Socio-Economic Determinants of Secondary Education in India

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1 Introduction

Secondary education is a decisive stage in the educational pyramid and an effective link between elementary and higher education. Secondary education consolidates the gains received from elementary education and provides relevant skills for the labour market, in order to lift people from below poverty line in a sustainable manner. It has the potential to be a major instrument of social change—in raising economic growth, improving income distribution, reducing poverty and improving human development. Realising the importance of secondary education, the Sustainable Development Goal (SDG) 4 included universalisation of secondary education by 2030, as a logical extension to the Millennium Development Goal (MDG) of achieving universalisation of primary education.

Unfortunately, even after various international initiatives and national planning of individual countries, there are millions of children who are out of school. Youths have higher probability to be out of school compared to children of primary school age due to poverty and a variety of other reasons (UIS Fact Sheet No. 48, 2018). South Asia, alone, has half of the out-of-school youths (15–17 years) of the world. More than one-fourth of South Asia's out-of-school youths live in India. The number of out-of-school youths in India alone is higher than that of entire East and Southeast Asia (Table 1).

Out-of-school youth is an unfortunate current phenomenon for India, because if we look back to the history of Indian education system, then 12 years of education was considered as basic education (from age 6 to 18 years). Throughout those 12 years, students had to stay at the residence of the parent-like teacher called *Guru.* With such a strong foundation of basic education, India's higher education was renowned

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Table 1 Out-of-school youth (15–17 years) in India and different parts of the World

Region	Out of school number (millions)		
	Total	Boys	Girls
Europe and Northern America	2.8	1.5	1.3
Latin America and the Caribbean	6.9	3.6	3.3
Central Asia	0.5	0.3	0.3
Southern Asia	67.3	34.4	32.9
Eastern and Southeastern Asia	15.8	9.9	5.9
Northern Africa and Western Asia	8.8	4.2	4.6
Sub-Saharan Africa	35.8	17	18.9
Oceania	0.5	0.3	0.2
World	138.5	71.1	67.4
India	17.8	9.3	8.4

Source UIS Fact Sheet No. 48, (2018) and NSSO (2014) for India

worldwide, and several foreign students used to come to India to acquire higher education (Singh 2017). Unfortunately, the glorious higher education system was completely dismantled by the time the British came to India. However, the primary level indigenous education was well spread in the entire country (Dharampal 1983). British rulers adopted the downward filtration theory of education, citing the logic of availability of limited resources for this purpose. They found it convenient to educate the upper classes in order to fulfil the requirement of English-knowing employees to run the commerce and administration and leave it to them to spread elementary education among the masses. Although some universities were established (e.g. Calcutta, Madras and Bombay), no such attention was attached to intermediate secondary education.

In post-Independence India, the Constitution promised universal education up to the age of 14 years within a period of 10 years of its commencement. Meanwhile, there were commissions on higher and secondary education, perhaps presuming that the Constitution had taken ample care of elementary education. However, over the period, this simple target was prioritised, re-prioritised but never achieved. In 2010, the Right to Education (RTE) Act came into effect mandating that all children, within the age groups 6–14 years, would receive free and compulsory education. This development resulted in rapid progress in universal elementary education. *Sarva Shiksha Abhiyan* (SSA) has been the main vehicle to achieve the target. On the lines of SSA, the Government of India has also launched *Rashtriya Madhyamik Shiksha Abhiyan* (RMSA), with the objective of universalising secondary education. Recognising the linkages between elementary and secondary education, the Central Advisory Board of Education has also recommended integration of SSA and RMSA, with the government launching the *Samagra Shiksha Abhiyan* recently.

In this background and context, the present paper explores the socio-economic determinants of secondary school attainment (15–18 years) in India on the basis of

data from 71st round survey (2014–15) of the National Sample Survey Organisation (NSSO).

