

Working paper



International  
Growth Centre

# Choice and cost

The role of  
household  
decision making  
and spending on  
secondary education  
in rural Bihar



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# FINAL REPORT

To understand the educational choices that households make and expenditures they undertake for children going from upper primary school to secondary school in Bihar

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## Chapter 1: Introduction

With a population of about 104 million and per capita income of just over Rs. 11,500, Bihar is one of India's poorest and least industrialized states. Services and agriculture contribute the most to Bihar's GDP – 74.07 and 21.3 % respectively. Although, in 2009-2010 Bihar witnessed a growth of 9.6%, higher than the national growth rate of 8%, there has been significant migration of people from Bihar, a trend that started almost 3 decades ago and continues unabated.<sup>1</sup> As the Chief Minister of the state has rightly observed on many occasions, Bihar's future development depends on the effective use of its human capital. Indeed, research shows that the demographic transition is almost complete in the South and the gains from the demographic dividend will mainly accrue from the North. However to reap the demographic dividend an essential condition is: availability of gainful employment opportunities for the additional workforce along with requisite skills in the workforce to use these opportunities productively.

A key element of the much needed human capital development strategy in Bihar is good quality school education. Bihar has made rapid strides in access and enrollment at the primary level in the last 7-8 years. Today there are close to 70,000 elementary schools and enrolment levels above 95% since 2009, for the 6-14 age group.<sup>2</sup> But as children move through the education system more and more children will enter into secondary education. The importance of secondary education has also been highlighted at the national level with the launch of the Rashtriya Madhyamik Shiksha Abhiyan (RMSA).

The Bihar government has also introduced some innovative schemes to encourage students, especially girls to go on to high school. Currently, there are about 3000 government high schools in Bihar and the government plans to start a high school in every panchayat in the

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<sup>1</sup> [http://www.in.undp.org/content/dam/india/docs/bihar\\_factsheet.pdf](http://www.in.undp.org/content/dam/india/docs/bihar_factsheet.pdf)

<sup>2</sup> [http://old.aud.ac.in/Downloads/Rukmini\\_Banerjee-EPW.pdf](http://old.aud.ac.in/Downloads/Rukmini_Banerjee-EPW.pdf)

state.<sup>3</sup> The incidence of private schools is among the lowest in India. Interestingly, despite the acute shortage of high schools, the number of students taking the Std. 10 exams has been going up each year.

Another important feature of the educational landscape in Bihar is the prevalence of supplemental provision in education in the form of coaching and tuition. This is not just an urban phenomenon.

Evidence from ASER indicates that the incidence of tuition and coaching in rural Bihar in elementary level is among the highest in the country. For instance, in 2012, almost 50% of all children in rural government schools (Std. 1-8) availed of private tuition. In Std. 8, this number is much higher with 65% of all rural government school children paying for supplemental help<sup>4</sup>. Further, these numbers have been increasing over time. Yet very little is known about this vast, unorganized and unregulated sector. This is particularly true about the provision and quality of coaching, the way it is organized and its cost.

The Government of Bihar is strongly interested in raising educational standards all around: a phenomenal number of teachers are being appointed; many middle schools are being upgraded to secondary schools, girls are being provided access to secondary schools (the Cycling to School initiative).

The current study purported to be a pilot study attempts to understand the interrelated aspects of access to and participation of children transitioning from upper primary to secondary schools in Bihar and, will feed into the larger secondary education landscape of Bihar and provide important inputs to policymakers.

There are two parts to the study:

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<sup>3</sup> <http://www.igovernment.in/news/30197/bihar-to-upgrade-2-400-middle-schools>

<sup>4</sup> [http://img.asercentre.org/docs/Publications/ASER%20Reports/ASER\\_2012/bihar.pdf](http://img.asercentre.org/docs/Publications/ASER%20Reports/ASER_2012/bihar.pdf)

- An analysis of secondary sources of data to draw out patterns of access and participation in high school including expenditure on supplemental inputs like tuition.
- An analysis of primary data comprising:
  1. Provision of all education institutions in a block – GPS mapping of all educational institutions offering upper primary, secondary education, as well as all tuition centres and individual tutors in a block.
  2. A census of all villages in 3 panchayats which will focus on understanding household decision making dynamics with regard to who goes to what kind of secondary school, what kind of supplementary learning support our target children, i.e. girls and boys in Std 9, 10, 11 and 12 get and the expenditure on education.
  3. Information about the schools and tuition centres that the target group attends. This information supplements the GPS data collection of the block

Therefore, the study envisages to yield a snapshot of the secondary education sector in rural Bihar: What are the gaps in provisioning? What limits access to secondary education? Is it just access, or do households actively choose certain education institutions – primary as well as supplemental? If so, what are the factors that influence this choice? What are the dynamics of transition from middle to secondary school? Why do some children transition and others do not? The data is expected to reveal different aspects of decision making that households need to make when deciding on secondary education. This will enable the government to take appropriate steps in the matter.

Whether Bihar will harness this dividend and translate it into sustained growth will crucially depend on the quality of its labour force. To enhance skill generation it will be essential to improve transition rates from middle to secondary school, the stage at which many children drop out and join the labour force. This study will provide key insights into this phenomenon and will be useful for education policy-making in Bihar. This study lasted from July 2014 to June 2015.

## Chapter 2: Private Tuition Literature Review

Private tutoring can be defined as fee-based tutoring that provides supplementary instruction to children in academic subjects that they study in the mainstream education system (Dang and Rogers 2008). It is widespread across many developing as well as developed countries<sup>5</sup>. A substantial fraction of household expenditure on education is devoted to spending on private tutoring. In Korea, for example, households spent 2.8% of GDP on private tutoring in 2006, equivalent to 80% of government expenditure on public education for primary and secondary schooling (Kim and Lee 2010). In Turkey, aggregate expenditure on private tutoring is 1.44% of GDP, and is comparable to total public sector educational spending (Tansel and Bircan 2006).

### Why private tutoring?

For one, parents might feel that they are not in a position to guide their child in studies, and hence prefer to send the child to a tutor. An academically weak child might fall behind of what is being taught in the class, and hence might need more individual attention, which can be provided by private tutors. This might be especially true in the Indian context where an 'ambitious' curriculum leaves many students behind (Muralidharan and Zieleniak 2013; Pritchett and Beatty 2012). Insistence on home-based study of children after school hours has been found to have a strong connection with dependence on private tutoring, especially in cases where the child is the first generation learner (Pratichi, 2009). In many developing countries, schools in general, and government schools in particular, may not deliver 'quality' education<sup>6</sup>. Parents might prefer private school but private schools may not be available or affordable. In these instances, parents might feel the need to supplement school-based education with private tutoring (Banerjee and Wadhwa 2013; Dang and Rogers 2008). The private tutors are said to provide notes on specific chapters and topics to the students, as well

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<sup>5</sup> Paviot et al (2008) analyze phenomenon of private tutoring in Kenya, Malawi, Mauritius, Namibia, Zambia and Zanzibar. They find proportion of students taking private tuitions ranged from 44.7% in Namibia to 87.7% in Kenya. Countries such as Japan, Malaysia and Korea also have large proportion of students in the middle school and above attending private tuitions (Bray 2007; Bray 2011; Dang and Rogers 2008; Kim and Lee 2010).

