RESEARCH REPORT I

Making it Past Elementary Education

Making it past elementary education

Demographic transition and education planning

Equity and efficiency in expansion of secondary schools

Efficient school siting using GIS modelling

Cost and equity in accessing secondary education

The shifting terrain of government and private Provision

Private Tuition: Extent, Pattern and Determinants

EQUITY IN ACCESS AND LEARNING
A way forward for secondary education

Preface

This document is one of a series of seven research reports which has been prepared to accompany the single consolidated recommendation report *Equity in Access and Learning: A Way Forward for Secondary Education in India*. The research reports are intended to be of interest to planners, managers and policy makers, as well as to academics involved in development of policies and plans for secondary education. In addition to these reports, a research priority framework and research quality assessment framework has also been developed to take this research agenda forward.

The research programme was developed by the Rashtriya Madhyamik Shiksha Abhiyan-Technical Cooperation Agency (RMSA-TCA) in discussion with National University of Educational Planning and Administration and the Ministry of Human Resource Development (MHRD). The research was developed to respond to concerns expressed in the Joint Review Missions (JRM) to strengthen the evidence base for diagnosis of issues arising during the implementation of RMSA, and to inform policy dialogues on options that could increase access, efficiency, effectiveness, and equity.

This paper explores current patterns of participation and inequality in secondary education and addresses several key research questions relating to determinants of transition to secondary education and its completion.

The eight research reports in this series are as follow:

Research Report 0: **Equity in Access and Learning: A Way Forward for Secondary**
(Consolidation) **Education**

Research Report 1: **Making it Past Elementary Education**

Research Report 2: **Demographic Transition and Education Planning**

Research Report 3: **Equity and Efficiency in Expansion of Secondary Schools**

Research Report 4: **Efficient School Siting using GIS Modelling**

Research Report 5: **Cost and Equity in Accessing Secondary Education**

Research Report 6: **The Shifting Terrain of Government and Private Provision**

Research Report 7: **Private Tuition: Extent, Pattern and Determinants**

RMSA TECHNICAL COOPERATION AGENCY

MAKING IT PAST ELEMENTARY EDUCATION

FEBRUARY, 2016

Note on Documentary Series

A series of documents has been produced by RMSA Technical Cooperation Agency for the Government of India's programme to make good quality secondary education available, accessible and affordable to all young persons in the age group of 14-18 years.

The documentary series is arranged as follows:

RMSATCA 0   Programme Management Reports and Documents

RMSATCA 1   National Achievement Survey (Reports and Documents for Thematic Area 1)

RMSATCA 2   Teacher Management and Development (Reports and Documents for Thematic Area)

RMSATCA 3   School Standards, Evaluation and Development (Reports and Documents for Thematic Area 3)

RMSATCA 4   Data Management and Use (Reports and Documents for Thematic Area 4)

RMSATCA 5   Results Focused Planning (Reports and Documents for Thematic Area 5)

RMSATCA 6   Research (Reports and Documents for Thematic Area 6)

RMSATCA 7   Communication and Knowledge Management (Reports and Documents for Thematic Area 7)

Disclaimer

Table of Contents

List of Table and Figures

Executive Summary

Participation in education at all levels has expanded greatly in India since 2000. More specifically since 2009 the Government of India has prioritised investment at the secondary level to meet increasing demand arising from the success of SSA and the limited capacity of the secondary education system, Under the 11th plan the government set the target of 75% gross enrolment ratio (GER) by the year 2012. To achieve universal access to secondary education Rashtriya Madhyamik Shiksha Abhiyan (RMSA) was launched in March 2009 with the goal of universal access to secondary education by 2017 and universal retention by 2020. Ever-increasing numbers of children are now making it through the elementary cycle. However the 2012 GER goal was missed. India presently has an average GER of 70% with very wide variation between and within States.

The agenda to expand access is very challenging. India lags seriously behind other BRICS countries with which it is often compared (World Bank 2009; OECD 2011). In terms of participation rates it is at a level reached by China 25 years ago and in the 1970s by Sri Lanka and Malaysia. It is not simply the volume of demand, but the fact that new secondary entrants will increasingly come from disadvantaged backgrounds. This will place greater demands on the education system. These children will require more support and better-quality teaching and will lack academic assistance from within their households. Age specific enrolment rates are much lower than gross enrolment rates suggesting that many who reach secondary entrance are over age for their grade. This is even more so for Scheduled Castes (SCs), Scheduled Tribes (STs) and Other Backward Castes (OBCs). Amongst whom enrolment rates may have to double to reach universal levels.

Since before the millennium the Government of India has been committed to providing a secondary school section within 5 kilometres of every habitation to prevent distance and lack of transportation from being an obstacle. In practice this norm has been applied unevenly. As transport infrastructure has improved and urbanisation has taken place the importance of distance has diminished in many parts of India. Costs and opportunity costs, and perceived relevance are now the most important factors that influencing participation. Secondary school access has remained unequally and inequitably distributed.

This paper explores current patterns of participation and inequality and addresses several key research questions. These are:

- What are the patterns of participation in secondary education in India and how have they been changing?
- How do patterns of participation vary between regions of the country and between urban and rural areas and between communities?
- How equitable is existing pattern of secondary education in India and how does it vary by States?
- What are the key factors in transition to and completion of secondary school?
- What role do demand-side factors such as traditionally determined sources of socio-cultural disadvantage and household poverty, play in decisions to attend secondary school?

There has been little written on pupil flow through the education system and transition to secondary education in India (World Bank, 2009), and this paper helps to fill this gap. The first section examines participation and shows that there continues to be a problem of uneven participation by social group and household expenditure and that there remain substantial numbers of children of secondary

school age out of school in India. Though most children do enrol in grade 1 many do not make it through to the end of primary, upper primary or secondary. The challenges are greatest for the poor and the historically marginalised and it remains the case that less than half the age group successfully complete grade 10, especially in the Northern States.

Late enrolment in primary 1 and repetition in the early years of school mean that children are often over-age for their grade. This is linked with drop out at all levels and in particular at the transition point to secondary where those who are two years or more over age are very unlikely to make the transition. While there has been considerable progress in reducing out of school children, and boosting educational attainment in the population, there are still issues with low attendance rates, and automatic promotion continues to be a subject of debate. There are great variations between states with some having achieved virtually full enrolment in grades 9 and 10, and others succeeding in enrolling less than half the age group.

The gap in enrolments between girls and boys still remains but has diminished considerably, and 15 States now have more girls than boys enrolled. Progress for SCs and STs has been considerable, though large differences remain. The research shows that the most important determinant of exclusion from secondary school is household poverty, with a clear relationship found between wealth and secondary school participation. This is true within social groups as well as between groups. Thus richer SC children having greater chances than their poorer, higher caste peers, as do richer ST children and richer girls. There is some evidence that expanded participation at the secondary level has benefitted those at the top and in the middle of the income distribution more than the poorest.

This paper presents three models examining the issues impacting on three distinct steps: the transition from primary to upper primary school; the transition to secondary school; and then completion of secondary. The analysis finds that in addition to household wealth, factors such as low-caste status, a poorly educated household head, being a girl (usually), being over-age at the time of first entry into school, and living in rural areas all have an impact on the chances of crossing the three transition thresholds. There are also key interactions that mean that two challenges often combine to impact on a child's educational chances.

This analysis confirms the central importance of wealth and the ability to pay, above all other factors. A key policy response will be to remove or substantially reduce the cost barrier to raise and sustain participation amongst the poorest, at both secondary and upper-primary level. Due to cost levels by far the greater share of increasing participation at secondary level will be absorbed in government schools since private schools will be unaffordable to most households. School quality is an important factor in motivation to enrol children and keep them enrolled, and in children's interest and desire to be in school. It is also important in determining whether children with few resources and little household support can cope with secondary level curricular material. The quality issue is present at every level, meaning that that expanded access must be accompanied by investment in trained teachers and physical infrastructure that supports learning. Achieving the goals of RMSA depends on smoother and more inclusive flows of children through the school system all the way to grade 10. This in turn means understanding and acting to reduce and eliminate the existing bottlenecks that exclude different groups, and managing provision to ensure provision of schools large enough to attract a full complement of qualified teachers at affordable costs to households and to government.

1.   Introduction

Participation in education at all levels has expanded greatly in India since 2000. More specifically since 2009 the Government of India has prioritised investment at secondary level to meet increasing demand arising from the success of SSA and the limited capacity of the secondary education system, Under the 11th plan the government set the target of 75% gross enrolment ratio (GER) by the year 2012. To achieve universal access to secondary education Rashtriya Madhyamik Shiksha Abhiyan (RMSA) was launched in March 2009 with the goal of universal access to secondary education by 2017 and universal retention by 2020.Ever-increasing numbers of children are now making it through the elementary cycle. However the 2012 GER goal was missed. India presently has an average GER of 70% with very wide variation between and within States.

The agenda to expand access is very challenging. India lags seriously behind other BRICS countries with which they it is often compared (World Bank 2009; OECD 2011). In terms of participation rates it is at a level reached by China 25 years ago and in the 1970s by Sri Lanka and Malaysia. It is not simply the volume of demand, but the fact that new secondary entrants will increasingly come from disadvantaged backgrounds. This will place greater demands on the education system. These children will require more support and better-quality teaching and will lack academic assistance from within their households. Age specific enrolment rates are much lower than gross enrolment rates suggesting that many who reach secondary entrance are over age for their grade. This is even more so for Scheduled Castes (SCs), Scheduled Tribes (STs) and Other Backward Castes (OBCs). Amongst whom enrolment rates may have to double to reach universal levels.

This paper explores current patterns of participation and inequality and addresses several key research questions. These are:

- What are the patterns of participation in secondary education in India and how have they been changing?
- How do patterns of participation vary between regions of the country and between urban and rural areas and between communities?
- How equitable is existing pattern of secondary education in India and how does it vary by States?
- What are the key factors in transition to and completion of secondary school?
- What role do demand-side factors such as traditionally determined sources of socio-cultural disadvantage and household poverty, play in decisions to attend secondary school?

The paper sheds light on each of these questions and seeks policy relevant conclusions.

The paper is set out as follows. The next section examines the trends in participation in schooling to date and secondary school completion rates, while the third section examines levels of inequity and inequality in these trends, looking specifically at the roles of wealth, gender, social group and geography on participation and flow through the system. Fourth, a multivariate analysis of the factors in transition is presented, while the fifth section concludes and presents policy relevant findings.

2.   Growing Participation in Secondary Schooling in India

2.1   Overview of growth in participation across levels and particularly at secondary level

This section begins by outlining general trends in the expansion of participation in the education system. Participation at the secondary level is largely dependent on how many children are making it through the elementary cycle first. While the paper focuses on participation in secondary schooling, it is necessary to show trends in participation at the levels feeding into India's secondary schools.

In 2009 at the start of the RMSA programme, India's gross enrolment ratio (GER) at the secondary level was only 63%, below that of East Asian peers at 70%, and Latin American countries at 82% (Siddhu, 2010). India is a large and varied country however, with a considerable gulf between urban and rural populations, with rural children's participation lagging by 20 percentage points. However worse still, and far more severe, is the gap between the rich and the poor, with 70% of children from the richest quintile attending secondary school, but only 30% in the poorest quintile, at the time of RMSA's launch (Siddhu, 2010, p.1). In 2007 40% of people aged 17-25 years had completed secondary school, and by 2014 this had risen to just under 54%. The gross enrolment ratio at the secondary level has risen to 70%. (Figure 1).

Those children who do reach secondary school are an already privileged cohort. Problems with participation and ultimately drop out happen all along the elementary school cycle - much earlier than the transition to secondary school. These problems include late (or rarely early) enrolment; poor attendance; and repetition, with all of these factors contributing to eventual drop out. It is now the norm that children will become enrolled and enter grade 1, yet India continues to have a major issue with out of school children (see further discussion of this issue, below). The issue is less to do with never enrolling in school, but rather with many being technically enrolled but not attending, indicating that dropping out can be a gradual process. Many do drop out of primary and upper primary schools, with 15% of children disappearing from the system by primary 5, and only around 70% of primary grade 1 entrants making it to the end of grade 8 to complete their elementary education. More children drop out even after making the transition to secondary: at least 60% will not make it to completion, and many more in some states (Lewin, 2011b, p.382) and may of those who do complete will fail to reach acceptable levels of achievement.

2.2   Children continue to be out of school in India

Sarva Shiksha Abhiyan, the campaign to get all children into elementary schooling, has had considerable impact on participation, but has not solved the issue of retention through to grade 8. Table 1 shows the percentages of children out of school by age group, and illustrates that the proportion of children aged 6-10 who have never enrolled is higher than the next two older age groups because of late enrolment in school. Having never enrolled at the younger end of this age substantial numbers of children enrol at the age of 7 years or above. The never enrolled has always been smaller in magnitude than the problem of older children being enrolled as over age students and the problem of those enrolled but not actually attending. This problem is extremely common, particularly for the older children who have higher opportunity costs in areas where there is paid employment available. Only 68% of 16-17 year olds are currently enrolled in school and as many as 20% or more of these are

still in grade 8 or below. The figures in Table 1 may under estimate the numbers out of school since they are based on household self-reporting.

Table 1: Percentage of children by schooling status and age group

Age group	Never enrolled		Enrolled but currently not attending		Currently attending	
	2007-08	2014-15	2007-08	2014-15	2007-08	2014-15
6 to 10	8.8	6.0	1.6	1.0	89.6	92.9
11 to 13	6.2	2.9	7.5	4.3	86.3	92.9
14 to 15	8.5	4.4	20.0	12.4	71.5	83.2
16 to 17	8.7	6.0	36.5	25.6	54.8	68.4
Overall	**8.1**	**5.0**	**11.0**	**7.6**	**80.9**	**87.4**

Source: Estimates based on NSS 64th and 71st round unit level data

Table 2 shows that the issues of never enrolling and being enrolled but not attending are much greater for the children of the poor. The proportion of children enrolled and attending school increases steadily with wealth, illustrating without ambiguity the high correlation of material and educational disadvantage. For the secondary school aged group, those aged 16-17 years, 11% of those in the poorest quintile have never enrolled, and 40% are enrolled but do not attend, but only 2% and 10% respectively of the richest quintile. Fewer than half of these poor children are still attending school, while 88% of the richest are attending. This data on wealth, age and enrolment reinforces the message regarding the importance of household wealth in all schooling decisions.

Table 2: Percentage distribution of children by schooling status, age group and expenditure quintile

Age groups	Never enrolled				Enrolled but currently not attending				Currently attending			
	6 to 10	11 to 13	14 to 15	16 to 17	6 to 10	11 to 13	14 to 15	16 to 17	6 to 10	11 to 13	14 to 15	16 to 17
Q1 (Poorest)	9.4	5.0	9.2	10.7	1.3	7.1	17.6	40.2	89.2	87.9	73.2	49.1
Q2	6.3	3.7	4.9	7.6	1.2	4.9	15.0	33.0	92.5	91.4	80.1	59.4
Q3	5.4	2.3	4.0	7.1	1.0	3.6	13.2	24.7	93.6	94.1	82.8	68.2
Q4	5.4	1.9	2.5	2.6	0.9	3.8	10.1	19.7	93.7	94.3	87.5	77.7
Q5 (Richest)	2.3	1.3	0.9	1.7	0.4	1.7	3.8	10.5	97.3	97.0	95.4	87.8
Overall	6.0	2.9	4.4	6.0	1.0	4.3	12.4	25.6	92.9	92.9	83.2	68.4
Wealth inequality (Q1-Q5)	**7.1**	**3.7**	**8.3**	**9**	**0.9**	**5.4**	**13.8**	**29.7**	**-8.1**	**-9.1**	**-22.2**	**-38.7**

Source: Estimates based on NSS 71st round unit level data

Inequalities by caste are less extreme than by income grouping, as shown in Table 3. In more privileged caste groups as many as 22% of secondary school aged children are not attending school though most of these have at least enrolled, and fewer of these pupils are currently attending: 78%. The proportions of non-attending children from scheduled castes and tribes are lower than for children from the poorest families. However cast and poverty clearly interact.

Table 3: Percentage distribution of children by schooling status, age group and caste group

	Never enrolled				Enrolled but currently not attending				Currently attending			
	6 to 10	11 to 13	14 to 15	16 to 17	6 to 10	11 to 13	14 to 15	16 to 17	6 to 10	11 to 13	14 to 15	16 to 17
ST	7.5	5.5	5.7	7.2	2.2	6.9	16.9	35.2	90.3	87.6	77.4	57.6
SC	7.1	3.5	5.1	6.6	0.8	5.2	15.2	30.5	92.1	91.3	79.7	62.9
OBC	6.4	2.9	4.6	7.1	0.9	3.8	12.1	25.4	92.7	93.4	83.3	67.5
Others	3.8	1.1	2.8	3.4	1.0	3.2	8.9	18.6	95.2	95.7	88.3	78.0
Overall	6.0	2.9	4.4	6.0	1.0	4.3	12.4	25.6	92.9	92.9	83.2	68.4
Caste inequality (ST-Others)	3.7	4.4	2.9	3.8	1.2	3.7	8	16.6	-4.9	-8.1	-10.9	-20.4

Source: Estimates based on NSS 71st round unit level data

Figure 1 and Table A.2 provide a picture of variation across states in the percentages of out-of-school children by age group illustrating that in many states there is a considerable jump in these proportions between the age groups 14-15 years, and 16-17 years. Kerala has the lowest percentages of out-of-school children across all age groups with only the oldest children having a percentage out of school that registers, though this is not even approaching 10%. The proportions are much higher for 'backward' states, Odisha, West Bengal, Bihar, Gujarat, UP, Madhya Pradesh, and Rajasthan. By contrast, Karnataka has many fewer out-of-school in the younger age groups, but there is then a large jump in the 16-17 year old age group. UP and Bihar have many more out of school children aged 6-10 years than Kerala has, aged 16-17 years.

Figure 1: Percentage distribution of out of school children by age group and state
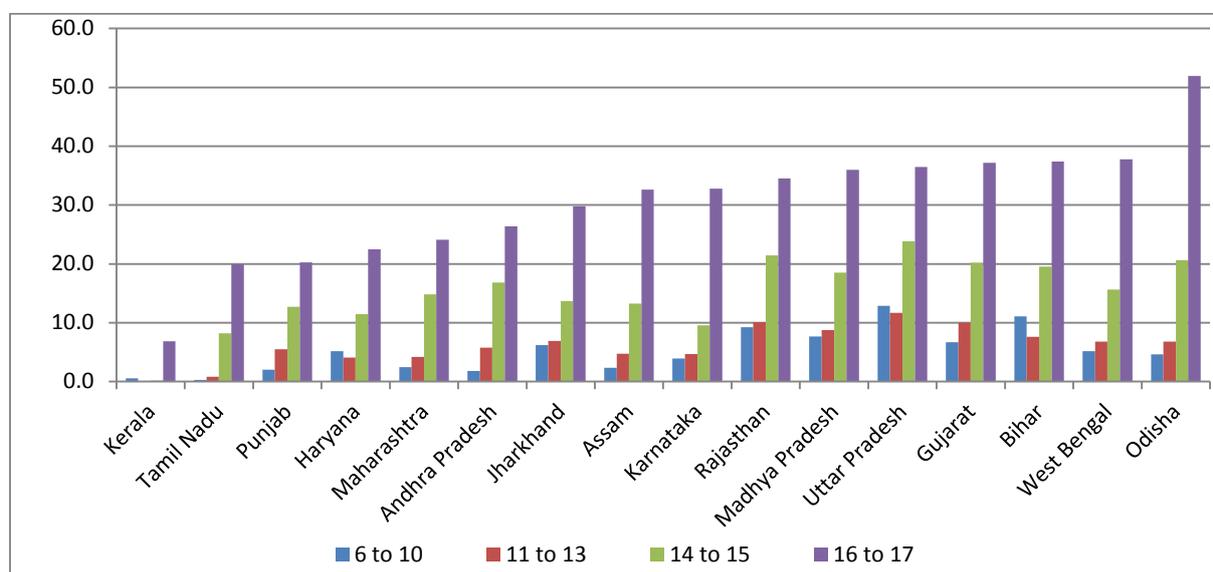
Source: NSS 71st round unit level data

2.3   Patterns of current enrolment in secondary education and flow through the schooling system

Since there is a large percentage of children who are still not in school a substantial number of new secondary school places will be needed. These will only be taken up if there are incentives for continuing through elementary school and the bottlenecks that exist at the end of primary and elementary school are removed. In some areas there simply have not been enough secondary school

places available expanded post-elementary opportunity may encourage elementary completion, as some research indicates that where further opportunities are unavailable, some might not see the point in completing lower levels (Lewin, 2011a & 2011b). The overall picture of Indian school education is one of progress having been achieved over time, but at the same time continuing inequity in who makes it through education and the continuing and urgent need for more to be done to ensure children stay in school for longer.

Figure 2 shows starkly how the numbers of children enrolled in school in India decline at every grade level. However the figure tells a story of progress as well as progress yet to be made. There is a marked shift from the first year in the series, 2004/05, when the numbers starting primary 1 were very high due to children enrolling late (and therefore over-age) at that time, and when the number in grade 10 was the lowest. This is compared with the much flatter line for nine years later, when fewer children were entering primary 1 (closer to the correct age) and there was little drop-off in numbers until primary 5. The numbers in upper primary are far fewer suggesting there is drop out from grade5 to 6. The numbers in the two secondary grades also drop off significantly in grades 9 and then 10. In this most recent year shown, as many as 27 million children are enrolled in grade 1, including many over-aged and some under-aged children. By grade 5 the total number enrolled is similar to the number of children aged 10 years in the population at around 25 million. From grade 6 upwards, there are fewer children enrolled than there are in the relevant age group, and by grade 9, after the transition to secondary school, enrolments have fallen to around20million.