Theoretically, children between the age group of 15 to 18 years are supposed to be in secondary and senior secondary school education, covering, classes IX, X, XI and XII. If children of this age group are out of school, then it acts as a deterrent to universalisation of secondary (including senior secondary) education. Out-of-secondary-school children are an under-researched phenomenon although the problem is prevalent. Earlier, Chakrabarti (2009) undertook a similar work using NSSO 52nd round data (1995–96), though it was for the entire higher education (age group 15–24 years). She found that students from SC and ST backgrounds had lower probability of attending higher education compared to upper castes. Similarly, chances of girls having higher education were lower than that of boys. Rising cost of higher education was found to have a significant detrimental impact on the likelihood of participation in higher education. Based on 68th round of NSSO data (2011–12), Pramanik (2015) studied the socio-economic determinants of higher education (age group 18–29 years). She found that parental education and family income have a direct effect on an individual's propensity to participate in higher education. In terms of social group and gender, her findings were in line with that of Chakrabarti (2009).

This paper departs from these earlier studies in many aspects. It considers secondary school education (15–18 years) in the background of universalisation of secondary education, whereas earlier studies focussed on higher education. These earlier studies delved into family characteristics only, while this paper goes beyond and builds a holistic conceptual framework, and include distance to nearest school, thanks to NSS recent version data set of 71st round (2014). This paper adds value to the existing literature by analysing both demand and supply-side determinants.

2 Theoretical and Conceptual Framework Based on the Existing Literature

Human capital approach, based on instrumental value of education, (Schultz 1960, 1961; Becker 1964) is the theoretical foundation for demand-side analysis, i.e. economic logic behind household's preference for schooling of the child in order to maximise the lifetime wealth. People invest, and if they are poor, they take loans to invest in education. It is just seen as an individual gain from individual investment. However, if we consider endogenous growth theory, based on this human capital approach (Romer 1990; Lucas 1988) and diverse empirical evidence of significant returns to education on economic development (Gounden 1965; Psacharopoulos 1994; Barro and Lee 2013), then the question that arises is that if a country is growing due to investment in education, should poor people take loan for this investment or is it the duty of the nation?

Theories based on intrinsic value of education like capability theory, social positive externality on education and the recent right-based approach provide strong theoretical foundation for the role of government in supplying/providing free universal education (Sen 1988; Dreze and Sen 1996; Tilak 2004; Singh 2014). The supply-side theoretical foundation is closely interlinked with demand-side factors as well, particularly in poor developing countries, due to information asymmetries. Parents, with little or no education, often do not realise the benefits of investing in education of their children, even when the private rate of return is high (Boissiere 2004). For example, even after numerous studies have established the benefits of education, particularly for girls (surveyed in Sperling and Winthrop 2015), there is still gender discrimination in education in many developing countries.

On the basis of survey of the existing literature, conceptually, the following can be noted as the socio-economic determinants of school enrolment, retention or drop-out in education:

2.1 Individual Factors

(a) **Age** (Colclough et al. 2000; Cardoso and Verner 2006; Rumberger and Lim 2008; Manandhar and Sthapit 2012). Older teenagers are more likely to give up school, mainly because their opportunity costs increase with age.

(b) **Gender** (Al-Samarrai and Peasgood 1998; Kingdon 2002; Tansel 2002; Khan and Ali 2005; Lloyd et al. 2005; Rammohan and Dancer 2008; Rumberger and Lim 2008; Chakrabarti 2009; Mucee et al. 2014). Education of boys is often given priority over girls. Moreover, the gendered division of labour within households often sees girls taking on household duties and care of younger siblings, which often keep them out of school.

(c) **Non-interest in education/indifferent attitude towards education** (Rumberger and Lim 2008; Chugh 2011). However, according to (Chugh 2011), disinterest in studies is closely related to school and educational quality in terms of infrastructural facilities, teachers' preparedness and curriculum relevance.

(d) **Work involvement/child labour with or without payment** (Khanam 2008; Cardoso and Verner 2006; Hunt 2008; Rumberger and Lim 2008; Mucee et al. 2014; Nekongo-Nielsen et al. 2015). The most prevalent types of child labour appear to be domestic and household-related duties (girls) and agricultural labour (boys), which are, for the most part, unpaid, under-recognised and take up substantial amounts of time.

(e) **Poor academic achievements** (Rumberger and Lim 2008; Hanushek et al. 2008; Chugh 2011). However, although it is an individual factor, it is closely related to classroom teaching, parent's education and poverty. If students are not able to comprehend classroom teaching, are unable to get parental support in doing homework and also not able to afford private tuitions due to financial

constraints, then lack of interest in education and poor academic achievements are the obvious consequences.

(f) **Disability** (Thurlow et al. 2002). Lack of proper infrastructure in schools and considering disability a social taboo, often keep children out of school.

