Educational Attainment in India: What Drives Transition?

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Abstract

In this paper, using data from the 61st round of the (Indian) National Sample Survey, we examine the relative impacts of personal-household and state-level characteristics (including government action) on the likelihood of transition from one educational level to the next. Our analysis suggests that the most important factors driving these transition likelihoods are personal and household characteristics like gender and education of household heads. However, state-level characteristics and government actions have a significant impact on these transition likelihoods as well, especially for transitions from the lowest levels of education to somewhat higher levels. The odds of making the transition to higher education, especially tertiary education, are systematically lower for women than for men, for individuals in rural areas than those in urban areas, and for Muslims than for Hindus. An important conclusion of our analysis is that location matters and there is significant scope for government action to address educational gaps between various demographic and other groups in the country.

1. Introduction

Education, which is an investment in human capital, plays a critical role in shaping a country's economic future. To begin with, there is a broad consensus about the positive impact of the stock of human capital on a country's growth rate (Barro, 1991; Mankiw,

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Romer and Weil, 1992). It is also generally accepted that there are positive and significant returns to education, and that differences in education can explain a significant proportion of earnings differences between various socio-economic groups (Bhaumik and Chakrabarty, 2009a, 2009b) and indeed between labourers in different countries (Gregorio and Lee, 2002; Bargain *et al*, 2009). There is also some evidence to suggest that (unsurprisingly) the returns to investment in education are higher for people from the more disadvantaged socio-economic classes (Krueger and Lindahl, 2001). Provision of education, therefore, remains a key pillar of policymaking.

However, policies that emphasise removal of supply side constraints for spread of education do not necessarily succeed in ensuring that their stated objectives are met. Dropout rates are high in most developing countries. Even in many developed countries, a relatively small proportion of the population receives university education. Further, enrolment and dropout rates vary significantly between genders and across socioeconomic groups (Bhalotra and Zamora, 2009). Formulating policies that aim to deliver more than literacy—skills that require completion of high school or even university education—to a significant proportion of the population, therefore, requires an understanding of the factors that influence individual choice of education levels. The aim of this paper is to make a contribution towards that policy discussion by examining the impact of individual and household characteristics as well as government action on educational attainment in India.

It is well understood that the educational attainment of individuals depends significantly on personal characteristics and family backgrounds (Lave, Cole and Sharp, 1981; Teachman, 1987; Lauer, 2003). In particular, it depends on the educational background of the individual's parents and on the permanent income of the household (Tansel, 1997, 2002). Other studies have emphasised the importance of mother's education, the differences in the impact of the father's and the mother's education, and factors like nutrition that are related to a household's economic status (Zhao and Glewwe, in press; Maitra and Sharma, 2010). There is some evidence to suggest that the importance of family background on the educational attainment of individuals in developing countries is fairly stable over time (Smith and Cheung, 1986). Religion and ethnicity can also play an important role in determining an individual's educational attainment, with some people from some religious and ethnic backgrounds having a greater statistical likelihood of higher educational attainment than others (Sander, 2009, in press). In part, this could be on account of inter-group differences in the impact of parental education on educational attainment (Gang and Zimmerman, 2000). Educational attainment is also affected by factors that influence an individual's demand for education, as students respond to economic incentives in making education choices (Wilson, 2001).

The evidence about the impact of government action on educational attainment is much more ambiguous, especially in the context of developing countries. There is evidence to suggest that government policies, in part in the form of greater educational spending, can have a positive impact on the educational attainment of a population (King and Lillard, 1987; Gupta, Verhoeven and Tiongson, 2002). But the impact of government spending varies across countries (Gupta and Verhoeven, 2001). Further, analyses using individual level data demonstrate that once factors like ability (which, in turn, may be influenced by family background) are controlled, school characteristics like teacher-student ratio that can be influenced by government action no longer have any impact on educational attainment (Dearden, Ferri and Meghir, 2002).

We examine the relative importance of family background (encompassing both individual and household characteristics) and location and especially government action on educational attainment in India. Specifically, we use the 61st round of the National Sample Survey (NSS) data for 2005 to examine the impact of these individual, household and regional characteristics influenced by government policies and government action on the likelihood of transition across educational levels (primary, middle, higher secondary and tertiary). In the light of the evidence about significant differences in the educational attainments of Hindus and Muslims in India (Bhaumik and Chakrabarty, 2009a, 2009b), we separately estimate the impact of these variables on the educational attainments of these two religious groups. Our results suggest that state-level characteristics like per capita NDP and the structure of a state's economy do influence the likelihood of transition from any level of education to the next (or higher) level. Government policies (captured by per capita government expenditure on education) matter as well. However, while public spending on education has a positive impact on transition probabilities for lower levels of education, they do not have any impact on the likelihood of transition from high school to tertiary education.

The rest of the paper is structured as follows: In Section 2, we discuss the data and highlight some interesting patterns. The econometric methodology is discussed in Section 3. In Section 4, we report and discuss the implications of our regression results. Finally, Section 5 concludes.

2. Data

For our analysis, we use individual level data from the 61st round of the NSS. We concentrate on individuals in the 25-30 age group. The lower limit for age is chosen on the basis of the reasonable assumption that, with very few exceptions, an individual takes all her decisions about education (e.g., whether or not to enrol in a college or university) by the age of 25. The upper age limit is influenced by the availability of data. As we shall see later, we argue that an individual's

We use the 61st round of the National Sample Survey data for 2005 to examine the impact of these individual, household and regional characteristics influenced by government policies and government action on the likelihood of transition across educational levels.