<sup>6</sup> See Glewwe and Kremer (2006) and Chaudhury et al (2006) for more on state of government schools in developing countries.

as conduct mock tests regularly. This helps reduce 'exam phobia' among students (Majumdar 2014). In many instances, it has been observed that government school teachers shirk their responsibilities in school in order to increase demand for private tutoring (Biswal 1999; Jayachandran 2014)<sup>7</sup>. As a consequence, private tutoring is now considered 'essential', and unless it is beyond the parent's capability, tutoring has become as necessary as going to school (Majumdar 2014).

Analysis by Kim and Lee (2010) indicates that among other things, high prevalence of private tuition in South Korea can be explained by increased demand for education with increased income, and importantly, real or perceived advantage of elite universities. In fact, they suggest that expenditure on private tutoring is driven by academically better students who have a good chance of being admitted to the prestigious universities. The same applies in case of Japan and Turkey as well (Ono 2007; Gurun and Millimet 2008).

### **Private Tutions in India**

It is widely known that a large proportion of students attend private tuitions in India. This phenomenon is not restricted to only to higher grades or urban areas as some might believe. In fact, India represents an interesting case where private tutoring is accessed even at the earliest stages of primary education (Pratichi, 2009). Approximately one-fifth of rural Indian children in grades one to eight also attend private tuitions (ASER (2009-2013))<sup>8</sup>. There is substantial variation among states in terms of proportion of children attending tuition (figure 1 below). Almost three-fourth of children at elementary level in rural West Bengal and Tripura, and close to half of children in rural Bihar and Odisha attend private tuitions<sup>9</sup>. Pratichi (2009), based on two survey rounds, first in 2001-12 and second in 2008-09, in six districts of West Bengal finds

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<sup>7</sup> It is important to note that the Right to Education (RTE) Act explicitly prohibits private tutoring by school teachers.

<sup>8</sup> Numbers are likely to be much higher for children in urban areas. ASER doesn't survey children in urban area. As per India Human Development Survey (IHDS), carried out in 2003-04, 26% per cent children in grades one to eight attend tuition. The latest round of IHDS is not yet in public domain.

<sup>9</sup> For more on private tutoring in West Bengal, see Majumdar (2014), Pratichi Education reports (2002, 2009) and SCERT, West Bengal (2009).

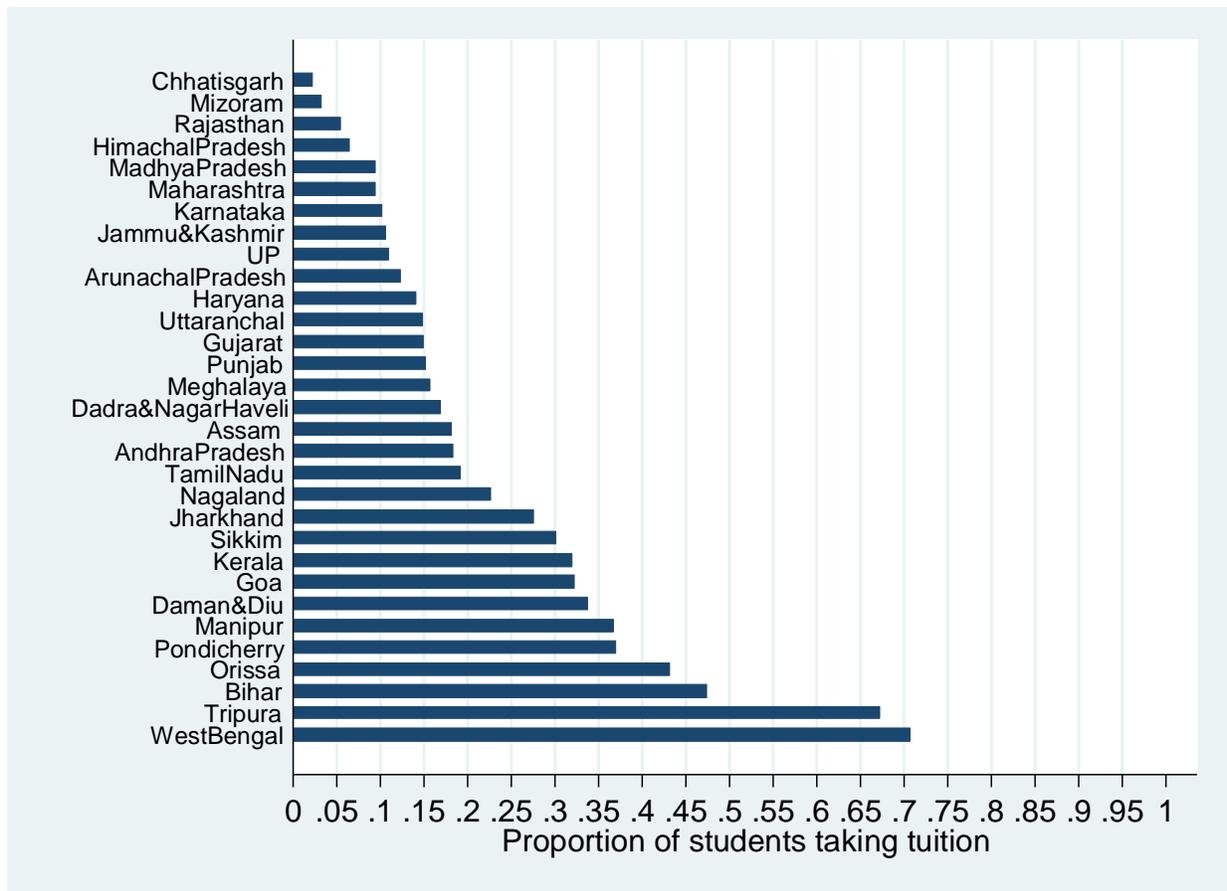
that “the proportion of children relying on private tuition has gone up quite a bit (64 per cent from 57 per cent for the students of standard primary schools, and 58 per cent from 24 per cent for SSK children). Underlying this rise is not only some increase in incomes and the affordability of having private tuition, but also an intensification of the general conviction among the parents that private tuition is “unavoidable” if it can be at all afforded (78 per cent of the parents now believe it is indeed “unavoidable” - up from 62 per cent). For those who do not have arrangements for private tuition, 54 per cent indicate that they do not go for it mainly — or only — because they cannot afford the costs.” Children attending tuition spend, on an average, nine hours in tuitions per week (IHDS 2004-05), which is equivalent to one and a half school day<sup>10</sup>. They pay on average, Rs. 170 per month, amounting to slightly above Rs. 2000 per annum to attend these tuitions (ASER 2013)<sup>11</sup>.