2.2 Household-level factors

(a) **Education of parents, particularly mothers** (Al-Samarrai and Peasgood 1998; Jayachandran 2002; Tansel 2002; Khanam 2008; Okumu et al. 2016; Rumberger and Lim 2008; Zhao and Glewwe 2010; Mueni 2015; Mike et al. 2008; Iddrisu et al. 2017; Dostie and Jayaraman 2006; Khan and Ali 2005; Hati and Majumdar 2012; Nekongo-Nielsen et al. 2015; Pramanik 2015; Damas 2016). Educated parents understand the importance of achieving education and, thus, would be more willing to send their children to schools compared to parents with little or no education. Educated parents are also more equipped to evaluate the investment in human capital that would increase the wage expectations for their children.

(b) **Financial or capacity/household income/wealth of family** (Tilak 2002a; Jayachandran 2002; Ranasinghe and Hartog 2002; Tansel 2002; Khan and Ali 2005; Dostie and Jayaraman 2006; Rumberger and Lim 2008; Chakrabarti 2009; Zhao and Glewwe 2010; Chugh 2011; Hati and Majumdar 2012; Mueni 2015; Nekongo-Nielsen et al. 2015; Pramanik 2015; Kainuwa et al. 2017; Iddrisu et al. 2017). Education entails a range of costs like school fees, uniforms, travel and also the opportunity costs of sending a child to school (Tilak 2002b ; Mike et al. 2008; Hunt 2008; Guntur and Lobo 2017).

(c) **Female work participation** (Jayachandran 2002). If mothers are going to work, very often the elder children look after younger siblings and domestic chores.

(d) **Orphanhood** (Bicego et al. 2003; Hunter and May 2003; Hunt 2008). Death of parents has direct adverse effect on schooling, particularly for poor children. Death of mother increases the domestic workload, whereas death of single-earning father is often linked to an increased likelihood of poverty and child labour.

(e) **Household's perceived benefits of schooling** (Al Samarrai and Peasgood 1998; Hunt 2008). Perceived benefits to the household from education depend on a variety of factors, including prospective remittances, likelihood of obtaining paid work in the present as well in the future. Therefore, it can have either positive or negative effect on children's schooling.

(f) **Reluctance and lack of support towards a child's education by parents** (Juneja 2001). This lack of interest in the child's schooling is cited as an important factor in dropping out or infrequent attendance.

2.3 *Community/social infrastructure/social context-level factors*

(a) **Public expenditure on education, particularly on development of schools** (Glewwe and Ilias 1996; Duflo 2001; Handa 2002; Handa and Simler 2006; Bhakta 2015). Building new schools with public expenditure has significant positive impacts on schooling, especially for countries where level of school and other public infrastructure is deficient.

(b) **Common economic factors like gross state domestic product (GSDP) for macro-level studies/village development variables for micro-level studies** (Dostie and Jayaraman 2006; Bhakta 2015). It is generally expected that more income or more funds for development will be reflected in more schools or other educational infrastructure.

(c) **Caste and other form of social discrimination** (Dostie and Jayaraman 2006; Chakrabarti 2009; Govinda and Bandopadhyaya 2010; Mananadhar and Sthapit 2012; Pramanik 2015). Sedwal and Kamat (2008) indicate a number of reasons for children from Scheduled Caste or Tribe groups being more likely to drop out from school in India. These include: economic disadvantage, poor quality of available schooling (many study in badly equipped schools with poor infrastructure and under-trained teachers) and forms of social expectation. Discrimination against under-privileged social groups results in push-out rather than drop-out of children (Balagopalan and Subrahmanian 2003).

(d) **Rural–urban differences** (Mike et al. 2008; Mike et al. 2016). The probability of a child being out of school is generally less in urban areas. This could, perhaps, be attributed to the fact that it is easier to access schools in urban areas as compared to rural areas.

(e) **Work-related migration** (Tansel 2002; Damas 2016). Seasonal migration of parents along with their children obviously has an adverse effect on these children's education, because of the breaks or gaps in the study. However, parents permanently migrating to areas with better schooling facilities might increase the possibility of schooling for their children. Opportunity to migrate and get decent jobs also increases the incentive of education.