Figure 2: Enrolment by grade, 2004-2013, all India
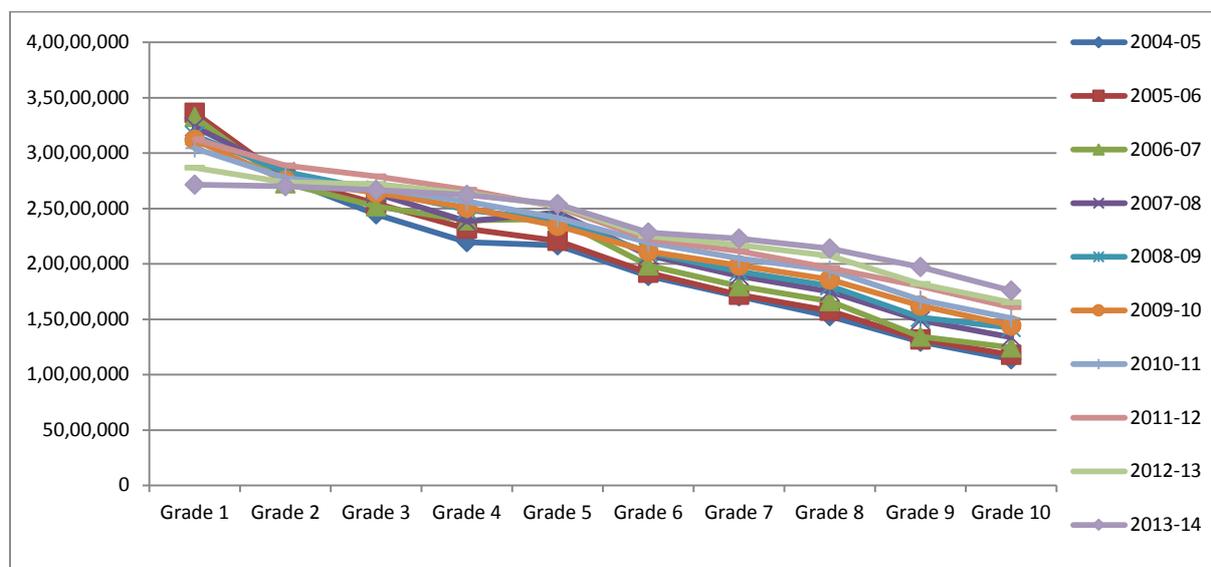
Source: Various rounds of Selected Education Statistics

Figure 3 shows how the secondary school GER has changed over recent years. It shows that before the millennium there was virtually no change across four years, but that positive movement started in 2002/03. In 2005/06 onwards the progress is larger and sustained, with the GER reaching 65% by 2011. While this level is still too low and meant that the target of 75% by 2012 was missed, it does reflect progress. There has been great progress in reducing the gender gap from 13 percentage points in 1995down to 2percentage points in 2014. The gross enrolment ratio for boys has increased from 37% in 1995-96 to 71% in 2014. In the same period the gross enrolment rate of girls has increased much faster from 24% to 69% and the gap has closed.

Figure 3: Growth in secondary gross enrolment ratio by gender
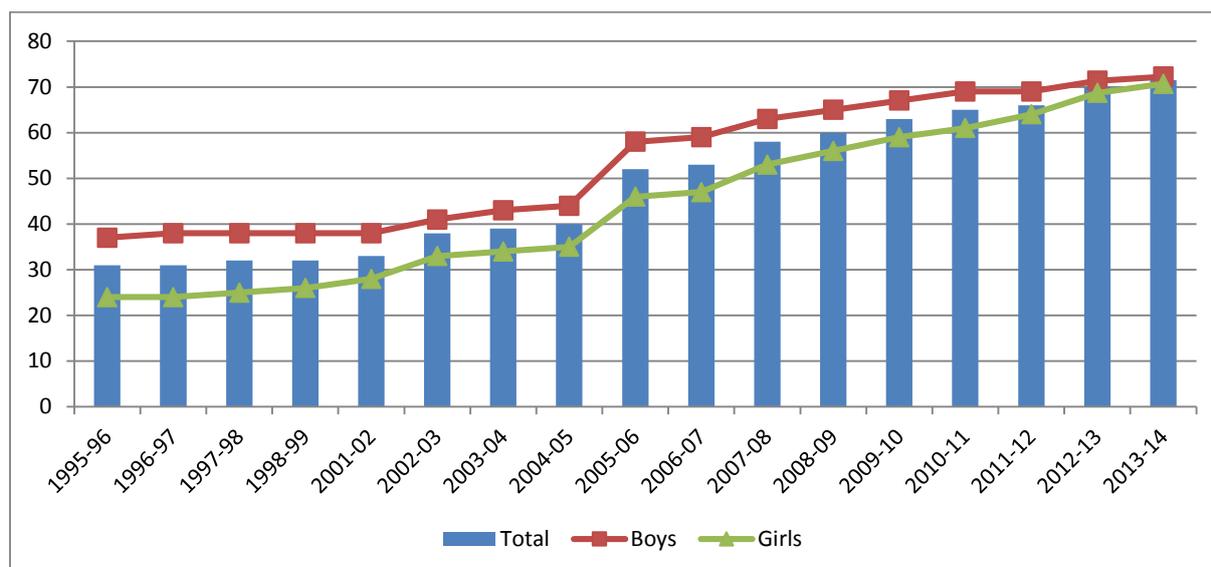
Source: Various rounds of Selected Education Statistics

2.4   Educational attainment of India's population

How many people who are secondary school aged or over have made it to the secondary school level, and how has this been changing over time? This section provides a picture of how much participation there has been in secondary education to date and how this has been increasing steadily with time. National Sample Survey data across a number of years show the rising proportions of people aged 15 years and higher in the country attaining higher levels of education. The percentage of people completing secondary and senior secondary has seen some of the strongest growth over the period from a small base. This reflects positive change for the population as a whole. There has been a proportionally larger increase for scheduled castes (SCs) and scheduled tribes (STs) than for their more advantaged peers (table 4) but this is from a smaller base. While 'other' castes are still far ahead of SCs and STs, the latter started from a very low 4.3% level completing secondary and above, to increase to nearly 18%, which is a more than three-fold increase. Table 4 shows the rising numbers of pupils completing elementary school, increasing from 17% in 1993-94 to 51%2014-15. This reflects growing demand and an increased supply of places. Secondary and higher secondary completion during the same period changed from 9% to 34% and therefore grew more slowly than the lower levels.

Table 4: Percentage of the population aged 15 years and above by highest education level attained

	ST and SC				Others			
	1993-94	**2007-08**	**2011-12**	**2014-15**	**1993-94**	**2007-08**	**2011-12**	**2014-15**
Illiterate	65.1	46.9	41.6	38.6	44.8	36.2	31.8	25.0
Non-Formal Schooling	1.2	9.8	11.1	0.7	1.2	8.3	9.7	0.7
Below Primary & Primary	25.9	15.6	13.1	21.4	29.7	15.6	11.5	19.7
Middle	14.2	14.3	16.3	17.0	10.8	17.4	17.0	16.7
Secondary & Higher Sec.	3.7	11.2	12.8	17.9	10.7	18.4	23.9	27.1
Above graduation	0.6	2.2	5.1	4.2	3.2	4.1	6.2	10.9

Source: Various rounds of NSS

Table 5 presents the level of education attained for people aged 15 years and above by state and over time. At an all India level average years of schooling for those aged 15 and above increased from 3.7 years (less than primary cycle years) to 6.2 in 2014. Higher levels of educational attainment can be

used roughly to indicate higher levels of social wellbeing, with the years of education increasing over time. Lower average years of education are observed in the 'backward States', reinforcing these states' slower development. The table shows that in 2014/15 year olds in Kerala have an average of 8.5 years of schooling - meaning roughly the complete elementary school cycle. In other States, particularly in Andhra Pradesh and Rajasthan, the average attainment of around 5 years implies as many as 50% barely complete primary education cycle by the age of 15 years. The difference in years of schooling between Kerala (amongst advanced State) and Rajasthan (amongst backward State) remained at 3.2 years between 1993 and 2014. The low levels of average years of schooling in 'backward states' is indicative of the persistence of more general inequality between richer and poorer states. This may feed a vicious circle of low levels of education and low levels of social and economic development. While averages mask great variation between and within states it is clear that universal completion of secondary school is likely to be some time in the future

Table 5: Average years of schooling for all those aged 15 years and above for selected states

States	1993	1999	2004	2007	2009	2011	2014
Andhra Pradesh	2.8	3.5	3.9	4.6	5.0	5.5	5.3
Karnataka	3.6	4.2	4.7	5.5	5.9	6.6	6.4
Kerala	6.0	6.3	6.8	7.5	7.7	8.4	8.5
Tamil Nadu	4.3	5.1	5.6	6.1	6.5	6.7	7.0
Madhya Pradesh	3.0	3.5	4.0	4.7	5.2	5.3	5.5
Rajasthan	2.8	3.4	3.7	4.2	4.6	4.8	5.3
Uttar Pradesh	3.3	3.9	4.3	4.8	5.2	5.2	5.8
All India	3.7	4.2	4.7	5.5	5.6	5.9	6.2

Source: Estimates based on various rounds of NSS unit level data

2.5   Survival through the schooling system

The evidence above demonstrates that India has poor rates of survival throughout the system, up to grade 8 and beyond. Bumps in the road through the elementary cycle can lead to the child discontinuing their studies, or reaching grade 8 at such an advanced age that they can be considered simply 'too old' to be in school any longer. Both late enrolment in primary 1 and repeating grades during the elementary cycle mean that children are over-age, and this is found to have a clear impact on drop-out and transition (Lewin, 2011).

Figure 4 shows the survival rates to each grade level, with the national figure and also the rates for seven states, all of which have below-average survival to grade 10, except for the higher-achieving Tamil Nadu. Meghalaya has the lowest survival of the states shown, 20 percentage points lower than the national average. Overall, over time the rates of survival to secondary schooling have been increasing, with 70% and 68% of children surviving to grades 9 and 10 (respectively).

Figure 4: Survival rates by grade and states
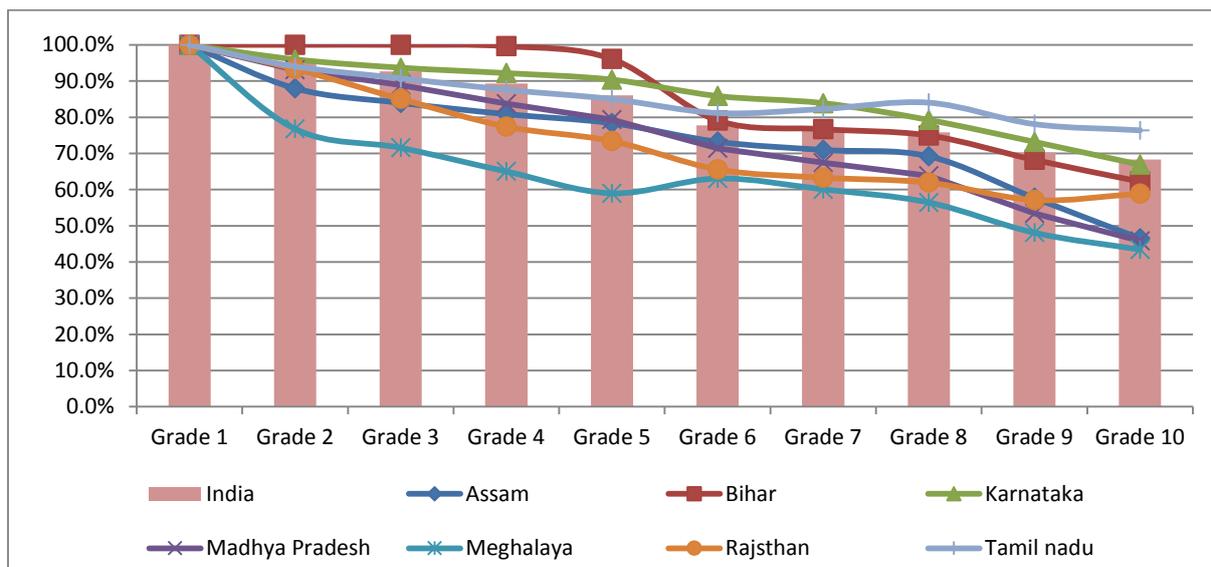
Source: UDISE 2012-13 and 2013-14

In addition to variation by state, there is variation in survival between different groups. Figure 5 illustrates the gap between overall survival rates and those for scheduled castes at each grade level. It shows that a gap appears after grade one and becomes steadily larger with every successive grade level. The survival rates to grades 9 and 10 for schedule castes were 61 and 59 percent respectively, compared with 70% and 68% overall. However in some states this gap becomes truly enormous after the primary level: in Bihar the survival rates to grades 9 and 10 for scheduled caste was as low as 31% and 25% (respectively) as against state average survival of 68% and 62% respectively.

Figure 5: Survival rates over all and by caste, all India and Bihar
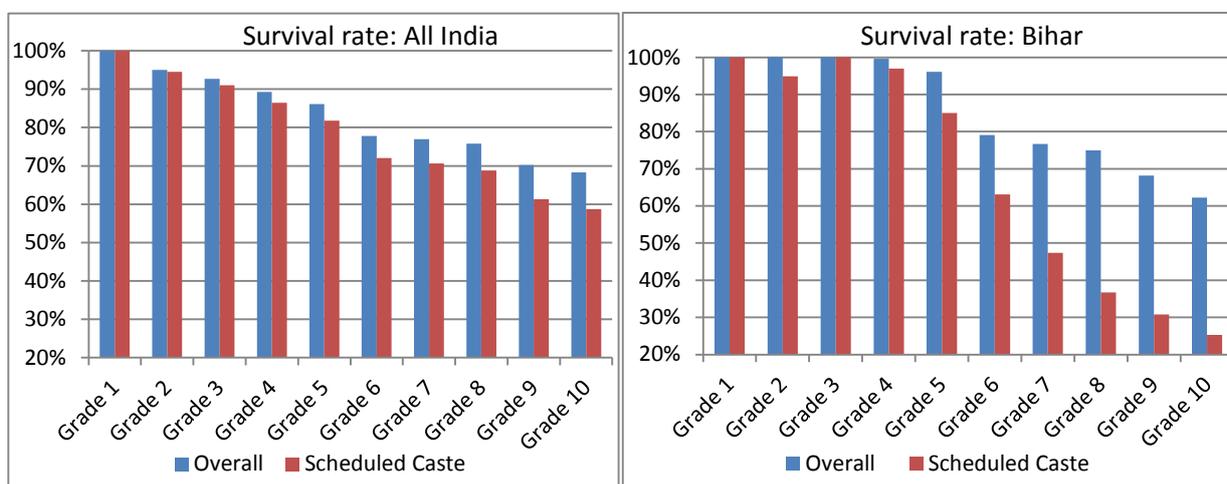
Source: UDISE 2012-13 and 2013-14

Having to repeat grades has a negative impact on survival. Repetition rates are much higher for scheduled caste children (and slightly higher amongst boys than girls). Repetition is relatively high in primary grade 1 and then reduces across the rest of the elementary cycle (figure 6). But repetition increases at the secondary level, spiking for scheduled caste children (and is also much higher at for these children at the grade 1 level). Note that these reported rates of repetition are likely to be an underestimate because of reporting errors.

Figure 6: Repetition rate by grade, gender and caste
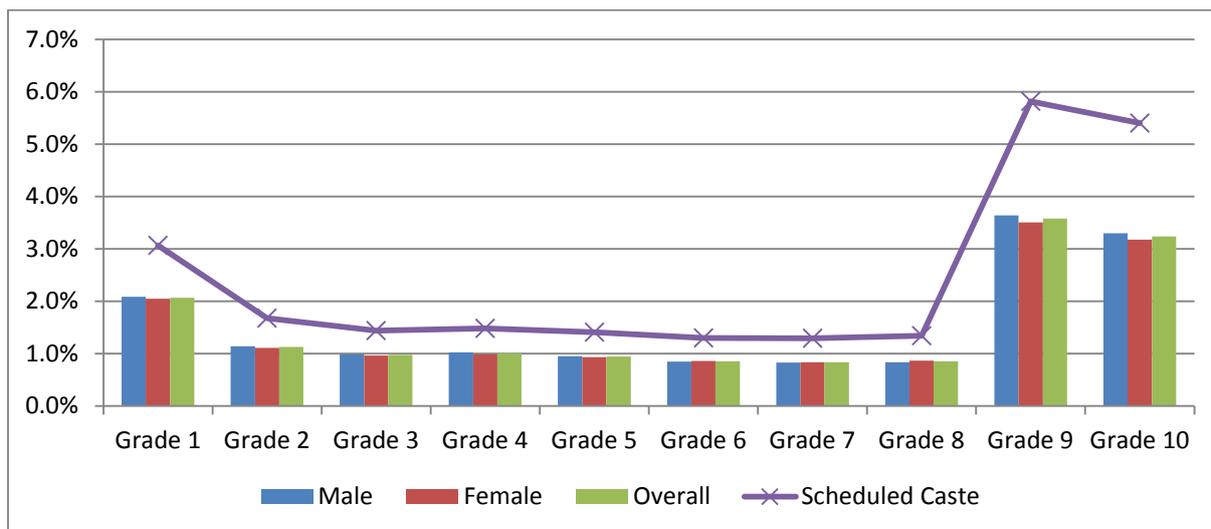
Source: UDISE 2012-13 and 2013-14

Repetition happens where children are not learning, leading to questions regarding the quality of teaching and also children's regularity of attendance. These things are often related - low quality leads to boredom, lack of motivation and interest, and therefore irregular attendance and ultimately dropout. Figure 7 illustrates (using our RMSA-TCA survey data) that attendance rates are often very low, and vary widely across districts within states. In all survey sites the average monthly attendance was lower than 80%, and varied between 24% in Darbhanga urban to 74% in Singhwara block in Bihar.

Figure 7: Attendance rates by district in TCA case study districts
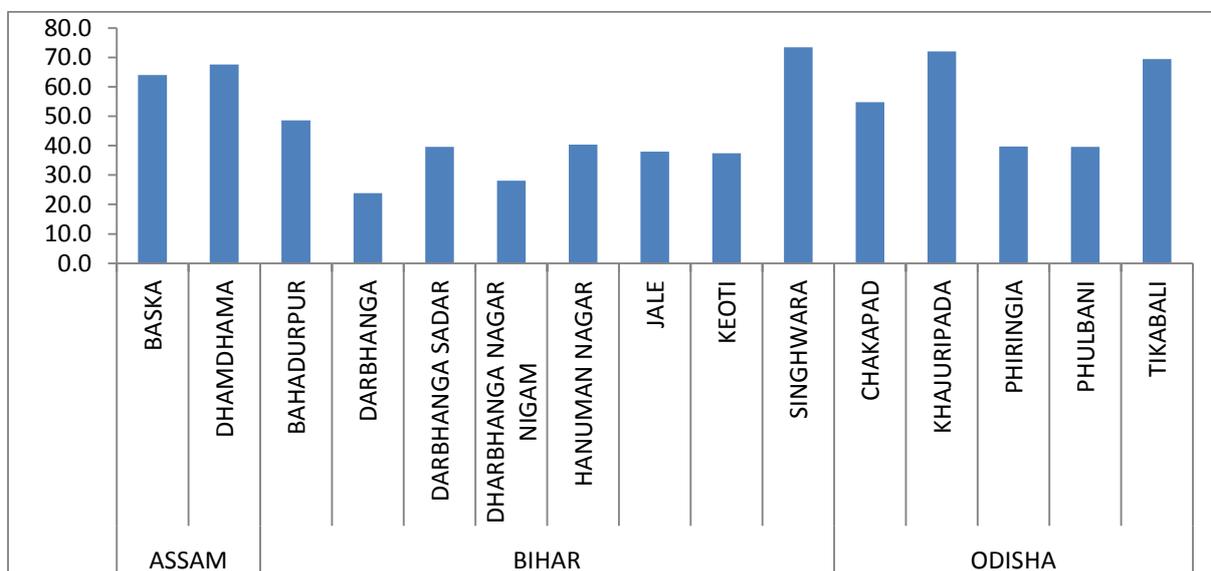
Source: TCA-School survey data

Low attendance, low levels of learning, and relatively high repetition are all contributors to failing examinations and to dropping out of school and lead to low survival rates, Table 6 shows reasons that grade 9 and 10 students repeat grades. Examination failure, along with missing the examination are key reasons, with health providing the other key factor.

Table 6: Reasons for children to repeat grades, TCA case study states

	Grade 9	Grade 10
Failed exam	51.7	29.4
Could not appear in exam because of exam fee	8.3	11.8
Could not appear in exam due to family reasons	13.3	14.7
Health reason	26.7	44.1

Source: TCA-School survey data

Drop out occurs consistently throughout the schooling cycle with largest drop outs occurring at the transition points of from primary to upper primary and upper primary to secondary. During 2012-13 and 2013-14, approximately 9.5% children dropped out during or after completing grade 5 and 7.3% children dropped out during or after completing grade 8. NSS data indicates that the key reasons for children to drop out of school include a lack of interest in studies (table 7) - which again may often actually be a reflection of poor teaching quality. But more explicitly, nearly 10% of pupils, who reached secondary level, drop out due to inability to cope with the curriculum or due to failing in examinations. Across all educational levels 'lack of interest in education' is the most significant factor. However at the secondary level, where costs rise substantially, financial constraints is an equally important reason for dropping out.

