-.063*** (.011)	-.057*** (.011)	-.056*** (.011)	-.053*** (.011)	-.053*** (.011)	-	-	-	-	-.133*** (.010)	-.129*** (.010)	-.126*** (.010)	-.123*** (.010)	-.122*** (.010)
PTA Participation	-	-	-	-	-	.185*** (.025)	.182*** (.025)	.165*** (.025)	.163*** (.025)	-	-	-	-	-	.155*** (.025)	.152*** (.025)	.136*** (.025)	.136*** (.025)	-	-	-	-	-	.114*** (.024)	.109*** (.024)	.092*** (.024)	.091*** (.024)
Father Literacy	-	-	-	-	-	-	.101*** (.027)	.064** (.027)	.064** (.027)	-	-	-	-	-	-	.088*** (.027)	.053** (.028)	.053** (.028)	-	-	-	-	-	-	.175*** (.026)	.140*** (.027)	.140*** (.027)
Mother Literacy	-	-	-	-	-	-	-	.216*** (.028)	.214*** (.028)	-	-	-	-	-	-	-	.207*** (.029)	.207*** (.029)	-	-	-	-	-	-	-	.206*** (.029)	.205*** (.028)
Female	-	-	-	-	-	-	-	-	-.108*** (.023)	-	-	-	-	-	-	-	-	.002 (.023)	-	-	-	-	-	-	-	-	-.048** (.022)
R ²	.026	.114	.143	.155	.178	.186	.187	.195	.198	.022	.078	.106	.119	.123	.129	.131	.138	.138	.021	.078	.101	.118	.140	.143	.149	.156	.157
Number of Observations	6051									5997									6045								

Note: Standard errors reported in parentheses. *,** and *** indicate significance at 10%, 5% and 1% respectively.