(f) **Role models in the community** (Damas 2016). Children coming particularly from families of poor and illiterate parents lack the incentives for attending schools. In these situations, motivated teachers or successful youngsters in the community play the part of role models and increase the likelihood of children attending school.

(g) **Early marriage** (Brock and Cammish 1997; Colclough et al. 2000; Chugh 2011; Mucee et al. 2014; Nekongo-Nielsen et al. 2015 Fentiman et al. 1999; Rose and Al Samarrai 2001; Hunt 2008). The early marriage of girls is linked to drop-outs in certain socio-cultural contexts. However, early marriage can also be the consequence of lack of secondary schools.

(h) **Socio-political conflict and emergency situations** (Sinclair 2001; Sommers 2005; Karam and Somokanta 2016; Pankaj et al. 2018). Children caught up in

conflict, or politically fragile and emergency situations often find difficulties remaining in school and many drop out. Many children are forced to migrate also, thereby disrupting the schooling they had begun.

2.4 School-related factors

(a) **Availability of school/distance to nearest school** (Colclough et al. 2000; Jayachandran 2002; Tansel 2002; Mike et al. 2008; Rumberger and Lim 2008; Chugh 2011; Siddhu 2011; Hati and Majumdar 2012; Nekongo-Nielsen et al. 2015; Damas 2016). Access to school is the pre-condition for school-related factors. Distance to school is also an important determinant for girls and poor children.

(b) **Teachers' quality and pedagogy** (Chugh 2011; Nekongo-Nielsen et al. 2015). Teachers, being the backbone of the school, the quality of teachers act both as pull or push factor to school.

(c) **Availability of female teacher** (Colclough et al. 2000; Sperling and Winthrop 2015). This is, particularly, important for universalisation of girls' secondary education.

(d) **Size of the class or pupil–teacher ratio** (Woessmann and West 2006). Lower class size is expected to have a positive effect on education, particularly for children of lower grades, in view of the logic of special attention per child.

(e) **School infrastructure and facilities** (Glewwe and Ilias 1996; Hunt 2008; Rumberger and Lim 2008; Damas 2016; Pankaj et al. 2018). The existence of proper school infrastructure and facilities has a positive impact on school enrolment and retention of children. The presence of girls' toilets in working condition has a major role in increasing the likelihood of secondary education of girls.

(f) **Monitoring** (Banerjee and Duflo 2006). Monitoring of various forms, both on teachers and students, has a positive impact on regular attendance.

(g) **Mid-day meal** (Tilak 2002; Dreze and Goyal 2003; Singh et al. 2013; Nekongo-Nielsen et al. 2015). Mid-day meal has immense role in bringing young children to schools, particularly in poverty-affected regions.

(h) **Language of instruction** (Gautam 2003; Hunt 2008; Pankaj et al. 2018). When students are taught in a language that is not their native tongue (especially in the earlier years), the same can be particularly exclusionary.

(i) **Corporal punishment** (Hunt 2008; Pankaj et al. 2018). Different relationships have been suggested in the literature on how beatings and intimidation 'affect children's motivation to attend school'.

(j) **Schools' non-response to special educational needs of the teenagers** (Balagopalan 2003; Chugh 2011). This reason is a significant push-out factor, particularly when the opportunity cost of the teenager is high.

From the survey of the literature, the conceptual framework of socio-economic determinants of education has been developed. Socio-economic determinants can be

clubbed under various headings; some depend on the student/child herself/himself, some on the household characteristics, some on the community the child belongs and some on the availability and quality of schools. These factors do not stand alone. They are often influenced and affected by income and expenditure (whether household, village, State or national level), and discrimination and exclusion (whether gender, caste or regional). The conceptual framework is illustrated in the following Fig. 1.

3 Methodology and Hypotheses

The population/universe, i.e. the children in the age bracket of 15–18 years, can broadly be segregated into three groups—(a) never attended, (b) ever attended but dropped out, (c) continuing formal or informal education. The consolidation of the first two categories can be defined as out-of-school children. The sign and statistical significance of the socio-economic determinants of secondary education has been tested through the following multivariate logistic regression:

$$\ln\left(\frac{P_{\text{oos}}}{1-P_{\text{oos}}}\right) = \beta_0 + \beta_1^i \text{AGE}^i + \beta_2^j \text{SEX}^j + \beta_3^k \text{HHEDU}^k + \beta_4^l \text{EXPQNTL}^l + \beta_5^m \text{SCTR}^m + \beta_6^n \text{RELGN}^n + \beta_7^o \text{SCGP}^o + \beta_8^p \text{DIST}^p$$

