WP-2016-030

Household Expenditure on Higher Education in India: What do we know & What do recent data have to say?

S Chandrasekhar, P. Geetha Rani, Soham Sahoo

Indira Gandhi Institute of Development Research, Mumbai
December 2016

Household Expenditure on Higher Education in India: What do we know & What do recent data have to say?

S Chandrasekhar, P. Geetha Rani, Soham Sahoo

Email(corresponding author): chandra@igidr.ac.in

Abstract

We analyse data from two recent NSSO surveys to provide estimates of expenditure on higher education and loans availed for higher education. The average share of expenditure on higher education out of total household expenditure is 15.3 per cent and 18.4 per cent for rural and urban households who participate in higher education. This average is higher in the southern states since individuals from these states are more likely to be enrolled in private unaided institutions where fees are higher and are more likely to be pursuing technical education. For reasons similar to mentioned above, individuals from southern states are more likely to have outstanding borrowings for education. At the all India level, poorer households are less likely to borrow possibly because they are risk averse and uncertain about future returns. We do however find that individuals from lower quintiles of the distribution of consumption expenditure are more likely to get fee subsidies or scholarships, indicating that such schemes reach their intended beneficiaries. One metric that should be tracked at the policy level is the reliance on non-institutional source of finance and in particular money lender. In conclusion, we also highlight the need for additional research on the relative importance of credit constraints vis a vis employability in the decision to pursue higher education.

Keywords: Higher Education, Expenditure, Borrowing, India

JEL Code: I2, I23

Acknowledgements:

We are grateful to Anuja Jayaraman, Sumit Mishra and Andaleeb Rahman for useful discussions and comments on earlier draft of the paper.

Household Expenditure on Higher Education in India: What do we know & What do recent data have to say?

S Chandrasekhar

Indira Gandhi Institute of Development Research Mumbai

chandra@igidr.ac.in

P. Geetha Rani

Department of Economics, Central University of Tamil Nadu, Thiruvarur

geethselva@gmail.com

Soham Sahoo

University of Goettingen, Germany

ssahoo@uni-goettingen.de

1. Introduction

Public and private investments in higher education have positive implications for economic growth. Based on an analysis of data from India over the period 1961-2001, Castelló-Climent and Mukhopadhyay (2013) find "a strong and significant effect on growth of a greater share of population completing tertiary education. …. a one per cent change in tertiary education has the same effect on growth as a 13% decrease in illiteracy rates" (p.303). Recent estimates suggest that the private returns to education in India indeed rise with the level of education, and it is highest for tertiary education. Agrawal (2014) estimates the marginal rates of return to primary, middle, secondary, higher secondary and graduate levels to be 5.5 per cent, 6.2 per cent, 11.4 per cent, 12.2 per cent and 15.9 per cent respectively. Returns are highest for graduate levels in both rural and urban India. He also finds that the return to vocational education is higher than general secondary education[1].

If higher education fosters growth and returns to education indeed increase, the logical question that follows is why India has not managed to substantially increase the proportion of individuals getting a college degree or a post graduate degree[2]. There are two competing explanations. The first pertains to the opportunity cost of time and credit constraints faced by households. In order to ensure that credit constraints do not deter individuals from investing in pursuing higher education, developed and developing countries, including India, have taken measures on the supply side to ensure availability of credit to individuals pursuing vocational education and tertiary education. The second explanation is that individuals would not invest in higher education, even if credit and interest rate subsidies were available, if a college degree did not translate into employability. Two key statistics from Census of India 2011 data sum up the state of India's labour market. First, at the turn of this century, i.e. in 2001, the proportion of Indians who were seeking or available for work was 6.8 per cent and by 2011 this proportion had increased to 9.6 per cent. Second, in 2011, among those seeking work or underemployed, the share of individuals having at least a technical degree or graduate degree was 8.6 per cent. In total, in 2011, 116.2 million individuals self-reported that they were seeking work, i.e. they were either under-employed or unemployed. Why did the proportion of individuals seeking work

[1] The evidence from both rounds of India Human Development Survey does show that the average annual earnings are the least for those without education, followed by those with elementary education, secondary education and university graduates.

[2] In the age group 18-23 years, only 32 per cent of individuals are attending an educational institution. In contrast, 90 per cent of children in the age group 6-13 years attend primary school. (Government of India 2015)

increase and why is the probability of finding a fairly qualified person in this pool as high as 8.6 per cent?

Despite the importance of the issue, the relative importance of credit constraints vis a vis employability in the decision to pursue higher education has never really been examined in the Indian context. In the absence of data that would allow us to credibly address the above issue, this paper, not surprisingly, does not claim to fill this gap. Without ignoring the issue of employability, which is the elephant in the room, this paper attempts to provide a better sense of the twin issues of household expenditure and borrowing for higher education. The twin issues are affected by household's perception on employability. We analyse two recent household surveys conducted by National Sample Survey Organisation (NSSO). The focus of Section 2, which partially sets the context of the paper, is on describing the spatial patterns in participation in higher education as evident from Census of India 2011 C-series tables[3]. In Section 3 we begin by providing evidence on participation in higher education and cost of higher education based on analysis of NSSO's 2014 Survey on Social consumption in India: Education. We provide corroborating evidence that credit constraints could be binding for poorer households. Following this, we rely on NSSO's 2013 All India Debt and Investment Survey (AIDIS), to improve our understanding of access to educational loans from formal and non-formal institutional sources. Since individuals from the southern states are more likely to be pursuing technical education in private unaided institutions the fees paid by them is higher. Hence individuals from southern states are more likely to have outstanding borrowings for education. We do find that individuals from lower quintiles of the distribution of consumption expenditure are more likely to get fee subsidies or scholarships, indicating that such schemes reach their intended beneficiaries. Section 4 concludes.

2. Spatial Patterns in Participation in Higher Education

Before we present regional variations in the cost of higher education and the decision to avail of loans, it is important to recognize the three key factors that drive these variations: differences in the proportion of individuals pursuing higher education, field of study (social sciences, engineering, medicine etc) and the type of institution (government or private, aided or unaided) in which the individual is enrolled. Further, on the supply side, state government policies did influence in which parts of India clusters of educational institutions got established. Data on

[3] Source: http://www.censusindia.gov.in/2011census/C-series/C08A.html

migration for education released by as part of Census of India 2011[4] D-Series tables reveal that the following five states attract over 50 per cent of individuals migrating for education: Andhra Pradesh, Karnataka, Maharashtra, Tamil Nadu and Uttar Pradesh[5].

Our objective in the discussion that follows, which is based on Census of India 2011 C series tables, is not to present detailed summary statistics. Instead our focus in on the two stylized facts that are generally mentioned in any discussion on spatial differences in enrolment and completion patterns in higher education in India. First, there are significant differences across the districts of India in the proportion of individuals who are enrolled in higher education or have completed their graduate degree. Second, individuals residing in the southern states are more likely to pursue an engineering or medical degree than individuals from the northern states. These two facts are borne out by data from Census of India 2011. What we would like to highlight in particular is the clustering of districts be it in terms of proportion of individuals pursuing higher education or choice of field of study among those enrolled in higher education **o**r completed higher education. Specifically, we are interested in understanding the extent to which in a given district the proportion of individuals enrolled in or completed higher education is higher or lower than the national average. Similarly, to what extent is the proportion of individuals pursuing higher education in a district opting for a specific field of study higher or lower than the national average. The ratio of the district average to the national average, in the manner described above, is also known as the location quotient (LQ), which is a measure of concentration[6].