TABLE 3.-SENSITIVITY ANALYSIS AND EXTENSIONS OF THE BASIC MODEL AT AGED 8-11 YEARS STUDENT

	Coefficient on OBC for:			Coefficient on SC for:			Coefficient on ST for:		
	Math	Reading	Writing	Math	Reading	Writing	Math	Reading	Writing
Baseline	-.051** (.021)	-.006 (.021)	-.078*** (.022)	-.076*** (.024)	-.103*** (.025)	-.118*** (.025)	-.255*** (.033)	-.232*** (.034)	-.250*** (.034)
OLS	-.041** (.021)	-.050** (.022)	-.092*** (.023)	-.126*** (.025)	-.175*** (.026)	-.174*** (.026)	-.252*** (.035)	-.203*** (.036)	-.192*** (.037)
By SES (Median)									
Below Median	-.015 (.033)	-.006 (.036)	-.042 (.036)	-.047 (.037)	-.134*** (.040)	-.074** (.039)	-.222*** (.046)	-.262*** (.050)	-.227*** (.049)
Above Median	-.081*** (.027)	-.017 (.025)	-.104*** (.027)	-.101*** (.033)	-.087*** (.031)	-.162*** (.033)	-.256*** (.051)	-.176*** (.048)	-.238*** (.051)
By school type:									
Public	-.037 (.030)	-.033 (.031)	-.119*** (.032)	-.041 (.032)	-.125*** (.033)	-.134*** (.034)	-.238*** (.040)	-.250*** (.042)	-.286*** (.043)
private	-.076** (.032)	.014 (.030)	-.047 (.031)	-.071 (.044)	.008 (.042)	-.064 (.043)	-.203*** (.075)	-.098 (.071)	-.093 (.074)
By Location type:									
Non-Metro	-.045** (.025)	.009 (.022)	-.064*** (.026)	-.076*** (.025)	-.094*** (.026)	-.113*** (.026)	-.244*** (.034)	-.224*** (.034)	-.237*** (.035)
Largest six metro areas	-.075 (.075)	-.162** (.071)	-.150** (.073)	-.082 (.077)	-.159** (.074)	-.125* (.075)	-.525* (.294)	-.031 (.283)	.150 (.292)
Urban	-.054 (.034)	-.041 (.034)	-.047 (.035)	-.062 (.042)	-.081** (.041)	-.053 (.043)	-.057 (.082)	.102 (.080)	-.030 (.084)
Rural	-.054** (.026)	.004 (.027)	-.099*** (.027)	-.085*** (.030)	-.115*** (.031)	-.150*** (.031)	-.278*** (.038)	-.271*** (.039)	-.290*** (.039)
Metro Urban	-.131 (.080)	-.165** (.079)	-.182** (.080)	-.123 (.084)	-.146* (.083)	-.164** (.084)	-.615* (.342)	-.224 (.334)	-.141 (.339)
Other Urban	.024 (.038)	-.013 (.038)	.003 (.040)	-.045 (.048)	-.060 (.048)	-.022 (.051)	-.002 (.085)	.132 (.084)	.017 (.089)
By Class:									
Poor	-.040 (.035)	-.001 (.038)	-.076** (.037)	-.071** (.038)	-.087** (.040)	-.112*** (.039)	-.228*** (.047)	-.269*** (.050)	-.244** (.049)
Middle Class	-.049* (.028)	-.015 (.027)	-.069** (.029)	-.011 (.035)	-.082** (.034)	-.167*** (.053)	-.204*** (.053)	-.106** (.051)	-.167*** (.053)
Comfortable Class	-.025 (.079)	.037 (.071)	-.063 (.029)	-.122 (.110)	.042 (.098)	-.175 (.036)	-.155 (.179)	.152 (.160)	-.023 (.172)
Mother Age at Birth:									
Mother Age less than 18 at child birth	-.058 (.108)	-.197* (.111)	-.200* (.116)	-.206* (.115)	-.221* (.120)	-.267** (.124)	-.486*** (.155)	-.295* (.077)	-.423*** (.167)
Mother Age above 18 and above at child birth	-.049** (.021)	.002 (.022)	-.071*** (.022)	-.067*** (.025)	-.097*** (.025)	-.110*** (.026)	-.241*** (.034)	-.228*** (.034)	-.240*** (.035)
Govt.Expenditure									
School Fees Paid by Govt: Yes	-.012 (.039)	-.025 (.042)	-.088** (.042)	.007 (.042)	-.115*** (.045)	-.130*** (.044)	-.236*** (.051)	-.295*** (.054)	-.299*** (.054)
School Fees Paid by Govt: No	-.050** (.025)	.015 (.025)	-.060** (.026)	-.094*** (.031)	-.063** (.030)	-.074** (.032)	-.168*** (.048)	-.086* (.047)	-.120** (.048)
Free Books:Yes	-.024 (.030)	.000 (.031)	-.106*** (.032)	-.037 (.032)	-.102*** (.033)	-.126*** (.034)	-.228*** (.040)	-.222*** (.042)	-.271*** (.043)
Free Books:No	-.068** (.030)	-.010 (.029)	-.038 (.030)	-.070* (.040)	-.032 (.039)	-.062 (.040)	-.112 (.068)	-.065 (.066)	-.054 (.067)
Free Uniform: Yes	.003 (.040)	.006 (.042)	-.096** (.043)	-.007 (.042)	-.064 (.044)	-.132*** (.045)	-.284*** (.051)	-.260*** (.054)	-.350*** (.054)
Free Uniform: No	-.062** (.025)	-.000 (.025)	-.064** (.025)	-.094*** (.031)	-.108*** (.031)	-.092*** (.031)	-.137*** (.031)	-.131*** (.047)	-.098** (.047)
Medium of Instruction									
Hindi	-.033 (.034)	-.012 (.036)	-.040 (.036)	-.110*** (.038)	-.172*** (.041)	-.118*** (.040)	-.350*** (.052)	-.363*** (.055)	-.307*** (.054)
English	-.118*** (.040)	-.014 (.038)	-.095* (.040)	-.151*** (.057)	-.073 (.053)	-.089 (.057)	.060 (.085)	-.137* (.080)	.087 (.086)

Other Regional Language	.008 (.037)	.017 (.036)	-.093** (.039)	.064 (.040)	.008 (.040)	-.057 (.043)	-.157*** (.053)	-.075 (.052)	-.246*** (.056)
Teacher Attendance:									
Teacher Attendance Never	-.037 (.027)	.020 (.027)	-.057** (.028)	-.076** (.031)	-.096*** (.032)	-.122*** (.032)	-.264*** (.043)	-.220*** (.044)	-.250*** (.044)
Teacher Attendance Sometimes	-.082** (.039)	-.042 (.039)	-.118*** (.040)	-.093** (.044)	-.133*** (.045)	-.109*** (.046)	-.318*** (.058)	-.304*** (.058)	-.301*** (.060)
Teacher attendance often	.014 (.108)	-.069 (.110)	-.036 (.109)	-.051 (.127)	.023 (.129)	-.114 (.129)	.126 (.201)	.033 (.206)	.043 (.205)

Note: Standard errors reported in parentheses. *, ** and *** indicate significance at 10%, 5% and 1% respectively.