All the individuals in our sample made their educational decisions in the era of economic liberalisation in India, which started in the mid-eighties thereby making our analysis relevant in the current context of a liberalised economy.

decision to move from the kth education level to the $(k+1)^{th}$ education level is influenced by the economic conditions prevailing at the time at which the decision is taken. For example, the decision to enrol in a middle school after the completion of primary education is made at the age of 10 such that for an individual who was 30 years old in 2005, the year in which that decision was made was 1985. We were able to obtain appropriate data on the economic conditions prevailing in different states in India going back to the late eighties, particularly the detailed break-up of state government's budgets, and this, in turn, determined the upper limit of the age cohort for our analysis. We do not, however, consider this data limitation to be a disadvantage. On account of these limits, all the individuals in our sample made their educational decisions in the era of economic liberalisation in India, which started in the mid-eighties (Rodrik and Subramanian, 2004), thereby making our analysis relevant in the current context of a liberalised economy.

We concentrate on individuals from 12 states that account for 87 per cent of the country's population and over 85 per cent of its GDP. We leave the North Eastern states and Jammu and Kashmir out of our sample because political uncertainties and insurgencies in these states may have impacted decisions about educational attainment in ways that would be difficult to model empirically. Further, we combine states like Jharkhand and Bihar that were a combined political entity in the early nineties. This aggregation was necessitated by the fact that individual and household level data from 2005 had to be matched with state level data from the late eighties and the nineties, when these states were unified political entities, which implies that the total number of states is 15.

FIGURE 1
Percentage Distribution of Hindus, Muslims and Overall Sample across Four Educational Categories
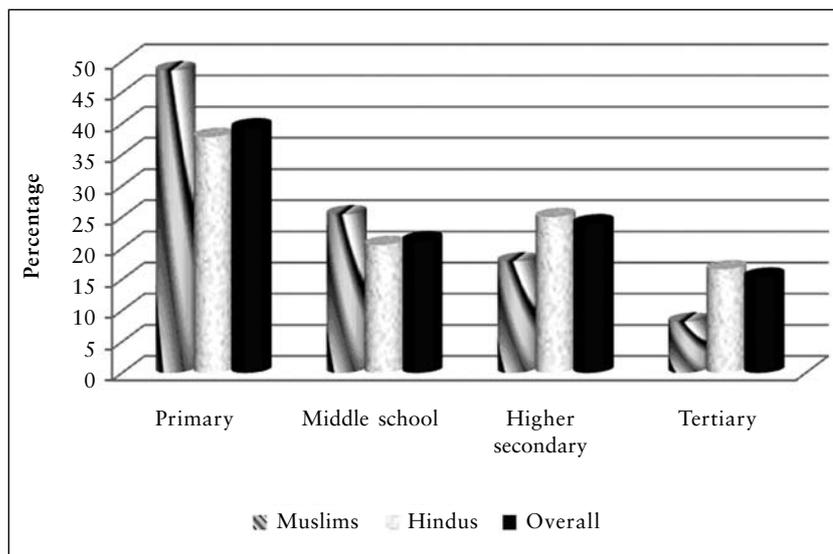
Our final sample has 14,332 observations, of which 12,283 are Hindus and 2,049 Muslims. In keeping with earlier literature on India that also used NSS data (Bhaumik and Chakrabarty, 2009a, 2009b), we distinguish between four levels of educational attainment: primary, middle school, higher secondary (i.e., high school graduation), and tertiary (graduates and above). The distribution of Hindus and Muslims (and the overall sample) across the four educational levels is reported in *Figure 1*. As highlighted in previous studies, while the overall distribution is skewed in favour of lower levels of education, with primary and middle school education accounting for 60.59 per cent of the sample, the distribution is more skewed for Muslims (73.94 per cent) than for Hindus (58.37 per cent). The advantage of Hindus is particularly high for tertiary education; 16.63 per cent of the Hindu individuals in our sample have tertiary education, which is double the proportion of the Muslims (8.2 per cent).

Since the aim of this analysis is to examine the relative importance of family background and government policies in determining educational attainment, it would be important to have a significant variation in the characteristics of the states included in the sample. We distinguish between two sets of government policies, the "flow" and the "stock". We take into consideration the contemporaneous education policy of the government as captured by the per capita government expenditure on education. We also take into consideration the economic status of each state—as reflected by its development status (per capita state real NDP), and dependence on agriculture (contribution of agriculture to state GDP)—that is an outcome of the policies pursued over a number of years. While these factors affected the decisions taken by the individuals in our sample in the late eighties and nineties, in order to provide a snapshot of inter-state variations in these factors, in *Figure 2* we report the average values of the underlying variables for the 1985–1998 period, whose relevance would be evident shortly. The diversity of the states is apparent from *Figure 2*.

If government policies, whether directly related to education or affecting the behaviour of economic agents by way of environmental factors like the level of development, do have a significant impact on educational attainment, we should expect a significant variation in the aggregate levels of educational attainment across the states. In *Figure 3*, we report the differences in the educational attainment of individuals in our sample across the 12 states. It can be seen that while in each state the share of primary and middle school education exceeds the share of higher/tertiary education by a substantial margin, there are nevertheless significant variations across the states.