We first focus on the proportion of individuals aged 20-24 years and pursuing higher education. Districts are grouped based on the value of their location quotient – 0 to 1, 1 to 1.5, 1.5 to 2 and greater than 2 – and the same is depicted on the India map (Figure 1). If the value of location quotient for a district is 1.75, then it means that the proportion of individuals aged 20-24 years pursuing higher education in this district is 1.75 times the corresponding national average. Notice

[4] Source: Provisional -D-5 Migrants By Place Of Last Residence, Age, Sex, Reason For Migration And Duration Of Residence-2011(India , States/UTs)
Available http://www.censusindia.gov.in/2011-Common/Latest_Releases.html

[5] See Chandrasekhar and Sharma (2013) for a discussion on internal migration for education and employment among youth in India

[6] Let $NE^{d}_{20\text{-}24}$ and $N^{d}_{20\text{-}24}$ be the total number of individuals aged 20-24 years enrolled or completed higher education in district d and the total number of individuals in this group in district d respectively. Let $NE_{20\text{-}24}$ and $N_{20\text{-}24}$ be the corresponding numbers for all India. Then the location quotient is defined **as** the ratio of $NE^{d}_{20\text{-}24}$ and $N^{d}_{20\text{-}24}$ divided by the ratio of $NE_{20\text{-}24}$ and $N_{20\text{-}24}$

the clustering of districts in southern India whose location quotient is in the region 1.5 to 2 and greater than 2.

Figure 1 here

Next we focus on whether there is clustering of districts based on whether individuals aged 20-24 years pursue technical education (engineering or medicine)[7]. We are focusing on technical education because an engineer or a doctor is considered to be highly employable. The districts are grouped into 4 categories as just mentioned earlier. We do find the clustering of districts with a value of location quotient in the range 1.5 to 2 and above 2 in the southern states (Figure 2). A related point that we want to make is that when we did overlay Figure 2 with the district maps of level of urbanization it is evident that spatial patterns are positively associated with level of urbanization. It is also true that there is a concentration of engineering and medical colleges in the southern states which incidentally are not only more urbanized but have educational clusters and reputed institutes of higher learning.

We also undertake a similar exercise for those aged 35-59 years of age. Contrasting the patterns across the two age cohorts 20-24 and 35-59 years provides a perspective on the changes over time. It is reasonable to assume that almost everybody in this age group have already completed their education and not currently enrolled for a higher degree. When we replicate the calculations for constructing maps analogous to Figure 2 for this age group[8] we find that there are only 2 districts with a location quotient greater than 2 (Table 1). In contrast, when we consider the age group 20-24 years, the number of districts with a LQ greater than 2 increases to 16. Notice also that the transition (as revealed by comparing across age groups) suggests a greater level of concentration, i.e. in some districts, among those pursuing higher education, the proportion of individuals pursuing engineering or medicine has increased from 1 to 1.5 times the national average to over 1.5 times the national average. These districts once again are likely to be from the south India. From Figure 2, it is evident that the districts in the southern states have a location quotient in the range 1 to 1.5 and 1.5 to 2. In short, this confirms that the propensity to enroll for higher education in southern states was always greater than that in northern states. Further, individuals from the southern states were always likely to be more enrolled in technical streams.

[7] Similar maps can be generated to examine clustering of individuals by different fiels of study.

[8] Maps analogous to Figures 1 and 2 for the age group 35-39 are available on request.

What the comparison across the age cohorts establishes is that the north-south divide in choice of stream of higher education has increased more.

Table 1 here

Figure 2 here

Data permitting the next line of inquiry should have been along the following lines. First, is there a relationship between the field of study and employability, i.e are engineers and doctors less likely to be unemployed or under employed vis a vis individuals with degrees from other streams? Second, does it matter from where an individual graduates, i.e. are individuals with a degree from one of the institutions in the south more likely to be employed than individuals trained in other regions of India? In short what we need to investigate is whether there is co-variation in the demand for different streams of education and the employability across the Indian districts and states. However, tables released as part of dissemination of Census of India 2011 do not permit us to address this issue.

3. Participation in Higher Education and Household Expenditure on Higher Education

On the one hand limited data are released as part of the dissemination of information from Census of India 2011. On the other hand there is no integrated survey of household expenditure on higher education and how households finance the expenditure. It would have been ideal if NSSO's 71st round (Schedule 25.2) Survey on Social Consumption in India (Education)[9] 2014 which has information on participation in higher education and expenditure on higher education had also canvassed information on how households actually finance higher education. Unlike the Survey on Social Consumption in India (Education), estimates on borrowing by households for higher education are available from the AIDIS conducted by NSSO an year earlier in 2013[10]. AIDIS however has no information on expenditure on higher education. As part of AIDIS, the following information on outstanding loans is sought from every household: period of loan, amount borrowed, the agency from where borrowed, duration of loan, interest, purpose, type of security etc.

[9] Details on the Survey on Social Consumption in India: (Education) are available in the report corresponding to this survey (Government of India 2015).

[10] Details of the survey are available in the detailed report published corresponding to this data (Government of India 2014).

In this section we triangulate information from these two surveys to present a comprehensive story on the household's reported expenditure on higher education, how the cost of education varies by stream of study and estimates of borrowing by households to finance education. When we analyse the data from survey of education, our focus is on individuals who are pursuing one of the following streams: general education (humanities, science, or commerce), technical/professional education (medicine, engineering, agriculture, law, management, education, chartered accountancy and similar courses, or IT/computer courses), courses from Industrial Training Institute (ITI), recognised vocational training institute, and others. Since one of the objectives of the paper is to highlight regional differences, we group the states into the following regions: Northern, North East, Eastern, Central, Western, and Southern (See Table 2 for grouping of states). We would like to draw attention of the reader that the regional variations found in the Census of India 2011 data are also evident in NSSO data sets.

3.1 Participation in Higher Education

To begin with there are no marked differences in the net attendance ratio among those aged 18-29 years[11] in the tertiary level across the regions of India although there are significant differences across rural and urban areas (Table 2). It is apparent from Table 3 that conditional on being enrolled in higher education, the propensity to be enrolled in technical education is higher for students in south as compared to other regions. This is true for both rural and urban areas. So it is not surprising that of all the students enrolled for technical education the southern states account for the highest share (Table 3). When we examine the stream chosen by those pursuing general education, we find that in rural areas, students from southern states are most likely to study science (38 per cent) or commerce (35 per cent) and less likely to study humanities. This pattern is in sharp contrast with all other regions of India where most of the students in rural areas opt for a course in humanities. The pattern evident in rural areas is also visible in urban areas. Students from Western and Southern regions are more likely to study courses which are skill based or market oriented. In other words, their choice of courses most likely reflects the expected earnings given their employment prospects.