where P_{oos} is the probability of being out of school. The dependent variable is binary, which takes only two values, 1 = out of school and 0 = in school. Age and gender have been considered as individual factors. Age dummy AGE^i, $i = 1, 2, 3, 4$, takes four values for the years 15, 16, 17 and 18, respectively, and gender dummy SEX^j, $j = 1, 2$, takes two values for boys (1) and girls (2), respectively. Education level of household head (as a proxy of parents education level), and expenditure quintile, as a proxy of household income, have been considered as family-related determinants. Education dummy HHEDU^k, $k = 1, 2, 3$, takes three values, illiterate or below primary educated household head (1), school educated household head (2) and household head with secondary and above (3). Expenditure[1] quintile dummy EXPQNTL^l, $l = 1, 2, 3, 4, 5$, take five values poorest (1), poorer (2), middle (3), richer (4), richest (5). Social infrastructure-related determinants have been considered as: rural–urban, religion and caste dummy. Rural–urban dummy SCTR^m, $m = 1, 2$, takes two values for rural (1) and urban (2). Religion[2] dummy RELGN^n,$n = 1, 2, 3$, takes three values for Hindu (1), Muslim (2) and Christian (3). Caste or social group dummy SCGP^o,$o = 1, 2, 3, 4$, takes four values—Scheduled Tribes (1), Scheduled Caste (2), Other Backward Class (OBC) (3) and General/Others (4). The only school-related

[1] Since NSSO data do not provide data on income, we have considered annual consumer expenditure as a proxy of economic class.

[2] We have considered only three major religions, Hindu, Muslim and Christian, since the populations of other religions were negligible.

