



## **ROLE OF PRIVATE TUITION INTO EDUCATIONAL TRANSITION FROM SECONDARY TO POST- SECONDARY EDUCATION IN INDIA**

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*Private tutoring market has emerged as the dominant sector in the education all and scape in India, but its role in educational transition has hardly been examined. This study explores its role in the educational transition from secondary education to post-secondary education in India using data from two waves of the Indian Human Development Survey (IHDS) carried out in 2004- 05 and 2011-12. The logit model without and with fixed effect has been applied to examine the role of private tuition in the aforesaid educational transition. The three measures of private tuition have been considered in the study: participation in private tuition, private tutoring expenditure, and the number of hours of tutoring classes per week. The findings suggest that in take of private tuition increases the odds of educational transition of a student from secondary to post-secondary education in India. Further, higher expenditure on private tutoring is also positively associated with the odds of the aforesaid educational transition. In contrast, the intensity of tutoring (duration of private tuition) has no significant role in such at ransition.*

**Key Words:** Logit model, Educational transition, Private tuition, Private tutoring expenditure, Secondary education, post-secondary education

**JEL:** I24, I29

### **INTRODUCTION**

Private tuition or coaching is a fee-based teaching service in academic subjects, occurring outside the formal education but following the same curriculum. It is widely termed 'shadow education' (Mori & Baker, 2010; Stevenson & Baker, 1992) or 'private supplementary education' (Chen & Kuan, 2021) in the literature. The studies on private tuition (or coaching) commonly suggest that parents spend on it to secure better grades for their children, enabling their entry into the next level of education, particularly in prestigious institutions. Analogous to findings of various parts of the world, the evidence from National Sample Survey (NSS) also shows that students from high socioeconomic status (SES) have more participation in private tuition in India (Azam, 2016; Kumar & Chowdhury, 2021). The prevailing explanation is that high SES parents are not only more capable of paying for the tutoring services but are also more knowledgeable about the function of prestigious educational institutions. Further, they are more concerned about the career of their children. Nowadays, it has become a global phenomenon, and its prevalence can be observed in developing and developed countries (Bray, 2006; Mori & Backer, 2010). However, its prevalence is more

intensively present in east Asian counties like Singapore, Japan, and South Korea (Kim, 2013). Studies based on south Asian counties like India, Bangladesh, Nepal also indicate its presence at a moderate level (Farhin, 2018, January 26; Jayachandran, 2014, Kumar & Chowdhury, 2021). In the case of India, its rampant prevalence can be seen in eastern states (West Bengal, Tripura, Bihar, Orissa, and Jharkhand), urban areas, and among higher socioeconomic classes (Kumar & Chowdhury, 2021).

The private tuition market came into the limelight of educationists and media around the 1990s, which further intensified with its growing scale. Subsequently, researchers also shifted their attention from analyzing its prevalence and average expenditure, to examining its academic benefits, and they found mixed results regarding its benefits. Expansion of the tutoring business also drew critic is from a wide range of academicians because it promotes education aine qualities as evident in Korea (Kang & Park, 2021). It also undermines the function of the formal education system. In Nepal, it has also been found that when schools offer tuition for profit, the teacher teaches less during the regular school days (Jayachandran, 2014). In addition, it also poses an additional time burden on students (Kumar & Chowdhury, 2021), and so does depressing symptoms (Chen & Kuan, 2021). On the brighter side, it also enables self-perceived enjoyment to the motivated students (Yung & Chiu, 2020).

Several studies have tested its impact on academic achievement. However, most of them have focused on grades obtained at the terminal examination

Especially at high-stakes examinations, i.e., the terminal examination whose grades or marks are crucial for admission to the next level of education (In India's case, secondary and higher secondary level examinations can be considered high-stake examinations). Students attending private tuition have been found to score better in university entrance exams in Turkey (Tansel & Bircan, 2005). Some specific forms of private tuition like the practice courses and corresponding courses enhance the probability of entering university in Japan (Steveson & Backer, 1992). Hence, private tuition becomes a tool described as "Buying your way to colleges" (Smith, 2009). In the case of India, there exists well-developed theoretical and empirical literature on the relationship of socio-religious groups (Basant & Sen, 2009), gender (Sahni & Shankar, 2011), regional factors (Zakir, 2010) with educational attainment. And more so, there is a dearth of literature on the role of private tuition in the academic transition from secondary to post- secondary education. Mostof such studies have tried to analyze the students' self-reported perception of the academic benefit of tuition or coaching. Based on rigorous empirical analysis, a study (Dongre & Tiwarey, 2015)' finds that private tuition positively impacts learning outcomes in elementary education. Its impact is larger in arithmetic than reading outcomes. This study attempts to fill the research gap and correlate private tuition and educational transition from secondary to the further education level.