Education attainment not only varies across states, but locations within states—broadly divided into urban and rural locations—also matter significantly. In *Figures 4A* and *4B*, we report the distribution in individuals with middle school education and

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FIGURE 2
Distribution of State-level Determinants of Educational Attainment
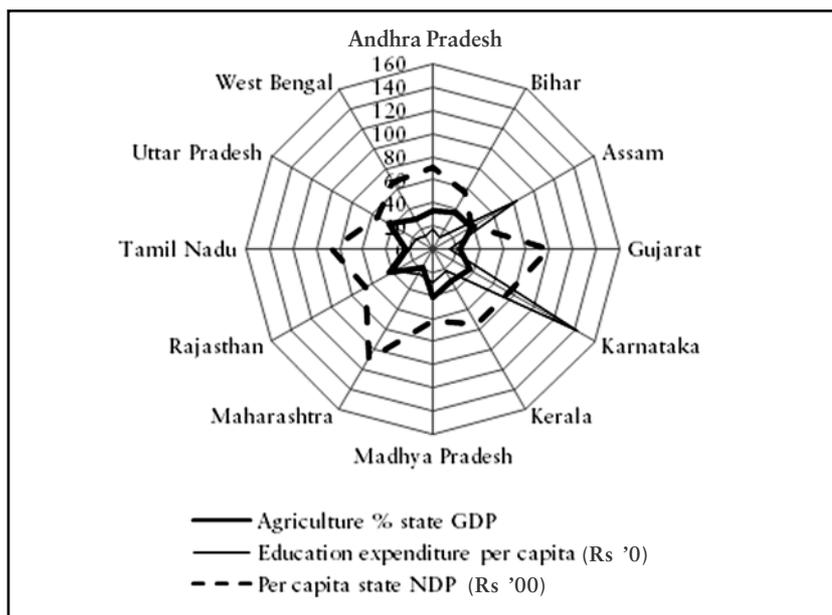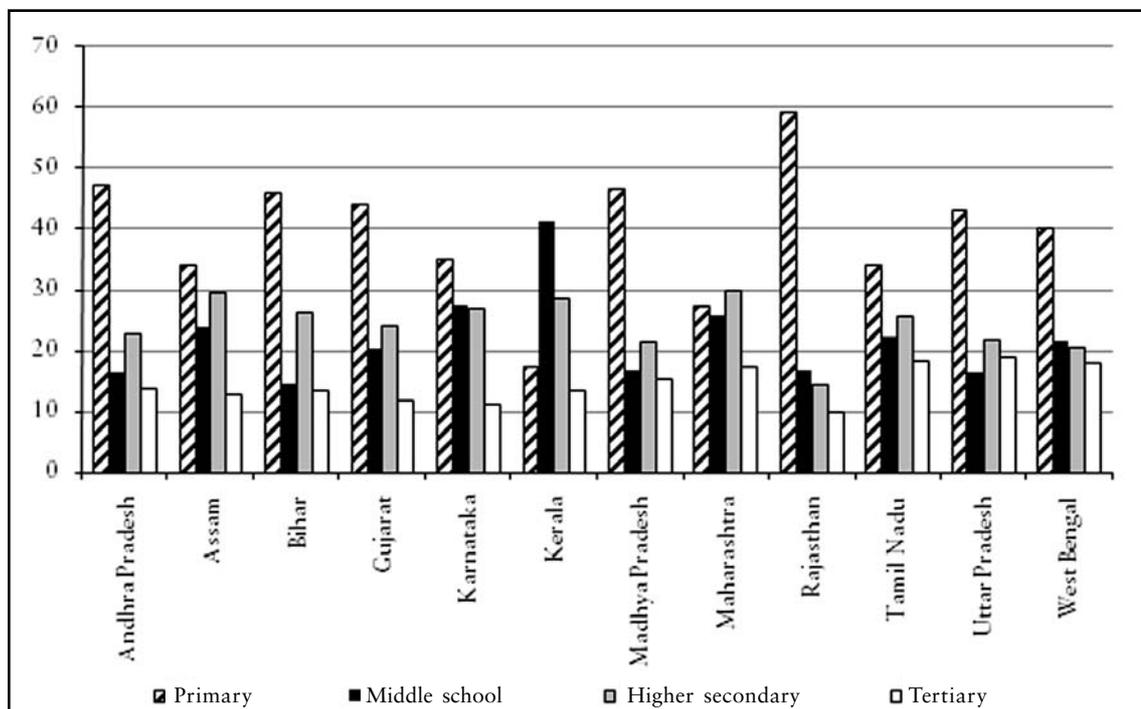(Average for 1985-98)

FIGURE 3
Percentage Distribution of Overall Sample across Four Educational Categories, for 12 States
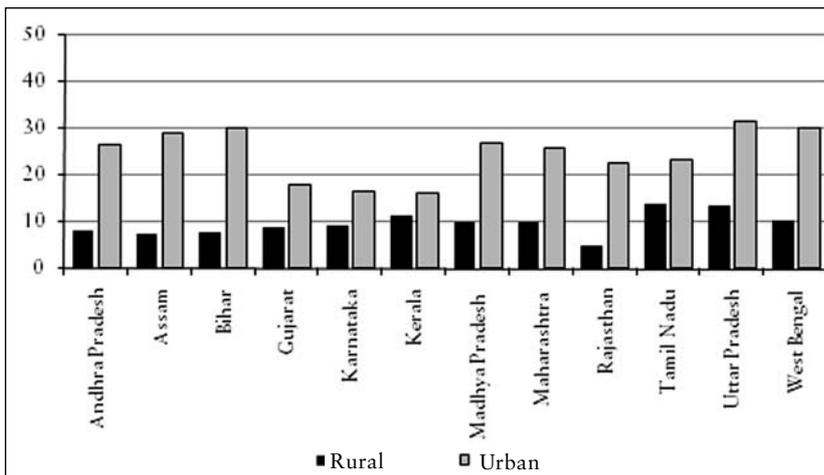
tertiary education across states, divided into rural and urban locations. It can be seen that for lower levels of educational attainment, urban locations do not have a significant advantage over rural locations in any of the states. However, for higher/tertiary education, the advantage of urban locations is significant.