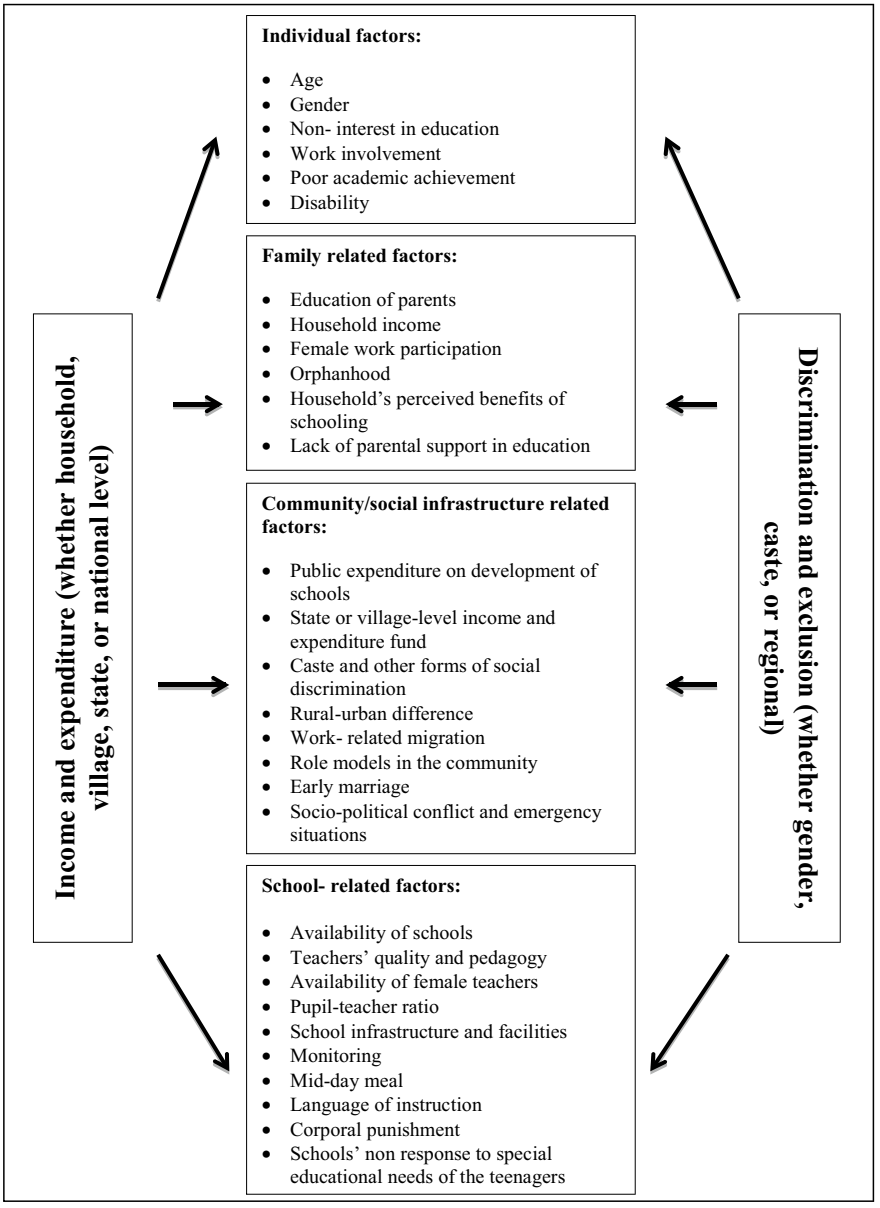

Fig. 1 Conceptual framework of socio-economic determinants of education. *Source* Prepared by author

factor that we have been able to include is distance to nearest secondary school dummy, $\text{DIST}^p, p = 1, 2, 3, 4, 5$ which takes five values less than one kilometre (km) (1), more than one km but less than two kms (2), more than two kms but less than three kms (3), more than three kms but less than five kms (4), more than five kms (5).

Hypotheses

Age: Since opportunity cost increases with age, the probability of being out of school is expected to increase with age.

Gender: Due to prevalence of patriarchal mentality of a large section of Indian population, the likelihood of being out of school is anticipated to be higher for a girl child.

Parents' Education: Since educated parents generally have enlightened attitude about education and often provide a more conducive environment for children's education as compared to uneducated parents, one may expect the probability of being out of school to decline with education level of the household.

Household income: Poverty is seen as the most crucial barrier to education in India. Thus, the likelihood of being out of school is assumed to decrease with household income.

Sector (rural–urban): One might expect that urbanisation would exercise a positive influence on education due to better infrastructure and developed educational facilities. Further positive peer pressure or bandwagon effect might also work in urban areas. Thus, the probability of being out of school is expected to be lower in urban areas.

Religion: Compared to dominant religion, i.e. Hindu, likelihood of being out of school is presumed to be higher in case of the minority religion, Muslim, for historical reasons.

Social group: Historically, lack of access and exposure to education could lead to low level of education among persons belonging to Scheduled Castes and Scheduled Tribes. Moreover, discriminatory practices could also exist within the classroom towards children belonging to disadvantaged communities. Therefore, one might expect the likelihood of being out of school to be lower in the case of those from general caste compared to other disadvantaged social groups.

Distance to school: *Ceteris paribus*, school attendance is reasonably expected to be higher with lesser distance to school, particularly for girl children, due to safety, and poor children, due to transportation cost.

4 Findings

As per NSSO 71st round data (2014–15), 31.3 million children of the age group 15 to 18 years are out of school. This is 25 percent of the total children in the age group. The percentage is quite disturbing as one of every four youth is out of the realm of secondary education (Fig. 2).

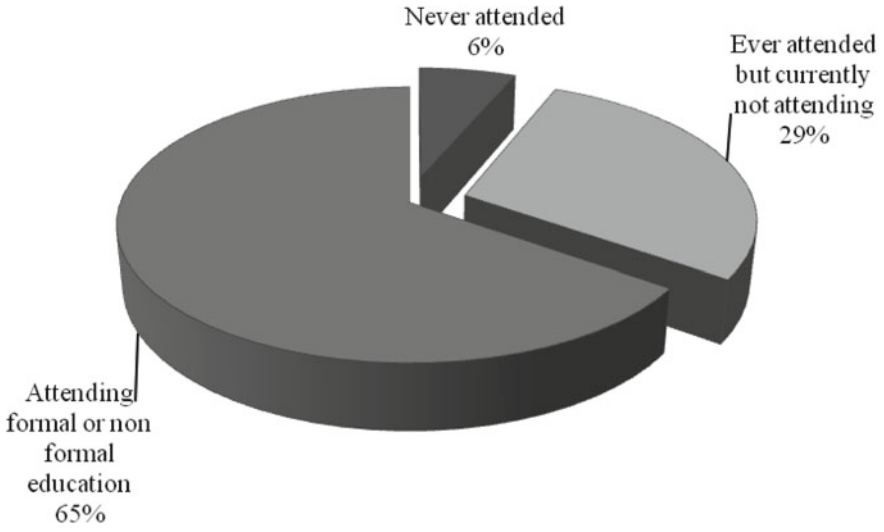

Fig. 2 Status of current educational attendance of youths (15–18 years). *Source* 71st round survey (2014–15) of National Sample Survey Organisation (NSSO)