Against this backdrop, the paper begins exploring a comparative scenario of the prevalence, average expenditure, and its economic burden in various dimensions in Indiausing two rounds of Indian Human Development Survey (IHDS) datasets, namely IHDS-I (2004-05)

and IHDS-II (2011-12). After that, it examines the association of private tuition with the educational transition from secondary to post-secondary education in India.

#### **DATA, ISSUES, AND METHODOLOGY**

IHDS is a unique dataset that measures various dimensions of human development with modules on health, education, economic status, occupation, social capital, gender relations, marriage, and fertility. Further, it recollects the data from the same households in different rounds as much as possible. The Panel data has been constructed using the Indian Human Development Survey (IHDS) of 2004-5 and 2011-12, covering 83% of households (common in both rounds). Both rounds of IHDS cover the information on the "private paid tuition" of children in the households. The data set gathers two pieces of information regarding tuition: (a) no. of hours of private tuition per week of the child and (b) out-of-pocket expenditure on it in the previous year. As in India, national or state level examination is held at secondary education, and admission to a higher level depends on students' performance in terms of marks secured at this stage. It is also evident that the prevalence of shadow education is much higher at the secondary level (Kumar & Chowdhury, 2021). Hence, the model considers the students attending secondary education (class IX-X) in IHDS 2004-05. Then, a panel has been made to track their transition to higher secondary or onwards using IHDS 2011-12. Since there is a gap of seven years between the two surveys, we have included all students who ever entered higher secondary levels because many would have completed their desired education level and are not enrolled now (in IHDS-II).

Regarding the control variables that might influence the educational transition, some of the variables are considered with minor modification in IHDS 2004-05. The highest education level of any adult household member is divided into three categories - primary or below (0 to 5 years of schooling), up to secondary (6 to 10 years of schooling), and higher secondary and above. While taking households' educational expenditure on students' education, the expenditure on private tuition is excluded. Because it will capture some effect of private tuition (which is taken as a dummy), especially for government schools where private tuition primarily covers educational expenditure. Again, the type of school by management has been divided into two categories; government and private. Government, private aided schools, and Madrasas are clubbed into government category, while private unaided and convent schools are taken as private. While categorizing the social class, the Brahmin and Upper caste are taken as General class, as both are considered as General class in the standard literature. STs, SCs, and OBC categories are left intact.

Now, given that our variable is binary (i.e., if a student enrolled in 2004-05 has transitioned to higher secondary or above may be referred as post-secondary), a logistic model has been applied to understand the role of private tuition in educational transition after controlling for various socioeconomic characteristics, and with state fixed effect. Here, state fixed effect captures the state level unobserved heterogeneity of the omitted variables. The required model is represented by equation (1).

$$\text{prob}(T_{ij}=1|x_{ij}) = \frac{e^{\alpha_j + \beta_1 PT_{ij} + X'_{ij}\gamma}}{1 + e^{\alpha_j + \beta_1 PT_{ij} + X'_{ij}\gamma}} ; i = 1, 2, \dots, n ; j = 1, 2, \dots, m. (1)$$

Where  $T_{ij}=1$  if  $i^{\text{th}}$  student of  $j^{\text{th}}$  states being enrolled in secondary education in 2004-05, has ever transitioned to higher secondary in 2011-12, and  $T_{ij}=0$  otherwise.  $PT_{ij}$  is also a binary variable and equal to 1 if  $i^{\text{th}}$  student of  $j^{\text{th}}$  state is participating in private tuition, and equal to 0 otherwise. However, in the latter two measures of private tuition, namely, private tutoring expenditure and intensity of the tutoring (time hours of the tuition in a week), it is a continuous variable.  $X_{ij}$  is a vector of various characteristics related to the student's school, gender, and family's socioeconomic status, educational status, educational expenditure, and place of residence. Removal of 'j' subscript in equation(1) results in a standard logistic model(without fixed effects).