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<sup>10</sup> IHDS stands for India Human Development Survey. See Desai et al (2010) for more details.

<sup>11</sup> NSS 64<sup>th</sup> round (2007-08), which is quite dated now, indicated that at an all India level, on an average, expenditure on private tutoring constituted 8% and 14% of household expenditure on education, for primary and middle school classes. For rural areas, it was 7.6% and 13.1%, and for urban areas, it was 8.5% and 15.1%. For the age group 5-29 years, expenditure on private tutoring constituted 0.19% of GDP in 2007-08.

**Figure 2.1: Proportion of Students taking tuition- State-wise (Age 6-14) ASER, 2011**



### Private Tutoring and Learning outcomes

Does private tutoring improve outcomes? The main challenge in estimating impact of private tutoring is non-random selection of students in it. Students who attend private tutoring are likely to differ systematically from those who don't take tuitions on various observable and unobservable dimensions. Differences along the observable dimensions can be controlled but differences along the unobservable dimensions such as ability, motivation, parental concern for education etc., by their nature, are difficult to account for. More importantly, these factors are correlated with both, learning outcomes and likelihood of attending tuitions. As a result, if we find any difference in learning levels of students who attend private tuition and those who don't, it's not clear whether this difference is due to private tuitions alone or the unobservable factors also play a role. Only a few papers have recognized this problem and findings from these

papers are mixed. Dang (2007), and Ono (2007) find substantial effects of private tutoring, while Briggs (2001), Gurun and Millimet (2008), and Kang and Ryu (2013) find negligible effects<sup>12,13</sup>.

In the Indian context, Dongre and Tewary (2015) use two rounds of ASER data and show that children attending private tuition have more privileged background than children who don't attend private tuitions. For example, being in a government school, being a girl child and being in a lower grade, each reduce the probability of attending tuition. Parents of children attending tuition are more educated, i.e. they have completed two more grades of education. Children attending tuition belong to relatively affluent households, as indicated by nature of house (*pucca, semi-pucca or kutcha*), availability of toilet, ownership of television set, mobile phone, and computers, and availability of newspapers and other reading material in the house. Children who belong to economically active or larger villages have higher probability of attending private tuition—children from villages which have banks, primary health centre, private health centre, private school, and internet café have higher probability of attending private tuitions.

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<sup>12</sup> I do not mention here the studies that don't attempt to control for endogeneity. See Dang and Rogers (2008) for details on these studies.

<sup>13</sup> Dang (2007) estimates effects of expenditure on tutoring in Vietnam using a nationally representative survey data. Since expenditure on tutoring is not reported for all the households, and dependent variable (i.e. academic ranking) is discrete and ordered, he estimates joint Tobit and ordered Probit model, with tutoring prices as an instrument. He finds significant effects of tutoring on academic performance. Students in Japan invest substantial time and money in *ronin* (spending additional years to prepare for entrance examinations through specialised entrance preparatory schools) to get selected in top universities. Ono (2007) estimates an instrument variable regression which shows that *ronin* investments improve the probability of attending better quality university, which in turn, improves earnings. Thus, investment in *ronin* pays off from the individual student's point of view. Briggs (2001) investigates effect of tutoring on scores in standardised tests for college admissions in the US using a nationally representative sample of students from 8<sup>th</sup> grade through high school and beyond. But his estimates using Heckman approach suggest that tutoring helps but by a rather small amount. Findings from Turkey are also similar as shown by Gurun and Millimet (2008) through bivariate probit estimation. They show that expenditure on tutoring has no effect on probability of university placement when positive selection is taken into account. Kang and Ryu (2013) employ a variety of estimation methods to a panel data set from South Korea, and find that expenditure on tutoring has modest effect on test scores of middle school students (grades seven to nine).

The paper employs Fixed Effect (FE) estimation to control for the effect of unobserved variables. They find positive and significant effect of private tutoring on learning outcomes for students in grades one to eight. This effect is equivalent to an additional year of schooling or being in a private school instead of a government school. What is interesting is that the effect is stronger for the disadvantaged students – those who are less wealthy, and those whose parents are relatively less educated, i.e. those students who have lower learning outcomes.

### **Policy Implication**

What policy implication does this have? Clearly there is demand for private tutoring. Curbing or banning tutoring is not the solution, which is near impossible to enforce in any case. Evidence in the Indian context does suggest that tutoring improves learning outcomes. But it is also the fact that tutoring is available only for those who can afford it. Thus, tutoring can lead to widening existing inequalities in learning outcomes. But private tutoring benefits more to those students who have lower learning levels. Hence, one possible public policy response could be provision of remedial education in schools itself. Majumdar (2014) also stresses the need for reforming the mainstream education system – reducing the weight of curricula, stopping the practice of ‘home tasks’ at least for very young children and recruiting adequate number of teachers (Pratichi, 2009).

### **Chapter 3: Sampling, Household Sample and Household Characteristics**

For this study we purposively chose Sahebganj block of Muzaffarpur district in Bihar. In Sahebganj block we purposively chose 3 Gram Panchayats or GPs, namely Jagdishpur, Bishanpurpatti and Saraiya. The factors considered for selection of this block and the GPs were the size, accessibility and flood situation in monsoons. The 3 GPs were medium sized and collectively have 17 villages and 41 wards.

In September, 2014, prior to the household survey, a house-listing was carried out in all 41 wards of the 3 GPs. The criteria for selection of households for the main survey were:

- Std. 9 to Std. 12 school going children residing in the household
- In case of out of school children, households with children from the ages of 13 to 18.

In total 1,274 children enrolled in Std. 9 to 12 were found in the 3 GPs, 621 boys (49%) and 650 girls (51%). Out of these, 1,085 were enrolled in government schools (85%). Although the number of students studying in private schools is far lower at 167, the gender distribution among this sub sample shows proportionately far more boys (57%) as compared to girls (43%).

In addition, 211 out of school children were found in these 3 GPs, out of which 200 had dropped out from school and only 11 children who had never enrolled in school (Table 1.1). Among out of school children, the proportion of girls was more than twice the proportion of boys.

#### **Religion and caste composition of households in % age**

During the house-listing process in the 3 GPs, a total of 1,059 households (Table 1.1a) were selected for the household survey based on the presence of children in our target group. Nearly 90% of these households were found to be Hindus and 10% were Muslims (Table 1.2). The majority were found to be OBCs (63%) with about 19% being of general caste (Table 1.3).

#### **Household indicators**

Data collected for this study indicates that households in Sahebganj block are far from affluent. Just over a third of surveyed households were seen to be made of concrete, the rest were

either semi-concrete or of *kuchha* construction (Table 1.6). Almost 1 in 3 households did not have an electricity connection (Table 1.7)

A large proportion of households, about 84% use firewood as a cooking fuel, whereas only about 1 in 10 households use LPG to cook (Table 1.9). Likewise, almost about 8 out of 10 households have a bicycle and about 1 in 10 households own a motorcycle (Table 1.11).