Table 2 here

[11] Assuming that age of entry into class 1 is 6 years, an individual should have completed class XII by the age of 18 years. Also, the survey sought information on those aged 5-29 years. Hence we calculate the net attendance ratio for those aged 18-29 years.

Table 3 here

3.2 Expenditure on Higher Education

This survey has information on each household's usual monthly consumption expenditure. We multiply a household's usual monthly consumption expenditure by 12 and to this figure we add the household's annual expenditure on education. This allows us to arrive at an estimate of the household's total annual expenditure. This approach is in line with that outlined in the instruction manual corresponding to the survey.

At the aggregate level, we calculate the share of expenditure on higher education as a fraction of household's total annual expenditure. Since this also includes households who do not incur any expenditure on higher education it is not surprising that this ratio is 2.62 per cent and 4.94 per cent for rural and urban areas respectively. The share is highest in the rural areas of Southern states while we do not find differences across urban areas of the different regions (Table 4).

Table 4 here

In order to get a sense of differences in economic status, in Figure 3 we plot for rural India the cumulative distribution of annual usual consumption expenditure (i.e. excluding education) for households with at least one member pursuing higher education and households without any member pursuing higher education. Figure 4 corresponds to urban India.

Figure 3 here

Figure 4 here

What we would like to point out is that the distribution of annual usual consumption expenditure of households with at least one member pursuing higher education lies below the distribution of households without any member pursuing higher education. This implies that the distribution of annual usual consumption expenditure of households with a member pursuing higher education dominates that of households without any member pursuing higher education. This is true in both rural and urban India. The mean annual usual consumption expenditures of households with and without any member enrolled in higher education are Rs. 110,289 and Rs. 69,208 respectively in rural and Rs. 176,459 and Rs. 112,888 respectively in urban India.

For rural and urban households having a household member pursuing higher education, we calculate each household's annual expenditure on higher education as a proportion of its annual total expenditure (Figure 5). The average share of expenditure on higher education is 15.29 per cent for rural households as compared to 18.36 per cent in urban households. We do find differences in this average across the regions of India. It is the highest in the southern states for both rural and urban areas (Table 5).

Figure 5 here

Table 5 here

Focussing only on those pursuing higher education, we find that the average annual expenditure per student is highest in the southern region. This pattern is more pronounced for rural as compared to urban India. Considering rural areas, the southern states have an average per student expenditure of Rs. 36,063 followed by the Northern states where the figure is Rs. 25,143. In urban areas, the average expenditure per student is Rs. 49,690 in Southern states, closely followed by the Western states where it is Rs. 45,436 (Table 6).

Table 6 here

Poorer households will have to spend a greater share of their annual total consumption expenditure on higher education. Since, this aspect was not reflected in previous tables, we calculate the mean per capita education expenditure incurred by individuals who are enrolled in higher education and divide this by the mean annual household expenditure for these households. The ratio of these two variables reflects the percentage of expenditure that a household might have to spend if it wants to enrol one of its members in higher education. These figures are given in Table 6. We find that the share of expenditure on higher education if one individual participates in higher education is 27 (30) per cent of the total annual expenditure of an average household in rural (urban) India. We find that this share is highest in the southern states.

The higher average expenditure on education in southern states has to be interpreted in conjunction with patterns evident from other tables. Individuals from the southern states are more likely to be enrolled in private unaided institutions (Table 7). We find that the average expenditure per student is highest in private unaided institutions, followed by private aided ones. Students enrolled in government institutions incur lowest expenditure in both rural and urban areas in all the regions. Those enrolled in private aided and private unaided institutions

respectively incur almost double and triple expenditure than in government institutions (Table 8). Further, recall that in the southern states individuals are more likely to be pursuing technical education. The average expenditure on technical and vocational education is much higher than average expenditure in general education (Table 9). Students enrolled in technical courses pay the most. This pattern is true for both rural and urban India, and for all the regions. In short, average expenditure on education in southern states is higher since individuals from these states are more likely to be pursuing technical education in a private unaided institution where fees are higher.

Table 7 here

Table 8 here

Table 9 here

3.3 Free Education, Tuition Waiver, Scholarships

It is evident that the costs of pursuing higher education are steep for poorer households. Hence, they might not be able to afford the costs of higher education. So a valid concern is that credit constraints might deter investments in human capital accumulation. Governments worldwide have sought to defray the cost of higher education by offering free or highly subsidized education, tuition waivers, and scholarships. Given that the share of expenditure on higher education in the household budget is substantial, issues pertaining to free education, tuition fee waiver and scholarships become important. Tilak (2004) analysed data from NSSO's 1995-96 survey along these dimensions. He found that fee subsidies are progressively distributed. Our calculations from NSSO's 2014 data, reveals that 13.8 (8.9) per cent of students participating in higher education in rural (urban) India receive the benefit of free education or tuition fee waiver. We find that students enrolled in government institutions are more likely to get free education or a fee waiver than students in private (both aided and unaided) institutions (Figure 6). Similar to Tilak's finding, we find that students from lower quintiles of consumption expenditure are more likely to receive fee subsidies (Figure 7). This pattern is true in both rural and urban India, indicating that such schemes probably reach their intended beneficiaries.

Figure 6 here

Figure 7 here

The average amount of scholarship received is Rs. 6952 in rural and Rs. 14633 in urban India. The rural-urban difference is not surprising since average expenditure per student in education is much higher in urban than in rural areas. When we look at the average amount of scholarship in different types of institutions, students from private unaided institutes are found to receive significantly higher amount of scholarship in both rural and urban areas. This is again in line with the fact that education is much more expensive in private unaided institutions than in government or private aided institutions. Nearly 21 per cent of the rural students and 12.5 per cent of the urban students receive scholarship. There are no marked variations across government, aided and unaided institutions. We do find that students from poorer background, as reflected by households' usual consumption expenditure, are more likely to receive a scholarship (Figure 8). The XIIth Five Year Plan calls for a substantial increase in funding for achieving a "quantum jump in the volume, range and amount of student support in the form of scholarships, stipends, assistantships and loans for disadvantaged students" (p.103, Chapter 21 Government of India 2013). Individuals not getting fee subsidies or unable to finance their education from household income or savings would have to borrow and this is the focus of the discussion in the next section.

Figure 8 here

3.4 The Aggregate Picture on Educational Loans: Insights from AIDIS

In India, budgetary compulsions[12] have implied that the government has not been able to ramp up public expenditure on higher education as a percentage of gross domestic product. At the same time the cost of higher education has increased leading to an increased focus on easing supply of credit for financing expenditure on higher education. While there is a literature on government spending on education, the literature on loans for higher education is limited. Against the backdrop of declining public expenditure for higher education, Tilak (1992) reviewed the experience of the National Loans Scholarship Scheme which he points out started in 1963. Although there have been some new proposals in the 1990s and in particular in the XIth plan, when the new student loan program was launched. From 2009–10 onwards the government also started to provide 100 per cent interest subsidy during the moratorium period on educational

[12] Issues relating to educational loans have received increased attention on account of five reasons: "budgetary objectives, facilitating the expansion of higher education, social objectives (improving equity and access for the poor), meeting specific manpower needs, and easing student financial burdens" (p.29) Zilderman (2004). For detailed explanation see 'Table 3.1: Alternative Objectives of Student Loans Schemes'

loans taken by students from families with income of less than Rs 4.5 lakh per annum. Looking ahead, the XII[th] Five Year Plan document states that "all student financial aid schemes under the Ministry of HRD would be consolidated under a single 'Student Financial Aid Programme' in order to rationalise and strengthen the administration of equity-related schemes by bringing them under a single umbrella initiative" (p.104, Chapter 21 Government of India 2013). The point to note is that the policy measures have focussed primarily on the supply side[13] and an innovation was that educational loans became part of priority sector loans of banks.