The above discussion suggests that there is considerable variation in educational attainment across the Indian states, and there are also considerable variations in the educational policies of governments and other local conditions (that are affected by the

FIGURE 4A
Percentage Distribution of People with Middle School Education across Rural and Urban Areas, for 12 States
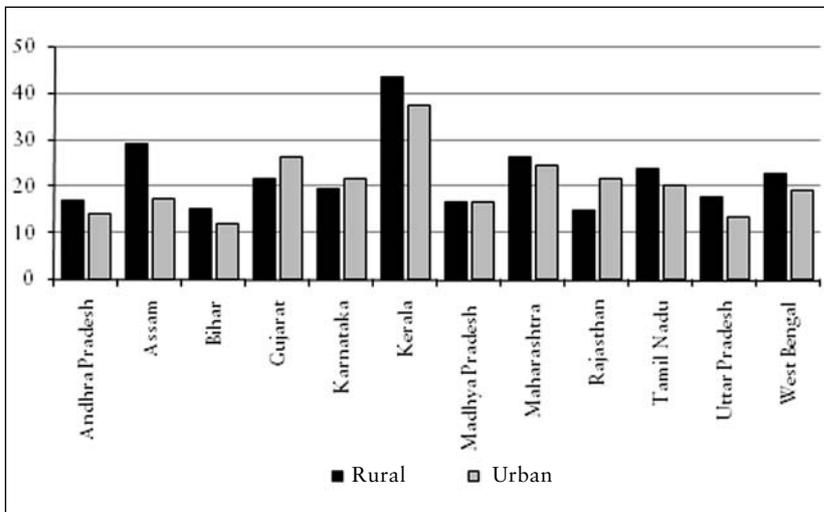
FIGURE 4B
Percentage Distribution of People with Tertiary Education across Rural and Urban Areas, for 12 States

It can be seen that for lower levels of educational attainment, urban locations do not have a significant advantage over rural locations in any of the states. However, for higher/tertiary education, the advantage of urban locations is significant.

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"stock" of government policies) that can affect an individual's demand for education. Taken together, there is perhaps *prima facie* evidence that government policies, whether about education itself or about the economics of the states in general, might have an impact on educational attainment. However, there is also evidence to suggest that factors like religion might influence an individual's educational attainment, and we have not yet looked at factors like parental education. Hence, at this stage, it is not possible to make a conjecture about the relative importance of family background and government policies-local economic conditions in determining educational attainment. We examine this more rigorously in the rest of this paper.

3. Methodology and Specification

In contrast to the section of the literature that uses ordered probit to model the educational attainment of individuals, we view progression through educational levels as a sequential process in which attaining each level of education is conditional on not exiting the process after completing the previous level of education. This view is consistent with the observation that children can (and indeed do) drop out of schools after completing some years of education, and that not all high school graduates continue into tertiary education. While there is a well-defined order in education—tertiary education is higher than high school education, for example—the sequence and the risk of not making the transition from one level of education to the next cannot be ignored.
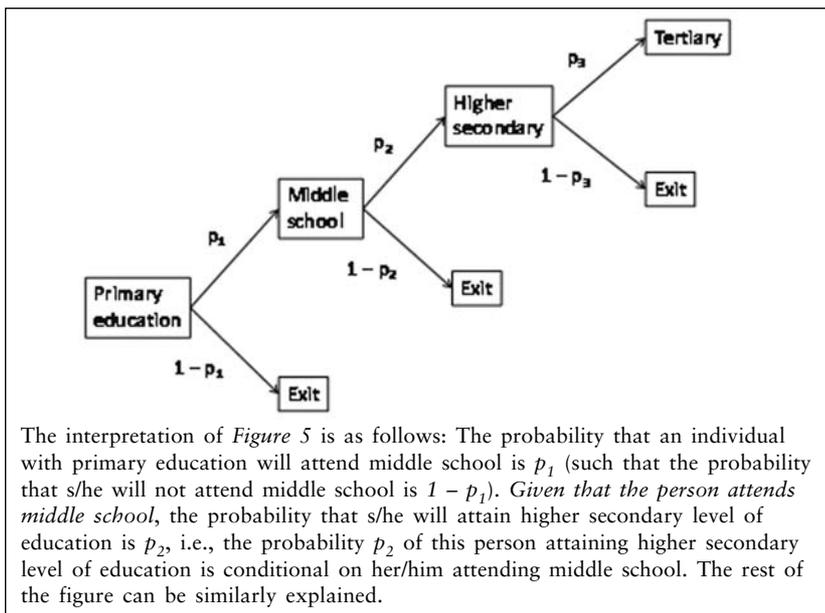
Following Buis (2009) and Pal (2004), therefore, we model educational attainment in India using a sequential logit model. As mentioned above, in the light of data availability and also past literature on the impact of education on earnings in India (Bhaumik and Chakrabarty, 2009a, 2009b), we construct four levels of educational attainment, namely, primary, middle school, higher secondary (or high school graduation) and tertiary. Given these levels of education, we construct a sequence structure that is depicted in *Figure 5*.