## RESULTS AND DISCUSSION

This section analyses the patterns of prevalence, average expenditure, and economic burden of private tuition, along with an overview of the samples and logistic regression results.

### Private Tuition: Prevalence, Out of Pocket Expenditure and its Economic Burden

As private tuition is a fee-based teaching activity, it poses an economic burden on families. This burden has been measured in terms of absolute expenditure and its share in households' per capita income and has been depicted in Table 1 along with its prevalence.

The prevalence of private tuition was 23.5 percent in 2004-05, which marginally increased in 2011-12 at the national level. Similarly, the average expenditure of private tuition also increased from Rs1370 in 2004-05 to 1558 in 2011-12. The prevalence and average expenditure patterns vary across the region, income quintiles, and socio-religious groups. Its prevalence is higher female, secondary and higher secondary education levels, and urban category as compared to their respective counterparts. Similarly, its prevalence also increases along with higher socioeconomic status and education level of the highest educated person in the household. These patterns have been consistent over both rounds except cases of Dalit, Muslim and government schools. Furthermore, similar patterns and trends can be observed in average expenditure on private tuition. Students belonging to the male category, urban area, high socioeconomic and educational status, studying in private schools, and enrolled in secondary and higher secondary education spend more on private tuition than their counterparts.

In the case of its economic burden (its share in the per capita income), this private tutoring service cover one-sixth of per capita income (one-fifth in the latter period) at the national level. For males, the economic burden was more than females and rose by 7 percentage points in this period. Further, even in the rural area where a significant proportion of students attend a government school, its prevalence and the economic burden have increased up to 19

percent, indicating that households from rural areas are bearing the same burden of private tuition as that of the urban area. The economic burden of private tuition is more severe for the poorest class. Parents from the poorest quintile have to spend 24(40) percent of their income to availing the tutoring services for children in 2004-05(2011-12), while in the case of the wealthiest quintile, it is 10(8) percent. From moving along poorest to richest quintile, the burden of private tuition monotonically falls in both rounds because of the base effect. Furthermore, there is slight variation in its burden among the education level of the highest educated person in households, except graduation and above category in 2011-12.

**Table 1: Prevalence, Average Expenditure and Economic Burden of Private Tuition in India**

Household or Characteristics	Individual	Prevalence of private tuition (in percentage)		Expenditure on private tuition (in Rs)		Share of Exp in PCI (in percentage)	
		2005-06	2011-12	2005-06	2011-12	2005-06	2011-12
Sex	Male	24.9	26.5	1407	1643	13	20
	Female	21.7	22.5	1318	1446	21	18
Class	Primary	18.3	21.0	825	867	5	15
	Middle	24.9	25.4	1187	1098	18	18
	Secondary	38.7	36.7	1728	1675	24	22
	H. secondary	35.9	33.7	2687	2956	32	34
Region	Rural	20.0	21.6	1005	1171	13	19
	Urban	31.8	30.9	1914	2120	21	20
Income	Poorest	17.6	21.8	827	1081	24	40
	Middle	21.6	22.9	1013	1317	16	15
	Richest	34.9	30.3	2196	2563	10	8
Social Groups	General (Hindu)	31.6	31.6	1945	2201	25	26
	OBC	23.5	23.5	1124	1383	6	16
	Dalit	20.3	24.1	1169	1357	24	19
	Adivasi	12.4	11.5	1258	1107	17	13
	Muslim	21.4	27.0	1093	1092	14	19
	Other minorities	23.3	18.5	1362	2503	12	18
Education of Highest Educated Person in Household	none	16.4	18.4	749	985	24	20
	upto primary	18.2	21.2	786	1136	23	20
	Secondary	24.2	25.9	1190	1561	21	19
	H. Sec	28.0	27.8	1575	2395	20	11
	HE	32.9	27.8	2326	3039	23	26
Schools	Government	21.0	24.8	1133	1250	13	20
	Private	29.5	27.1	1420	1609	16	20
India	--	23.5	24.6	1370	1558	16	20

**Source:** Author's calculation from IHDS-I 2004-05 and IHDS-II 2011-2. Note: All figures of

expenditure on private tuition are given at constant prices of the base year 2011-12. Furthermore, these are population estimates after applying sampling weight given in the dataset(s).