As on June 30, 2012, the total outstanding cash loans of rural and urban households was Rs 507,822 crores and Rs 708,561 crores respectively. Of this amount the total outstanding cash loans for education stood at Rs 13,104 crores and Rs 26,787 crores in rural and urban India. Thus the total amount borrowed for education is Rs 39,891 crores[14]. This amount is from both institutional and non-institutional sources. Of this amount Rs 29,046 crores was borrowed from commercial banks including regional rural banks and cooperative banks. This amount should be contrasted with the outstanding bank credit for education as reported in the Basic Statistical Returns (BSR) data of Reserve Bank of India. As per the BSR data, gross bank credit for education stood at Rs 46,990 crore in March 2012. The reason for this discrepancy can possibly be attributed to the fact that AIDIS data do not reflect the upper end of the income distribution and hence educational loans taken by the richer households. This fact should be borne in mind while interpreting the estimates reported and the inferences drawn in this paper.

The average size of loan for education is Rs 116,702 while the median is Rs 56,042. However, note that a household can have multiple loans outstanding. The average household debt for education was Rs 146,875 while the median was Rs 70,672. In rural India, 0.83 per cent of

[13] While it is true that by 2009-10, the quantum of educational loans had grown faster and was at the same level as government expenditure on higher and technical education, it is also true that in 2009-10, only 9.3 per cent of students had availed loans for education (Rani 2014a, b). At the aggregate level, Chakrabarty (2009) estimated that a 1 per cent increase in India's gross domestic product would be associated with a 5 per cent increase in education loan. Yet, despite these macro estimates, in reality, the growth in educational loans has been sluggish. The development of credit markets for loans for higher education has lagged behind in India. The reason for this is not far to seek. Tilak's observation that "some important questions on the design of a student loan programme" need to be addressed is still valid today (Tilak 1992, p. 401). It is not only student loan program but also the student support system that needs to be re-examined.

[14] Consistent with the way NSSO reports the estimates (Table 5-R, 5-U, Government of India 2014), in this paper we report estimates of total outstanding cash loans and cash loans for education as on 30 June 2012. Thus the estimates are reported based only on information available from the visit 1 and not combined for visit 1 and visit 2. The total number of loans for education in the sample was 3,707 only while the total number of cash loans including educational loans was 110,443. Since there were a handful of states for which we had information on less than 30 educational loans, in this paper we do not provide any state wise estimates. Instead as before we report the estimates after grouping the states into geographical regions.

households had outstanding loan for education while in urban India this was 1.7 per cent. One limitation of the NSSO data is that it does not ask questions on whether the households sought to borrow and reasons why it did not succeed in borrowing. So we cannot provide any estimates of either the number of households which did not want to borrow (voluntary exclusion) or could not borrow (involuntary exclusion).

Next, we report a few key estimates at the regional level. A statistic of particular interest would be the share of cash loans for education in total cash loans. Loans for purposes related to education account for 2.58 per cent and 3.78 per cent of the outstanding loans in rural and urban India respectively (Table 10). The share of educational loans in total loans is highest in the southern region (4.16 per cent in rural and 5.90 per cent in urban) and lowest in the central region (0.48 per cent in rural and 1.85 per cent in urban).

Table 10 here

Another way to slice the data would be to contrast the share of the six regions in the quantum of outstanding cash loans and cash loans for education. The southern region accounts for 74.5 per cent of outstanding cash loans for education in rural and 71.3 per cent in urban areas (Table 11). The observed pattern in share of distribution of educational loans by region matches up with the data from BSR distribution for 2012. The standard explanation that share of educational loans is higher in southern regions because of better financial intermediation does not necessarily hold water since their share in educational loans is markedly higher than their share in total outstanding loans. If their share in total loans was not around 45 per cent and instead higher at 75 per cent then the above explanation could be credible.

Table 11 here

As is well known, on an average, the quality of educational institutions is higher in the southern states thereby assuring employability (Deloitte and Confederation of Indian Industry 2013). Graduates' placement of professional higher education from southern regions is better than other regions. Employability is an important determinant of demand for education loans. Hence the issue of educational loans should not be seen purely from a supply side perspective. It is true that Reserve Bank of India encourages banks to make educational loans and these loans qualify as priority sector lending. The supply side explanation is that in the absence of collateral, banks

will be reluctant to lend in the poorer regions. However, with little recognition of the biding demand side constraints, the discussion in the XII[th] plan has a supply side focus[15].

While not downplaying the importance of supply side measures, we argue that a more nuanced explanation for understanding low off take of educational loans would begin with the issue of employability. The explanation runs as follows. The problem with government guaranteed or subsidised bank loans as pointed out by Chapman (2006) is that, "(S)ome risk averse potential students will not be prepared to undertake loans with repayment burdens which are insensitive to a student's future capacity to pay; this is because loans repaid on the basis of time, rather than income, are associated with both default risks and potential repayment hardships. There might well be socially unproductive career choices made by graduates facing very high loan repayments that are not sensitive to capacity to pay" (p.49). This line of reasoning leads to the policy prescription that the focus has to be on income contingent loans and not interest subsidies. This is an important question for future research in the Indian context.

3.5 Patterns in Outstanding Borrowings

Next, there are three issues that we would like to highlight: inequality in borrowing across households arranged by decile class of asset holdings, the reliance on non-institutional sources of finance and the need for collateral.

The poorer households account for a lower share of the outstanding loans for higher education. This is evident from the fact in rural India, in each of the first 6 decile classes the share of households from each decile in outstanding loans is less than 10 per cent. Similarly, in urban India, in each of the first 7 decile classes the share of households in outstanding loans is less than 10 per cent (Table 12).

Table 12 here

The distribution of outstanding loans by source of borrowing throws up the following picture. In rural India 70 per cent of loans are from institutional sources, 21 per cent from money lenders

[15] The plan document states that "a student loan guarantee corpus would be created under the management of a Credit Guarantee Trust to guarantee against default in repayment of student loans. This will substantially protect lending institutions from student default thereby encouraging them to make more student loans. In addition, the government guarantee should reduce the rate of interest on student loans (it should be only slightly more than the yield on comparable 10-year Government Securities) benefitting the student community at large (p.104-105, Chapter 21 Government of India 2013)"

and 9 per cent from other non-institutional sources. In urban India 80 per cent of loans are from institutional sources, 13 per cent from money lenders and 6 per cent from other non-institutional sources (Table 13). When one examines all outstanding loans then we find that 33 (11) per cent of the total loans in rural (urban) India are from money lenders. The reason we report these estimates is because the standard yardstick for measuring financial inclusion is share of money lender in total outstanding loans.