About 2 in 5 households (43%) did not have any reading material in the house at all. Almost 3 out of 5 (57%) households had some reading material, with religious book in about 39% and books other than text books in almost 29% being most common reading material (Table 1.12). A high percentage (84%) of households, almost 4 out of 5, did not have toilets (Table 1.8).

Almost all households visited had a mobile phone. Out of a list of 16 common household possessions, the five that were most often seen were mobile phone (98%), chair (85%), bed (61%), table (50%) and clock (42%) (Table 1.10). Despite the fact that almost 70% of the households had an electricity connection, almost no households had a washing machine or a water cooler and relatively few had an electric fan (24%), television (13%), or radio (14%) (Table 1.10). Similarly, ownership of computers was very low in households (1%).

### **Education and occupation of sampled child's parents**

About a third of fathers (31%) and a little over two thirds of mothers (68%) in the sampled households had never attended school. About 7% of the fathers have studied upto higher secondary and just about 5% have a university degree. In case of mothers about 1.5% have studied upto higher secondary and an insignificant proportion have a university degree (Table 1.4)

The most common occupation of the fathers was agricultural activity, with about 42% owing own agricultural land and just about 11% working as agricultural wage labourers. 12% of them were found to be salaried professionals. A high proportion of mothers were housewives (88%) and a few were employed as agricultural wage labourers or salaried professionals (Table 1.5).

## Chapter 4: How Was The Data On Schools And Tuition Collected?

Several methods were used for collecting data about educational institutions including tuition centres in Sahebganj block of Muzaffarpur district in Bihar. In all there are 23 gram panchayats and 130 villages in this block.

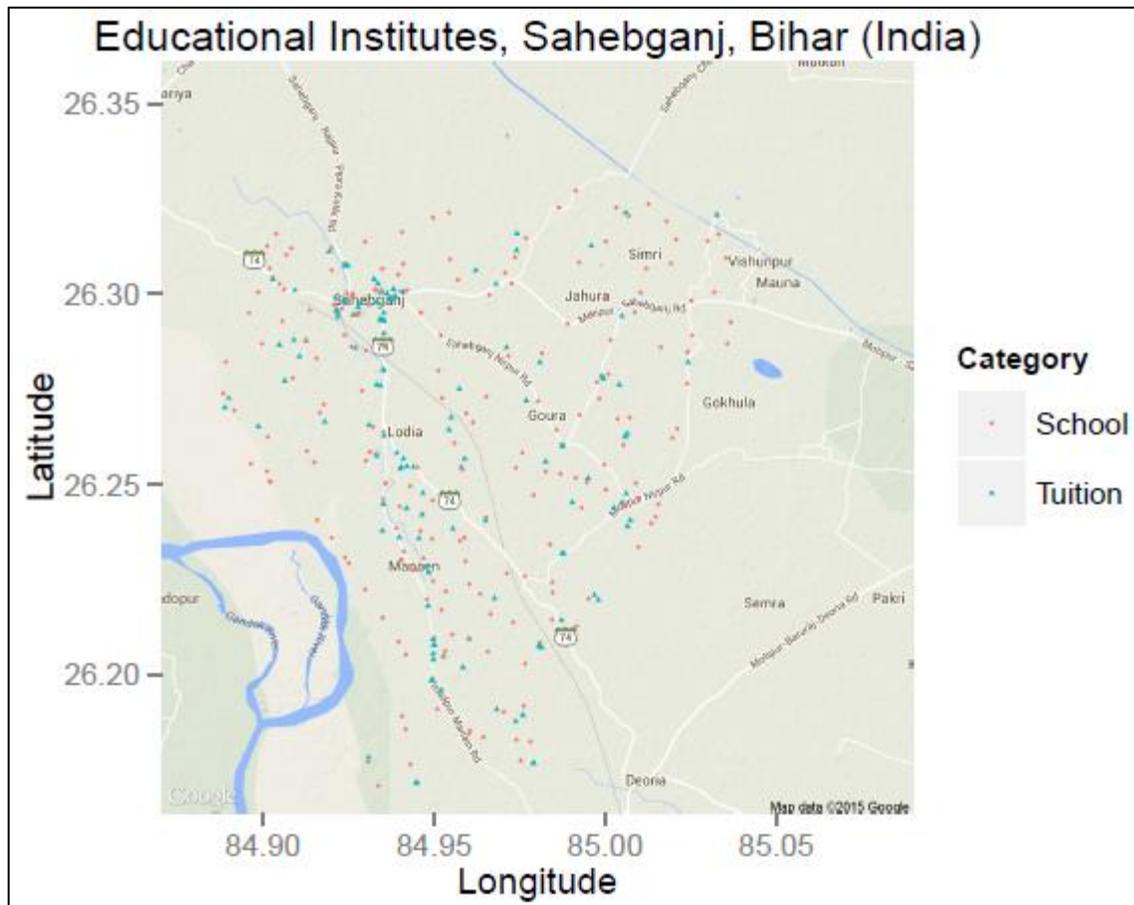
- Block level mapping: Two rounds of GPS mapping of educational institutions were conducted in Sahebganj block. During the first round, all educational institutions and schools that had classes 9, 10, 11 or 12 were covered. Tuition centres were also mapped.<sup>14</sup> To ensure completeness of the information collected on tutors, a second round of GPS mapping was done after the household and student surveys were completed. All schools where the sampled enrolled children were studying and all tuition centres where the sampled enrolled children attended classes (including tuition at the child's home or tutor's home) were mapped.

The school mapping shows that there are 18 schools in the block which have classes 9, 10, 11 or 12. Of these 7 are government schools with secondary classes. Of the total of 18 schools only 4 have classes till 12. There were also 9 madrassas in the block. With respect to tuition centres, putting together the data from both rounds of mapping, the exercise generated data for 132 tuition centres in the block.<sup>15</sup>

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<sup>14</sup> Tuition centres that were visible were mapped. If the centre was large or had a signboard then it was easy to cover. However, if the surveyors could see five or more children being taught by someone, whether in a house, under a tree, at an institution or elsewhere the GPS coordinates of that location were taken.

<sup>15</sup> In Sahebganj block, 3 gram panchayats (17 villages) were the focus of the study. In these villages, a census was carried out for all children/youth enrolled in classes 9, 10, 11 and 12 and those in the same age group. Each of these young people and their families were asked if the student attended tuition classes. Details were noted. The list of names and locations of tutors was then matched with the GPS listing. If the name/location was not there from the previous round, then the location was visited and data was collected. It is very likely that every tuition location connected to young people from these three focus gram panchayats has been covered in the listing. The tuition centres that were outside Sahebganj block were not included, even if children from the 17 villages (or 3 GPs) went to these tutors for classes.