The econometric estimation of the socio-economic determinants of secondary school education goes along the expected hypotheses, which is presented in Table 2.

The likelihood of being out of school increases with age. This establishes our hypothesis of increasing opportunity cost of youth, leading to increased drop-out from secondary schools. This implies that only bringing children to the secondary education is not enough, but their retention is a bigger challenge. Inclusion of vocational training, along with secondary education, could be helpful in attracting and retaining secondary students. It will also increase the opportunity cost of dropping out of school before completing secondary/higher secondary education.

Compared to boys, the probability of being out of school is significantly higher for girls. Apart from preference for boys' education, and involvement of daughters in domestic works, a major problem particular to India is lack of government-funded secondary schools. After Class VIII, girl children from economically weak backgrounds either have to join high fee-charging private schools in the vicinity or travel a long distance for attending the nearest government secondary schools. The sharp increase in fees or expenditure on transportation, along with the safety and security concern to travel such a long distance, often acts as a barrier for their secondary education.This phenomenon is closely linked with early marriage of girls. If early marriage is a community practice, then it can be removed or reduced through awareness and education. However, if girls are sitting idle at home either due to lack of government secondary school in the vicinity or they are not adequately skilled for the labour market, then early marriage is a simple consequence. Parents neither feel safe to keep their teenage daughters alone at home (if both of them are out for work),

Table 2 Result of logistic regression

Probability of being out of school (dependent variable: out of school = 1, in school = 0)								
	1	2	3	4	5	6	7	8
Constant	−1.29***	−1.36***	−0.81***	−0.41***	−0.41***	−0.50***	−0.21***	−0.46***
Age dummy (reference category = 15 years)								
16 years	0.41***	0.41***	0.46***	0.50***	0.50***	0.50***	0.52***	0.53***
17 years	0.65***	0.66***	0.76***	0.80***	0.80***	0.83***	0.84***	0.85***
18 years	1.34***	1.34***	1.47***	1.54***	1.53***	1.56***	1.58***	1.58***
Gender dummy (reference category = boys)								
Girls		0.08***	0.12***	0.15***	0.15***	0.15***	0.15***	0.15***
Education of head of household dummy (reference = below primary)								
School-educated			−1.07***	−0.95***	−0.96***	−0.92***	−0.86***	−0.86***
Higher secondary onwards			−2.36***	−1.98***	−1.98***	−1.90***	−1.80***	−1.78***
Economic class dummies (reference category = poorest)								
Poorer				−0.43***	−0.44***	−0.50***	−0.47***	−0.46***
Middle				−0.55***	−0.56***	−0.62***	−0.59***	−0.58***
Richer				−0.90***	−0.91***	−0.99***	−0.94***	−0.93***
Richest				−1.45***	−1.46***	−1.50***	−1.41***	−1.38***
Sector dummy (reference category = rural)								
Urban					0.04***	−0.03***	0.00***	0.11***
Religion dummy (reference category = Hindu)								
Muslim						0.73***	0.91***	0.92***

(continued)

Table 2 (continued)

Probability of being out of school (dependent variable: out of school = 1, in school = 0)								
	1	2	3	4	5	6	7	8
Christian						−0.44***	−0.61***	−0.64***
Caste dummy (reference category = ST)								
SC							−0.19***	−0.14***
OBC							−0.43***	−0.39***
Others							−0.71***	−0.66***
Sec-school distance dummy (ref category = less than 1 km)								
1–2 kms								0.22***
2–3 kms								0.22***
3–5 kms								0.37***
More than 5 kms								0.47***
Number of observation	89,940,740	89,940,740	89,940,740	89,924,726	89,924,726	89,902,146	89,894,220	89,893,815
LR chi2	5,138,161.30	5,166,933.74	1.48e + 07	1.77e + 07	1.77e + 07	1.91e + 07	1.98e + 07	2.02e + 07
Prob > chi2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pseudo R2	0.04	0.04	0.13	0.15	0.15	0.16	0.17	0.17

Source Author's calculations
Note ***implies statistical significance at 1%, **implies statistical significance at 5%, *implies statistical significance at 10%

nor do they feel comfortable to send them to secondary schools 10–15 km away. They feel most comfortable to get them married off. This trend is prevalent in rural India.