Table 7: Reasons for dropping out from a given schooling levels, by gender

	Primary	Upper primary	Secondary
Not interested in education	32.2	24.5	19.7
Financial constraints	22.5	22.7	20.4
Engaged in domestic activities	20.7	20.0	15.6
Engaged in economic activities	11.9	16.6	18.6
School is far off	2.2	2.9	1.9
Timings of educational institution not suitable	0.1	0.0	0.0
Language/medium of instruction used unfamiliar	0.1	0.1	0.1
Inadequate number of teachers	0.0	0.1	0.0
Quality of teachers not satisfactory	0.2	0.1	0.1
Unable to cope up with studies or failure in	2.9	5.0	9.9
Unfriendly atmosphere at school	0.3	0.1	0.1
Completed desired level/class	0.4	0.6	2.0
Girl student - non-availability of female teacher	0.2	0.2	0.0
Girl student - non-availability of girls' toilet	0.0	0.1	0.0
Girl student – marriage	2.0	3.7	8.4
Others	4.2	3.4	3.3

Source: Estimates based on NSS 71[st]round unit level data

2.6   The relationship between age-for-grade and the relationship with survival and transition

Turning to the issue already noted above, of whether a child is of the correct age for the grade, it has already been noted that a child might be over-age, or older than they should be, due to late entry into the system; due to repetition; or possibly both. Several studies document the relationship between being overage and dropout (Ersado, 2005; Hossain 2010; Taylor and Mabogoane et al. 2010; Anga 2011).The data indicates that late enrolment in primary grade 1 may be becoming less common, however there is still a serious problem in many Indian states in ensuring that children flow through the system at the right age for their grade, and there are many still in the system who did enrol late.

Late entry, repetition and any interruptions to studies have led to there now being enormous age ranges within particular grades.

Being over-age reduces the likelihood of completion of schooling. Lewin (2009) finds that single grade (as opposed to multigrade) classes with large age ranges present a major pedagogical challenge to teachers, with children being of even more drastically different ability and development levels than in a class of similarly aged children. The cognitive capabilities of 6 year olds and 12 year olds differ due to their different developmental stages, meaning that different types of learning tasks will be appropriate. There are also great social and psychological challenges with such a situation, with differing impacts for boys and girls. Older children are likely to be demoralised by being with very much younger children, contributing to their eventual drop out. Lastly the negative effect of being overage is likely to be greater for girls, reducing their chances of transition (Lewin, 2011, 12) due to being 'too old to be in school' for social reasons and possibly so that they can be married off (Siddhu, 2010).

Figure 8: Percentages of children with correct age-for-grade, by grade level

	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Boys	51	51	43	39	32	36	30	29	31	24	20	18
Girls	50	52	41	38	31	34	26	27	29	21	17	15
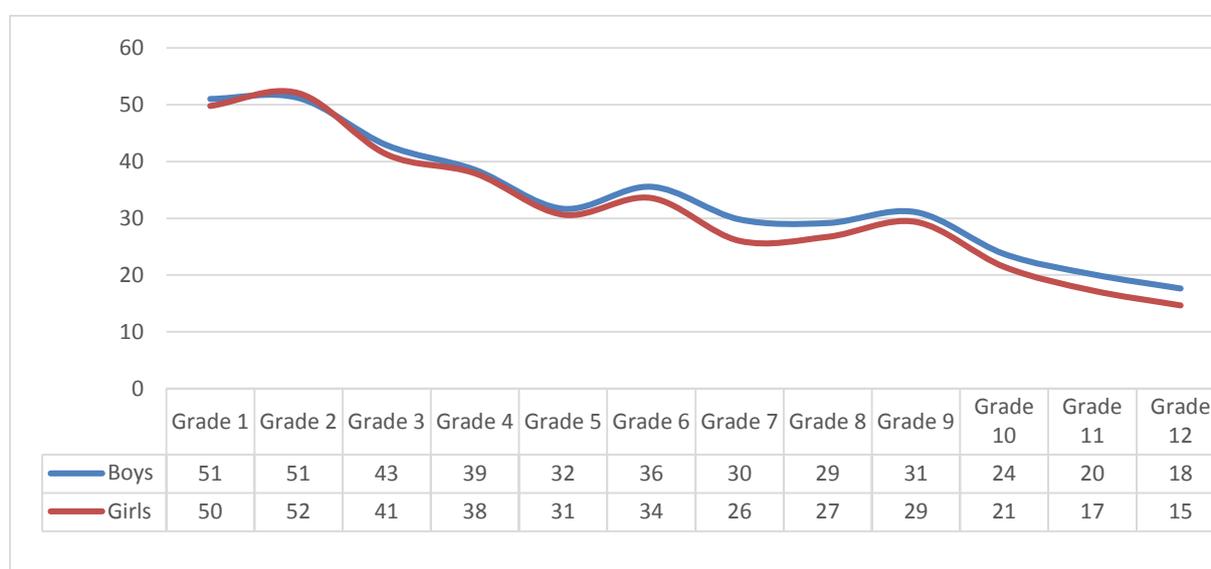
Source: Estimates based on NSS 64th round unit level data

Figure 8 reports the percentages of children who are of the correct age for their grade. It is a clear pattern that as the grades progress, the percentage of pupils of the 'correct' age declines. Children are increasingly entering primary 1 at the correct age - although at only around 50% this is still much lower than it should be; but as figure 6 above illustrates, there is a relatively higher percentage of children who repeat the first year of schooling. Repetition is then higher again at the secondary level, meaning that the percentage of pupils reaching the senior secondary level at the right age is extremely low. Only 31% males and 29% females of the right age were attending grade 9 and 24% males and 21% females of the right age were attending grade 10. This declining age and grade incongruence is strongly associated with repetition and eventual dropout.

Figure 9: Distribution of children with 2 or more years delay in first entry to school
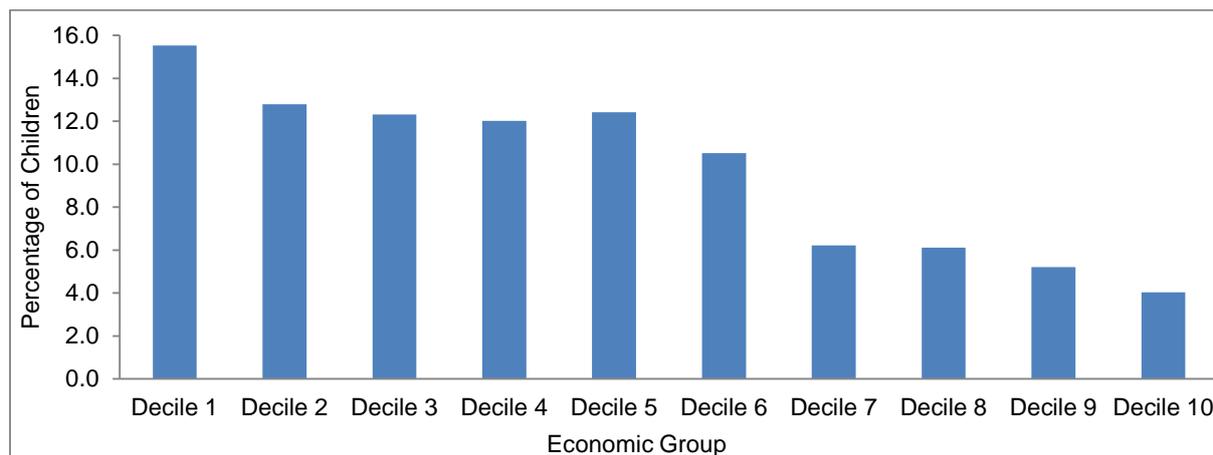
Source: NSS 71st round unit level data

Being over age is somewhat more prevalent for girls than boys, but it is more common amongst the poor than the better-off. Figure 9 shows that only 4% of children entering late are from the richest wealth decile, while almost 16% of late enrolling children come from the poorest quintile. The effects of poverty tend to have a greater impact on older children, as children from poor backgrounds fall under greater and greater pressure to engage in socio-economic activities or to help with domestic work and care for their siblings, the older they get (Ersado, 2005).

Figure 10: Distribution of children with 2 or more years delay by average educational level of head of the household
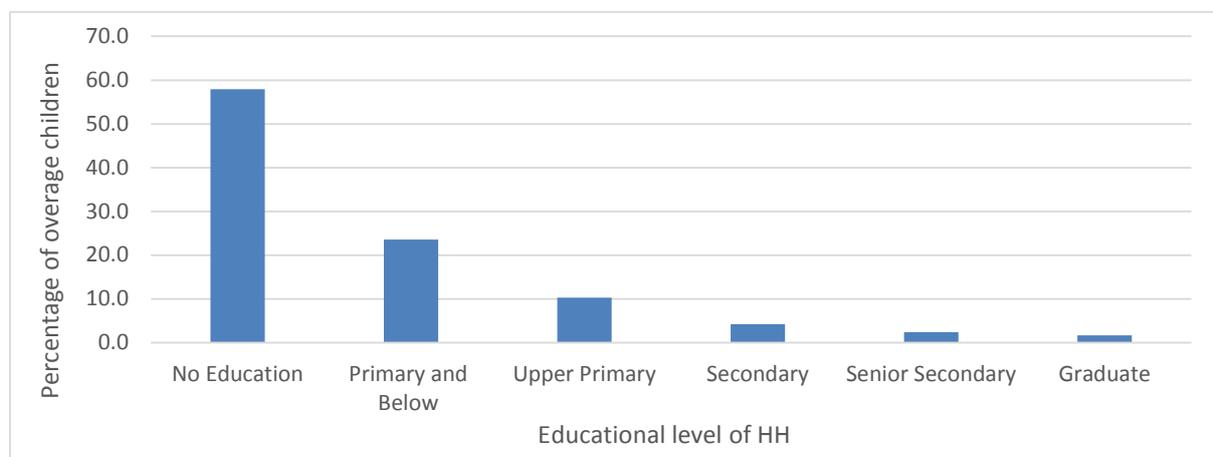
Source: NSS 71st round unit level data

Overage children are not simply poor; they often have uneducated or under-educated parents who may not understand the importance of enrolling on time (figure 10). The proportions of late-enrolling children in families where the head has more than primary education are very low. The majority of children who are two or more years over age at school entry are from families with head of the households with no education (almost 58% overage children have head of the household who are illiterate), who lack the necessary awareness and support within the household to start school on time and have their learning supported for successful progression and transition. The lack of ability of the school system to provide the levels of support needed for these vulnerable learners means they become more likely to repeat grades and ultimately drop out.

2.7   Rates of completion of secondary school

In light of the late starts that many children experience and the repeated years or other interruptions that some children face, it is clear that staying in school through secondary level and completing the cycle is a major challenge for many children. More students are making the transition to secondary school, but this does not translate into completion of the cycle for all who enter, and attrition at this level is high. Figure 11 shows the net and gross secondary attendance rate for several states, along with their completion rate, as reported by households, for 16 and 17 year olds in 2014. For the purpose of analysis GAR and NAR, Define GAR and NAR for readers for 14 and 15 years old, was calculated for 2012 and completion rate for 16 and 17 years old was calculated for 2014. In the scenario of full efficiency the completion rate should be equal to GAR. However it can be seen that in some educationally backward states such as Assam, Bihar and Madhya Pradesh the completion rate was well below the NAR indicating either large number of children are repeating secondary grades or dropped out of it. In case of educationally advanced states, the completion rates were as high as the NAR but below the GAR indicating marginal loss which is equivalent to the difference between the GAR and the NAR. Overall completion rate for India, for 16 and 17 years old, was only 44%.

Figure 11: Gross attendance, net attendance and completion rates for secondary schooling
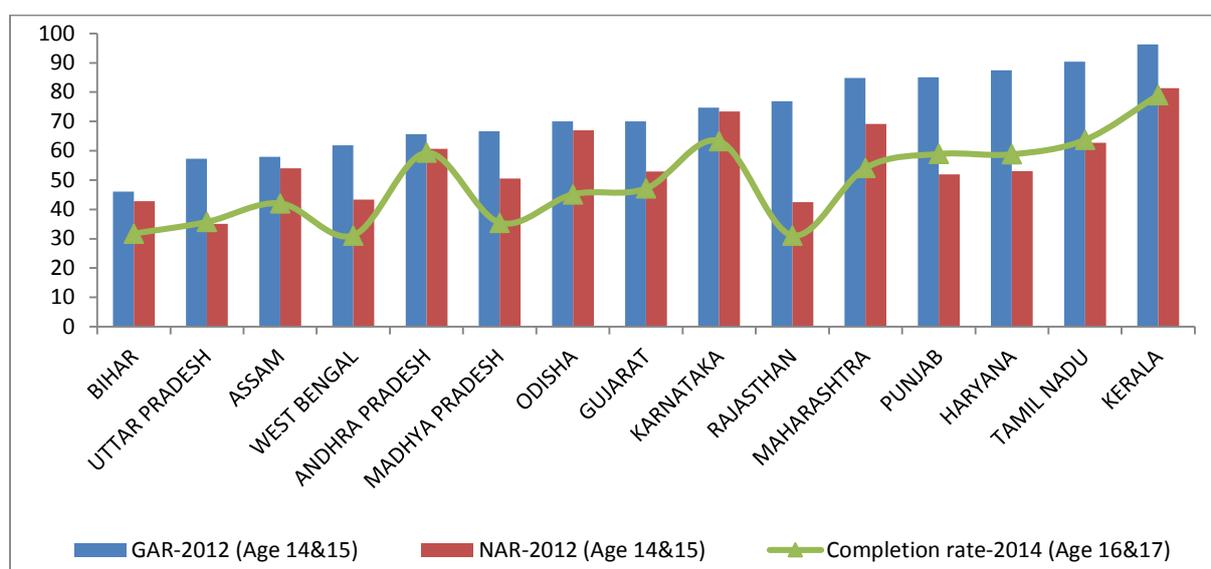
Source: Estimates based on relevant NSS rounds

Figure 12 below provides information on the educational attainment of 16 and 20 year olds over two time points, showing, encouragingly, that a much greater percentage of the population is now reaching and completing secondary school. The figure presents two important messages firstly, it shows that overage enrolment is a continuing issue as illustrated by the much larger percentage of those completing secondary school in 2014-15 by age 20 as opposed to age 16. Secondly, the percentage of individuals aged 16 years who have completed the primary and upper primary cycle is greater than that for the population aged 20 years thus reflecting greater efficiency in the education system experienced by the younger cohorts. The percentage of 16 years old who have completed secondary increased from 28% in 2007-09 to 41% in 2014-15 and similar percentages for 20 years old were 15% and 52% respectively.

Figure 12: Percentage of the population aged 16 and 20 years completing each education cycle
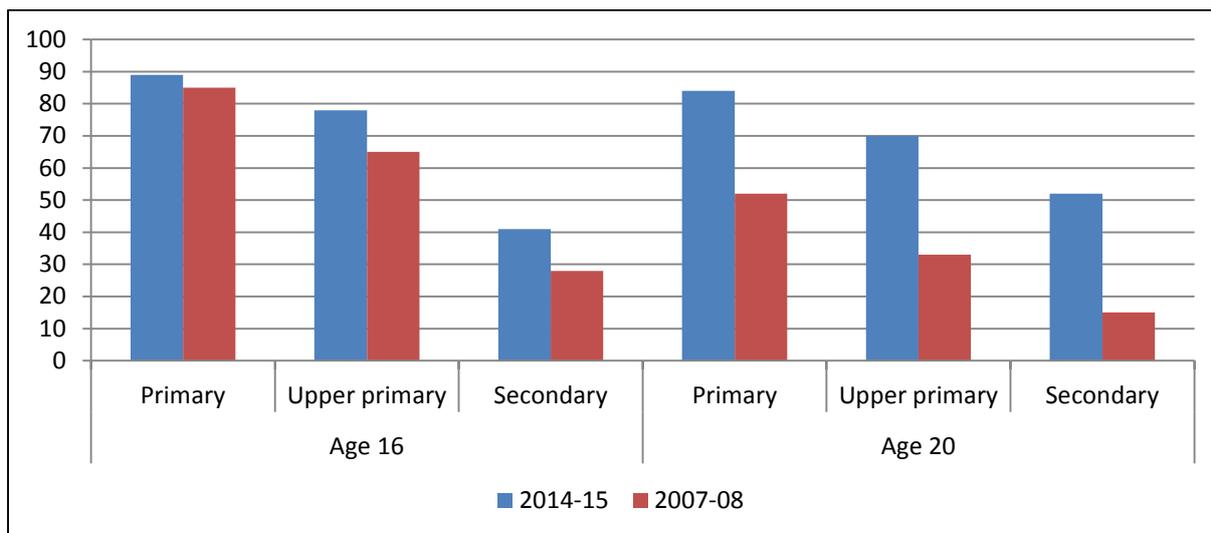
Finally in this section, we show the secondary school completion rate allowing more for over-age participation through examining a five-year age band for completion for the share of the population aged 17 to 22 years, using a pseudo-cohort analysis based on NSS data (figure 13). The national picture shows relatively consistent increase in participation over the last 45 years. The, growth takes off from the millennium, and becomes stronger towards the middle of the decade. As government efforts to expand access to secondary schooling increased in intensity, the percentage of people completing this level of schooling has been increasing.

Figure 13: Secondary completion rate for the age group 17-22 years, 1970-2014
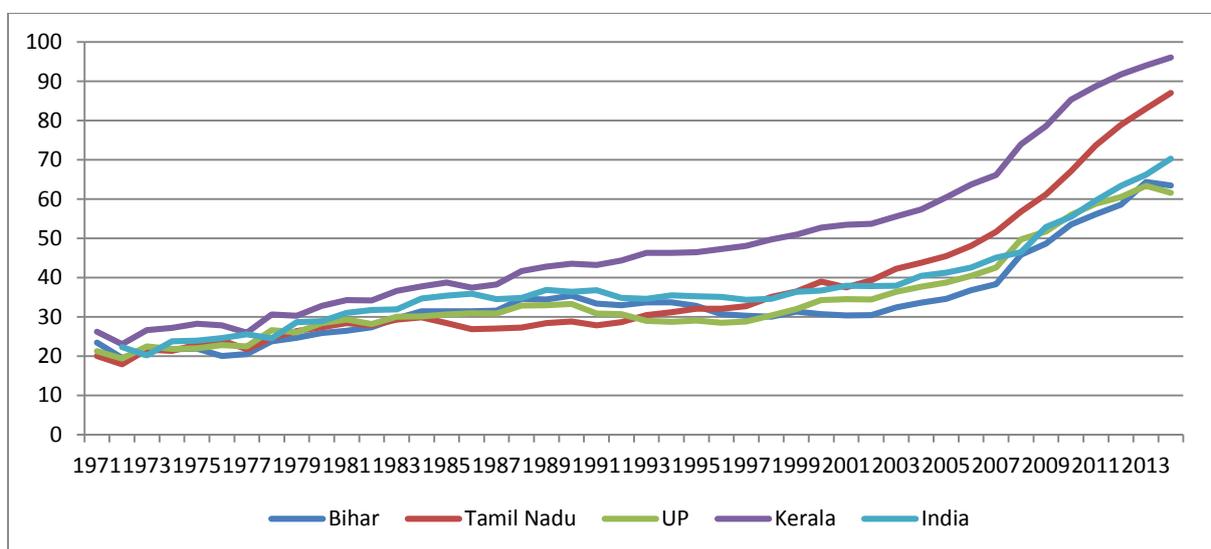
As with all aggregate figures, the national picture hides all manner of variation across regions and across segments of the population. Figure 13 shows the variation between two of the highest and two of the lowest performing states in the country. It shows Kerala having started at a slightly higher level of secondary completion than the other states, and having then grown steadily more than the others. Tamil Nadu shows very strong growth from the mid-1990s, increasingly catching up to Kerala, while the 'backward' states of UP and Bihar stagnated for decades and only started to grow from the

beginning of the millennium, with rates of growth tailing off in recent years. Kerala has reached nearly universal secondary completion with Tamil Nadu approaching 90%. The backward states have much work to do to catch up with these more advanced states. Interestingly, in Tamil Nadu where completion rates were similar to Bihar and UP during mid-90s, the scenario changed dramatically where it started to become similar to that in Kerala.

2.8   Share of private schools in growing enrolment

The presence of unregistered private sector means that it may be that enrolment rates in India are somewhat higher than the above data suggests. There are many unregistered private schools in India, meaning that the children concerned are not included in official data. But are in HH census India's states have widely varying numbers of private schools - both registered and unregistered - accounting for different proportions of secondary school enrolments. The private sector is heterogeneous, including elite schools for the wealthy, through to poor schools situated in slums, serving the relatively poor. The private sector has been growing in terms of numbers of schools and their percentage share of total schools and also enrolments, however this has been at a modest rate. See TCA report on private schools

Figure 14: GERs by level and by year, and percentage enrolments at private schools by level, 2005-2014
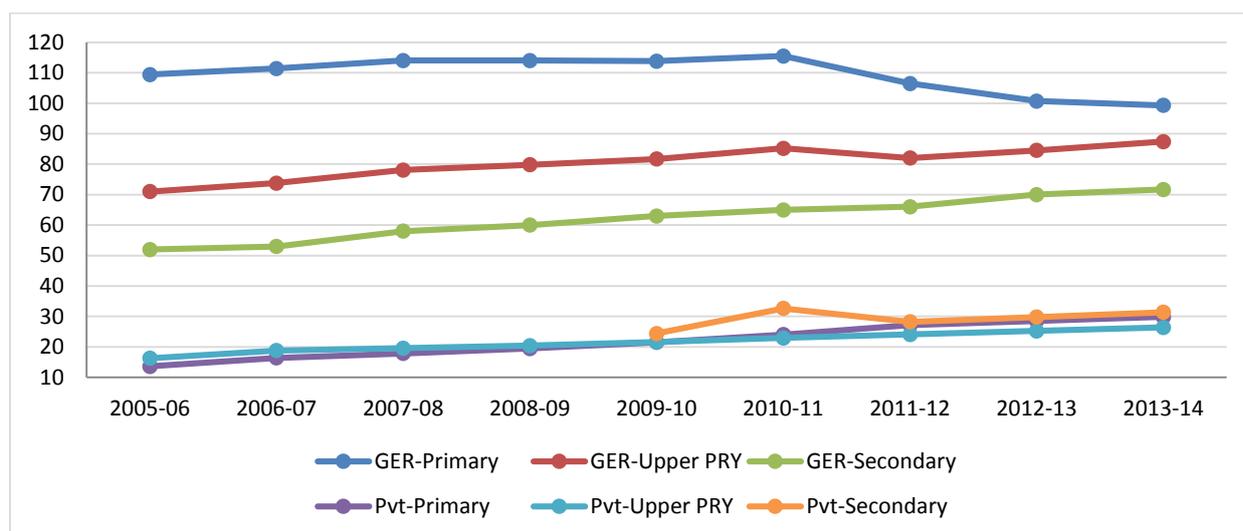
Source: Various rounds of administrative data collected by NUEPA

Between 2010 and 2014, U-DISE data reflects an increase in the share of private schools and enrolments across levels (from primary through secondary), and across states (for a detailed discussion, see Härmä 2016). Härmä (2016) finds that for the most part private schools are accessed by traditionally more advantaged groups within Indian society, and that the growth in numbers of enrolled children across the country accounted for by private schools is most likely primarily amongst these groups. It appears therefore that increasing private participation may not be increasing overall access by enrolling the previously unserved (figure 14). Over the period considered in this paper, around 60% of the growth in enrolments was in government schools and it is likely that these pupils will be from poorer, more disadvantaged backgrounds. Private schools at secondary grew by enrolling children who would otherwise have been in public schools. Therefore this study focuses on increasing participation in secondary school with a predominant focus on government schooling.