- Mapping of the focus villages/panchayats: Three gram panchayats were chosen for the more detailed study of students, families and educational choice. Jagdishpur gram panchayat has 4 villages (13 wards). Bishunpur Patti panchayat also has 4 villages (14 wards). The largest gram panchayat Saraiya has 9 villages (14 wards). Household and student surveys (census) of all children/youth enrolled in classes 9 to 12 was carried out in the focus villages. Data on school and tutors is likely to be incomplete; physically, there are 30 tuition centres in these three focus gram panchayats put together. It is possible; however children from these villages may also be going to tutors outside these gram panchayats.
- Matching tuition centres/tutors with the students from the focus gram panchayats: Students in the three focus gram panchayats were asked for the names of the tuition centres and tutors whom they went to for classes. This information was used to track

the tutors/tuition centres. About 150 tuition centres were mentioned by students in their interviews. Out of these based on the information from students, 75 tutors/tuition centres were tracked for this study (50%). The rest could not be tracked either because insufficient or incorrect information was provided, or because the tuition centre was located outside the block. The tuition centre/tutor surveys were carried out in April 2015.

- Household and student questionnaires: Most of the detailed information about educational choices and decision-making around the issue of tuition was collected from households and from students. This included asking parents of students for details of the tuition classes their children took. Students also provided additional information. The student and household survey was conducted from mid-December 2014 to mid-January 2015.

#### **How was tuition information collected in households?**

In the household questionnaire, parents of the sampled enrolled children were asked whether their wards took tuition. If so, then information was collected about the class they were in when they joined the tuition centre and the subjects they were being tutored in. They were also asked to specify the money that was spent on their children's tuition per month. We also gathered information on who decided on sending them for tuition and the main reasons for their decision.

The sampled enrolled children were also asked about the subjects they were taking tuition in. They also answered questions on the distance and type of tuition centre they went to (tuition centre, tutor's home or any other place). Our questionnaire for children also had questions on enrollment of the tuition centre, (management) type of school children came from – government or private, basic infrastructure of the tuition centre, teaching practices in the tuition centre etc.

### **Tuition centre survey**

In the tuition centre survey, the tuition centre in-charge and 1-2 tutors from each centre were interviewed. The in-charge was asked about his/her educational qualifications and professional experience, as well as information regarding the institution such as enrollment rates, drop-out rates, basic details of the student body (management type of school, distance the students travel to attend class at the centre, factors that determine admission, whether never enrolled and drop out children are also taught, medium of instruction, teaching practices, fee structure and shifts). Tutors were asked about their educational qualifications, professional experience, teaching hours and sources of income.

We were unable to observe classroom practices as most centres were not operational when we went to survey the tuition centres, as the board examinations were underway. However, we observed the centre infrastructure.

## **Chapter 5: Understanding Tuition Behaviour from the Point of View of Students**

### **Incidence of Tuition**

Overall, 868 of the 1,274 (Table 3.1) children in this study reported taking tuition in one or more subjects (68%). These proportions are far higher among students in Classes 9 and 10 (76% and 81% respectively) and substantially lower among those in Classes 11 and 12 (38% and 56% respectively) (Table 3.1a).

Among tuition-taking students, almost all those studying in Class 9 or 10 were enrolled in government secondary schools; almost no private school students were also taking tuition classes. However among higher secondary (Class 11 and 12) students taking tuition, enrollment is more equally divided between government and private schools (Table 3.2 and Table 3.2a).

The majority of tuitions are provided in the tutor's home across all Classes, followed by 'other place' (could be a separate building, under a tree, or any other location) and then the child's home (Table 3.3 and Table 3.3a)

The tuition location was reported to be outside the village by most children from Class 9 to 12, especially in Class 11 and 12 where almost 90% of sampled tuition-taking children travel outside the village for tuition (Table 3.4 and Table 3.4a). This difference is reflected in the time taken to reach tuition, which is half an hour or less amongst 80% of the children in Class 9 and 10, but in the case of children in Class 11 and 12 it is about 60%. Almost a third of the Class 11 and 12 children travel half an hour to one hour to reach the tuition location (Table 3.5 and Table 3.5a)

A measure of the importance attached to tuition classes is the fact that about 10% of the children who take tuition reported that they absent themselves from school in order to attend tuition (Table 3.6 and Table 3.6a).

### **Tuition and Subjects**

In the student questionnaire, each currently enrolled student was asked about the subjects in which he or she took tuition. These data suggests that it is very common for students especially in class 9 and 10 take tuition for many subjects (at least 4) (Table 4.1 and Table 4.1a). Often it is thought that tuition is a way of seeking additional help for subjects that seem difficult or that

need more attention than the student may be getting in school. Although the common perception is that the incidence of tuition is high mainly for math and science subjects, preliminary analysis of data from the focus villages in this study indicates that at least up to the Class 10 board exam, students are taking a “bundle” of subjects in their tuition classes. More than 80% of the young people surveyed take tuition in four or more subjects and the patterns for boys and girls are similar by grade (Table 4.4 and 4.5).

Who pays how much and for what kind of tuition? For approximately 825 children (Tables 2.1 and 2.2), we have information on household expenditures on tuition. The hypothesis would be that the more subjects you take in the tuition classes, the higher would be the money that is spent. Comparing average expenditures by class, gender and subjects taken some interesting trends are visible (Tables 4.7, 4.8 and 4.9). First, almost for each category, the cost of doing more subjects is higher than that of doing fewer subjects. However, depending on the subject (and perhaps the kind of tutor or tuition centre) the cost of doing one or two subjects may also be high. Second, the cost of tuition seems to rise by grade with Class 9 showing lower numbers than higher grades. Third, in most categories the expenditure on girls’ tuition is lower than that of boys. Looking at the raw numbers it is difficult to tell whether this is purely because girls choose a different basket of subjects as compared to boys or whether girls are going to “cheaper” tutors/centres than boys. Fourth, interestingly, for both boys and girls, Class 12 expenditure seems to be lower than that in Class 11.

Perhaps the seasonality in tuition-taking behavior needs to be taken into account here. Our survey was in the field in December-January and the data collected is current at that point in time. When we went to survey the tuition centres in April, 2015 we could only locate 75 tuition centres out of 150 tuition centres that the children said they were going to at the time of the household survey in December, 2014 to January 2015. One reason could be with the ongoing board exams in April, many children might have stopped going to tuitions, and hence some of the tuition centres were not functional.

## **Basic skills in Language and Math among secondary school students**

In order to understand why students seek tuitions, many questions can be asked. Do students seek tuition as additional help for specific subjects in which they are weak? Or is it the case that the supplemental help makes a good student better? What is the relationship between student achievement levels (even basic learning levels) and their propensity to seek additional help? Or is it the case that tuition provides comprehensive education – all subjects, all year round and in that sense is like a parallel system of education?

In order to begin to explore this question, we collected very basic data on students' ability to do some basic tasks in Hindi, math and English. In Hindi, students were given a passage to read and some questions were asked related to the text. In math there were six math questions – all of whom could be seen as “everyday calculations” and not pegged at grade level math (Figure 5.1). In fact, the case can be made that most of these problems should be easily solved by children who are in Class 5.