After completing any level of education k, an individual i has the option to continue to the next level of education with probability p_{ki} or exit with probability $(1 - p_{ki})$. The use of the sequential logit model yields estimates of these transitional probabilities p_{ki} that are given by

$$\hat{p}_{ki} = \frac{\exp\left(\alpha_k + \sum_m \beta_{km} x_m + \sum_n \lambda_{kn} z_n\right)}{1 + \exp\left(\alpha_k + \sum_m \beta_{km} x_m + \sum_n \lambda_{kn} z_n\right)}, \text{ if } p_{k-1,i} = 1$$

We model the transition probability as a function of m individual and household characteristics (x) and n other variables that capture the government's educational policy of the individual's state of

FIGURE 5
Sequential Nature of Educational Attainment

The interpretation of *Figure 5* is as follows: The probability that an individual with primary education will attend middle school is p_1 (such that the probability that s/he will not attend middle school is $1 - p_1$). *Given that the person attends middle school*, the probability that s/he will attain higher secondary level of education is p_2, i.e., the probability p_2 of this person attaining higher secondary level of education is conditional on her/him attending middle school. The rest of the figure can be similarly explained.

residence and the economic environment in the state in general. Starting from an educational level *l*, an individual's probability of reaching a higher education level *L* is, therefore, given by $\prod_{k=l}^{L} p_k$.

TABLE 1	
List and Description of Variables used for the Analysis	
Variable	*Measurement*
Dependent variable	Education = 1: primary or below-primary (up to class 5); Education = 2: middle (up to class 8); Education = 3: (higher) secondary (up to class 12); Education = 4: undergraduate and above
Personal and household characteristics	
Gender	Dummy variable = 1 for female (7,588 males and 6,744 females)
Household per capita consumption	Mean = INR 687.67
Education of household head	Categorical variable with 1 indicating illiteracy and 13 indicating postgraduate education
Location	Dummy variable = 1 for rural
Government action and economic environment	
Per capita state NDP	Data obtained from the EPW Research Foundation and measured in Indian rupees (INR) in 1980–81 prices
Agriculture % of state GDP	Data provided by the EPW Research Foundation
Education expenditure per capita	Education expenditure data obtained from state government budget documents

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The choice and measurement of household characteristics and the policy-environmental variables are highlighted in *Table 1*. Our measures of personal and household characteristics are easily understood. These measures are contemporaneous, i.e., of 2005. Some of these characteristics (e.g., gender) are invariant over time. Others like a household's socio-economic status, measured by per capita household consumption, can, in principle, change over time. But it is possible to make the reasonable assumption that in a developing country like India current socio-economic status is strongly correlated with past socio-economic status such that, at the very least, the relative positions of households in the distribution do not change substantially over time.

The variables capturing state-level characteristics and government policies, however, do not have contemporaneous measure. Consider, for example, an individual who is 25 in 2005. If s/he took the decision to make (or not make) the transition from middle school to (higher) secondary education at the age of 14, her/his decision would have been influenced by state-level characteristics and government action *at that point in time*, i.e., in 1994. For the same transition, the relevant year for an individual who is 30 years old in 2005 is 1989. It is easy to see how the values for the state-level variables were chosen for the analysis. Given the age range of 25–30 for our sample of individuals, and given that the transitions range from "primary to middle school" to "higher secondary to tertiary", the values of the state-level characteristics and proxies for government policies were chosen from the 1985–1998 period.

4. Regression Results and Discussion

The regression estimates are reported in *Tables 2* (for Hindus) and *3* (for Muslims). Each of these tables has three panels. Panel A reports the odds ratios for logit regressions for moving from the primary education to any of the higher levels of education.[1] Panel B reports the odds ratios for moving from middle school to higher secondary or tertiary education. Finally, Panel C reports the estimated odds ratios for moving from higher secondary to tertiary education. In both the tables, for each of these panels, most of the estimated odds ratios are significant at the 5 per cent or 1 per cent level. The likelihood ratio chi-square statistics for the regression models are also significant at the 1 per cent level. Hence, we are fairly confident that our specification explains variations in the educational attainment in the data reasonably well, for both the Hindu and Muslim sub-samples.

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[1] The interpretation of odds ratios is as follows: If an odds ratio is greater than one then the relevant characteristic of the individual or the household increases the likelihood of transitioning from one education level to the next, and *vice versa*. An odds ratio of one indicates that the individual or household characteristic does not have any impact on the likelihood of transition.

TABLE 2
Regression Estimates of Sequential Logit Model For Hindus

Log-odd ratios	Transition 1 Panel A	Transition 2 Panel B	Transition 3 Panel C
Personal and household characteristics			
Gender (female = 1)	0.349*** (−12.99)	0.605*** (−6.14)	0.890* (−1.83)
Household per capita consumption	1.001*** (5.80)	1.001*** (7.85)	1.001*** (7.08)
Education of household head	1.250*** (14.99)	1.176*** (12.39)	1.149*** (12.78)
Government action and economic environment			
Per capita state GDP	1.004*** (43.97)	1.003*** (34.97)	1.000 (−0.43)
Agriculture % of state GDP	0.504*** (−28.51)	0.607*** (−19.12)	0.995 (−0.33)
Education expenditure per capita	1.200*** (17.27)	1.020*** (7.94)	0.998 (−0.53)
Location			
Rural household	0.648*** (−4.68)	0.688*** (−4.33)	0.644*** (−6.71)
State Dummies	Significant	Significant	Not all significant

Regression statistics

Log likelihood = −7317.696

LR chi-square = 2361.97

Sample size = 12283

The odds ratios indicate that, for Hindus, the likelihood of transitioning to a higher level of education is lower for women, people in rural households and households residing in states in which agriculture is a dominant economic sector. The likelihood of transition is higher for people from richer households, and households in which earlier generations (the proxy for which is the household head) are educated. State characteristics such as per capita state NDP and education expenditure per capita have an impact on the likelihood of transition from primary to middle school, and from middle school to higher secondary—the transition likelihood is higher in richer states and in states that spend more on education per capita—but not on the likelihood of transition from higher secondary to tertiary.