Compared to children coming from household, whose head is either illiterate or educated up to below primary level, the probability of being out of school is significantly lower for children coming from school educated and, more importantly, higher educated headed households. It implies that if one generation gets education with government support, those people will be able to take care of education of the future generations.

The hypothesis about poverty to be the most crucial barrier to education in India has been well established by the econometric estimation. The likelihood of children being out of school declines at every stage as we move from poorest to the richest quintiles.

Rural–urban differentiation of secondary education does not come out very clearly in our empirical estimation. In one case, probability of being out of school is higher in rural areas compared to urban areas; however, in rest of the equations, it is the other way round. This is an interesting finding. It implies that compared to general arguments of better exposure and positive peer pressure, it is the availability of schools in the vicinity that increases the possibility of schooling, irrespective of the rural–urban differentiation. This is further accentuated by the fact that the chances of being out of school increase quite consistently with increase in distance to the nearby school having secondary classes,

Compared to Hindu, the probability of being out of school is lower for Muslims, but higher for Christians. Compared to STs, the likelihood of being out of school is lower in SCs, OBCs and upper castes particularly.

5 Conclusion and Recommendations

Secondary education is a crucial stage in the educational hierarchy that consolidates the gains received from elementary education and provides relevant skills that might be useful in the labour market (Tilak 2007). Unfortunately, youths of secondary school age group have a higher probability to be out of school due to poverty and various other reasons. The share of out-of-school youths in India is one of the highest in the world. Presently, the Indian government is attempting to universalise the secondary education system. In this background, this paper explores the socio-economic determinants of secondary education in India, using unit-level NSSO data. This paper adds value to the related existing literature by developing a holistic conceptual framework and analysing both demand and supply-side determinants of secondary education in India.

The results of our estimated multivariate logistic regression indicate that the likelihood of being out of school increases with age. This calls for tailoring secondary education according to the needs of teenagers. Inclusion of vocational training, along

with secondary education, could be helpful in attracting and retaining secondary students. It will also increase the opportunity cost of dropping out of school before completing secondary/higher secondary education. Parents' education is revealed to have significant positive influence on children's education. The hypothesis about poverty to be the most crucial barrier to education in India has been well established by the econometric estimation.

Compared to Hindus, probability of being out of school is higher among Muslims and lower among Christians. Compared to STs, the likelihood of being out of school is lower in SCs, OBCs and upper castes particularly. Compared to boys, the probability of being out of school is significantly higher for girls. Apart from preference for boys' education, and involvement of daughters in domestic works, a major problem, particular to India, is lack of government-funded secondary schools. After Class VIII, girl children from economically weak background either have to join private schools in the vicinity or travel a long distance for attending the nearest government secondary schools. The sharp increase in fees or expenditure on transportation, along with the safety and security concern to travel such a long distance, often acts as a barrier for their secondary education. Interestingly, we found that compared to general arguments of better exposure and positive peer pressure, it is the availability of schools in the vicinity that increases possibility of schooling, irrespective of the rural–urban differentiation.

In fact, an important feature of the present secondary education in India is a high proportion of private schools—government-supported private institutions, and, more importantly, private-unaided institutions, depending exclusively on student fees. The expenditure on education increases drastically, if one were to go a private school and this is one of the major reasons behind drop-out rate to peak after Grade/Class VIII, as per NSSO data.

In the background of small number of government-funded secondary schools, child labour and early marriage might be the consequence rather than the reasons for out-of-school children. Lack of access to government schools being a prominent reason for drop-out, universalisation of secondary education has strong potential, provided it is supported by extension of the existing government schools to higher secondary level, wherever possible, or otherwise constructing new schools. This might help in reduction of child labour, early marriage and income inequality, some of the major concerns of our country at present.

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