Despite high incidence of tuition learning trajectory of students in Classes 9 to 12 is not ideal.

Figure 5.1: Sample of Math testing tool

## गणित की जाँच - सैम्पल 1

### प्रश्न-1

राजू के पास खेत है, जहाँ उसकी भेड़ चरती हैं। राजू के खेत की लम्बाई 12 मीटर है और चौड़ाई 6 मीटर।

- a) राजू के खेत का क्षेत्रफल (जगह का माप) निकालें।  
b) राजू के खेत का परिमाण/परिमिति निकालें।



### प्रश्न-2

नीचे दी गई सारणी जनगणना की सारणी है। इसमें प्रत्येक गाँव की आबादी की जानकारी है। इस सारणी के आधार पर नीचे दिए गए प्रश्नों का उत्तर दें।

क्र.संख्या	गाँव का नाम	पुरुष	महिला	बच्चे	कुल
1	परवलपुर	400	450	200	1050
2	वासुदेवपुर	300	420	150	870
3	बहादुरपुर	200	210	180	590
4	सबलपुर	700	650	500	1850
	कुल	1600	1730	1030	4360

- a) किस गाँव में महिलाओं की संख्या सबसे कम है?  
b) परवलपुर गाँव की पुरुष आबादी बहादुरपुर गाँव की पुरुष आबादी के कितने गुणा है?

### प्रश्न-3

एक गाँव में 120 बच्चे 5 वर्ष से कम उम्र के हैं। इन बच्चों में से 25% बच्चे कुपोषित हैं। अब बताओ कि इस गाँव में कुल कितने बच्चे कुपोषित हैं?

### प्रश्न-4

एक किसान दिन भर में 35 किलो आलू बेचता है और उससे उसको 525 रुपये की आमदनी होती है। अगले दिन अगर वह 40 किलो आलू बेचे तो उसे कितने रुपये की आमदनी होगी?

All 868 students who took tuition in classes 9 to 12 were administered the basic math and language tests. The basic tabulations of student responses are quite worrying. Table 5.1 and Table 5.1a shows the summary of results. Although for each question, students in higher grades do better than their junior counterparts, the overall performance in basic “everyday” calculations is weak. About 58% of students in class 12 are able to solve a simple area problem. Only 15% of students in class 9 and 10 can do a simple percentage computation. Year after year, ASER has been pointing out that even after several years of schooling, children do not have basic skills in reading and arithmetic. The data here reinforces those broad findings by providing evidence of weakness in basic computational capabilities even after nine or ten years of schooling.

If we look at the distribution of correct answers across the math test, we find that even in class 12 only 12% students are getting all answers correct (Table 5.2 and Table 5.2a). In fact, in all classes, the percentage of students who could not do any question correctly is nearly 30% for classes 9 and 10 and hovers around 13 and 15% for students in classes 11 and 12 respectively

As part of understanding basic learning levels of students in the sample, young people were asked to read a simple one page text that was given to them and then asked to orally answer two questions (Figure 5.2)

Figure 5.2: Sample of Language testing tool

## हिन्दी की जाँच - सैम्पल 1

### बाढ़ के समय एवं उसके बाद



- बाढ़ आने से पहले और बाद में अपने बहुमूल्य सामानों और कागजातों को सुरक्षित रखें। बाढ़ से इनका बचाया जाना बहुत ज़रूरी है अन्यथा बाढ़ में नष्ट होने के बाद इन्हें दुबारा प्राप्त नहीं किया जा सकता या प्राप्त करना कठिन होता है।
- ज़रूरी कागजातों में – ज़मीन के कागज़, बैंक/डाकघर का पासबुक, वोटर कार्ड, राशन कार्ड, शैक्षणिक प्रमाण-पत्र, डॉक्टर की जाँच के पुर्जे आदि हो सकते हैं।

- भोजन सामग्रियों में सूखे सामान रखें, ताकि उनका इस्तेमाल बिना पकाए किया जा सके।
- खाद्य सामग्रियों को अलग-अलग प्लास्टिक की थैलियों में रखा जाना चाहिए, ताकि उन्हें नमी से बचाया जा सके।
- बाढ़ के समय बहुत से ऐसे सामानों की ज़रूरत होती है, जिनकी अग्रिम व्यवस्था बहुत ज़रूरी है।
- प्लास्टिक शीट के साथ कुछ खूंटो और रस्सियों की व्यवस्था कर लेनी चाहिए, ताकि तंबू यानी टेंट बनाया जा सके।



- बाढ़ के बाद जहाँ-तहाँ जल जमाव, मरे हुए जानवरों और गंदगियों का ढेर जमा हो जाता है, जो अत्यंत जोखिम का समय होता है। बचाव के लिए मरे हुए जानवरों को छोड़ें या फेंकें नहीं, बल्कि ज़मीन में गाड़ दें।
- कूड़ों-कचरों को एक जगह इकट्ठा करके उन्हें ज़मीन में गाड़ देना चाहिए या जला देना चाहिए।

#### प्रश्न

- बाढ़ के समय भोजन सामग्रियों को अलग-अलग प्लास्टिक की थैलियों में क्यों रखना चाहिए?
- बाढ़ के समय तंबू या टेंट बनाने की ज़रूरत क्यों पड़ सकती है?

The data from the language assessment also suggest that there may be a need to focus on basic skills even in the area of reading and comprehension (Table 5.3, Table 5.3a, Table 5.4 and Table 5.4a). Table 5.3a indicates that in class 9 around 37% of the students could correctly do the fact retrieval question and by class 12 is only 12%. Similar student performance was observed in the second question which required each person to link information from different parts of the text.

Overall, the preliminary analysis of the rapid assessment data of student learning raises many questions about what students have learned in elementary school and what needs to be done in secondary school to strengthen and accelerate their basic skills. These data on weak academic achievement of students also raise serious questions about what is being done in tuition classes.

## Chapter 6: How Is Tuition Provided And Who Are The Tutors?

### Organization of the provision and delivery of tuition

As mentioned in Chapter 5, 868 of the Std. 9 to 12 children included in this report were taking tuition, amounting to 68% of the total sample of children. Of these, 77 children (9%) took tuition in their own homes while about 726 (88%) reported attending 150 tuition centres spread across the block. 'Tuition centre', in this definition, refers to any location outside the child's house where s/he was taking paid classes outside school hours.

Subsequently, in April 2015, an attempt was made to visit and survey all 150 tuition centres identified by children. However, issues of timing meant that we were able to cover only 75 of these, because during the fieldwork period board examinations had started and many tuition centres were no longer fully operational. The tuition centres that were not surveyed could either not be located had closed down or were not providing classes for Std. 9-12.

**Characteristics of tuition centres:** At each of the 75 tuition centres visited, we interviewed the tuition centre in-charge. If the tuition location had more than one tutor, 1-2 tutors were interviewed as well. A total of 108 tutors from these 75 tuition centres were part of this study.