3.   Education expansion and inequity in attainment

This section of the paper uses various types of data and analysis to illustrate key issues: that there has been and continues to be great inequity in access, participation and completion of secondary (and also elementary levels) of schooling; but that progress is being made, and the gaps in all types of inequity are shrinking, even if not quickly enough.

3.1   Measuring inequality using the Gini coefficient

The inequality in educational attainment indicates underutilisation and underdevelopment of the potential in people who could have become more productive 'human capital' with more education. Lopez et al. (1998) estimated inequality in educational attainment of twelve countries including India, and their findings, while now dated, have continuing relevance. The research suggested prevalent inequality in educational attainment and distribution of educational resources are important reasons behind existing socioeconomic inequalities which continue in India today. Analysis of inequality in educational attainment in India by Thomas et al. (2000) found that India's Gini coefficient value (0.58) was the highest amongst a group of countries at a similar level of development (educationally and more generally). And as far back as 1985, China had the same score as India had in 2012: 0.49 (see table 8, and Thomas et al., 2000). Paranjape (2007) estimated inequality in educational attainment in Maharashtra and observed substantial difference in the level of educational attainment between rural-urban areas, between caste categories and gender. Asadullah and Yalonetzky (2010) indicated that inequality in education in India has declined in the post reform period, however, substantial inter-regional difference are found to be persisting. Their analysis highlights the lower inequality in educational attainment in the southern states as compared to the northern states (see table 5 and figure 4 above).

Analysis of age specific inequality in educational attainment in India by Cuaresma et al. (2012) found lower levels of inequality in educational attainment amongst younger people (as in figure 12, above). However they report significant gender difference in the level of educational attainment. The coefficient of inequality in educational attainment was observed to be 0.3 for males and 0.43 for females meaning that rich boys were more privileged than rich girls. Encouragingly, and similarly to this report's findings, analysis of inequality in attainment by Bhushan and Jha (2012) indicates significant decline in inequality in educational attainment in 14 states over what time period. They found that in the majority of states, inequality in attainment is mostly between rural and urban areas, and that boosting the number of years of schooling in rural areas would reduce the overall inequality to less than 0.3. Aggarwal (2013) attributed inequality in educational attainments, which was measure to be 0.50, to inter-caste and rural-urban differences, meaning that the lack of access and opportunities for rural dwellers, and continuing disadvantage experienced by marginalised castes, are the key sources of disadvantage.

As a starting point to illustrate levels in inequality, the Gini coefficient, is applied in table 8 below to illustrate how large the extent of inequality in educational attainment (measured using years of education) is across Indian states. Measured from 0 (no inequality) to 1 (absolute inequality), the coefficient shows steady decline over the years (0.65 in 1993 to 0.45 in 2014), indicating declining inequality in access to educational opportunity, particularly in some states where the initial extent of inequality was quite high. It should of course be noted that this is taking years of schooling into account (and where these are increasing, the variance must necessarily decrease), taking no account

of the quality of schooling, with more privileged groups more likely to be gaining access to better quality schools. Policies for expansion of access to schooling such as the District Primary Education Programme and Sarva Shiksha Abhiyan are likely to have made a substantial impact on getting more children into schools, though not necessarily on quality of provision. States making considerable progress include Rajasthan with a decline of 0.21, Andhra Pradesh with 18% and Madhya Pradesh with 22%. The Gini coefficient is another way of marking the differences between the 'backward' northern states where inequality in educational attainment is considerable, and the southern state such as Kerala which stands out as being least unequal. In terms of states whose progress is lagging, Andhra Pradesh stands out, along with Rajasthan and Uttar Pradesh.

Table 8: Gini coefficient of inequality in educational attainment

States	1993	1999	2004	2007	2009	2011	2014
Andhra Pradesh	0.72	0.68	0.65	0.59	0.57	0.54	0.54
Karnataka	0.65	0.61	0.57	0.54	0.49	0.44	0.45
Kerala	0.36	0.36	0.35	0.34	0.31	0.26	0.27
Madhya Pradesh	0.72	0.67	0.63	0.57	0.53	0.51	0.5
Rajasthan	0.74	0.68	0.66	0.62	0.59	0.58	0.53
Tamil Nadu	0.57	0.52	0.49	0.47	0.43	0.42	0.41
Uttar Pradesh	0.7	0.65	0.62	0.61	0.55	0.55	0.5
All India	0.65	0.61	0.57	0.52	0.51	0.49	0.46

Source: Estimates based on NSS unit level data various rounds

3.2   The sources of inequality in India

There are several well documented forms of inequity and inequality in opportunity in India. It is already established that different parts of the country have achieved different degrees of progress, so a child born in Kerala is likely to have greater opportunity than a child from UP or Bihar. There is also disadvantage for rural children in relation to urban children; girls in relation to boys; SCs, STs and OBCs in relation to the 'other' (more socially privileged) castes; for minority religion children in relation to Hindus; and crucially, all children from the poorest quintile of the population in relation to children from the richest quintile. This section of the paper provides clear evidence from the data regarding these sources of inequity and inequality of opportunity.

Historically better off and more privileged children have always made up a greater proportion of those accessing higher levels of education. However since progress in including more and more children is being made, it means that increasingly, new demand will come from marginalised groups not previously able to enrol. Children coming to school with disadvantages drawn from the various sources listed above have systematically different characteristics to those children who currently attend secondary school and will be from poorer households with much lower cultural capital and levels of capability. The conditions in which they live are often not conducive to study, and their parents and other family members are less likely to be equipped to help them with school work or support them in other necessary ways to promote their schooling. These ways include putting attendance at school above all else that the child could be doing, such as helping with the income-earning work of the household or with domestic work. This section examines participation patterns according to various sources of disadvantage, beginning with gender.

Gender is widely documented as being a factor in all types of schooling choices in India, including whether or not the child should attend school and to what age and what level; and in what type of school. While there is much less research on Indian education at the secondary level, there is much to draw on at lower levels, with most of the issues crossing over to secondary schooling. Rawal and Kingdon found a large gender gap at the primary level in all aspects of their participation in the education system, exacerbated by household poverty in UP and Bihar (Rawal and Kingdon, 2010). Using pseudo-cohort analysis based on NSS data, figure 15 shows that there is a gap in secondary school completion (for those aged 17-22 years) that has persisted for nearly the last half century (and before). However girls have been catching up, particularly since 2010, when the gap has been narrowing. More progress is needed however, and the research literature highlights evidence of continuing bias, the interplay between gender and other factors such as caste, wealth and distance, as well as progress towards closing the gap.

However attitudes are changing in India with regard to the role of girls in the family and in society.

> **Box 1: Girls, and poor girls in particular, are much less likely to make it to secondary school in UP**
>
> One study of transition to secondary schooling in Uttar Pradesh found that girl children were seriously disadvantaged in schooling decisions, but particularly where poverty was also present. In the poorest quintile of households in this study, 44% of girls but only 20% of boys failed to transition to secondary school. For those in the richest quintile there was no gender bias, with only 3% of each gender failing to transition (Siddhu, 2011, p.396). The study found firstly that the single most important reason for any child not attending secondary school was cost. However there are other issues that play a role, and different trends were found for boys and girls, with the biggest reason offered for boys' drop out being 'lack of interest in studies'. For girls the distance to school and concerns about societal perceptions of older girls travelling to attend secondary school were the two largest reasons. 'For girls the relationship between age and dropping out may be related to puberty and their approach to marriageable age, and the fact that parental fears regarding their daughters' safety and reputation increase as girls get older. There may also be some opportunity costs involved where daughters would otherwise be helping with domestic work or with the main economic work of the family' (Siddhu, 2011, p.397). These social and economic issues interplay with the issue of being over-age, as well as with poverty, as in this study, 55% of over-age girls were found to have dropped out, with parents often stating that the girls was 'simply too old to remain in school' (ibid., p.397).
>
> *Source: Siddhu (2011)*

For example, as early as a decade ago, despite finding that families in rural UP were less likely to pay for a girl to attend private school, Härmä (2008) found that while many mothers interviewed had minimal or no schooling themselves, all of the school-aged girl children of these mothers were in school, even in the poorest households, indicating a considerable change in priorities from one generation to the next. While this study did not examine participation at the secondary level, it is this type of increasing participation at the elementary level that is leading to, and crucial for, increasing participation at secondary level. A few years prior to that study, this increasing emphasis on girls' education was already being documented elsewhere in UP in a separate study by Srivastava (2006).

Figure 15: Secondary completion for the age group 17-22 years, by gender
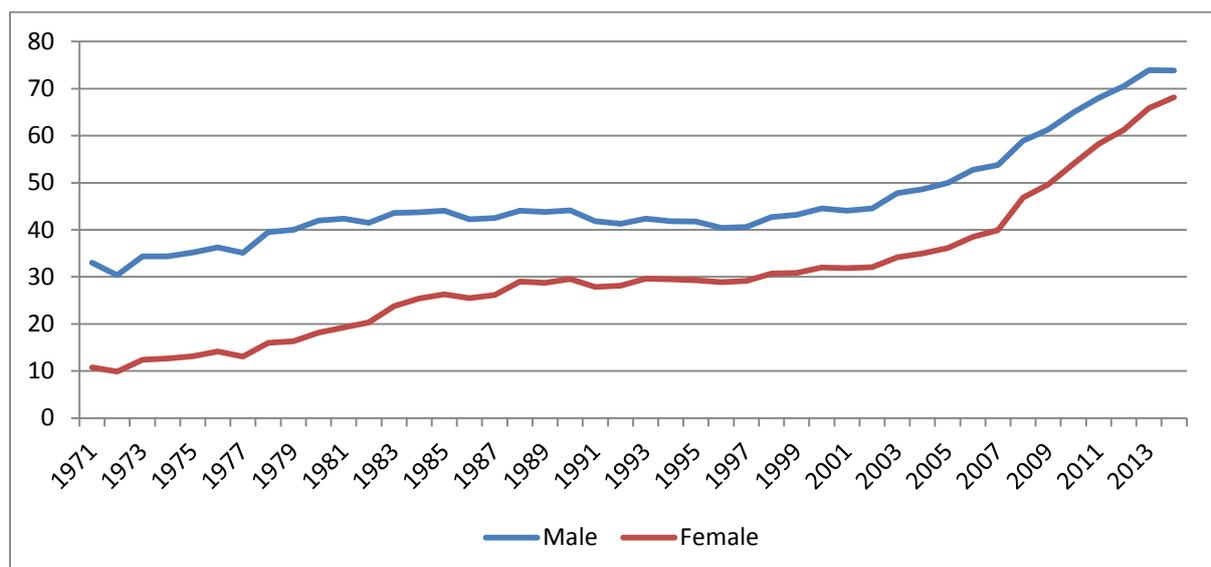
However despite an improving picture with strong recent progress as evidenced here by figure 15 (as well as figure 3 above), gender bias is still evident and may be playing out now to a greater extent in other schooling choices rather than in whether or not to have girls in school. RMSA-TCA's three-state case study data finds that 38% of parents of private school pupils and 24% of parents of government school pupils reporting that they sometimes priorities boys in their decisions regarding spending on education, and with more girls than boys failing to transition to secondary school. It is likely that fewer gender-based choices need to be made with regard to sending children to government schools due to their lower costs, requiring fewer trade-offs. Despite continuing evidence of some bias, it is encouraging that while figures 18 and 19 (see below) do show differences in rates of participation

> **Box 2: Concerns about girls and the distance to school can be overcome**
>
> Bihar is one of many states where girls are not encouraged to travel outside of their villages to access secondary schooling. To mitigate the issue of distance, the government has started an incentive scheme where girls are given a bicycle with which to get to secondary school, on the condition that the girl is enrolled. Girls can then cycle in groups, for heightened safety and security, to the nearest secondary school. A study of the scheme found that it raised girls' age-appropriate enrolment in secondary school by 30%, and also reduced the gender gap in this enrolment by 40%. These positive impacts largely took place in villages farther away from secondary schools, with virtually no impact on those living within 3 kilometres of a secondary school, indicating that the provision of a bicycle effectively reduced the distance and the safety cost for these girls able to cycle together to schools. The study indicates then that such proactive schemes to reduce the disadvantage of girls are needed at the secondary level where distances are greater.
>
> *Source: Muralidharan and Prakash (2013, p.3)*

between girls and boys in similar circumstances, the differences are not very large, with differences by wealth far exceeding those by gender.

Caste is found to be associated with participation in schooling at all levels, and particularly at the secondary level. Figure 16 shows that those aged 17-22 years from 'other', more privileged castes, have an enduring advantage over those from SCs, STs and OBCs. However it also shows that the gap

has been steadily narrowing, yet with OBCs making greater progress than SCs and STs, while the curve of improvement for SCs is steep, from the lowest levels.

Figure 16: Secondary completion for the age group 17-22 years, by caste
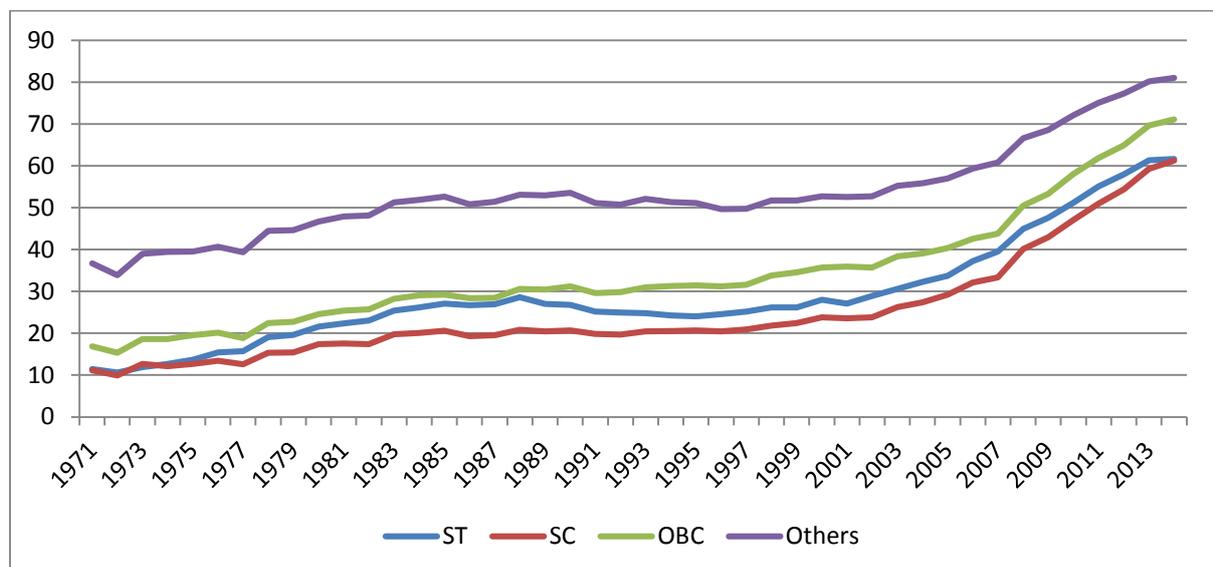
It has already been established that where a child lives has an impact on their chances of staying in school; however the type of setting within the state, rural or urban, has an impact, usually through the distance to school. Distance also interplays with cultural factors: the Bihar study (box 2) indicates that distance interplays with cultural views on appropriate gender norms to impede participation at secondary level. With sufficient wealth, distance to secondary school can usually be overcome, especially at the secondary level where pupils are older and more able to travel; while poor families must rely on nearby options.

Our survey evidence shows that while it is actually common for children not to attend the closest school to home, both the distance to the closest school and to the chosen school, are usually not great, which has implications for quality stemming from proliferation of small schools. These distances are usually lower than the 3 kilometres that Muralidharan and Prakash (2013) found to be significant to the attendance of girls in Bihar (box 2). Table 9 provides distances to the nearest schools by type and by level, while table 10 below provides the distances to the schools surveyed children were currently attending. In most, but not all cases government school pupils tend to attend schools closer to home than private school pupils. Yet even once a school is selected, distance can affect attendance: in our case study data, 39% of government school parents and 32% of private school parents reported that it interferes with the regularity of attendance (Härmä, 2016). Siddhu (2011) found that distance to the nearest secondary school, along with cost, gender and being SC or ST, proved a barrier to transition to secondary schooling.

Table 9: Average distance from households to the nearest school by level

	Primary			Upper Primary			Secondary		
	Government	Private	Aided	Government	Private	Aided	Government	Private	Aided
ASSAM	0.7	0.6	0.6	1.3	1.1	1.0	1.5	1.4	2.1
BIHAR	0.6	0.5	0.4	0.9	0.7		3.5	0.9	2.0
ODISHA	0.5	1.0	0.4	1.0	2.5	1.7	2.1	1.3	1.8

Source: RMSA-TCA household survey

Table 10: Average distance to schools currently attended by level

	Primary			Upper Primary			Secondary		
	Government	Private	Aided	Government	Private	Aided	Government	Private	Aided
ASSAM	0.8	1.9	1.6	1.7	2.6	2.8	2.4	2.9	3.5
BIHAR	0.6	1.7	.6	1.0	2.5	4.0	3.2	2.5	2.2
ODISHA	1.2	2.1	.7	2.8	2.3	1.1	6.1	2.4	1.6

Source: RMSA-TCA household survey

3.2.1 Household wealth: the key factor in schooling decisions

A large body of research evidence seems to indicate that the single most important factor in a child's education, including transition to secondary schooling, is household wealth. There has been a growing emphasis on education's importance to all young people. Parental aspirations have grown considerably amongst all social groups and wealth levels, with general income levels growing at the same time. However many still remain too poor to support all of their children through a complete school education.

Aspirations are rising, with higher levels of education seen as a way out of poverty through a 'good', formal sector job. Many, even the poor, now therefore regard secondary schooling as a sound investment. The cost of transition to secondary schooling is considerable, and hits the poor the hardest, so belief in a high return is crucial to this decision. At this stage in life the opportunity cost of keeping a child in school becomes considerable, as they might instead be helping in the house, thereby freeing a parent for other work, or they might be contributing to the economic work of the household.

The jump in cost usually experienced by poorer families in order to continue through to secondary school is enormous. Siddhu (2011) found that the cheapest option at the secondary level in his study of UP, a private-aided secondary school, would cost 2.5 times as much as the cheapest option at the upper primary level, a government school. For those privileged enough to be accessing private schools at grade 8, the increase to a private secondary school was a more manageable (though still large) 44% increase in cost (Siddhu, 2011, p.397). While the cost of an aided school is half that of a private school, the added cost at the secondary level represents a considerable share of household expenditure for families in the poorest wealth quintiles. The same study concluded that those who make the transition are already a relatively privileged, high-achieving cohort, with those facing the greatest challenges to stay in school and to learn, being the most likely to be shed from the system during the primary and upper primary grades (Siddhu, 2010).

Family poverty is a clear factor in every type of education decision. Where costs are low, such as at the primary level, the highest levels of participation are possible. Other considerations also come into play but most issues can be overcome with sufficient family wealth. School quality is a major issue across levels in India (Hill and Chalaux, 2011), in both government and lower-fee private schools (Alcott and Rose, 2015). Even this obstacle is seemingly mitigated through parents spending further resources on private tuition, which might not be required if the school-hours teaching children received was of good quality.

Nationally, despite the government's RMSA campaign to extend access to government secondary school provision within a five kilometre radius of every habitation, affordability of these lower fees and other costs is an issue. Household income strongly influences enrolment in secondary school (Lewin, 2011). Any level of direct costs can be enough to exclude the poor (Tamim and Tariq, 2015)

and specifically with regard to secondary schooling, a World Bank report suggests that this level of education is unaffordable to the poorest half of families in rural India (Lewin, 2011b, p.389). Härmä (2011) found that the single biggest factor in school choice (between government and private schools) was the cost of schooling in relation to families' socioeconomic status. Srivastava (2006) finds that for the poor to access private schools means making major sacrifices on other important areas of family expenditure, and by extension the costs of secondary education will have a similar effect. Alcott and Rose (2015) find that wealth is not only the largest household factor in school choice, but also in how much children ultimately learn. Siddhu (2011) finds the single largest determinant of transition is the cost, or rather, family wealth status. And while there are fewer studies on the secondary level, with costs considerably higher than at elementary schools, it is impossible that cost and poverty would play any smaller role than they do at the primary level, and with regard to primary private school fees where these are somewhat comparable to government and aided schools at the secondary level.