With respect to the type of schools, the burden of private tuition falls the same on children from government and private schools in 2011-12, though, in 2004-05, parents whose children studying in private schools were spending 3 percentage points more on private tuition than the parents of children studying in government schools. In short, we see little growth in the economic burden of private tuition as a percentage of income in 2011-12, except for students belonging to the poorest quintile, rural area, Muslim and other minorities groups, government schools, and in the cases where primary education is highest education level in households. Hence, it can be said that private tuition is posing a greater burden on disadvantaged families, whether economically, socially, or educationally.

Overall results from this section show the high prevalence of private tuition for the students belonging to privileged backgrounds whether in terms of gender, area of residence, type of schools, or socioeconomic and educational status of the family. The analysis also indicates that the high-stakes examinations also play a crucial role in the amount of expenditure on private tuition. Thus, it seems that students with high socio-economics status spend more on receiving private tutoring services because their parents can afford it. In other words, it might be reflecting the parents' desire to equip their children so that they stay ahead in today's competitive world, especially at the secondary and higher secondary level where the examination's stakes are high. For the students who belong to disadvantaged backgrounds, despite bearing the severe economic burden, their low spending on private tuition might reflect the low quality of tutoring. It means, even though parents of these children try to mimic the strategy of the privileged class in providing private tutoring services for their children, they can hardly overcome the comparative disadvantage in educational opportunities.

### **Characteristics of the Samples**

Table 2 shows the characteristics of private tuition along with other control variables in our sample in 2004-05. We see that the average annual income of households is Rs10,219, and the annual education expenditure is Rs 2276, excluding the private tuition expenditure. The average annual expenditure on private tuition is Rs1804, and the average time spent on tutoring classes is around 10 hours per week. Moreover, the prevalence of private tuition is 35 percent which is approximate to the finding in the descriptive section for secondary education.

An important finding is that the transition rate is only 33 percent, i.e., two-thirds of students enrolled in secondary education in 2004-05 have dropped out. The proportion of different social groups and males in the samples are slightly different from the general population in these categories. It might have arisen from some missing observations in 2011-

12 for STs, OBCs, and females. Further, students belonging to the rural and government schools are nearly 58 percent and 70 percent, respectively, i.e., larger than their respective counterparts.

**Table 2: Sample Statistics**

<b>Characteristics</b>	<b>mean/proportion</b>	<b>SE</b>
per Capita Income	10629.5	209.5
Education Exp excluding PT	2276.6	42.7
No of teens (15-21 Years)	1.6	0.018
Expenditure on tuition	1804.6	70.8
private tuition hours /week	10.0	0.2
private tuition	0.351	0.008
Transition	0.333	0.008
<b>Social Groups</b>		
ST	0.060	0.004
SC	0.204	0.007
OBC	0.400	0.008
General	0.336	0.008
<b>Education level of HEPH</b>		
up to primary	0.255	0.007
up to secondary	0.440	0.008
Higher secondary and above	0.306	0.008
Female	0.333	0.008
Rural	0.578	0.008
Government	0.704	0.007
Observations	3476	

**Source:** Author's calculation from HDS-I (2004-05).

### **Econometric Results**

Table 3 shows the regression results of the standard logit model along with the fixed effect in different specifications. In the first specification, private tuition is considered a binary variable. In the second and third specifications, private tuition expenditure and the tutoring hours in a week have been taken as measures of private tuition and are continuous variables. Furthermore, the regression results show the correlations at best, not causality, because of the absence of many other covariates that would have affected the educational transition-establishing such a causality requires the treatment effects.

The result of the first specification (without control of covariates and fixed effect) shows that a student availing private tuition has 1.67 times higher odds of transitioning to post-

secondary education than one not opting for the tuition (model I). The odds further increase when controlled for state-level unobserved heterogeneity (model 2). The subsequent decline can also be observed when controlled for various covariates that might contribute to the students' educational transition.