Table 13 here

It is also instructive to compare the share of outstanding loans for education by the nature of security pledged (Table 14). Nearly 84 (68) per cent of loans made by money lenders in rural (urban) India is backed by personal security. Loans from other non-institutional sources are more likely to be backed by personal security. Only in case of loans from banks do we find sufficient variation. This variation could be because banks have the discretion on whom to lend and how much to lend. They also require collateral security in the form of suitable third party guarantee. Student loans as per the guidelines of Indian Banks Association (IBA) are categorized into three slabs based on loan limits and the operating parameters such as interest rates, requirement of margin money (down payment), security requirements vary. As per data from IBA more than 80 per cent of the loan accounts were unsecured loans during 2009-10 to 2011-12 while in 2012-13 only 60 per cent of the loan belong to this category.

Table 14 here

3.6 Towards Informing Policy

As part of the Consultation Process for New Education Policy, Ministry of Human Resource Development, Government of India, identified among others the following key questions relating to financial assistance for higher education. First, should there be differential income slabs for existing student financial assistance schemes? Second, apart from affirmative scholarship, a need based scholarship should be linked up to what kind of earning per family? Third, has the interest loan subsidy scheme helped the poorest of poor in accessing higher education? If not, what changes need to be effected?

Before we proceed to proffer an answer to these questions it is important to note that all three questions are focussed on the supply side and in this paper we have argued that the demand side is equally important. From Table 15 it is evident that the net attendance ratio in rural India

increases from 3.27 per cent in the lowest quintile of consumption expenditure to 18.54 per cent in the highest quintile. This pattern holds true for urban India also. When there is uncertainty in the employment prospect, the opportunity cost of pursuing higher education is larger for poorer households, which potentially explains the disparity in demand for higher education across wealth levels. It is this differential in the net attendance ratio that drives the inequality in borrowing across households arranged by decile class of asset holdings.

Table 15 here

Tilak (2007) while assessing the approach to the XIth plan points to the need for strengthening elementary and secondary education. "The current enrolment ratios in secondary education and the transition rates between secondary and higher education are very low. Unless these are improved significantly, significant increase in enrolment of quality students in higher education may not be possible" (p. 3875). Extending his argument lower rates of enrolment in higher education cannot be addressed in any significant way by only facilitating access to educational loans. However, one metric that should be tracked at the policy level is the reliance on non-institutional source of finance and in particular money lender.

Coming to the first of the three questions, we do believe that there should be differential income slabs for existing student financial assistance schemes. First, the average income in rural India is not sufficient to finance quality higher education. In rural India, as per data from the Socio Economic and Caste Census 2011, in nearly 73 per cent of households the maximum income earned by any member is less than Rs 5,000 per month. Second, as mentioned earlier, an average rural (urban) household spends 27 (30) per cent of its total expenditure if any one of its members wants to pursue higher education. Since poorer households have lower level of income, this share is likely to be higher for poorer households. This provides support for the policy stance that financial assistance schemes need to be targeted by income slabs. Second, on the issue of affirmative scholarship, we find that nearly 50 (39) per cent of individuals pursuing higher education and belonging to scheduled tribe (scheduled caste) households in rural India receive some form of scholarship (Figure 9). This would kind of give credence to the notion that such schemes are reaching the intended beneficiaries to some extent. We are unable to provide any insights on the issue of interest loan subsidy scheme based on the data from NSSO's surveys. It is important for future surveys of NSSO to canvass information on specific schemes as part of the survey on education. Using bank level data, Rani (2015) highlights that the states lagging behind on educational outcomes account for only a small fraction of beneficiaries of the interest

subsidy scheme. She finds that the two southern states viz. Tamil Nadu and Kerala account for almost 60 per cent of the total number of beneficiaries of the interest subsides available for loans for higher education availed by low income households. Not surprisingly, these two states account for bulk of amount of subsidy received. In short, the interest subsidy scheme has not benefited the poorer regions of India.

Figure 9 here

4. Conclusion

In this paper we analyse data from two recent NSSO surveys to provide estimates of expenditure on higher education and loans availed for higher education. The average share of expenditure on higher education is 15.3 per cent and 18.4 per cent for rural and urban households which have at least one member pursuing higher education. While we do not find any stark difference in the net attendance ratio across regions, there is a great deal of regional variation in the stream of study, type of course, and the type of institution attended. Students from southern states are more likely to be enrolled in technical and vocational education and in private unaided institutions. Since fees are substantially higher in private unaided institutions as well as for technical and vocational courses, the average expenditure on education is higher in southern states than other regions of India. Despite the policy initiatives to promote educational loans, the penetration of educational loans is miniscule. In rural and urban India, 0.83 per cent and 1.7 per cent of households respectively have outstanding loan for education. The regional disparity in terms of educational loans has a pattern similar to household expenditure on higher education. Southern states account for more than 70 per cent share in total educational loans in India. Even among those enrolled in general courses, students from southern states are more likely to study science and commerce, while the proportion of students in humanities is higher for the rest of India. Since there are greater chances of future employability in science and commerce stream, it also explains why students from southern states have higher demand for educational loans. These findings suggest that only promoting supply of educational loans may not be inclusive unless the demand side obstacles are mitigated. Moreover, we find that demand for higher education and demand for educational loans both have a connection with household's economic status. Poorer households are less likely to participate in higher education as well as have a lower share in the volume of total cash loan for education. A plausible reason could be that poorer households have higher degrees of risk aversion. Or they may face greater uncertainty in the future returns to investment in higher education due to various reasons. For instance, they may

be unable to meet the opportunity cost arising from the longer duration of higher studies. Often belonging to the disadvantaged groups, they also face the academic risk of not being able to complete the studies in time, or even if they complete, they may lack the desired academic credentials. They may also lack the social network to get the right job with the right amount of salary. All of these issues may be important in explaining why demand is lower among the poorer households. On the other hand, among those who participate in higher education, individuals from poorer households are more likely to get fee subsidies or scholarships. This suggests that schemes which are targeted towards the disadvantaged groups of the society are indeed beneficial for them.

As per estimates from NSSO's 2011-12 survey of consumption expenditure, the share of expenditure on education in total monthly expenditure is 3.1 per cent and 5.7 per cent in rural and urban India. This number is indeed higher if we focussed only on households where an individual is pursuing higher education. However, neither the survey of consumption expenditure nor the survey on social consumption (education) has any information on sources of financing education. Existing surveys do not inform us on those who are financially excluded i.e. those who wanted to avail a loan from the formal institution but were unable to do so. It is important for future surveys on "Social Consumption: Education", to have a module on sources of financing and in particular whether a household sought to take an educational loan corresponding to any member of the household who is attending an educational institution or had borrowed for a member who has completed education. In addition, for households that do not report any borrowing, a set of questions need to be included on access and utilisation of financial services. Such information will be useful in framing the discussion on loans and financial assistance for those pursuing higher education.