Notes: (1) Transition 1 is from primary to middle school or higher; Transition 2 is from middle school to higher secondary or tertiary; Transition 3 is from higher secondary to tertiary. (2) Values within parentheses are Z values. (3) ***, ** and * indicate significance at the 1, 5 and 10 per cent levels, respectively.

The coefficient estimates for the Hindu individuals (*Table 2*) suggest that the transition to a higher level of education is affected both by household characteristics (or family background) and by government action and the economic environment prevailing in the state at the time of the relevant decision. Both the educational attainment of the household head and the socioeconomic status of the household (as reflected in the per capita consumption of the household) have a

The odds ratios associated with education of the household head and education expenditure (of state government) per capita are very similar for the Hindus and Muslims in our sample, indicating that they are similarly affected by parental characteristics and by state education policies.

significant and positive impact on the likelihood of transition at each level of an individual's educational attainment. Though the effect of household per capita consumption expenditure remains the same across the three stages of transition, the impact of the household head's education is more profound in the first stage. In most cases, being a woman reduces the likelihood of transition to the next level of educational attainment. However, once an individual already attains higher secondary level of education, while being a woman though continues to decrease the likelihood of transition to tertiary education, this impact is only marginally significant. This suggests that Hindu women in India generally tend to drop out of education early in life.

Government action and the economic environment have a significant impact on the likelihood of transition as well. Both per capita government expenditure on education and the level of development in the state (as captured by per capita state NDP) have a positive impact on the likelihood of transition to middle school and higher secondary levels of education. However, neither the level of development nor per capita government expenditure on education influences the transition to tertiary education. Not surprisingly, the likelihood of transition to higher levels of education decreases with the contribution of agriculture to the state's GDP, suggesting that educational transition might be affected by availability of job opportunities that require higher levels of education. Finally, unsurprisingly, residence in rural areas has a significant negative impact on the likelihood of transition at all levels of educational attainment.

The regression results for Muslims (*Table 3*) are similar in most respects, but there are also some differences. Once again, the education level of the household head and the socio-economic status of the household (captured by per capita consumption) have positive and significant impact on an individual's transition likelihood at each level of educational attainment. Being a woman reduces the likelihood of transition from primary to middle school and from higher secondary to the tertiary level of education, but has no impact on the transition likelihood from middle school to higher secondary level of education. By contrast, the transition likelihood from middle school to higher secondary level of education is lower for rural households, but rural location does not affect the transition likelihood from primary to middle school, and from higher secondary to tertiary education. Importantly, the odds ratios associated with education of the household head and education expenditure (of state government) per capita are very similar for the Hindus and Muslims in our sample, indicating that they are similarly affected by parental characteristics and by state education policies.

Next, we compute the overall transition probabilities—probabilities as opposed to odds ratios—by religion, gender and (rural/urban) location. They are reported in *Table 4* and, in effect, are a reality check for our regression results. The probabilities are consistent

TABLE 3
Regression Estimates of Sequential Logit Model for Muslims

Log-odd ratios	Transition 1 Panel A	Transition 2 Panel B	Transition 3 Panel C
Personal and household characteristics			
Gender (female = 1)	0.510*** (−3.46)	0.748 (−1.34)	0.616** (−2.17)
Household per capita consumption	1.001** (1.99)	1.002*** (5.10)	1.001*** (4.33)
Education of household head	1.276*** (6.79)	1.118*** (3.21)	1.148*** (3.79)
Government action and economic environment			
Per capita state GDP	1.005*** (16.98)	1.002*** (12.31)	1.000 (-0.79)
Agriculture % of state GDP	0.577*** (-8.05)	0.517*** (-7.65)	0.930 (-1.25)
Education expenditure per capita	1.231*** (7.17)	1.036*** (4.74)	1.003 (0.30)
Location			
Rural household	1.049 (0.23)	0.483*** (-3.02)	0.711 (-1.38)
State Dummies	Significant	Significant	Not all significant

Regression statistics

Log likelihood = −986.168; LR chi-square = 387.34; Sample size = 2049

The odds ratios indicate that in most respects the likelihood of transition to higher education levels for Muslims is affected by individual, household and locational characteristics in the same way that the transition characteristics for Hindus are affected by these factors. Once again, the likelihood of moving up the education ladder is lower for women and people belonging to rural households, and higher for people belonging to richer and more educated households. Similarly, the transition likelihood is lower in states in which agriculture dominates as an economic activity, and is higher in more developed states and in states that spend more on education per capita.

Notes: (1) Transition 1 is from primary to middle school or higher; Transition 2 is from middle school to higher secondary or tertiary; Transition 3 is from higher secondary to tertiary. (2) Values within parentheses are Z values. (3) ***, ** and * indicate significance at the 1, 5 and 10 per cent levels, respectively.