Figure 17: Gross and net attendance ratios at the secondary level by wealth decile
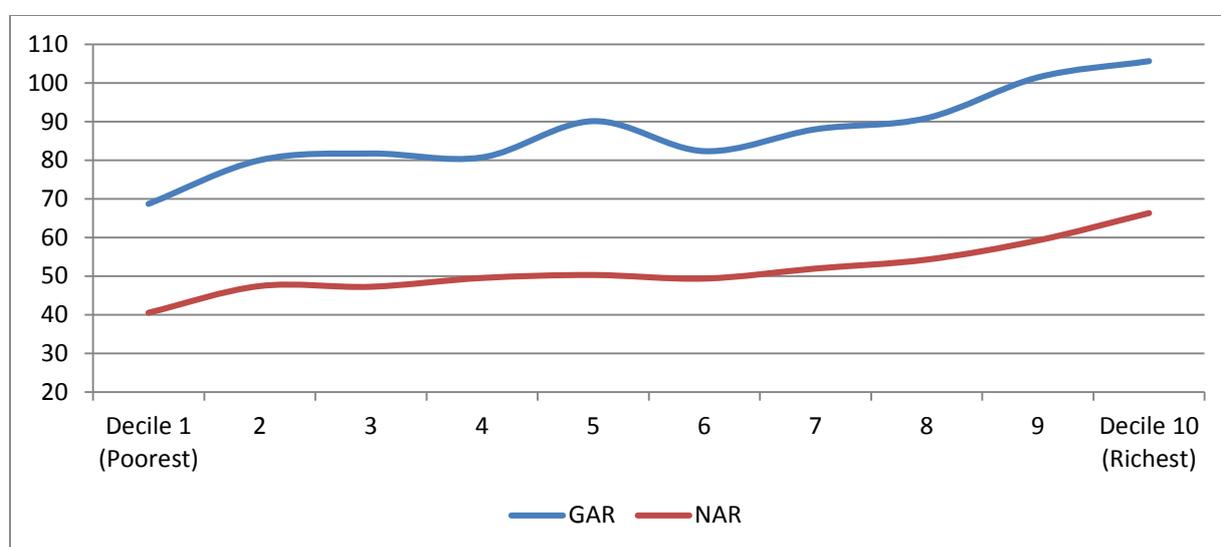
Source: Estimates based on NSS 71st round unit Level data

To illustrate clearly how participation and household wealth are related, figure 17 shows the GAR and NAR by decile of household wealth. For both indicators, the poorest three deciles have distinctly lower enrolment than those in the middle, and for richer families there is a clear increase in attendance. The GAR for the poorest is 68% compared with over 100% amongst the richest income group. On the other hand the NAR is observed to be very low, at 40% compared with 66% for the richest income group. This level of age-appropriate attendance for the wealthiest can also be seen as relatively low.

Figures 18 and 19 provide some detail on the interplay between wealth and other key inequalities that persist, by showing NARs for these groups. Figure 18 shows that the 'other' caste group, those not traditionally marginalised, are somewhat better off than the rest of the categories; while figure 19 shows that urban children are somewhat better off than rural. Both figures indicate that in most cases girls are somewhat worse off than boys. However what the figures show clearly is that the largest difference, no matter the social group or areas of residence, is by poverty status, with those in the poorest quintile always significantly worse off than those in the richest quintile. This message is further indicated in figure 18, through evidence that richest SC girls have a 20 percentage points higher net attendance ratio than to the poorest girls belonging to the 'others' (more privileged) caste category -

indicating that greater household wealth is able to bridge, to a large extent, many other types of disadvantage.

Figure 18: Net attendance ratio by gender, caste and wealth quintile, secondary level
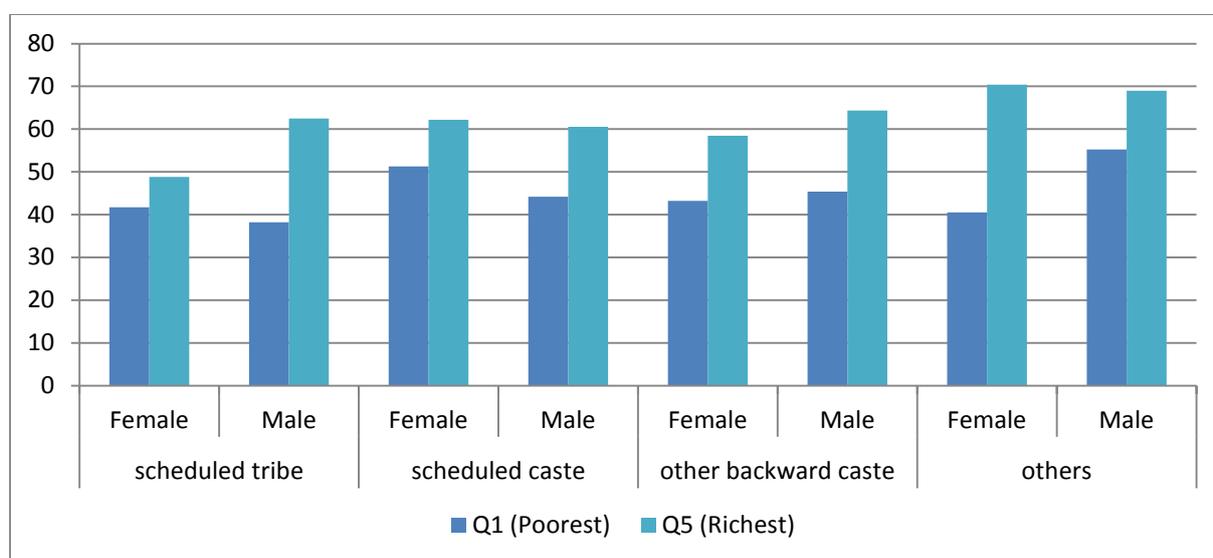
Source: Estimates Based on NSS 71stRound Unit Level Data

Figure 19: Net attendance ratio by gender, location and wealth quintile, secondary level
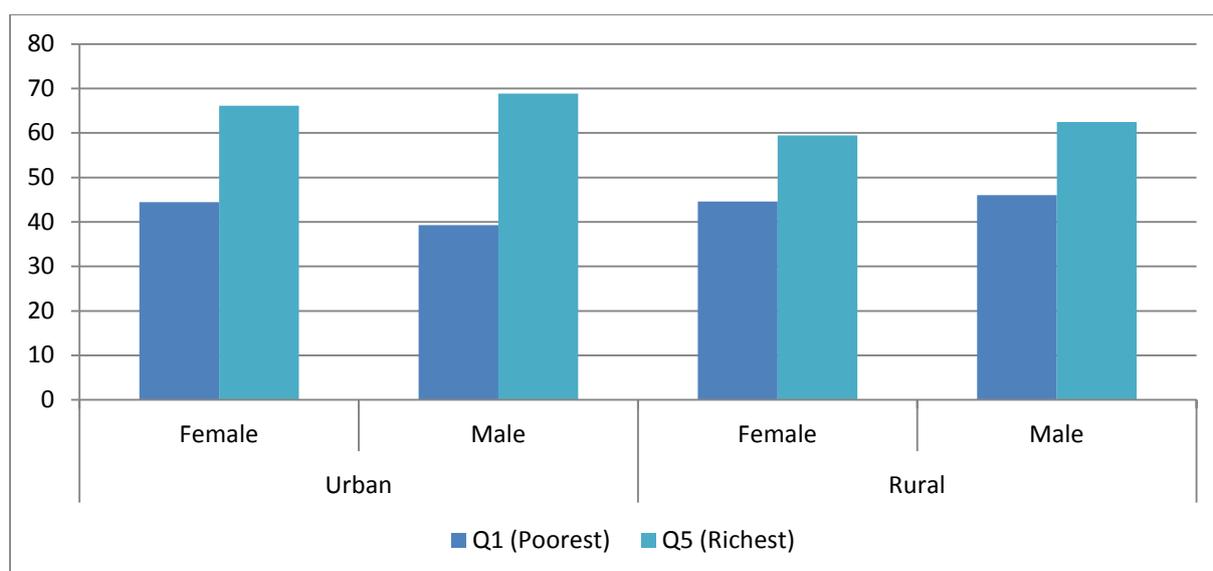
Source: Estimates based on NSS 71st round unit level data

3.3   Completion of schooling levels and sources of inequality

The following tables bring together the key issues connected with children's ability to access secondary schooling, already outlined above. In separate tables for each level, primary, upper-primary and secondary, the key issues of gender, caste and location are shown in relation to levels of wealth (in quintiles), with the extent of inequality on each issue provided. The same tables are prepared for two time points: 2007 and 2014, to also show change over time. The key messages are twofold. First inequality is still a clear and pressing issue and second that inequality has been decreasing over time at the elementary level, offering hope for further improvement. And yet, there are still some areas in which there has not been improvement and these are highlighted in the discussion below. At the

secondary level however the picture is more mixed, and a cause for concern and a stimulus to more concerted effort.

Starting with tables 11 and 12 showing rates of completion of primary schooling for those aged 12-25 years in the population in 2007 and 2014, for different genders, castes, and rural or urban settings according to wealth, all areas show improvement, and all levels of inequality is decreasing. For SC children there has been a five percentage point reduction in wealth-based inequality, yet progress for the poorest SC children is disappointing, at only one percentage point. Wealth-based inequality has also hardly improved for those living in rural areas; however, encouragingly, girls have experienced nearly a seven percentage point decrease in this inequality. Overall, over the period there has been over four percentage points improvement in wealth-based inequality.

Table 11: Primary completion rate, ages 12-25 years, 2007

	Gender			Caste					Location			Overall
	Male	Female	*Gender Inequality (Male-Female)*	ST	SC	OBC	Others	*Caste Inequality (General-ST)*	Rural	Urban	*Location Inequality (Urban-Rural)*	
Q1 (Poorest)	72.0	54.1	**17.9**	53.8	61.0	**66.3**	**71.3**	**17.5**	62.0	75.3	**13.2**	63.5
Q2	77.3	64.3	**12.9**	63.3	67.8	**71.6**	**78.8**	**15.5**	70.7	74.6	**3.9**	71.1
Q3	81.5	71.0	**10.6**	69.0	72.5	**76.4**	**82.8**	**13.8**	75.8	79.6	**3.8**	76.5
Q4	84.9	77.7	**7.2**	74.7	78.3	**80.2**	**87.3**	**12.6**	79.9	85.3	**5.4**	81.5
Q5	92.1	87.4	**4.8**	81.1	87.7	**87.0**	**93.4**	**12.3**	85.3	93.8	**8.5**	89.8
Overall	82.8	73.2	**9.7**	66.2	72.9	**77.6**	**86.5**	**20.3**	75.0	86.9	**11.9**	78.3
Wealth Inequality (Q5-Q1)	**20.1**	**33.2**		**27.3**	**26.7**	**20.7**	**22.1**		**23.3**	**18.6**		**26.3**

Table 12: Primary completion rate, ages 12-25 years, 2014

	Gender			Caste					Location			Overall
	Male	Female	*Gender Inequality (Male-Female)*	ST	SC	OBC	Others	*Caste Inequality (General-ST)*	Rural	Urban	*Location Inequality (Urban-Rural)*	
Q1 (Poorest)	77.0	67.2	**9.8**	65.7	69.5	73.5	82.2	**16.5**	71.7	77.2	**5.5**	72.5
Q2	84.9	79.3	**5.5**	78.7	80.6	82.4	86.1	**7.4**	82.2	82.5	**0.2**	82.3
Q3	87.5	83.2	**4.3**	84.0	84.7	83.9	89.6	**5.6**	84.7	87.7	**3.0**	85.5
Q4	90.3	87.6	**2.7**	81.6	88.4	87.6	93.4	**11.8**	87.1	92.2	**5.1**	89.0
Q5	95.1	93.9	**1.2**	89.5	91.4	93.5	96.6	**7.2**	91.4	96.8	**5.4**	94.5
Overall	86.7	82.2	**4.6**	77.1	81.2	84.0	90.9	**13.9**	82.3	90.1	**7.8**	84.6
Wealth Inequality (Q5-Q1)	**18.0**	**26.6**		**23.8**	**21.9**	**20.0**	**14.4**		**19.7**	**19.7**		**22.0**

There is a similar story of progress in the percentages of those completing upper-primary school (tables 13 and 14), with inequality decreasing for most groups. Again an exception is the case of the poorest along caste lines, with the position at the upper primary level having actually deteriorated rather than improved. This measure of inequality actually increased by 3.5 percentage points. For all scheduled caste children however, there was an improvement of 14 percentage points. Girls have

made remarkable progress of 19 percentage points while boys improved by 16 points; and the wealth-based inequality for rural dwellers has improved by 14 percentage points.

Table 13: Upper primary completion rate, ages 15-25 years, 2007

	Gender			Caste					Location			Overall
	Male	Female	*Gender Inequality (Male-Female)*	ST	SC	OBC	Others	*Caste Inequality (General-ST)*	Rural	Urban	*Location Inequality (Urban-Rural)*	**Overall**
Q1 (Poorest)	45.6	26.8	***18.7***	26.3	33.7	40.3	42.4	***16.1***	34.3	51.3	***16.9***	36.5
Q2	53.8	38.7	***15.1***	34.3	40.4	48.5	56.7	***22.3***	45.9	50.8	***4.9***	46.6
Q3	60.1	47.8	***12.3***	42.0	47.1	56.2	60.7	***18.8***	53.2	58.5	***5.3***	54.2
Q4	68.0	58.4	***9.7***	50.9	57.0	63.2	70.7	***19.7***	60.8	69.4	***8.6***	63.4
Q5	81.2	75.8	***5.5***	66.0	71.8	75.4	84.1	***18.1***	71.3	84.9	***13.6***	78.6
Overall	64.2	52.9	***11.3***	40.6	49.2	59.1	70.1	***29.4***	53.4	72.3	***18.9***	58.8
Wealth Inequality (Q5-Q1)	***35.7***	***48.9***		***39.7***	***38.1***	***35.1***	***41.7***		***37.0***	***33.6***		***42.1***

Table 14: Upper primary completion rate, ages 15-25 years, 2014

	Gender			Caste					Location			Overall
	Male	Female	*Gender Inequality (Male-Female)*	ST	SC	OBC	Others	*Caste Inequality (General-ST)*	Rural	Urban	*Location Inequality (Urban-Rural)*	**Overall**
Q1 (Poorest)	77.0	64.7	***12.3***	62.3	68.3	72.4	82.0	***19.6***	70.2	77.0	***6.8***	53.0
Q2	85.7	78.3	***7.4***	78.9	80.0	82.7	85.9	***6.9***	82.1	82.8	***0.6***	66.0
Q3	88.7	83.0	***5.7***	83.5	84.9	84.9	90.0	***6.5***	85.1	88.7	***3.6***	72.2
Q4	92.1	88.4	***3.7***	82.4	89.7	89.2	94.5	***12.0***	88.4	93.4	***4.9***	79.9
Q5	96.4	94.7	***1.7***	91.5	92.6	94.7	97.4	***5.9***	92.8	97.6	***4.9***	90.9
Overall	87.8	81.8	***6.0***	76.2	81.1	84.7	91.5	***15.3***	82.4	90.8	***8.4***	72.2
Wealth Inequality (Q5-Q1)	***19.4***	***30.0***		***29.1***	***24.3***	***22.2***	***15.4***		***22.6***	***20.6***		***37.9***

Considering just quintile 1 children, the increase in upper-primary completion across genders, castes and locations, is enormous between the two time points. In some aspects progress for this poorest group has outstripped progress for the richest - however there is still a considerable extent of wealth-based inequality in completion rates. Poorer families have been making greater progress but from a much lower point (than for the richest) in 2007.

Overall however, reductions in wealth, gender, caste and location-related inequality have very much reduced.

With regard to the secondary level, while completion rates have been rising for every wealth quintile, wealth-based inequality has actually been on the rise (tables 15 and 16). Children in the poorest quintile only experienced an improvement of 11 percentage points, while this jumps to nearly 19 points in the next quintile; over 19 points for the next, and around 21 points for the top two quintiles. Similar trends have been observed historically during education expansion programmes, and at lower schooling levels. The richer in society tend to be the first to benefit, while it takes time for poorer

groups to catch up and start taking advantage of opportunities. While any increase in inequality is a concern, it is expected that the poor will increasingly take up expanding opportunities to access secondary schooling; however more should be done to support their participation, with wealth-based inequality having increased for both boys and girls, but remarkably much more so for boys.

Table 15: Secondary completion rate, ages 17-25 years, 2007

| | Gender | | | Caste | | | | | Location | | | Overall |
	Male	Female	Gender Inequality (Male-Female)	ST	SC	OBC	Others	Caste Inequality (General-ST)	Rural	Urban	Location Inequality (Urban-Rural)	
Q1 (Poorest)	24.4	11.9	*12.5*	11.7	14.2	20.5	25.0	*13.3*	15.4	36.2	*20.8*	18.2
Q2	31.1	18.4	*12.6*	14.4	17.7	27.1	34.5	*20.1*	24.1	29.7	*5.6*	24.9
Q3	38.1	27.9	*10.2*	22.8	25.5	33.9	41.9	*19.1*	31.4	39.7	*8.3*	33.2
Q4	46.0	39.3	*6.7*	29.8	34.2	42.2	52.0	*22.2*	39.1	50.9	*11.8*	42.8
Q5	62.4	59.6	*2.8*	46.5	49.1	55.0	70.2	*23.7*	50.6	70.0	*19.3*	61.0
Overall	43.1	34.7	*8.4*	22.1	27.4	37.9	52.9	*30.8*	32.3	55.2	*23.0*	39.0
Wealth Inequality (Q5-Q1)	*38.0*	*47.7*		*34.8*	*35.0*	*34.6*	*45.2*		*35.2*	*33.8*		*42.8*

Table 16: Secondary completion rate, ages 17-25 years, 2014

| | Gender | | | Caste | | | | | Location | | | Overall |
	Male	Female	Gender Inequality (Male-Female)	ST	SC	OBC	Others	Caste Inequality (General-ST)	Rural	Urban	Location Inequality (Urban-Rural)	
Q1 (Poorest)	33.2	25.2	*8.0*	19.4	22.8	33.2	41.1	*21.7*	28.4	35.3	*6.9*	29.5
Q2	46.7	40.1	*6.6*	34.6	36.8	46.7	49.7	*15.0*	42.6	47.8	*5.2*	43.6
Q3	55.8	49.0	*6.8*	45.9	44.9	52.6	61.4	*15.5*	51.1	56.4	*5.3*	52.6
Q4	66.7	61.5	*5.2*	51.2	57.3	62.9	72.7	*21.5*	60.1	70.4	*10.2*	64.2
Q5	82.9	80.0	*2.9*	65.6	70.9	79.1	87.9	*22.3*	73.3	87.7	*14.4*	81.5
Overall	56.2	50.9	*5.3*	37.3	42.0	54.2	67.0	*29.7*	47.9	66.3	*18.4*	53.6
Wealth Inequality (Q5-Q1)	*49.7*	*54.8*		*46.3*	*48.1*	*45.9*	*46.8*		*44.9*	*52.4*		*52.0*

Wealth-based inequality has expanded considerably across caste groups, affecting SCs the most (with a 13 point increase in inequality), while the effect on the more privileged castes was the smallest, at less than 2 points, indicating that caste and wealth are often related. Of note, this type of inequality in completion rates worsens by 10 points for rural areas but 19 points for urban areas, potentially indicating an inability to keep up with growing numbers of poor urban dwellers. While inequality has been worsening, more children are completing secondary schooling in all groups within society, while the rich are progressing faster at this particular stage in the development of India's secondary education system.

Figure 20: Secondary completion rates by wealth quintile for selected states, 2007 and 2014
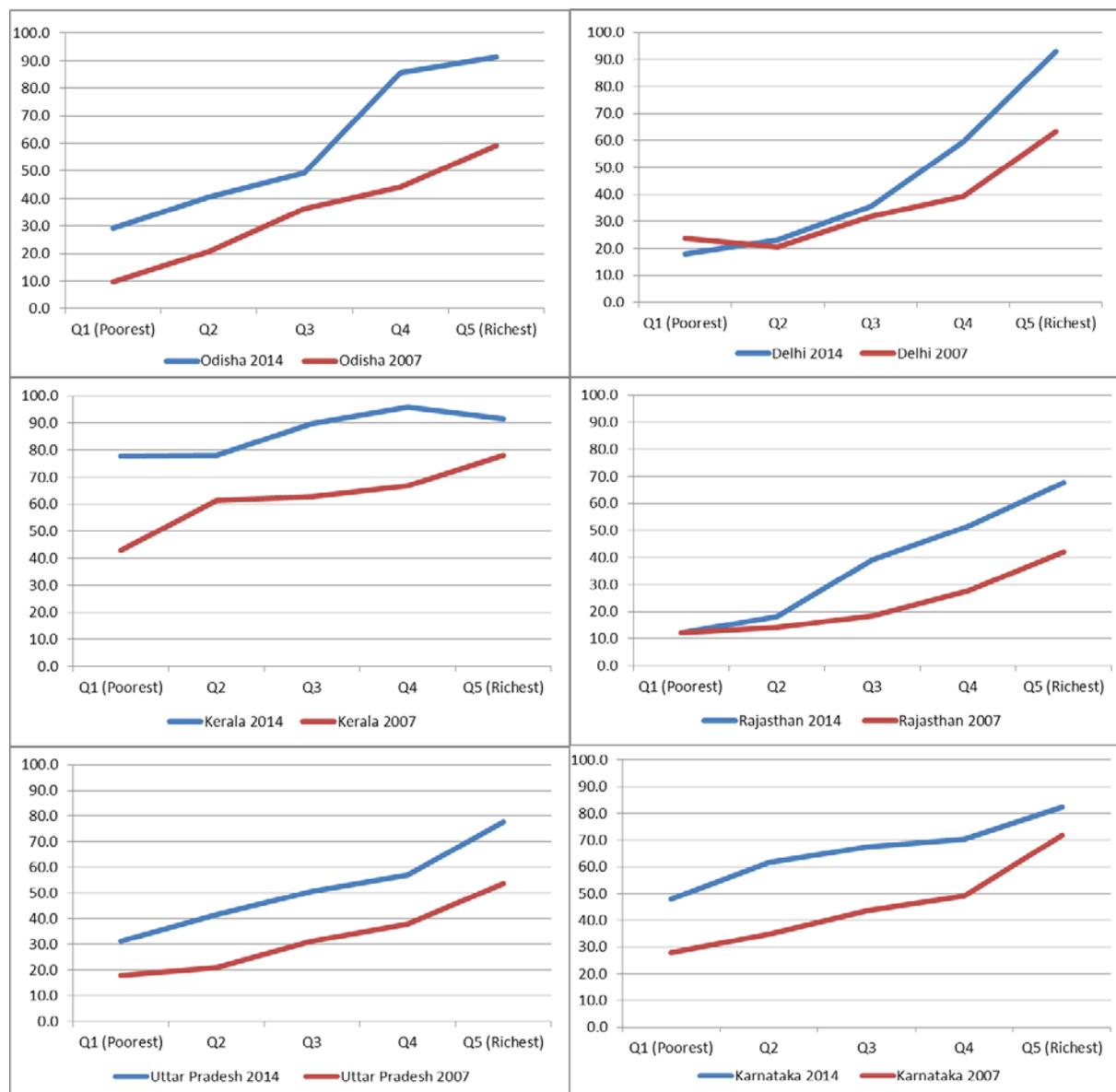
Figure 20 provides some disaggregation of the national picture outlined in the tables above. It shows the clear association between completion of secondary schooling and household wealth in five states and Delhi. The richest children are significantly more likely than their poorer peers to complete secondary school. Kerala presents the most progressive example, with the highest completion rates and with the richest only around 10 percentage points more likely than those in the poorest quintile to complete secondary school. In addition to having much greater equality of opportunity than other states, the poorest in Kerala have made truly remarkable progress over the period, significantly reducing the inequality gap. Karnataka has also managed to reduce the gap between rich and poor over the years (Annex tables A.5 & A.8).