Figure 1: Clustering of Individuals aged 20-24 and Pursuing Higher Education (as reflected by Value of Location Quotient)

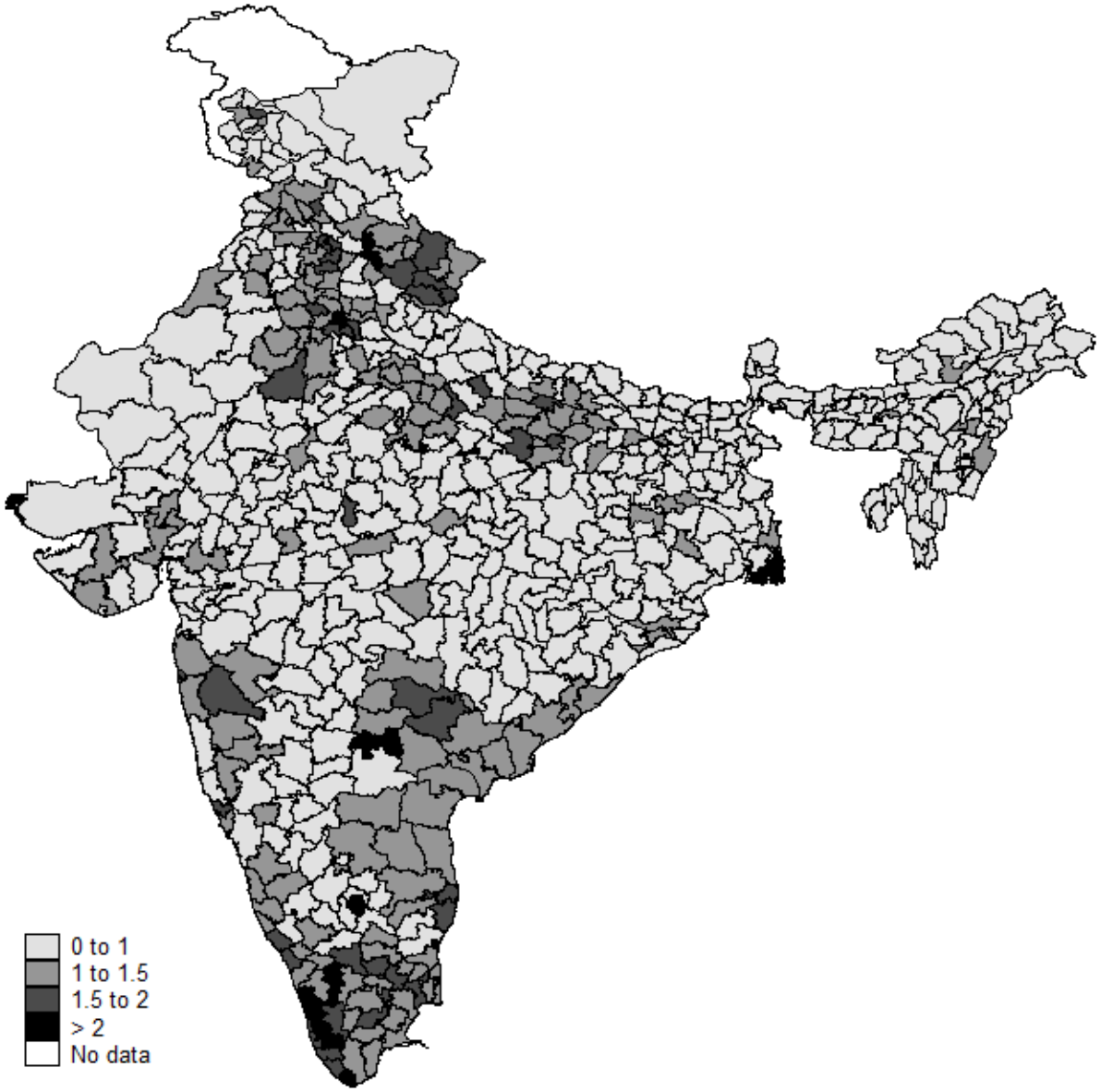

Figure 2: Clustering of Individuals aged 20-24 who are Enrolled in Higher Education and Pursuing Engineering or Medicine (as reflected by Value of Location Quotient)

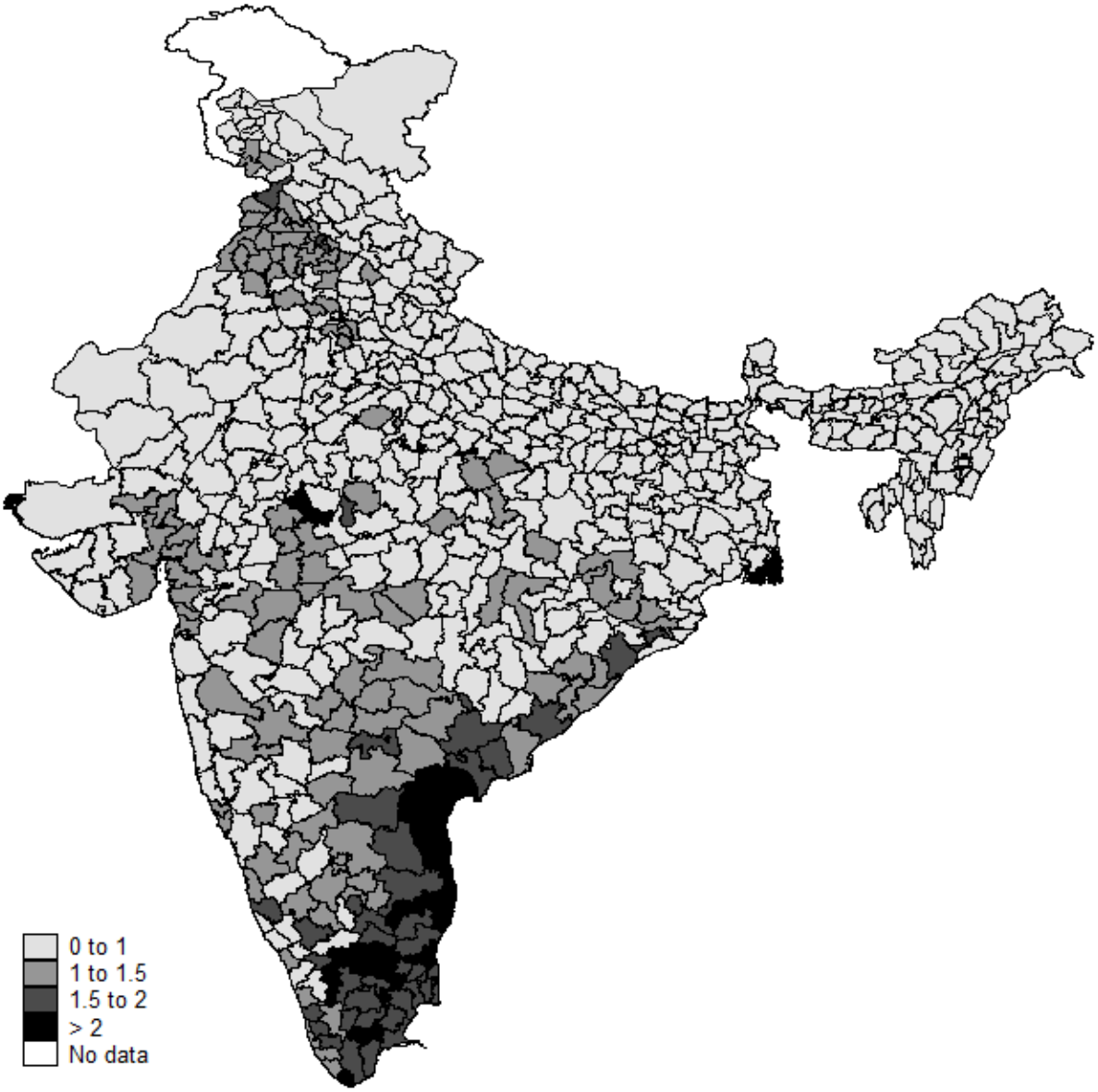

Figure 3: Cumulative distribution of annual usual consumption expenditure of households (Rupees) in rural India