TABLE 4
Transition Probabilities of Hindus and Muslims, by Gender and Rural-Urban Location

	Hindu				Muslim			
	Male		Female		Male		Female	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Primary to middle school or higher	0.81	0.65	0.72	0.43	0.61	0.54	0.52	0.40
Middle school to higher secondary or tertiary	0.60	0.44	0.55	0.26	0.36	0.25	0.31	0.18
Higher secondary to tertiary	0.45	0.27	0.41	0.24	0.30	0.22	0.21	0.15

The probability for transition is higher at lower levels of education attainment than at higher levels. Even in the best of cases—for a Hindu male residing in an urban area—the probability of transition from higher secondary to tertiary education is 0.45, around half the transition probability from primary to a higher level of education.

with our expectations. First, the probability for transition is higher at lower levels of education attainment than at higher levels. Even in the best of cases—for a Hindu male residing in an urban area—the probability of transition from higher secondary to tertiary education is 0.45, around half the transition probability from primary to a higher level of education. The odds worsen even more rapidly for Muslims, women and residents of rural areas. Second, transition probabilities are uniformly lower for females and members of rural households. This is evident from a cursory comparison of the "urban" and "rural" columns for any given religious group and gender, and the "male" and "female" columns of any given religious group and location. Finally, transition probabilities are also uniformly lower for Muslims relative to their Hindu counterparts. Importantly, while this is true for both men and women, the difference is starker for women than for men. For example, for Hindu women in urban areas, the transition probability from primary to a higher level of education (0.72) is about 40 per cent higher than the corresponding probability for an urban Muslim woman (0.52). The extent of this gap is even greater (about 100 per cent) for the transition probability from higher secondary to tertiary education; 0.41 for the urban Hindu woman and 0.21 for her Muslim counterpart.

　　Finally, we revisit the question as to whether government action has a role to play in enhancing educational attainment, or whether much of it is determined by family background or household characteristics. We have already seen from the regression estimates that government policies—whether contemporaneous education policy or the

FIGURE 6A
Impact of Household Head's Education on Educational Attainment of Rural Women, at the Average Education Levels of Heads of Hindu and Muslim Households
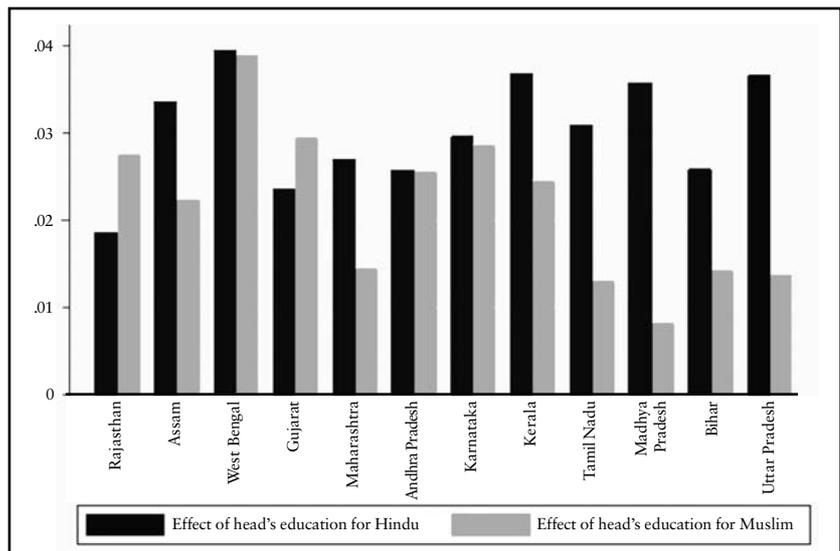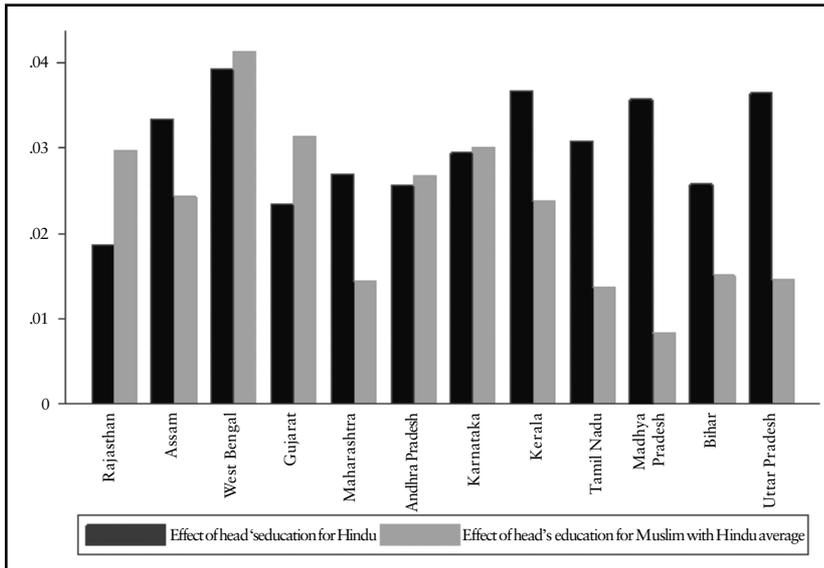
FIGURE 6B
Impact of Household Head's Education on Educational Attainment of Rural Women, when Muslim Household Heads have Same Education Level as their Hindu Counterparts

Legend: ■ Effect of head's education for Hindu ■ Effect of head's education for Muslim with Hindu average

cumulative impact of economic policy reflected in the level of development of the state—have at least as much impact on educational attainment as household characteristics like education of household head and per capita consumption. In the light of our discussion about the differences in the transition probabilities of Muslim women relative to their Hindu counterparts, we now focus on the importance of a key household characteristic—education of the household head—which is believed to have a very significant influence on the educational attainment of the household members. In *Figure 6A*, for each state, we report the impact of the household head's education on the educational attainment of rural women, at the average education levels of heads of Hindu and Muslim households. In *Figure 6B*, we recomputed this impact, after endowing heads of Muslim households with the average education level of their Hindu counterparts. We also present the above comparison for the urban female population in *Figures 7A* and *7B*. We can see that while this bridges the gap between the educational attainment of Hindu and Muslim women particularly in urban areas, a large part of the gap remains open. In other words, household characteristics in general and the family's educational background in particular do not explain the lion's share of the inter-personal variation in educational attainment (nor the difference in the educational attainment of Hindus and Muslims), leaving scope for appropriate government action (whether targeted directly at education or at the economic environment in general) to make an impact.