In Delhi however, the poor have regressed, and in Rajasthan they have experienced no change; in both contexts the inequality gap has widened considerably. In all cases except for Kerala and Karnataka, the rich have pulled away from the poor, widening the gap reflected in the tables above. The overall message from the figure is that there is a clear relationship between wealth and secondary school

completion, and only in the case of Kerala has there been a considerable decrease in the gap between rich and poor; while this has also been the case to a lesser extent in Karnataka.

The figure also indicates different patterns of expansion in secondary completion across Indian States. While in case of UP all economics group benefitted from this expansion as indicated by a parallel shift in the completion rate line, in case of Delhi and Rajasthan most improvement happened in the top economic categories with poorest not benefitting at all. In Karnataka & Kerala, most improvement in completion rate occurred amongst the poorest as indicated by flattening lines for 2014.

4.   Factors in Transitioning to, or Dropping out Before, Secondary Level

The following section presents findings from the sequential logistic analysis undertaken to look at the effect of individual and family characteristics on educational transition decisions. As discussed above, educational decisions of an individual depend on large number of factors ranging from individual and family characteristics to the availability and affordability of schools as well as experiences throughout the schooling cycle. The effect of these demand factors may not remain constant throughout the schooling cycle. It may be argued that the effect of social background differs in strength at different educational transition stages; at lower levels of educational transition the effect of social background may be stronger than at the higher levels of educational transition, partly as a result of selection effects. Those reaching grade 8 are on average richer and from higher caste backgrounds than those entering grade 1.

4.1   Empirical strategy for estimating inter education level transition

To capture differential effects of individual and family characteristics on educational attainment, Mare (1981) suggested that the educational attainment should be decomposed into sequence of different transitions which trace student's progression through the educational cycle. The central assumption of the Mare's model is that individuals in the educational cycle progress sequentially meaning thereby an individual is faced with the choice of moving to the next level (transition) or leaving (drop out). Based on the Mare's idea some empirical research (Shavit & Blossfeld, 1993) has analysed educational attainment as sequential transitions i.e. at the end of each level an individual decides to either leave the system or move up the educational ladder. Mare (1981) proposes that if one knows how far a person goes in school, it can help infer a person's decision to continue or not at each level. It suggests that for some individual continuation decisions are established by knowing whether a person attended a particular grade of schooling given that the person completed the previous grade, for others it is essential to know whether the person actually completed a particular grade.

Using the above approach we established both the respondent's highest grade of schooling attended and whether the person completed that grade and constructed a sequence of dichotomous variables denoting whether the person reached (or completed) a given level of schooling. For the purpose of this analysis we have used individual level data from 71st round of NSS. During the first stage, the population aged 17-25 years was selected and people who did not start formal schooling were excluded in total there were 55,429 people in the final sample. The age range selected is based on the assumption that most children complete lower secondary by the age of 17 and the sample is not too old to limit use of certain key variables such as current household income as a proxy for household economic status at the times of the transition decision. The final sample was then divided into four categories: those who entered primary but did not complete; those who entered upper primary but did not reach secondary; those who entered secondary but did not complete, and finally those who completed secondary.

Figure 21 presents three educational transition and completion decisions. First, transition from primary to upper primary conditional upon individual having entered primary education; second, transition from upper primary to lower secondary conditional upon individual having reaching upper primary education, and finally, completion of secondary education conditional upon having individuals reaching secondary level. The individuals who dropped out without completing any given level are

included in the transition category for that level. The probability of transition has been estimated using a set of equations given below;

$$P1i = \frac{\exp(\alpha1 + \lambda 1 * X1 + \beta1 * X2)}{1 + \exp(\alpha1 + \lambda 1 * X1 + \beta1 * X2)} \; If \; reached \; upper \; primary = 1$$

$$P2i = \frac{\exp(\alpha2 + \lambda 2 * X1 + \beta2 * X2)}{1 + \exp(\alpha2 + \lambda 2 * X1 + \beta2 * X2)} \; If \; reached \; secondary = 2$$

$$P3i = \frac{\exp(\alpha3 + \lambda 3 * X1 + \beta3 * X2)}{1 + \exp(\alpha3 + \lambda 3 * X3 + \beta1 * X2)} If \; completed \; secondary = 3$$

Where P is the probability of transition and X1 and X2 are a set of individual and family characteristics associated with transition decisions.

Figure 21: Framework of educational transition
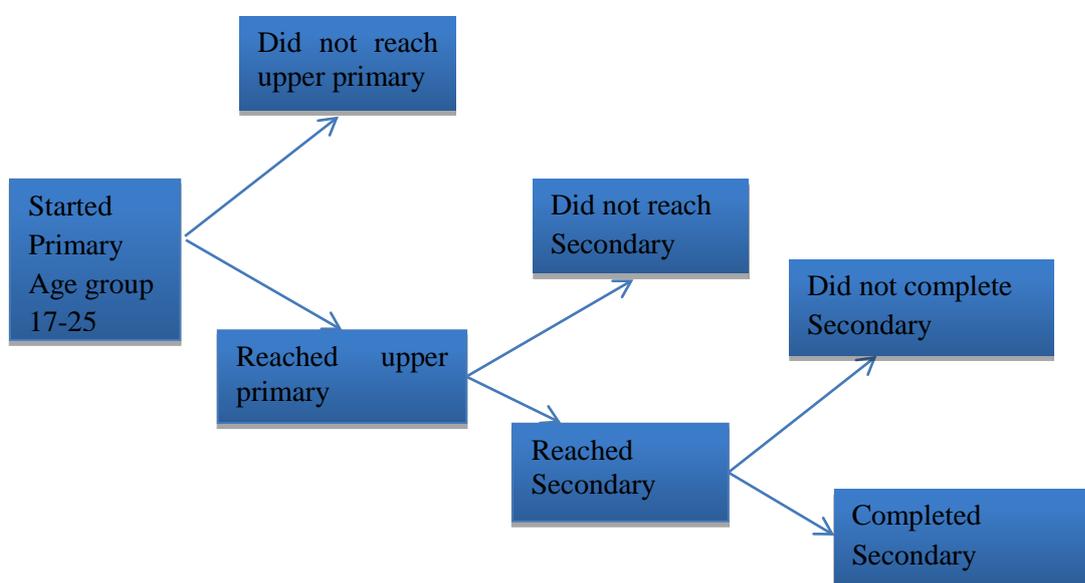
4.2   Key Findings and Discussion

The regression estimates are reported in table 17 along with standard error (SE) and the z-score to establish significance level of each variable. The table includes three sets of estimates- stage 1 presents estimates for transition to upper primary level; stage 2 presents estimates for transition to secondary level and finally stage 3 presents estimates for completing secondary cycle.

The coefficient estimates for individual characteristics suggests that being a male reduces the probability of transition to the upper primary and secondary level. However males are more likely to complete secondary education when compared with their female counterparts. The association of gender with transition and completion decisions is complex and has been further studied through introduction of interaction terms (discussed below). Age of first entry has been used as a proxy for being 'overage' for grade. As expected, being overage reduces probability of transition at both levels as well as probability of completing secondary level. The affect is highly significant across all three stages.

The effect of household size is highly significant across all three decision making stages implying children from large families have lower chances of transition to upper primary and secondary stages as well as completing secondary education. Belonging to a particular caste group continues to be associated with the transition decisions. As compared to ST children, SC children have significantly lower chances of transition to upper primary and the secondary levels. However once in the secondary grades the probability of SC children completing secondary level is greater. Children from OBC and general caste continue to have greater chances of reaching and completing secondary level as compared to ST children. Belonging to a Muslim family significantly lowers the chances of transition to upper primary and the secondary levels. However once in the secondary grades religion of the child is not associated with the chances of completion. This could be due to the fact that the most marginalised amongst Muslims dropout before reaching secondary grades. Living in a rural area is also negatively associated with transition and completion decisions. However the association is significant only for transition decision to the secondary level. This could be due to the greater distance and cost that a child may have to travel to access secondary schools compared to the distances they were traveling and amounts they were spending for accessing upper primary schools.

Table 17: Regression estimates of sequential logit model for people in the age group 17-25

	Stage 1:Transition to upper primary			Stage 2: Transition to secondary			Stage 3: Completing secondary		
	Estimates	SE	Z-Score	Estimates	SE	Z-Score	Estimates	SE	Z-Score
Gender of child (Male=1)	-1.30	0.49	-2.65	-0.99	0.36	-2.72	1.10	0.47	2.36
Location (Rural=1)	-0.07	0.06	-1.29	-0.11	0.04	-2.62	-0.05	0.06	-0.93
Age at first entry in school	-0.25	0.02	-11.94	-0.22	0.02	-12.07	-0.40	0.02	-16.93
Household size	-0.13	0.01	-16.19	-0.14	0.01	-23.29	-0.10	0.01	-12.35
Reference (Scheduled tribe)									
Scheduled caste	-0.18	0.08	-2.13	-0.20	0.07	-3.01	0.34	0.08	4.02
Other backward class	0.06	0.08	0.71	0.08	0.06	1.32	0.71	0.07	9.55
Other Caste	0.17	0.09	1.93	0.21	0.07	3.10	0.68	0.08	8.35
Islam	-0.57	0.07	-8.33	-0.37	0.06	-6.65	-0.24	0.08	-3.01
Other caste* Gender	0.31	0.12	2.46	0.20	0.09	2.12	-0.03	0.11	-0.26
Scheduled caste*Gender	0.14	0.12	1.23	0.10	0.09	1.11	-0.24	0.11	-2.10
Other backward class*Gender	0.20	0.11	1.85	0.19	0.08	2.30	-0.12	0.10	-1.20
Location*Gender	0.34	0.08	4.33	0.32	0.06	5.38	0.10	0.08	1.37
Islam*Gender	-0.30	0.09	-3.21	-0.27	0.08	-3.59	-0.14	0.10	-1.34
Annual disposable income (log)	0.85	0.04	21.89	0.79	0.03	27.88	0.72	0.04	19.29
Gender* Annual disposable income (log)	0.14	0.05	2.69	0.10	0.04	2.76	-0.10	0.05	-2.11
Gender of the head of the household	0.40	0.06	6.89	0.30	0.04	6.74	0.18	0.06	3.10
Educational level of the head of the household (Reference category illiterate)									
Up to primary	0.20	0.04	5.04	0.21	0.03	6.17	0.00	0.05	-0.03
Up to secondary	1.44	0.06	25.25	0.80	0.04	21.84	0.46	0.05	9.69
Above higher secondary	2.35	0.11	21.44	1.88	0.06	30.47	1.59	0.08	21.24
Constant	-4.52	0.39	-11.53	-4.84	0.30	-16.21	-3.03	0.39	-7.73

Education and gender of the head of the household continues to influence the transition status of a child. Having a male head of the household significantly increases the probability of transition to upper primary and secondary stages as well as completing secondary level. As compared to illiterate heads of the household, children from families with head of the household having any qualification have a

greater chance of reaching upper primary and secondary stages. The probability of completing secondary level is higher for children who have a head of the household with qualifications greater than primary. As expected, the economic status of the household continues to be positively associated with the transition decisions. Children from richer households have greater chances of transiting to upper primary and secondary levels as well as completing secondary.

Figure 22: Probability of reaching secondary by gender and caste
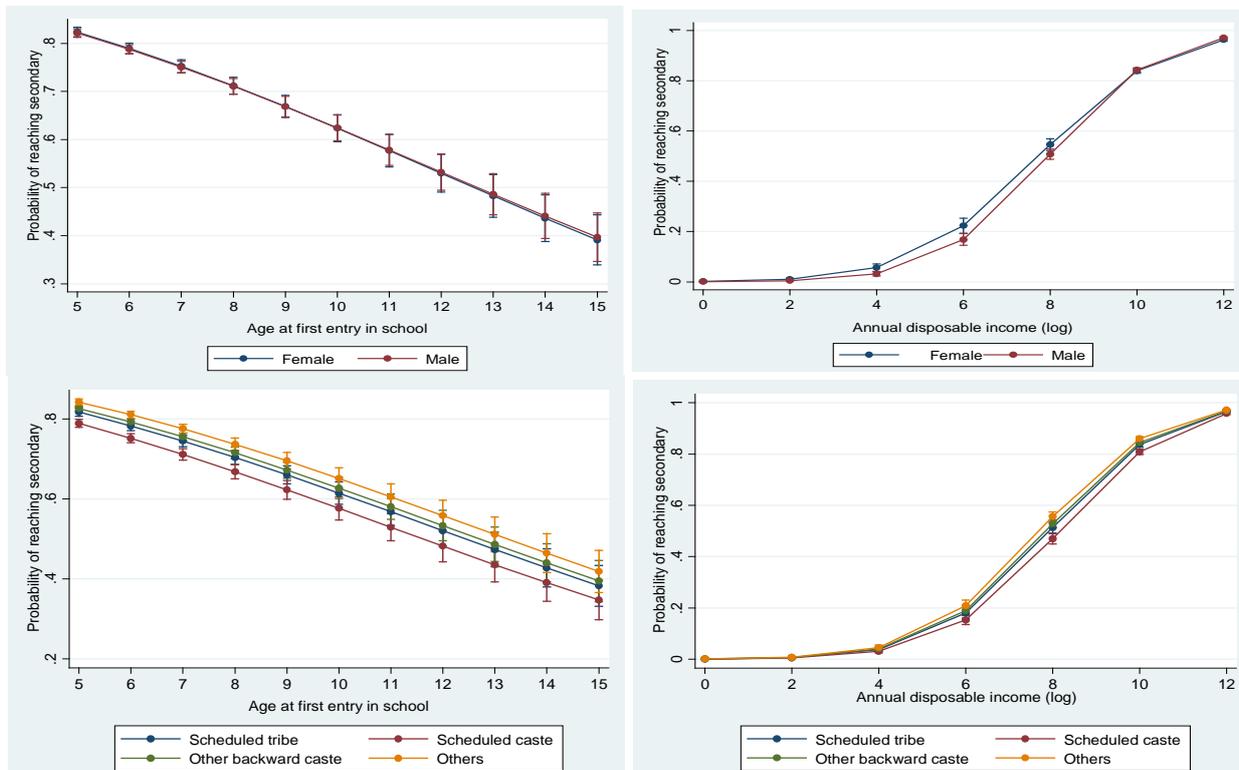
Four interactions were introduced to study association of gender with caste, religion, location and wealth status. As compared to ST children being scheduled caste male is not associated with the transition decisions but they have significantly lowers chances of completing secondary education. Upper caste males have significantly higher chances of transiting to upper primary and secondary levels but not of completing secondary level. This is likely to be a selection effect. The chances of transition to and completion of secondary level is significantly lower for Muslim males. As expected, males from rural area have significantly greater chances of transiting to upper primary and secondary levels than girls. There is however no male advantage of completing secondary levels in rural areas. Richer male continue to have greater chances of reaching upper primary and secondary stages as well as completing secondary level.

Figure 22 presents predicted probabilities of reaching secondary level for those children who entered primary level. As can be seen, children who started school on time have much higher chances of reaching secondary level. The probability of reaching secondary level drops sharply as the age of entry increases however there is little difference when disaggregated by gender. When disaggregated by caste of children, the probability of reaching secondary level reduces for children from all caste groups as their age of first entry increases, with probability for scheduled caste students being lowest. Similarly probability of reaching secondary level increases with the increase in household's annual disposable income. At the lowest income level, the probability of a girl reaching secondary is higher

than that of boys however the gap diminishes to negligible as the income increases. In the richest category, it is marginally higher for boys. When disaggregated by caste groups, probability of reaching secondary level by income groups remains almost similar for children from all caste groups. Overall it is clear that household disposable income is the main determinant of transition and completion

Figure 23: Probability of completing secondary by gender and caste
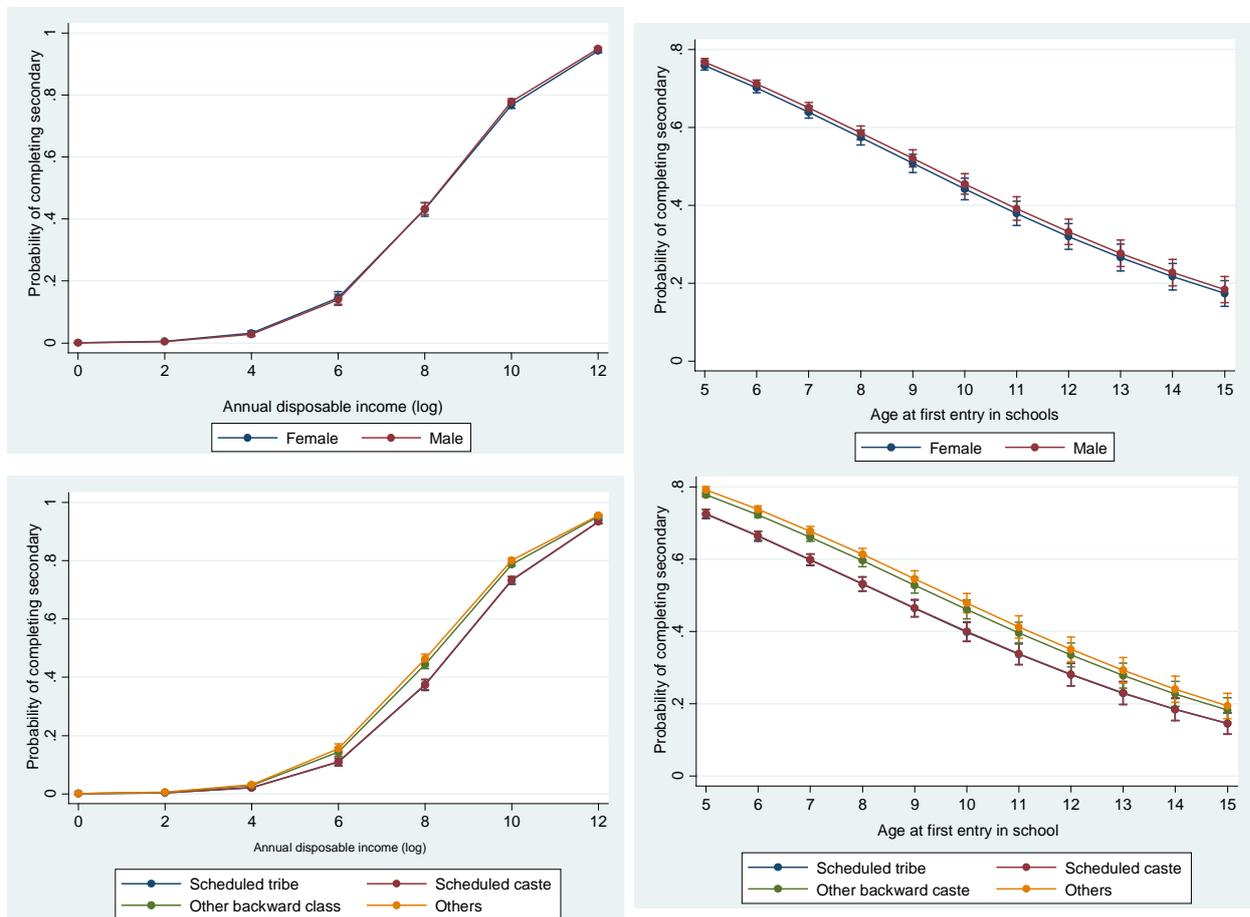
The predicted probabilities of completing secondary level by the age of first entry and annual disposable income are shown in figure 23. The probability decreases with the increase in the age of first entry and affects girls more than boys across all ages. When disaggregated by caste group, the probability of completing secondary level reduces for all groups as the age of entry increases but the affect is much stronger for scheduled caste children as compared to children from general group. The probability of completion increases with the increase in annual disposable income for both male and female children and children from different caste groups. At the top and the bottom income levels, the difference in probability of completion between caste groups is negligible. At the middle income levels, probability of secondary completion is lowest for scheduled caste children.

5.   Conclusion and Policy Implications

This paper has explored participation in schooling in India, starting off with answering the question, *what are the patterns of participation in secondary education in India and how have they been changing?* Transition to the secondary education system is a crucial break point in many children's education, with few having historically made it to secondary school. Now, with a GER of 70% and completion rate of 63%, participation in secondary schooling has expanded greatly, including many more young people since the launch of RMSA in 2009.