**Tuition centre infrastructure:** Almost 90% of tuition going children sit on benches during the tuition, about 6% on mat, almost 3% on floor and just about 1% on chair (Table 3.7a).

Water is available in about 88% tuition locations (Table 3.8a), general toilet is available in just over 43% of them (Table 3.9a), separate girl's toilet in about 33% (Table 3.10a). More than half the tuition locations are said to be without an electricity connection (Table 3.11a).

**Teaching practices of tutors:** Teaching was not actually observed in this study; rather, information about teaching practices was collected from students. From the data it seems that much of the teaching-learning practices in the tuition centres is broadly similar to those commonly seen in schools; however individual evaluation in the form of tests, homework and feedback are clearly key elements of the tuition process. Almost 94% of the tutors use

blackboards while teaching (Table 3.12a), hardly anyone employ or have a computer (Table 3.13a), and almost 65% of them use books when teaching (Table 3.14a). Almost 93% of the tutors take tests during the tutorial classes (Table 3.15a), almost all give homework (Table 3.16a) and discuss the pupil's mistakes with them (Table 3.17a).

### **Who are the tutors?**

108 tutors from 75 tuition centres were interviewed as part of this study. All tutors were male (Table 3.19). The average age of the tutors was about 31 years, with the youngest being 19 and the oldest 65 (Table 3.18). Almost two thirds of them travel less than 1 kilometre to reach the tuition location (Table 3.20). The majority have a university degree, about 56% an undergraduate and about 20% a master's degree (Table 3.21).

Very few tutors had a professional qualification to become a teacher. Only about 3% had a Diploma in Education – D.Ed.; just over 10% a Bachelor's in Education – B.Ed.; and less than 1% with Master's in Education – M.Ed. Just over 6% reported that they have cleared the Teacher Eligibility Test – TET (Table 3.22).

### **Tutor's teaching experience:**

Average teaching experience of the tutors working in the current tuition centre was found to be just over 6 years, the range of experience of individual teacher being from 1 year to 42 years (Table 3.23).

Most tutors (82 of the 108) said that they had worked in other places before joining the current tuition centre, some in more than one place (Table 3.24). About 45% worked in a different tuition centre; 39% taught children in their respective homes; 17% taught in their own homes; 8.54% taught in a government school and 27.16% in a private school (Table 3.25).

54 tutors were found to be currently teaching elsewhere in addition to the tuition centre (Table 3.27). About 35% taught in another tuition centre too; just under 26% taught children in the respective homes of the children; 3.7% taught children in their own homes; 22.22% additionally taught in a government school and 35.85% in a private school (Table 3.28). 19 tutors said that they teach tuition to those children that they teach in school (Table 3.29).

### **Reasons for becoming a private tutor**

Majority of the tutors, about 65%, were either students themselves or else preparing for some examination (Table 3.30).

When asked the reason for becoming a private tutor, 39% identified the prestige associated with the profession; just under 60% mentioned their interest to teach; almost 40% to fund their own education; about 32% for extra pocket money, and 1 person cited the flexibility of time that private tuition provides. Interestingly 18.52% of tutors confessed that they become a tutor because they could not get another job (Tables 3.31 to 3.36).

### **Time spent in tutoring and income**

On an average each private tutor taught 27 pupils, with the range varying from 5 pupils to 125. The tutors on average taught for 4 hours per day, and the range varying from 1 hour to 11 hours a day. On an average each spent about 6 days a week teaching, but some taught 3 days and some all days a week (Tables 3.37 to 3.39).

For 70% of the tutors the income from tuition was the main source of income (Table 3.41), amongst the rest about 21% were found to be salaried government employees and another 21% with agricultural income (Table 3.42).

Of the 70% tutors who said their main source of income was from tuition, about 59% reported additional agricultural income; and about 17% were just students with no other source of income (Table 3.43).

On an average the tutors were seen to be earning Rs 5,709 per month, though some reported teaching free of charge. The maximum that any tutor reported was Rs. 30,000 (Table 3.40).

## Chapter 7: Household Expenditure and Benefits

As mentioned in earlier chapters, out of the total households with the target children, just over 85% had these children going to government schools and just 13% had children going to private schools<sup>16</sup>.

### Household Expenditure

For households with sampled children going to government schools, the average total annual household expenditure on boys and girls were Rs. 6,698 and Rs. 5,505 respectively. The corresponding figures of median are Rs. 5,500 and Rs. 4,930 for boys and girls respectively. (Table 2.1). Within this total, expenditure on tuition was substantially higher than that on schooling and here again we find a large proportion of households spending less than the average for the subsample as a whole.

In the case of children enrolled in private school, the average total household expenditure, for boys and girls, was much higher at Rs. 11,768 and Rs. 8,536 respectively. . However the trends are similar to those seen in households with children in government schools. Once again the median of the distribution is much lower at Rs. 9,250 and Rs. 6,000 for boys and girls respectively, indicating that a substantial proportion of households spend less than the annual average (Table 2.2). As in the case of households with children attending government schools, household expenditure on tuition was substantially higher than school expenditure, with a large proportion of households spending less than the average. Among children in government schools the annual average household expenditure of Class 11 boys was seen to be the highest at almost Rs. 12,780, substantially higher than the corresponding figure for other sub populations within the sample, with the average of tuition expenditure being almost Rs. 9,089 (Table 2.1). However, only 27 students in all were in this category. With the exception of girls in Std 9, across all classes and both genders average annual expenditure on tuition was found to be higher than average school expenditure. More money is also spent on boys than girls in all classes.

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<sup>16</sup> About 2% missing data on school information.

Among households with private school going children, the average household expenditure of Class 11 boys was also seen to be the highest at over Rs. 12,254 with the average tuition expenditure of Class 9, Class 11 and 12 boys and girls being higher than average school expenditure. More money is spent on boys than girls in all Classes (Table 2.2). However sample sizes in many of these groups are far too small to enable definitive conclusions based on these data.

### **Household Benefits**

Almost half of sampled households with government school going children were receiving some benefits, financial or material. In the case of the total private school going children households this proportion was one third; however sample sizes are very small (Tables 2.1, 2.2, 2.4 and 2.5).

The average total annual benefits being received by households with government school for boys and girls was found to be Rs. 3,014 and Rs. 3,569 respectively and with the median of the distribution being Rs. 2,500 and Rs. 3,200 it would seem that a large proportion of households received less than the annual average. But, the benefits under 'other category' was seen to be not only the highest at about Rs. 1,998 and Rs. 2,270 for boys and girls but the median in this category, Rs. 2,500 and Rs. 2,600 was higher than the average, which indicates that a large proportion of households were getting benefits higher than the average. The other benefits that the children in these households comprised government and private scholarships (Table 2.4).

In the case of households with children in private schools, average total annual benefits being received were evidenced to be Rs. 2,750 and Rs. 3300 for boys and girls respectively (Table 2.5).

Interestingly a few government school children were seen to be recipients of private scholarships, which was not the case with private school children (Tables 2.4 and 2.5)

Annual average benefits received by households which have girls going to governments schools is more than boys of the household going to government schools, in almost all classes.