FIGURE 7A
Impact of Household Head's Education on Educational Attainment of Urban
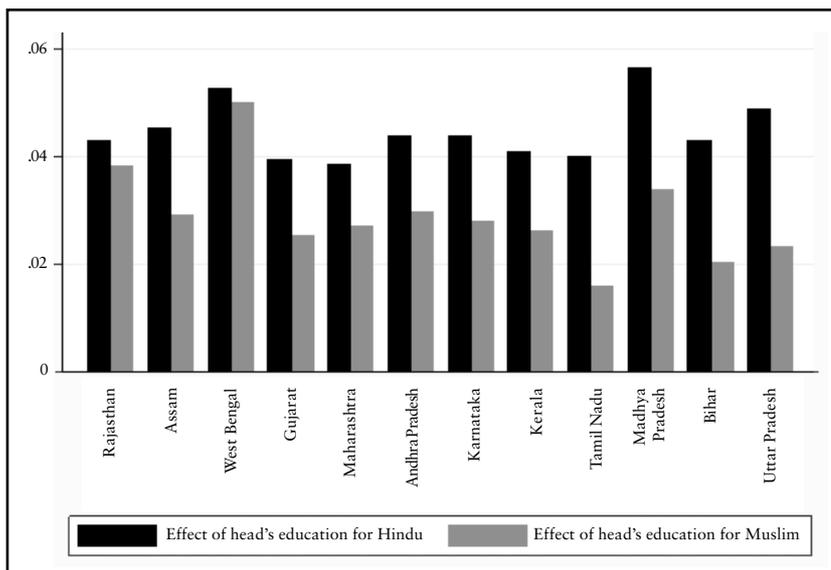Women, at Average Education Levels of Heads of Hindu and Muslim Households

Effect of head's education for Hindu   Effect of head's education for Muslim

FIGURE 7B
Impact of Household Head's Education on Educational Attainment of Urban
Women, when Muslim Household Heads have Same Education Level as their
Hindu Counterparts

Effect of head's education for Hindu   Effect of head's education for Muslim with Hindu average
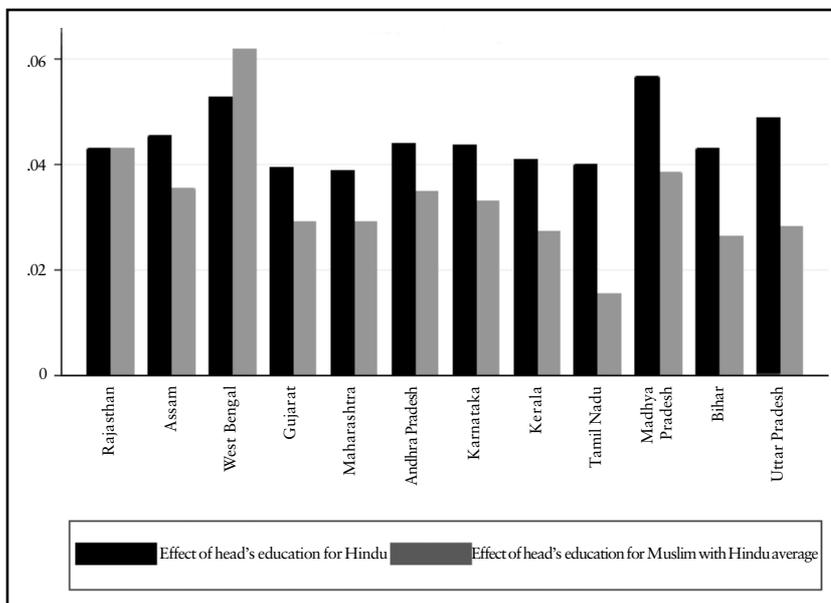
5. Conclusion

The education policies of governments should ideally take into account not just supply side failures, but also individual, household and state-level characteristics that might influence an individual's decision to continue with formal education. Mindful of this proposition, in this paper, we examine the relative impacts of personal-household and state-level characteristics (including government action) on the likelihood of transition from one educational level to the next. We undertake the analysis separately for Hindus and Muslims. Our analysis suggests that the most important factors driving these transition likelihoods are personal and household characteristics like gender and education of heads of household. However, state-level characteristics and government policies have a significant impact on these transition likelihoods as well, especially for transitions from the lowest levels of education to somewhat higher levels. The odds of making the transition to higher education, especially tertiary education, are systematically lower for women than for men, for individuals in rural areas than those in urban areas, and for Muslims than for Hindus. These results are consistent with the existing literature on gender gaps and gaps between Hindus and Muslims with respect to educational attainment. An important conclusion of our analysis is that there is significant scope for government action to address educational gaps between various demographic and other groups in the country.

An important conclusion of our analysis is that there is significant scope for government action to address educational gaps between various demographic and other groups in the country.

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