> Conclusion 1: Broadly, participation is increasing overall which is the positive top-line, however while participation is up for all groups within society, the most privileged are benefiting first and foremost, though as with historical expansion at lower levels of education, poorer and disadvantaged groups are expected to gain ground.

Participation is up - but *how do patterns of participation vary between regions of the country and between urban and rural areas?* Different parts of the country experience different patterns of participation, with the southern-most states of Kerala and Tamil Nadu having the fewest out of school children, the highest average years of schooling in the population aged 15 and above, and, along with Karnataka, the highest secondary school completion rates in the country. By way of contrast, the 'backward' states such as UP, Bihar, West Bengal, Rajasthan, Madhya Pradesh (and others) have much lower secondary school participation levels and completion rates, with challenges being greater in rural than in urban areas. These states are poor economically and have poor educational outcomes.

> Conclusion 2: Urban-dwellers have an advantage over their rural counterparts. Rural communities tend to be poorer, have poorer infrastructure and possibilities for transport; they tend also to be home to many traditionally marginalised groups. These disadvantages appear to be even greater for the rural and the poor in the northern states. The chances of attending secondary school are greater for urban children, and in particular from the better-performing southern states.

A crucial question is *how equitable is the existing pattern of secondary education participation and how does it vary by states?* Making it to secondary school means persevering through the elementary school cycle and completing upper primary grade 8, often in the face of adverse conditions in the home or the school, or both. For many children elementary schooling entails a succession of obstacles. Children who are enrolled late by their parents, or underage, both of which (without proper school readiness) can lead to repetition of grade 1. Children from poor backgrounds and from traditionally marginalised groups such as scheduled castes and tribes struggle with few resources both material and in terms of practical educational support within the household. As they get older the opportunity costs of their time increases meaning that parents may need them in the home or to help with the economic activity of the household, and this becomes more likely all the sooner in their education where children are over age for their grade due to late enrolment and repetition.

In addition, poor quality of education often leads to waning interest and determination to stay in school, leading some to overtax already scarce household resources by accessing private tuition to supplement their school-day education. For those less motivated, dropping out may result. This can be a gradual process, starting with poor attendance, and then eventually ending up in enrolment with no attendance, and then finally drop out. Over-age girls are more likely to end their studies early, and

often by the end of elementary school, due to societal perceptions that a girl can simply become too old to stay in school. And where distances to available schools increase at the transition to secondary, this can also prove a barrier, especially to girls.

> Conclusion 3: There is continuing inequity in participation at all levels of schooling, with rising inequality at the secondary level due to the more advantaged taking up expanding opportunities first. However inequality is shrinking at the elementary level, and it is expected that this catching-up will eventually be experienced at the secondary level as well. Levels of inequity vary by state similarly to participation levels (conclusion 2). Kerala provides an example of a state where inequality at the secondary level is actually reducing.

This paper has ultimately sought to answer these crucial policy-relevant questions: *what are the key factors in transition to and completion of secondary school? What role do traditional sources of socio-cultural disadvantage and household poverty, play in decisions to attend secondary school?* The analysis points to a large range of issues (outlined above) that prove to be fault-lines dividing those who participate in secondary schooling and those that fall away from education, including caste, gender, rural residence and more. All of these sources of inequity help determine a young person's outcomes, as illustrated in this paper through the descriptive and multivariate analysis in preceding sections. Yet the largest single factor in whether or not a child will participate at the secondary level is the wealth (or poverty) of the household. Descriptive as well as multivariate analysis confirms the central role of wealth, with many of the other sources of inequity discussed above proving surmountable with sufficient funds.

> Conclusion 4: All sources of inequality tend to negatively affect a child's chances of completing secondary school, but by far the most important determinant is the ability to pay. The cost burden of secondary education is difficult for the poor to bear, with these households often experiencing the largest jump in costs between elementary and secondary levels, proportional to what they were paying for grade 8. Poverty is the most binding constraint to secondary school participation.

The picture this paper presents of the developing education system is one of great progress. While tables 11 to 16 show the widening inequality gap at the secondary level, they also document great progress, with every sub-group in society advancing in participation in education at every level. Inequality gaps have been shrinking at the elementary level. Gross and net enrolment has been increasing, and in recent years more adults have been completing their secondary education. Yet different states have experienced very different rates and extents of growth, and differ in whether or not things have improved significantly for the poor in terms of access to secondary school. The northern states have generally fared much worse in extending opportunity in an equitable way than the better performing southern states. The right policies can lead to more inclusive expansion.

5.1   Findings for policy:

- The policy of opening secondary schools within five kilometres of every habitation has made a difference to many students, in particular girls. However distance is not the only issue limiting participation. Key to improving transition and completion will be removing cost barriers to participation which are found to exceed all other sources of disadvantage in creating a barrier to

participation. Box 2 provides an example of an innovative way to tackle distance with a conditional asset transfer.

- Another paper in this TCA series of (Research Report 6) reports found that most new intake into secondary schooling is highly likely to be absorbed by government schools (Härmä, 2016), meaning that the costs associated with government school attendance need to reduce substantially. The cost of schooling jumps substantially at the secondary level, so the key area for investment will be to abolish tuition fees at this level, though other incentives are likely to be required to get the poorest into secondary school.

- Higher quality of education is needed from the pre-primary level upwards, and greater relevance of secondary schooling to young people's lives will mean that staying in school is both interesting and seen as a worthwhile investment of time and resources. Quality needs to be improved from the earliest years so that there are strong foundations on which to build subsequent levels of learning. Poor quality is leading to additional costs to families who feel they must pay for private tuition.

In conclusion, transition to and participation at the secondary level cannot be viewed and planned for on its own: a successful secondary school system with full participation is dependent on a supply of elementary school completers who have received a good quality education from strong foundations laid at the pre-primary level, built on solidly during the early primary school years and beyond. The implication is that working from the ground upwards is likely, in the longer term, to yield the best results at the secondary level, however in the shorter term, cost reduction and sometimes distance reduction strategies are likely to be needed to increase transition to secondary school (making sure that the disadvantaged manage to catch up) and to achieve participation targets and learning levels comparable to curricular expectations.

6.   References

Agrawal, T. (2014) Educational Inequality in Rural and Urban India, *International Journal of Educational Development*, 34: 11-19.

Agrawal, T. (2013) Educational Attainment in Educationally Backward States of India: Some Implications for the Right to Education Act, *International Journal of Education Economics and Development*, 4(1): 89-99.

Alcott, B. and Rose, P. (2015) Schools and learning in rural India and Pakistan: Who goes where, and how much are they learning? Prospects, 45:3, 345-363.

Ananga, E. (2011) *The drop out experience of basic school children in rural Ghana: implications for universal basic education policy*, D.Phil. dissertation submitted to University of Sussex, Brighton, United kingdom, Available at *http://sro.sussex.ac.uk/6937/1/Ananga,_Eric_Daniel.pdf Accessed on 20/08/2012*

Asadullah, M.N. and Yalonetzky, G. (2010) *Inequality in educational opportunities in India: Changes over time*, IZA working paper no. 5146. Available at *ftp.iza.org/dp5146.pdf, Accessed on 22/10/2011.*

Bhushan. S and Jha. S, (2012) Why is Education so important for the development of Bihar, *Journal Social and Economic Studies*, 22(2).

Boudon R. (1974) Education, Opportunity, and Social Inequality; Changing Prospects in Western Society. New York, Wiley, 1974

Paris, A., Cuaresma, J.C., Samir K.C. & Sauer, P. (2013) *Age-Specific Education Inequality, Education Mobility and Income Growth. Welfare wealth work*, working paper no. 6.

Duncan, B. (1965) Family Factors and School Dropout: 1920- 1960, Final report on Cooperative Research Project No. 2258, Office of Education. Ann Arbour: The University of Michigan.

Ersado, L. (2005) Child Labour and Schooling Decisions in Urban and Rural Areas: Comparative Evidence from Nepal, Peru, and Zimbabwe. World Development, 33(3):455-480.

Fienberg, S.E. (1977) *Discrete Multivariate Analysis: Theory and Practice.* M.I.T. Press, Cambridge, MA. Paperback edition.

Härmä, J. (2016) What Role is the Private Sector Playing at the Secondary Level in India? The Shifting Terrain of Public and Private Provision.

Härmä, J. (2011) Low-cost private schooling in India: is it pro poor and equitable? *International Journal of Educational Development*, 31:4, 350-356.

Härmä, J. (2008) Are low-fee private primary schools in rural Uttar Pradesh, India, serving the needs of the poor? Unpublished DPhil thesis. Brighton, University of Sussex.

Hill, S. and Chalaux, T. (2011) Improving Access and Quality in the Indian Education System. Paris, OECD Economics Department Working Papers No. 885.

Kingdon, G.G. (2007) The progress of school education in India. *Oxford Review of Economic Policy*, 23:2, 168-195.

Lewin, K. (2011a) Beyond Universal Access to Elementary Education in India: Is it Achievable at Affordable Costs? Brighton, University of Sussex. CREATE Pathways to Access Research   Monograph No. 53.

Lewin, K. (2011b) Expanding access to secondary education: can India catch up? *International Journal of Educational Development*, 31:4, 382-393.

Lopez, R., Thomas, V. & Wang, Y. (1998) *Addressing the Education Puzzle. The Distribution of Education and Economic Reforms*, Policy Research Working Paper 2031, Washington DC: The World Bank.

Lucas, S. R. (2001) Effectively Maintained Inequality: Education Transitions, Track Mobility, and Social Background Effects." American Journal of Sociology 106(6):1642-90.

Mare, R.D. (1981) Change and Stability in Educational Stratification." American Sociological Review 46(1):72-87

Muralidharan and Prakash (2013) Cycling to School: Increasing Secondary School Enrolment for Girls in India, IZA working DP no. 7585, available at *http://ftp.iza.org/dp7585.pdf.* Accessed on 25/11/2015.

Paranjape, M.S. (2007) Uneven Distribution of Education in Maharashtra: Rural-Urban, Gender and Caste Inequalities, *Economic and Political Weekly*, 42(3): 213-216.

Peffer, T. F. (2007) Intergenerational Educational Mobility in Comparative Perspective: Persistent Inequality in Educational Attainment and its Institutional Context, CDE Working Paper No. 2007-09, Center for Demography and Ecology, University of Wisconsin-Madison, available at https://www.ssc.wisc.edu/cde/cdewp/2007-09.pdf, last accessed on 25/11/2015.

Raftery, A. E. and Hout, M. (1993) Maximally Maintained Inequality: Expansion, Reform, and Opportunity in Irish Education, 1921-75." Sociology of Education 66(1):41-62.

Rawal, S. and Kingdon, G. (2010) Akin to my teacher: does caste, religious or gender distance between student and teacher matter? Some evidence from India. London, Institute of Education. Department of Quantitative Social Science Working Paper No. 10-18.

Shavit, Y., and Blossfeld, H. (1993) Persistent Inequality: Changing Educational Attainment in Thirteen Countries. Boulder, Colo.: Westview Press.

Srivastava, P. (2006) Private schooling and mental models about girls' schooling in India. *Compare*, 36:4, 497-514.

Siddhu, G. (2011) Who makes it to secondary school? Determinants of transition to secondary schools in rural India. *International Journal of Educational Development*, 31:4, 394-401.

Siddhu, G. (2010) Can families in rural India bear the additional burden of secondary education? Investigating the determinants of transition. Brighton, University of Sussex. CREATE Pathways to Access Research Monograph No. 50.

Tamim, T. and Tariq, H. (2015) The intersection of caste, social exclusion and educational opportunity in rural Punjab. *International Journal of Educational Development*, 43, 51-62.

Taylor, N. Mabogoane, T. Shindler, J. and Akoobhai, B. (2010) "Seeds of their struggle" The features of under- and overage enrolment among Grade 4 learners in South Africa. CREATE Pathways to Access Monograph No. 47. The Education Policy Unit at the University of the Witwatersrand, South Africa.

Thomas, V., Wang, Y. and Fan, X. (2000) Measuring education inequality: Gini coefficients of education. World Bank Working Paper No. 2525, Washington, DC.

World Bank (2009) Secondary Education in India: Universalizing Opportunity. Washington DC, World Bank. Report 48521 v1.

7.   Annexure

Table A.1: Gross enrolment ratio by Gender and States-Secondary

States	2012-13			2013-14			2014-15		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
A & N Islands	138.9	119.0	129.2	102.9	97.4	100.2	95.6	90.1	92.9
Andhra Pradesh	65.7	66.3	66.0	73.8	76.8	75.2	71.5	73.4	72.4
Arunachal Pradesh	78.4	74.9	76.7	88.4	84.9	86.7	93.1	90.1	91.6
Assam	57.9	66.0	61.9	65.6	77.2	71.2	69.4	80.6	74.8
Bihar	46.1	46.0	46.0	57.7	63.0	60.1	65.1	73.9	69.1
Chandigarh	111.7	105.7	109.0	92.1	92.2	92.1	89.1	90.5	89.7
Chhattisgarh	78.2	79.5	78.5	96.7	99.3	98.0	100.3	103.4	101.8
D & N Haveli	82.6	73.0	78.0	87.8	79.1	83.7	91.1	84.7	88.1
Daman & Diu	79.2	84.2	81.5	67.9	82.2	73.9	68.7	83.6	74.9
Delhi	113.2	106.2	110.0	102.0	108.9	102.4	101.6	106.0	103.6
Goa	127.1	111.2	119.4	110.8	102.1	106.7	118.6	108.1	113.6
Gujarat	70.0	55.5	63.2	81.8	65.9	74.5	80.8	66.7	74.3
Haryana	87.4	78.6	83.4	88.8	82.9	86.2	85.7	82.5	84.3
Himachal Pradesh	120.0	115.5	117.9	122.8	117.5	120.3	119.0	112.3	115.9
Jammu & Kashmir	62.5	58.0	60.3	67.8	63.9	66.0	67.7	64.8	66.3
Jharkhand	57.1	55.5	56.3	68.7	71.8	70.1	69.4	74.6	71.9
Karnataka	74.7	73.5	74.1	76.9	78.2	77.5	81.1	82.6	81.8
Kerala	96.3	91.9	94.2	103.8	101.1	102.5	103.6	102.8	103.2
Lakshadweep	116.2	98.7	106.7	119.6	135.4	127.6	117.9	127.9	123.0
Madhya Pradesh	66.7	63.6	65.2	84.2	82.5	83.4	81.0	79.3	80.2
Maharashtra	84.9	79.5	82.3	87.5	83.4	85.6	91.1	87.3	89.3
Manipur	73.2	72.1	72.1	84.8	83.8	84.3	91.4	89.8	90.6
Meghalaya	51.8	61.4	56.6	67.1	78.6	72.8	75.1	87.1	81.1
Mizoram	98.0	100.5	99.2	105.9	107.3	106.6	107.2	109.1	108.2
Nagaland	60.7	62.0	61.4	66.3	70.3	68.2	62.3	66.9	64.5
Odisha	70.0	69.7	69.9	74.9	74.6	74.8	77.3	76.8	77.1
Puducherry	114.5	112.3	113.4	97.8	104.6	101.0	90.3	101.9	95.7
Punjab	85.0	84.1	84.6	87.7	84.7	86.4	85.7	85.4	85.6
Rajasthan	76.9	59.4	68.6	85.3	71.0	78.7	82.7	68.6	76.2
Sikkim	76.8	93.8	85.2	90.2	106.7	98.4	104.1	118.5	111.3
Tamil Nadu	90.4	89.9	90.2	91.8	93.3	92.5	90.2	93.7	91.9
Telangana	65.7	66.3	66.0	73.8	76.8	75.2	79.7	85.0	82.3
Tripura	99.2	96.8	98.0	117.1	116.9	117.0	119.8	121.4	120.6
Uttar Pradesh	57.3	54.5	56.0	66.5	65.8	66.2	67.9	67.7	67.8
Uttrakhand	93.6	90.7	92.2	89.3	87.0	88.2	91.0	89.7	90.4
West Bengal	61.8	71.3	66.4	68.6	81.3	74.8	70.7	86.1	78.2

Source: Unit level analysis of NSS data from various rounds

Table A.2: Out of school children

	6 to 10		11 to 13		14 to 15		16 to 17	
	Never enrolled	Enrolled but currently not attending	Never enrolled	Enrolled but currently not attending	Never enrolled	Enrolled but currently not attending	Never enrolled	Enrolled but currently not attending
A & N ISLANDS	0.4	0.0	0.1	2.9	3.0	2.9	0.0	14.3
ANDHRA PRADESH	1.8	0.6	1.3	4.5	16.8	13.2	1.6	24.7
ARUNACHAL PRADESH	6.7	0.9	6.6	4.0	6.5	0.7	0.4	11.6
ASSAM	2.3	0.5	1.3	3.4	13.2	11.0	2.5	30.1
BIHAR	11.1	0.9	4.8	2.9	19.6	10.2	16.6	20.8
CHANDIGARH	6.3	0.0	1.2	2.3	3.4	3.4	0.5	6.0
CHHATTISGARH	4.9	0.0	0.2	6.2	11.1	8.3	4.0	29.5
D & N HAVELI	1.5	0.0	3.1	2.2	26.0	4.9	18.6	31.4
DAMAN & DIU	0.1	0.0	39.0	6.4	15.9	15.9	0.0	36.6
DELHI	5.0	1.0	1.7	3.5	15.3	14.7	1.9	16.6
GOA	0.0	0.0	0.0	0.0	0.6	0.6	0.0	10.1
GUJARAT	6.7	2.3	2.3	7.7	20.2	18.1	2.3	34.8
HARYANA	5.2	1.7	1.7	2.4	11.5	9.2	2.8	19.7
HIMACHAL PRADESH	2.3	0.0	0.6	1.4	2.2	1.4	0.0	9.8
JAMMU & KASHMIR	1.9	0.6	1.3	3.5	1.1	9.1	2.9	10.6
JHARKHAND	6.2	1.3	1.8	5.2	13.7	12.0	3.8	26.0
KARNATAKA	3.9	1.1	0.9	3.8	9.6	7.3	2.0	30.8
KERALA	0.6	0.1	0.0	0.0	0.2	0.2	0.4	6.4
LAKSHADWEEP	0.0	0.0	0.0	0.0	4.6	4.6	0.0	16.1
MP	7.7	1.8	3.0	5.8	18.5	16.1	5.1	30.9
MAHARASHTRA	2.4	0.7	1.5	2.7	14.9	11.6	1.5	22.6
MANIPUR	3.4	1.0	2.7	1.7	7.3	5.5	2.9	10.4
MEGHALAYA	4.5	1.3	2.2	1.3	15.8	14.4	2.9	18.4
MIZORAM	4.2	0.0	1.2	0.6	4.1	2.1	2.7	16.8
NAGALAND	6.8	0.2	0.0	2.3	3.5	3.5	0.0	9.7
ODISHA	4.6	0.6	2.3	4.5	20.6	15.0	6.8	45.1
PUDUCHERRY	0.0	0.0	0.0	2.6	9.5	9.5	8.4	9.9
PUNJAB	2.0	0.5	1.5	4.1	12.7	8.4	2.8	17.4
RAJASTHAN	9.3	1.5	5.5	4.6	21.4	15.3	13.4	21.1
SIKKIM	0.0	0.0	0.0	5.5	4.7	4.7	1.7	4.3
TAMIL NADU	0.3	0.3	0.0	0.8	8.2	8.0	0.0	19.9
TELENGANA	2.3	0.4	2.6	1.2	7.0	7.0	1.9	22.1
TRIPURA	1.2	0.0	0.0	0.2	7.4	6.8	0.0	15.1
UP	12.9	1.1	5.3	6.4	23.9	16.8	9.6	26.8
UTTARANCHAL	1.1	0.0	0.0	2.2	15.1	15.1	0.0	21.5
WEST BENGAL	5.2	1.4	2.3	4.5	15.7	11.2	4.4	33.4
India	7.1	1.0	7.1	4.2	16.8	12.4	6.0	25.6

Source: Estimates based on NSS 71st round unit level data

Table A.3: Primary completion rate for 12-25 years old-2007

STATE	Q1 (Poorest)	Q2	Q3	Q4	Q5 (Richest)	Overall	Wealth Inequality (Q5-Q1)
A & N ISLANDS	86.4	88.4	87.5	91.4	96.6	93.1	*10.2*
ANDHRA PRADESH	70.3	74.1	79.4	85.0	93.7	80.0	*23.4*
ARUNACHAL PRADESH	64.5	73.7	63.4	74.8	72.1	70.7	*7.6*
ASSAM	52.9	70.9	82.6	89.5	93.3	83.1	*40.4*
BIHAR	34.0	47.8	54.5	65.3	80.5	55.5	*46.5*
CHANDIGARH	31.5	29.7	69.3	92.6	97.8	81.9	*66.4*
CHHATTISGARH	65.8	74.3	83.9	84.5	94.8	78.9	*28.9*
D & N HAVELI	53.2	62.5	70.8	81.4	99.5	80.8	*46.3*
DAMAN & DIU	100.0	85.8	88.3	92.6	96.7	94.1	*-3.3*
DELHI	60.7	58.7	70.0	76.6	89.3	81.3	*28.6*
GOA	86.8	96.9	89.4	94.9	95.0	94.0	*8.2*
GUJARAT	73.5	78.2	74.9	83.0	91.5	83.6	*18.0*
HARYANA	70.2	65.2	78.0	86.8	90.6	83.7	*20.5*
HIMACHAL PRADESH	89.2	92.0	92.6	94.1	97.0	94.0	*7.8*
JAMMU & KASHMIR	46.7	73.6	80.9	81.1	87.9	83.3	*41.2*
JHARKHAND	53.9	55.5	62.5	69.0	82.9	64.4	*28.9*
KARNATAKA	78.1	79.0	86.4	87.4	94.8	86.0	*16.6*
KERALA	95.6	98.0	98.3	99.0	99.3	98.7	*3.7*
LAKSHADWEEP	90.9	100.0	100.0	99.5	95.2	96.2	*4.3*
MADHYA PRADESH	63.7	71.7	74.6	82.7	88.9	75.3	*25.3*
MAHARASHTRA	84.7	86.6	89.2	91.2	96.0	90.6	*11.3*
MANIPUR	86.5	77.0	86.0	91.7	82.1	85.8	*-4.4*
MEGHALAYA	60.2	58.0	66.2	65.5	75.7	69.1	*15.4*
MIZORAM	86.9	83.0	70.9	95.1	97.7	94.0	*10.8*
NAGALAND	75.0	87.9	92.0	92.4	94.9	93.9	*19.9*
ODISHA	56.3	73.5	83.1	92.7	96.3	74.7	*39.9*
PUDUCHERRY	93.2	93.4	94.8	95.3	98.2	95.9	*5.0*
PUNJAB	62.2	71.9	75.5	83.5	92.8	83.8	*30.6*
RAJASTHAN	47.6	59.0	66.2	73.2	84.1	71.2	*36.5*
SIKKIM	73.2	67.3	73.7	78.1	79.9	75.2	*6.7*
TAMIL NADU	85.7	90.2	94.3	94.0	97.6	93.3	*11.9*
TRIPURA	67.0	77.4	79.6	81.7	87.5	79.7	*20.6*
UTTAR PRADESH	56.6	61.5	69.8	73.0	82.0	71.0	*25.3*
UTTARANCHAL	73.5	83.6	79.8	80.1	86.6	82.0	*13.1*
WEST BENGAL	64.1	73.6	78.3	82.1	90.8	76.7	*26.7*
INDIA	63.5	71.1	76.5	81.5	89.8	78.3	*26.3*