**Table 3: Summary of Analysis from Regression Results of Logistic Regression in Different Measure of Private Tuition.**

Transition to post-secondary (Y=1, No=0)			Odds ratios			
Specification	Private tuition (yes)		Model 1	Model 2	Model 3	Model 4
I	Observation		1.67**(6.5)	1.84**(4.69)	1.32**(3.27)	1.46**(3.24)
	Pseudo R sq.		0.01	0.01	0.09	0.08
Specification II	Log exp on private tuition		1.32**(3.99)	1.41**(4.36)	1.16**(1.95)	1.19#(1.82)
	Observation		1110	1103	1076	1069
	Pseudo R sq.		0.01	0.02	0.11	0.10
Specification III	private tuition hours in a week		1.01(0.97)	1.01(1.43)	1.01(1.03)	1.01(1.49)
	Observation		994	985	957	948
	Pseudo R sq.		0.001	0.001	0.10	0.11
Control for covariates			No	No	Yes	Yes
State fixedeffects			No	Yes	No	Yes

**Source:** Author's calculation (seetable A1, A2, A3 for full model), @referencecategory, \*\*p<0.01 \*p<.05 #p<.10. Student t-values are given in bracket.

In the second specification, where the spending on private tutoring has been taken as a variable of interest, the unadjusted odds of transition to the next level of education increase by 32 percent (or 1.32 times) with one unit increase in the log of private tutoring expenditure (specification II & model 1). In subsequent models, the odds decline but are still significant while controlling for the covariates. It is indicative that the higher spending on private tutoring increases the likelihood of upward mobility in educational transition. The result seems analogous to the study where money matters for academic performance (Kang, 2007). One possibility is that higher spending may reflect better quality of tutoring as indicated in India (Majumdar, 2014). Finally, the intensity of tutoring seems to have no association with the educational transition. Similar evidence regarding the students' achievement has been observed in Ireland after controlling adequate difference characteristics between tuition participants and non-participants. However, the initial model in that study with the control of a few covariates shows a positive association of private tutoring to academic achievement (Symth, 2008).

## **CONCLUSION**

The empirical results suggest that private tutoring is positively associated with the educational transition from secondary to post-secondary education. In addition, higher spending on tutoring services also increases the chances of such a transition, though the increasing time on attending tuition classes does not. It has been noted that higher spending on tutoring indicates a somewhat better quality of tutoring because then or qualified tutors charge more fees. Thus, the finding of this paper indicates that the quality of tutoring matters more than time spent in attending tutoring classes. On the other side, various studies in the field of education show a strong association between social class, economic status, and educational status in India. In such a scenario, pupils from under privileged backgrounds would have to make a more extensive effort to achieve higher educational attainment in better educational institutions because they won't be able to afford the fees of high-quality tutoring. At the same time, those from privileged family's backgrounds would supplement their inefficiencies by consuming high-quality private tutoring services. It means that it would exacerbate the social inequalities in educational transition in India, which contradicts the goal of equity in educational attainment. In such a situation, remedial and even preparatory classes should be the integrated part of formal schooling.

The paper admits certain limitations, the main being that the used data set is not the most recent, yet, has been used as there is an absence of panel data in the educational trajectory in India. Future research based on the primary survey may focus on the impact of private tuition on educational mobility from secondary to post-secondary in selected prestigious educational institutions and stream wise by carrying out a longitudinal survey. In addition, its role in the transition from higher secondary to technical education also would be a more robust study.