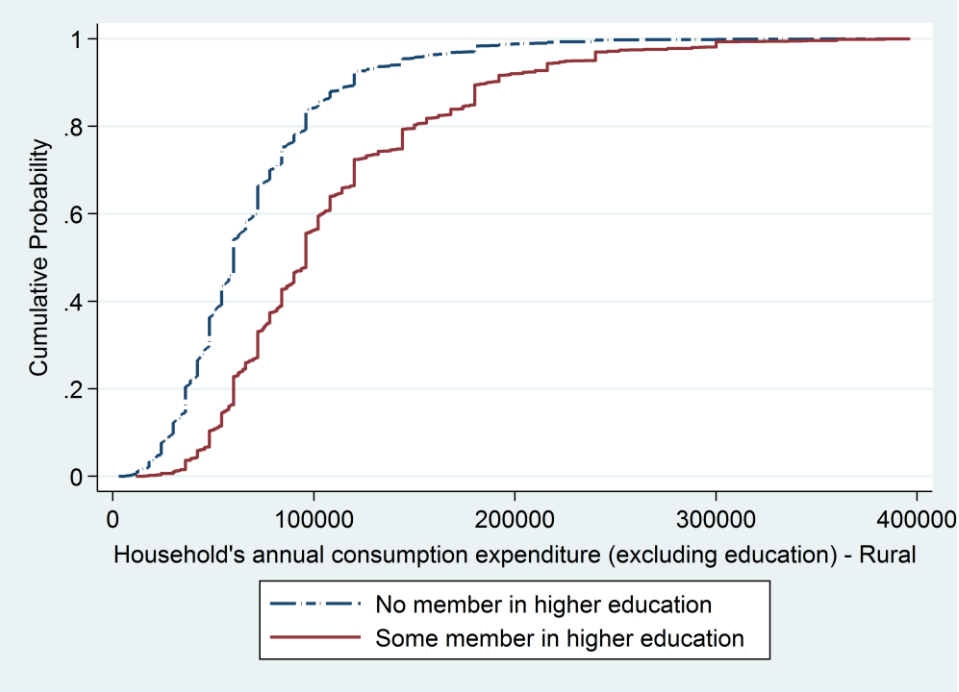

Figure 4: Cumulative distribution of annual usual consumption expenditure of households (Rupees) in urban India

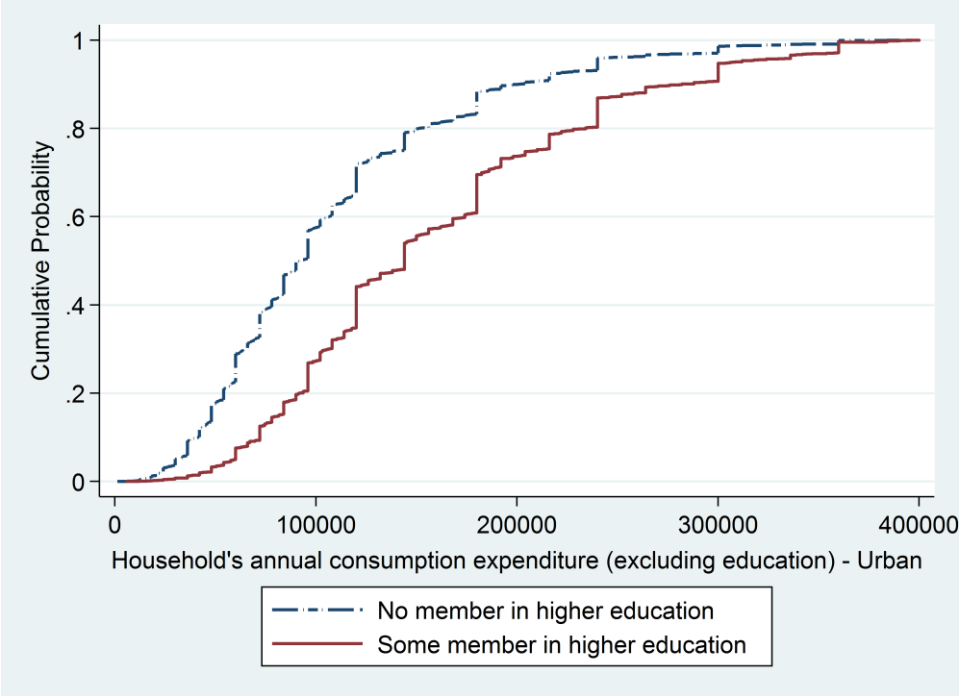

Figure 5: Kernel density estimates of household's annual expenditure on higher education as a proportion of its annual total (consumption and education) expenditure

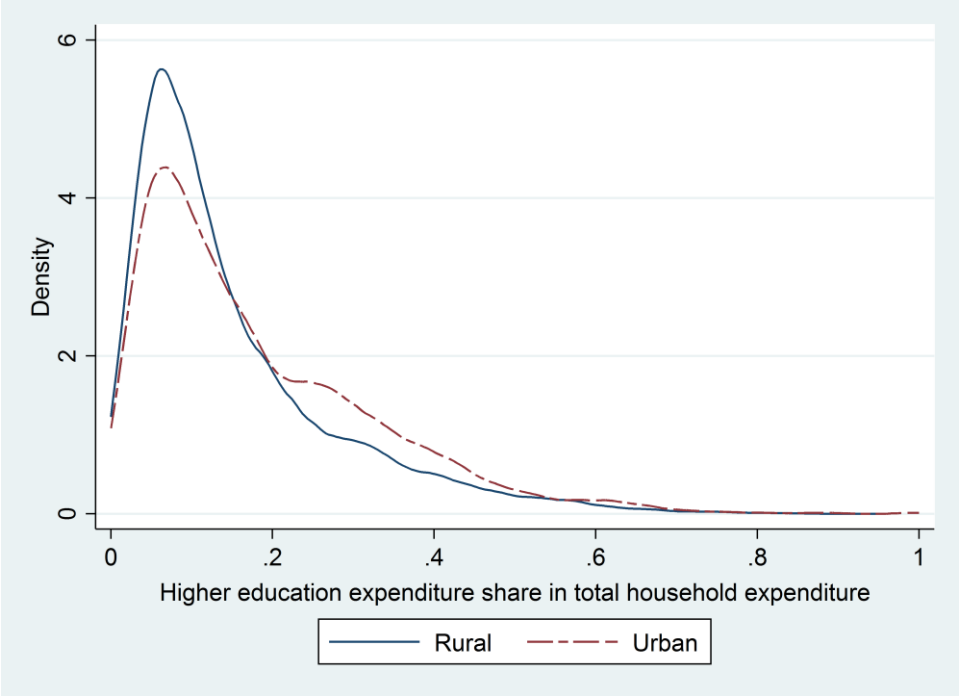

Figure 6: Percentage of students receiving free education or fee waiver, by type of institution