Source: Estimates based on NSS 64th round unit level data

Table A.4: Upper primary completion rate for 15-25 years old-2007

STATE	Q1 (Poorest)	Q2	Q3	Q4	Q5 (Richest)	Overall	Wealth Inequality (Q5-Q1)
A & N ISLANDS	8.2	56.4	62.9	78.1	89.9	78.0	*81.7*
ANDHRA PRADESH	42.5	47.1	54.4	63.3	84.4	57.7	*41.9*
ARUNACHAL PRADESH	52.4	56.9	47.6	61.2	62.7	57.7	*10.3*
ASSAM	23.0	31.8	53.6	69.6	78.5	59.4	*55.5*
BIHAR	19.3	28.8	37.7	48.4	69.2	39.1	*49.9*
CHANDIGARH	20.0	29.9	49.9	80.8	94.0	74.1	*73.9*
CHHATTISGARH	37.3	43.2	61.0	58.8	84.3	54.4	*47.0*
D & N HAVELI	35.9	33.7	52.8	69.6	93.3	67.5	*57.4*
DAMAN & DIU	100.0	100.0	84.4	65.7	86.4	80.7	*-13.6*
DELHI	38.4	36.6	50.0	58.9	76.4	64.9	*38.0*
GOA	11.6	63.2	59.4	79.2	83.5	74.8	*71.9*
GUJARAT	39.3	47.9	44.0	52.8	70.4	56.9	*31.1*
HARYANA	35.7	33.1	47.5	67.2	80.5	64.1	*44.8*
HIMACHAL PRADESH	78.3	70.7	72.3	83.1	87.3	79.9	*9.0*
JAMMU & KASHMIR	21.2	48.1	59.5	72.0	79.4	72.2	*58.1*
JHARKHAND	31.9	32.2	33.3	49.4	74.4	43.5	*42.5*
KARNATAKA	44.5	56.3	61.3	64.9	83.3	64.5	*38.8*
KERALA	73.3	88.5	92.7	93.1	95.1	92.3	*21.8*
LAKSHADWEEP	60.5	77.3	43.9	91.3	84.1	80.0	*23.6*
MADHYA PRADESH	31.9	42.0	50.0	59.2	76.2	50.2	*44.3*
MAHARASHTRA	61.3	65.5	68.6	76.4	87.4	74.4	*26.1*
MANIPUR	73.1	62.5	66.7	83.9	72.7	74.0	*-0.4*
MEGHALAYA	20.5	22.4	31.3	35.7	53.8	40.5	*33.3*
MIZORAM	52.1	33.5	34.4	68.6	84.3	73.4	*32.1*
NAGALAND	49.2	75.4	75.5	81.7	88.4	85.5	*39.2*
ODISHA	30.0	47.5	58.5	70.9	82.0	50.8	*52.0*
PUDUCHERRY	58.9	74.7	76.1	80.5	87.0	80.8	*28.1*
PUNJAB	24.8	46.2	44.8	65.6	81.5	64.4	*56.7*
RAJASTHAN	22.7	33.7	39.9	51.5	68.6	49.9	*46.0*
SIKKIM	47.1	30.9	38.2	48.5	67.6	45.1	*20.5*
TAMIL NADU	59.0	66.0	73.7	79.4	91.3	76.0	*32.3*
TRIPURA	32.5	42.7	52.7	56.0	75.8	52.8	*43.3*
UTTAR PRADESH	36.1	42.5	52.6	58.7	73.2	56.1	*37.1*
UTTARANCHAL	51.3	66.9	65.2	68.3	76.2	68.7	*25.0*
WEST BENGAL	25.8	38.8	46.6	56.0	74.5	46.4	*48.6*
INDIA	36.5	46.6	54.2	63.4	78.6	58.8	*42.1*

Source: Estimates based on NSS 64th round unit level data

Table A.5: Secondary completion rate for 17-25 years old-2007

STATE	Q1 (Poorest)	Q2	Q3	Q4	Q5 (Richest)	Overall	Wealth Inequality (Q5-Q1)
A & N ISLANDS	10.5	27.8	26.2	39.0	59.1	45.4	*48.6*
ANDHRA PRADESH	27.8	30.5	38.8	49.3	74.7	43.4	*46.8*
ARUNACHAL PRADESH	21.1	23.1	19.1	39.6	44.3	33.0	*23.2*
ASSAM	7.0	20.0	29.5	47.3	62.2	39.9	*55.2*
BIHAR	9.6	15.6	24.1	32.6	53.2	25.3	*43.6*
CHANDIGARH	17.5	14.5	34.2	68.2	86.8	64.0	*69.4*
CHHATTISGARH	15.8	19.3	26.5	34.2	56.8	28.9	*41.0*
D & N HAVELI	26.9	4.6	12.2	17.3	58.5	30.1	*31.6*
DAMAN & DIU	0.0	24.2	79.0	35.8	83.8	67.0	*83.8*
DELHI	23.7	20.6	31.9	39.2	63.2	48.8	*39.4*
GOA	11.6	38.3	24.1	27.9	74.2	49.9	*62.6*
GUJARAT	17.8	26.9	21.0	32.2	47.5	35.3	*29.7*
HARYANA	16.5	19.5	32.7	46.4	66.0	47.8	*49.5*
HIMACHAL PRADESH	54.9	51.1	53.0	68.6	74.7	63.6	*19.8*
JAMMU & KASHMIR	9.4	28.7	25.9	47.8	59.6	49.5	*50.2*
JHARKHAND	20.7	15.4	21.9	29.4	63.4	29.5	*42.8*
KARNATAKA	27.8	34.9	43.6	49.2	71.8	48.4	*44.0*
KERALA	42.8	61.3	62.6	66.7	77.9	67.6	*35.1*
LAKSHADWEEP	0.0	40.0	37.1	35.3	46.4	43.3	*46.4*
MADHYA PRADESH	10.6	17.8	23.5	35.4	60.0	27.5	*49.4*
MAHARASHTRA	32.9	37.4	46.5	55.9	70.8	52.7	*37.8*
MANIPUR	17.7	30.4	35.7	53.1	46.8	43.6	*29.0*
MEGHALAYA	5.3	7.8	14.3	12.4	35.0	21.1	*29.7*
MIZORAM	3.6	0.0	4.4	17.9	53.2	36.7	*49.7*
NAGALAND	39.7	49.0	54.1	56.0	70.2	65.6	*30.5*
ODISHA	9.8	20.9	36.2	44.1	59.3	27.7	*49.5*
PUDUCHERRY	58.9	51.2	51.6	56.3	68.1	58.7	*9.2*
PUNJAB	14.7	25.9	29.2	47.8	66.7	48.6	*52.0*
RAJASTHAN	12.1	14.2	18.5	27.5	42.0	27.2	*29.9*
SIKKIM	27.0	19.8	19.4	24.0	54.8	25.8	*27.8*
TAMIL NADU	32.0	33.5	45.5	55.3	76.3	50.6	*44.4*
TRIPURA	12.0	15.8	24.4	30.6	52.5	26.9	*40.5*
UTTAR PRADESH	18.0	21.0	31.1	37.9	53.9	35.6	*35.9*
UTTARANCHAL	38.5	39.3	35.3	44.5	54.1	44.3	*15.6*
WEST BENGAL	11.1	16.9	23.8	34.2	58.3	26.8	*47.3*
INDIA	19.0	26.2	34.6	43.4	61.4	39.8	*42.4*

Source: Estimates based on NSS 64th round unit level data

Table A.6: Primary completion rate for 12-25 years old-2014

STATE	Q1 (Poorest)	Q2	Q3	Q4	Q5 (Richest)	Overall	Wealth Inequality (Q5-Q1)
A & N ISLANDS	89.4	99.5	97.5	99.3	95.9	96.4	*6.5*
ANDHRA PRADESH	68.8	83.7	90.2	89.0	96.5	86.9	*27.7*
ARUNACHAL PRADESH	85.0	88.5	88.0	94.2	94.1	88.5	*9.1*
ASSAM	81.7	85.7	89.4	94.0	99.2	88.2	*17.5*
BIHAR	50.8	70.3	71.9	81.1	91.9	69.0	*41.0*
CHANDIGARH	100.0	85.8	79.8	92.4	99.4	94.1	*-0.6*
CHHATTISGARH	78.2	86.2	89.6	94.8	97.0	84.8	*18.8*
D & N HAVELI	96.7	83.8	87.6	98.5	100.0	92.6	*3.3*
DAMAN & DIU	99.0	49.1	98.2	41.8	98.3	71.9	*-0.6*
DELHI	75.8	70.4	86.6	91.7	96.6	92.0	*20.8*
GOA	100.0	100.0	100.0	100.0	99.3	99.7	*-0.7*
GUJARAT	72.9	81.1	86.4	88.8	96.6	88.1	*23.7*
HARYANA	67.0	76.7	82.6	90.3	94.6	86.1	*27.6*
HIMACHAL PRADESH	97.1	98.2	98.4	93.4	95.9	96.6	*-1.2*
JAMMU & KASHMIR	83.1	89.7	89.4	87.0	93.8	89.1	*10.8*
JHARKHAND	68.7	76.5	88.8	86.2	90.3	80.7	*21.6*
KARNATAKA	85.7	91.9	91.5	92.8	93.6	91.1	*8.0*
KERALA	94.7	98.6	98.8	99.8	98.7	98.9	*4.1*
LAKSHADWEEP	100.0	76.9	97.3	99.7	100.0	93.4	*0.0*
MADHYA PRADESH	80.3	86.6	85.5	89.9	91.8	85.5	*11.5*
MAHARASHTRA	79.7	89.0	93.0	94.4	95.4	91.6	*15.7*
MANIPUR	88.8	94.6	94.5	96.5	88.6	93.4	*-0.2*
MEGHALAYA	55.2	70.0	80.3	91.1	89.2	81.0	*33.9*
MIZORAM	81.0	73.7	89.2	98.7	98.7	93.0	*17.7*
NAGALAND	95.8	92.6	96.5	94.0	98.8	96.3	*3.0*
ODISHA	78.4	85.5	91.3	97.3	99.3	84.5	*20.9*
PUDUCHERRY	85.1	87.3	100.0	90.6	91.0	92.4	*5.8*
PUNJAB	59.9	82.3	83.1	94.8	95.9	88.7	*36.1*
RAJASTHAN	55.9	70.7	76.4	82.4	90.5	77.9	*34.6*
SIKKIM	76.4	85.7	87.1	87.7	94.4	87.0	*18.0*
TAMIL NADU	89.6	96.2	98.0	98.3	98.8	97.1	*9.3*
TELENGANA	81.4	87.3	94.1	93.6	96.4	91.2	*14.9*
TRIPURA	87.1	94.2	89.6	93.7	90.7	91.1	*3.6*
UTTAR PRADESH	68.0	75.9	79.7	81.2	90.6	78.5	*22.6*
UTTARANCHAL	94.1	97.2	98.0	94.9	99.2	96.4	*5.1*
WEST BENGAL	77.7	85.6	86.7	92.7	97.1	85.7	*19.4*
INDIA	72.5	82.3	85.5	89.0	94.5	84.6	*22.0*

Source: Estimates based on NSS 71st round unit level data

## Table A.7: Upper primary completion rate for 15-25 years old-2014

STATE	Q1 (Poorest)	Q2	Q3	Q4	Q5 (Richest)	Overall	Wealth Inequality (Q5-Q1)
A & N ISLANDS	83.6	95.6	94.3	85.5	87.3	88.6	*3.7*
ANDHRA PRADESH	41.2	62.9	70.5	73.7	88.2	69.0	*47.1*
ARUNACHAL PRADESH	77.1	80.8	82.7	90.2	93.0	82.4	*15.8*
ASSAM	57.8	60.0	76.7	81.2	88.0	69.9	*30.2*
BIHAR	36.5	52.1	57.7	71.3	90.2	55.3	*53.7*
CHANDIGARH	100.0	85.5	72.5	84.3	95.1	89.2	*-4.9*
CHHATTISGARH	61.1	77.5	74.2	79.3	88.6	70.8	*27.5*
D & N HAVELI	84.1	58.6	72.4	89.3	99.8	81.0	*15.6*
DAMAN & DIU	100.0	47.0	86.2	37.6	97.8	72.1	*-2.2*
DELHI	50.0	31.2	65.7	75.1	94.7	80.7	*44.7*
GOA	100.0	100.0	91.2	100.0	99.1	97.7	*-0.9*
GUJARAT	41.4	62.7	70.0	70.6	92.0	72.7	*50.7*
HARYANA	50.8	55.1	66.5	83.5	93.4	75.8	*42.6*
HIMACHAL PRADESH	91.8	83.5	95.7	92.6	92.8	91.9	*1.1*
JAMMU & KASHMIR	68.6	84.7	83.6	83.6	88.8	83.3	*20.2*
JHARKHAND	52.5	62.3	73.1	81.7	89.9	69.0	*37.3*
KARNATAKA	74.8	78.4	78.5	83.9	86.1	79.8	*11.3*
KERALA	84.1	92.9	97.3	99.0	98.0	97.1	*13.9*
LAKSHADWEEP	86.6	62.8	85.4	99.6	100.0	83.5	*13.4*
MADHYA PRADESH	55.5	65.9	64.7	80.9	89.1	67.2	*33.7*
MAHARASHTRA	61.3	78.6	82.0	84.2	94.1	82.1	*32.8*
MANIPUR	79.4	85.9	93.1	92.4	91.8	90.0	*12.5*
MEGHALAYA	41.1	40.4	67.3	75.1	80.3	63.9	*39.2*
MIZORAM	60.7	61.4	72.2	88.1	97.5	84.0	*36.8*
NAGALAND	89.0	87.2	94.6	91.0	90.0	92.1	*1.0*
ODISHA	62.0	71.5	78.6	93.3	98.3	71.1	*36.2*
PUDUCHERRY	68.9	83.8	94.4	86.0	89.4	87.4	*20.5*
PUNJAB	34.3	61.4	67.0	86.0	91.9	77.3	*57.6*
RAJASTHAN	34.5	48.9	62.7	70.8	82.8	64.5	*48.4*
SIKKIM	80.3	66.3	71.2	77.8	85.9	74.5	*5.6*
TAMIL NADU	67.3	88.8	89.6	93.3	96.7	89.6	*29.3*
TELENGANA	67.4	75.1	83.2	85.3	94.8	81.5	*27.4*
TRIPURA	58.9	64.5	77.8	80.5	89.3	73.0	*30.4*
UTTAR PRADESH	52.3	63.5	69.3	75.4	87.2	68.7	*34.8*
UTTARANCHAL	85.7	88.9	88.6	85.2	95.4	87.9	*9.7*
WEST BENGAL	51.7	58.2	67.8	81.9	93.6	65.1	*42.0*
INDIA	53.0	66.0	72.2	79.9	90.9	72.2	*37.9*

Source: Estimates based on NSS 71st round unit level data

Table A.8: Secondary completion rate for 17-25 years old-2014

STATE	Q1 (Poorest)	Q2	Q3	Q4	Q5 (Richest)	Overall	Wealth Inequality (Q5-Q1)
A & N ISLANDS	65.8	78.3	58.4	63.5	78.6	69.1	*12.7*
ANDHRA PRADESH	33.9	47.6	55.6	59.4	80.5	56.0	*46.6*
ARUNACHAL PRADESH	54.9	51.1	66.4	72.7	84.8	61.7	*29.9*
ASSAM	34.6	35.6	57.4	67.0	78.8	49.6	*44.2*
BIHAR	20.8	34.1	42.4	58.9	88.8	40.3	*68.0*
CHANDIGARH	50.0	90.5	48.5	84.1	94.3	82.9	*44.3*
CHHATTISGARH	26.8	49.9	51.3	74.9	75.7	43.4	*49.0*
D & N HAVELI	42.8	31.3	59.1	14.3	90.0	42.5	*47.2*
DAMAN & DIU	26.1	44.6	84.7	18.6	89.3	49.6	*63.2*
DELHI	17.9	23.0	35.4	59.6	92.9	69.5	*75.0*
GOA	100.0	89.2	69.3	82.2	81.8	80.6	*-18.2*
GUJARAT	10.8	37.7	42.8	46.8	78.4	50.0	*67.6*
HARYANA	23.4	38.0	53.5	73.3	84.6	62.9	*61.2*
HIMACHAL PRADESH	89.1	71.9	89.4	84.3	91.9	85.4	*2.8*
JAMMU & KASHMIR	44.4	48.1	56.2	60.2	74.4	58.6	*30.0*
JHARKHAND	22.9	40.7	48.5	61.5	77.3	46.5	*54.5*
KARNATAKA	48.0	61.6	67.4	70.4	82.3	64.7	*34.3*
KERALA	77.8	78.0	90.0	96.0	91.7	90.8	*13.9*
LAKSHADWEEP	60.5	51.1	54.8	76.7	98.5	63.1	*37.9*
MADHYA PRADESH	23.8	31.7	39.4	59.6	73.3	40.2	*49.5*
MAHARASHTRA	36.7	58.4	60.8	69.3	81.5	64.0	*44.7*
MANIPUR	60.6	67.1	78.3	77.0	79.2	74.3	*18.7*
MEGHALAYA	20.2	20.6	36.3	49.6	65.1	39.6	*44.9*
MIZORAM	12.9	16.7	30.1	55.4	74.2	51.1	*61.3*
NAGALAND	54.4	47.5	83.2	80.1	89.9	82.5	*35.5*
ODISHA	29.2	40.6	49.2	85.9	91.3	42.6	*62.2*
PUDUCHERRY	39.1	48.3	72.1	68.8	85.8	70.6	*46.7*
PUNJAB	19.8	40.2	50.1	70.4	86.3	64.2	*66.5*
RAJASTHAN	12.2	18.3	39.3	51.5	67.8	44.1	*55.6*
SIKKIM	48.6	36.1	48.9	47.2	83.4	51.0	*34.8*
TAMIL NADU	33.1	62.9	67.1	83.5	89.3	71.2	*56.2*
TELENGANA	47.9	60.2	75.8	75.4	92.8	71.1	*44.8*
TRIPURA	10.8	27.5	38.8	50.1	61.3	35.7	*50.5*
UTTAR PRADESH	31.3	41.6	50.7	57.2	77.8	50.5	*46.5*
UTTARANCHAL	64.3	72.7	76.4	74.7	76.8	73.2	*12.5*
WEST BENGAL	27.7	34.8	43.1	64.7	85.0	43.4	*57.2*
INDIA	29.5	43.6	52.6	64.2	81.5	53.6	*52.0*

Source: Estimates based on NSS 71st round unit level data
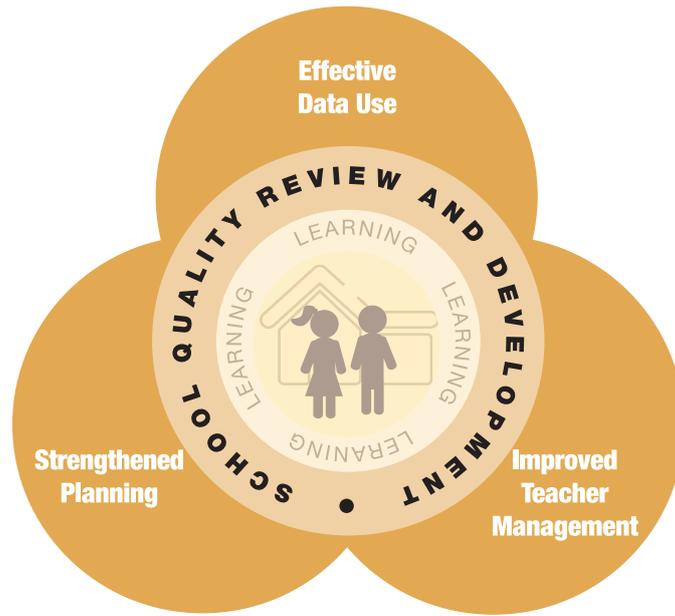
सीप | seep

Secondary Education Enhancement Programme

Contact

Room No. 308 - 313, Central Institute of Educational Technology (CIET), NCERT, Sri Aurobindo Marg, New Delhi -110016 INDIA

+91 11 26569925 | contact@rmsatca.org | www.rmsaindia.org/rmsatca

UK**aid**
from the British people