TABLE 4.- ESTIMATES OF THE RESPONSIVENESS OF TEST SCORES TO COVARIATES BY CASTE

Variables	Math					Writing				
	Full Sample	UC	OBC	SC	ST	Full Sample	UC	OBC	SC	ST
OBC	-.076*** (.024)	-	-	-	-	-.118*** (.025)	-	-	-	-
SC	-.255*** (.033)	-	-	-	-	-.250*** (.034)	-	-	-	-
ST	-.051** (.021)	-	-	-	-	-.078*** (.022)	-	-	-	-
Socio Economic Status Index	.228*** (.018)	.214*** (.032)	.240*** (.030)	.167*** (.042)	.348*** (.057)	.191*** (.019)	.176*** (.032)	.200*** (.031)	.158*** (.043)	.244*** (.065)
Child Spends Homework(Hours)	.022*** (.001)	.020*** (.002)	.021*** (.002)	.024*** (.003)	.031*** (.005)	.019*** (.001)	.017*** (.002)	.016*** (.002)	.024*** (.003)	.024*** (.006)
Child Spends School(Hours)	-.000 (.000)	-.001 (.001)	.001 (.001)	-.003* (.001)	-.004* (.002)	.001* (.000)	.002 (.001)	.003** (.001)	-.000 (.001)	-.001 (.002)
Child Spends Private Tuition (Hours)	.012*** (.001)	.016*** (.003)	.010*** (.003)	.008** (.004)	.013* (.007)	.007*** (.001)	.011*** (.003)	.003 (.003)	.008** (.004)	.003 (.008)
Child Absent School(Days)	-.011*** (.001)	-.007** (.003)	-.009*** (.002)	-.016*** (.003)	-.012** (.005)	-.015*** (.001)	-.013*** (.003)	-.013*** (.002)	-.019*** (.003)	-.010 (.006)
Child Television(Hours)	.003 (.007)	-.012 (.012)	.012 (.010)	.000 (.017)	.024 (.028)	.018*** (.007)	-.016 (.012)	.040*** (.011)	.011 (.017)	.047 (.031)
Child School Starting (in Years)	-.122*** (.008)	-.141*** (.014)	-.117*** (.012)	-.130*** (.018)	-.061*** (.025)	-.070*** (.008)	-.077*** (.014)	-.058*** (.013)	-.088*** (.018)	-.056** (.028)
PTA Participation	.162*** (.018)	.116*** (.034)	.156*** (.028)	.270*** (.039)	.037 (.054)	.138*** (.018)	.142*** (.034)	.154*** (.029)	.201*** (.040)	-.091 (.062)
Father Literacy	.049*** (.020)	.056 (.042)	.031 (.031)	.082** (.041)	.056 (.060)	.043** (.020)	.082** (.042)	.008 (.032)	.018 (.042)	.199*** (.069)
Mother Literacy	.250*** (.020)	.302*** (.042)	.231*** (.032)	.238*** (.043)	.225*** (.068)	.240*** (.021)	.262*** (.042)	.223*** (.033)	.223*** (.044)	.280*** (.077)
Female	-.082*** (.016)	-.065** (.032)	-.067*** (.025)	-.126*** (.036)	-.086 (.052)	.004 (.017)	.030 (.032)	.014 (.027)	-.005 (.036)	-.083 (.059)
R ²	.196	.203	.158	.173	.211	.144	.156	.106	.128	.150
Number of Observations	11514	2964	4891	2652	1007	11417	2924	4852	2637	1004
Variables	Reading									
	Full Sample	UC	OBC	SC	ST					
OBC	-.103*** (.025)	-	-	-	-					
SC	-.232*** (.034)	-	-	-	-					
ST	-.006 (.021)	-	-	-	-					
Socio Economic Status Index	.155*** (.018)	.108*** (.031)	.175*** (.031)	.143*** (.043)	.288*** (.064)					
Child Spends Homework(Hours)	.018*** (.001)	.013*** (.002)	.018*** (.002)	.023*** (.003)	.025*** (.006)					
Child Spends School(Hours)	.003*** (.000)	.003** (.001)	.005*** (.001)	.000 (.001)	.002 (.002)					
Child Spends Private Tuition (Hours)	.010*** (.001)	.011*** (.002)	.008*** (.002)	.009** (.003)	.017** (.006)					

Tuition (Hours)	(.001)	(.003)	(.003)	(.004)	(.008)
Child Absent School(Days)	-.015*** (.001)	-.011*** (.003)	-.015*** (.002)	-.018*** (.003)	-.016** (.006)
Child Television(Hours)	-.003 (.007)	-.015 (.012)	.002 (.011)	-.017 (.017)	.043 (.031)
Child School Starting (in Years)	-.113*** (.008)	-.121*** (.013)	-.108*** (.013)	-.120*** (.018)	-.086*** (.028)
PTA Participation	.119*** (.018)	.091*** (.033)	.131*** (.029)	.196*** (.040)	-.029 (.061)
Father Literacy	.120*** (.020)	.072* (.041)	.112*** (.031)	.150*** (.042)	.200*** (.068)
Mother Literacy	.249*** (.021)	.300*** (.041)	.201*** (.032)	.268*** (.044)	.219*** (.076)
Female	-.020 (.017)	.004 (.031)	-.010 (.026)	-.030 (.036)	-.121** (.058)
R ²	.162	.149	.130	.159	.186
Number of Observations	11501	2960	4885	2649	1007

Note: Standard errors reported in parentheses. *, ** and *** indicate significance at 10%, 5% and 1% respectively.