## Chapter 8: Drop Out Children – 13 to 18 years of age

200 children in the age group of 13 to 18 were found to have dropped out in the 3 GPS, in the majority girls. Of the 200 children, 60 were boys and 136 were girls, with missing data for 4 children (Table 6.1). According to the parents of these children, almost 84.5% had dropped out of school for more than 1 year (Table 6.6).

An analysis of the household characteristics of these children suggests that they belong to families that are economically less well off than families of enrolled children. About 42.5% of the former were found to be living in 'kutchra' houses compared to 34.8% of the enrolled children (Table 6.2). 61.5% of the households in which the drop out children lived had an electricity connection, again lower than 69.95% households of the enrolled children (Table 6.3). About 91.5% of the households had a mobile phone amongst the drop outs, lower than almost 98% of the households of enrolled children (Table 6.4).

In terms of availability of reading material in households, lesser number of households where children had dropped out of school had reading materials available than in case of households of enrolled children (Table 6.5).

According to the parents, most of the drop out children decided on their own to drop out of school (59.5%). In about 28% of cases the decision to leave school was taken by the parents and in case of a small fraction, 1.5% reported that the school teacher advised them to do so (Table 6.7). Similar patterns emerged when we asked the same questions to the children: 67.5% responded by saying it was their own decision to drop out; about 23.5% said it was their parents; and 1.5% mentioned their teacher advising them to leave school.

Looking more closely at the self-decision of the children to drop out by gender, we notice that a high percentage of boys (81%) having decided on their own compared to about 63% amongst girls. About 32% girls said that it was their parents who wanted them to leave school, much higher than what the boys reported, about 7% (Table 6.7a).

Most drop outs were seen to be in Class 10 (26%), followed by 16%, 14% and 11% in Classes 5, 8 and 9 respectively. The same pattern was evidenced amongst both boys and girls (Table 6.8).

The top three reasons cited by parents for a child dropping out were 'child not interested to study', 27%; 'monetary problems at home', 25.5%, 'distance and transport facility', 8.5%. Children's own responses to these questions confirmed these patterns (Table 6.9a).

55% of all children said that they wished to continue studies when they dropped out of school. More girls, 62.5% than boys, about 42%, said that they wanted to continue studying (Table 6.10).

Of all the drop out children, 14% of the children said that they had repeated a grade before dropping out. More boys repeated a grade (18.33%) than girls (12.5%) (Table 6.11).

More than half the parents expected their drop out children to start earning when they are 25. The expectation of boys was much higher (82%) than of girls 44% (Table 6.12). Parents also indicated their expectation of their children earning on an average of Rs. 6788. The average earning expectation is higher for boys, at Rs 7,789 than girls which stood at Rs 5918 (Table 6.13).

## Chapter 9: Summary and Way Forward

The main purpose of this study was to understand the interrelated aspects of access to and participation of children in secondary schools in Bihar and also to explore the phenomenon of paid private tuition, which is rampant across the state. We hope that the findings of this pilot study will not only feed into the larger secondary education landscape of Bihar and provide important inputs to policymakers, but also provide secondary information for future research in this area.

The study was designed to capture household choices on education and money they spent; understand the magnitude of private tuition; the costs associated with private tuition; and tuition practices and tutor background. We also assessed children's basic language and arithmetic skills via administration of two sets of tests with the target children, a verbal screening test and a mass pen-paper test.

### **Secondary schooling: Who stays and who drops out?**

Fieldwork for this study shows that most children in focus GPs were enrolled in school. However, 211 children in the age group 13-18 were not enrolled at the time of the field visit, amounting to a substantial 16% of the total number of children; almost all of them had earlier been in school and subsequently dropped out. As previous chapters of this report have shown, these children came from households that were economically disadvantaged relative to other children in the study; financial reasons were one of the three most often cited reasons for dropping out of school. Also important from a policy perspective is the fact that 136 of these children, almost 70% of all drop out children, were girls, among whom the greatest number had left school after either Class 5 or Class 10. Distance from school and difficulties with transport were also one of the three most common reasons mentioned for dropping out of school. Finally, it is distressing to note that in a large number of cases, both parents and children specified lack of interest or ability as a reason for dropping out of school; in fact a substantial proportion – 14% - had repeated a grade prior to dropping out. Given the low levels of basic ability in language and math among their school going counterparts who were tested as part of

this study, it is unsurprising to find children being unable to cope with the demands of the curriculum in higher grades.

### **Patterns of access to secondary school**

Taken in conjunction with the GPS mapping of educational institutions conducted in the first phase of the study, the detailed information generated from the three focus GPs throws up some interesting patterns and puzzles about enrollment trends. At the secondary level (Classes 9 and 10), the vast majority of students (more than 98%) in these three GPs attend government schools and only a handful of children were attending private school, even though only 7 of the 18 secondary schools in the block are government schools. At the higher secondary (Classes 11 and 12) level, however, this situation changes substantially. Although all four schools in the block offering these classes are government schools, 32% of children enrolled in Std 11 and 43% of those enrolled in Std 12 attend private schools – in other words, they travel outside the block in order to continue their education even though government options are available within the block. By this time, of course, the total number of children who continue to be in school has dropped sharply.

### **Incidence of tuition**

Private tuition amongst Class 9 to 12 children, as expected, was very common, with close to 68% of all children reporting taking tuition in at least one subject. Tuition was more common in secondary school children than among higher secondary school children. As in the case of enrollment, the older children of Class 11 and 12 were more often taking tuition classes outside the village, spending significant amounts of time on travel. Children most often went to their tutors' homes for tuition classes, suggesting that these classes were often informal arrangements rather than formal organizations.

It is important to highlight the fact that data from this study shows that households spend significant amounts of money on tuition for their children and in fact appear to be willing to spend more on this form of educational provision than on schooling. On average, across all classes and both genders, households spent more on tuition classes than on school fees.

Expenditure on tuition was higher for students in Class 11 and 12, as well as for boys relative to girls.

If this high incidence of tuition is linked to screening test results<sup>17</sup> then we notice almost a third of the children who took the test could not answer any questions on the math assessment and more than 40% could not answer the questions in language test. This lack of ability amongst secondary and higher secondary children cannot be looked in isolation and needs to be seen with the primary school learning levels, which ASER<sup>18</sup> for long has been reporting to be extremely low. Is this also leading to children dropping out and migrating from the villages for employment, which led to our field investigators observing much lesser number of Class 11 and 12 students in comparison to Class 9 and 10? This is an area that requires further investigation.

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<sup>17</sup>The number of children in the screening test also includes the missing data of private tuition children

<sup>18</sup> ASER 2014 findings of Muzaffarpur, the district in which Sahebganj is, reported that only 45% of the children in Class 3 to 5 could read a text of Class 1 or above. And only about 39% of Class 3 to 5 children could compute a 2-digit carry forward subtraction.

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