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## Appendices

**Table A1: Result of Logistics Regression when the Measure of Private Tuitions Considered a Binary Variable**

Transition to post-secondary (Yes=1, No=0)	Odds ratios			
	Model 1	Model 2	Model 3	Model 4
Private tuition (yes)	<b>1.67** (6.5)</b>	<b>1.84** (4.69)</b>	<b>1.32** (3.27)</b>	<b>1.46** (3.24)</b>
Log per capita income		1.25** (4.64)	1.21** (3.76)	
Log Edu. Exp		1.27** (4.74)	1.26** (3.96)	
No. of Teens (15-21)		0.86** (-4.14)	0.86** (-3.43)	
Social Groups				
SC		1.16 (0.83)	0.99 (-0.04)	
OBC		1.32 (1.63)	1.18 (0.75)	
General		1.48* (2.25)	1.34 (1.52)	
HHEDU (primary or below @)				
Secondary		1.38** (3.39)	1.39** (3.12)	
H. secondary & above		1.96** (6)	2.03** (7.09)	
Urban (rural @)		1.28** (2.84)	1.22* (2.26)	
Female (male @)		1.88** (7.25)	1.93** (6.57)	
Private school (government @)		1.19 (1.77)	1.2 (1.92)	
constant		0.02** (-7.33)		
State level fixed effects	No	yes No	yes	
Observations	3476	3472 3334	3333	
Pseudo R	0.01	0.01	0.08	0.09

**Source:** Author's calculation from IHDS I (2004-05) and IHDS II (2011-12), @ reference category, Student t-values are given in bracket. \*\*  $p < 0.01$  \*  $p < 0.05$

**Table A2: Results of Logistic Regression Considering Private Tutoring Expenditure as a Measure**

Transition to post-secondary (Yes=1 , No=0)	Odds ratios			
	Model 1	Model 2	Model 3	Model 4
<b>Private tutoring expenditure</b>	<b>1.32** (3.99)</b>	<b>1.41** (4.36)</b>	<b>1.16** (1.95)</b>	<b>1.19# (1.82)</b>
Log per capita income			1.18** (1.96)	1.14 (1.32)
Log Edu. Exp			1.58** (3.85)	1.58** (3.47)
No. of Teens (15-21)			0.79** (-3.39)	0.78** (-2.96)
<b>Social Groups</b>				
SC			1.39** (0.86)	0.91 (-0.19)
OBC			1.66** (1.39)	1.19 (0.31)
General			1.62** (1.3)	1.21 (0.41)
<b>Highest educated person's education in family (up to primary@)</b>				
secondary			1.65** (2.7)	1.7* (2.34)
H. secondary & above			2** (3.31)	2.22** (4.11)
Urban (rural@)			1.11 (0.64)	1.07 (0.38)
Female (male @)			2.25** (4.75)	2.28** (3.71)
Private school (government@)			1.19 (0.96)	1.08 (0.42)
constant	0.4 (-1.86)		0.001** (5.4)	
State level fixed effects	No	yes	No	yes
Observations	1110	1103	1076	1069
Pseudo R	0.01	0.02	0.11	0.10

**Source:** Author's calculation from IHDS-I (2004-05) and IHDS II (2011-12), @ reference category, Student t-values are given in bracket. \*\*  $p < 0.01$  \*  $p < 0.05$  #  $p < 0.1$

**Table A3: Results of Logistic Regression Taking Private Tuition Hours as a Measure**

Transition to post- secondary (Yes=1 ,No=0)	Odds ratios			
	Model 1	Model 2	Model 3	Model 4
<b>Tuition hours (in a week)</b>	1.01 (0.97)	1.01 (1.43)	1.01 (1.03)	1.01 (1.49)
Log per capita income			1.25* (2.38)	1.22* (2.14)
Log Edu. Exp			1.49** (3.19)	1.49** (3.1)
No. of Teens (15-21)			0.8** (-2.91)	0.76** (-2.92)

**Social Groups**

SC			1.36(0.79)	1(-0.01)
OBC			1.7(1.45)	1.37(0.45)
General			1.77(1.54)	1.36(0.52)

**Highest educated person's education in family (up to primary @)**

secondary			1.41(1.73)	1.47(1.74)
H. secondary & above			1.77**(2.53)	1.9**(3.97)
Urban (rural @)			1.21(1.13)	1.2(1.03)
Female (male @)			2.52**(5.17)	2.59**(3.56)
Private school (government @)			1.29(1.28)	1.16(0.93)
constant	2.54**(7.19)		0.01**(-4.4)	
State level fixed effects		yes		yes
Observations	994	985	957	948
Pseudo R	0.001	0.001	0.10	0.11

**Source:** Author's calculation from IHDS I and IHDS II, @ reference category. Student t-values are given in bracket

. \*\* p<0.01 \*p<.05. Note: model 1 & 2 are overall insignificant.