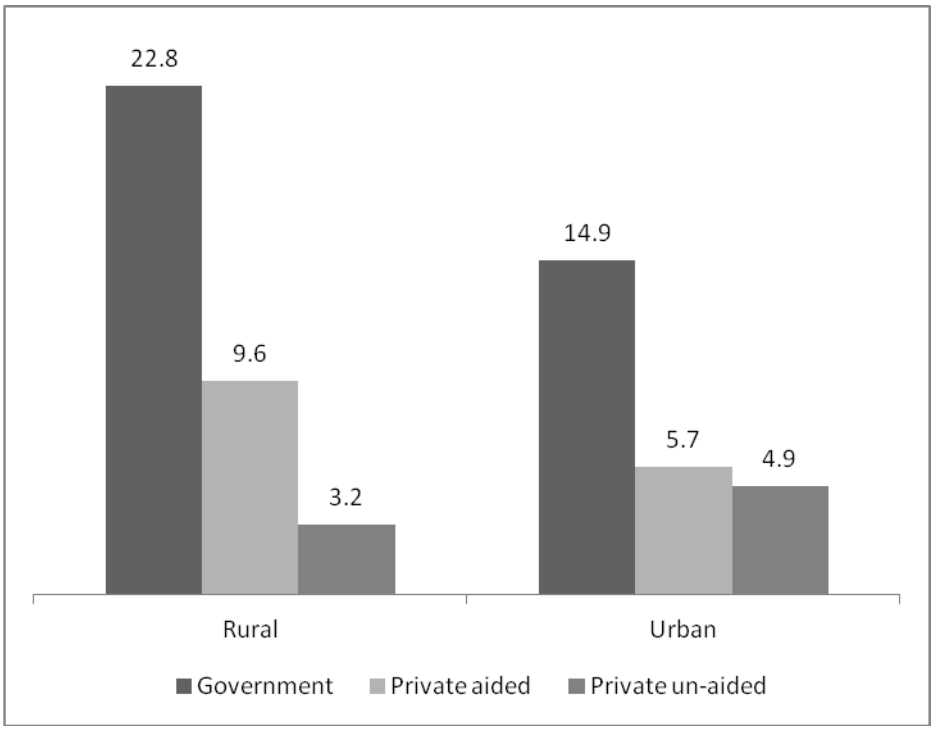

Figure 7: Percentage of students receiving free education across different quintiles of households' usual consumption expenditure

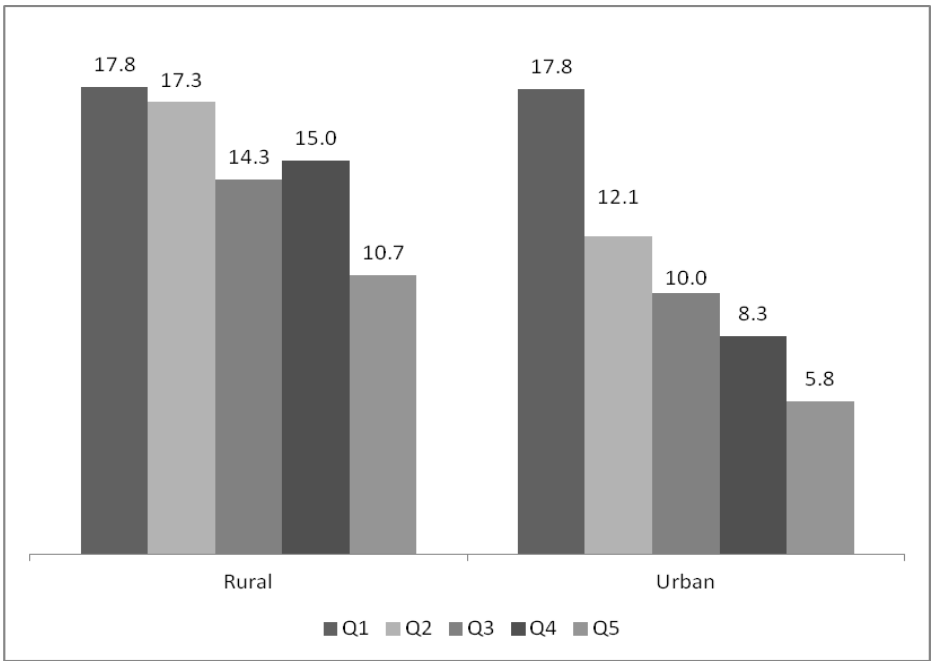

Figure 8: Percentage of students receiving scholarship across different quintiles of households' usual consumption expenditure

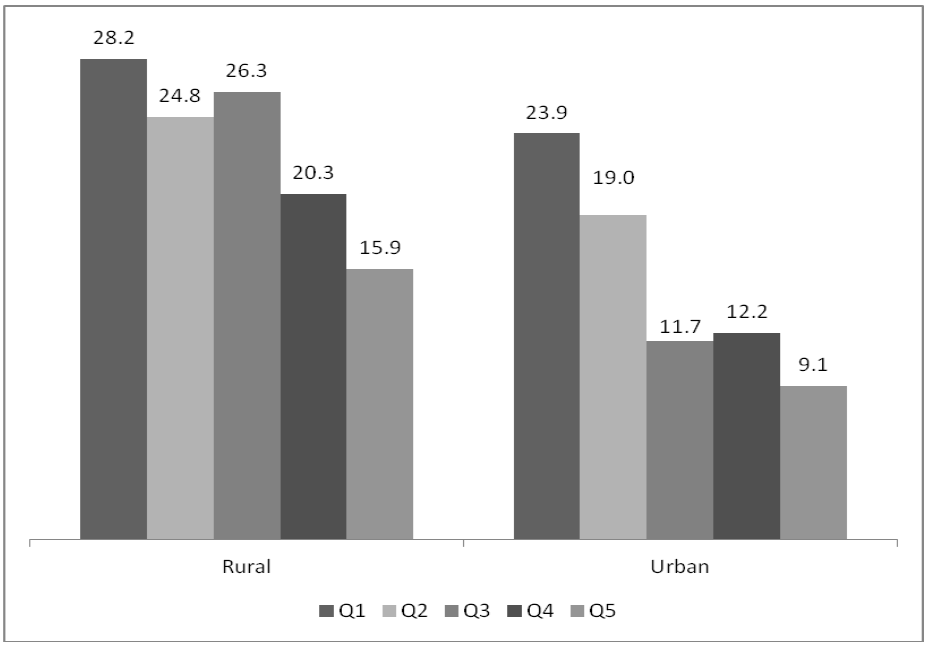

Figure 9: Percentage of students receiving scholarship across different social groups

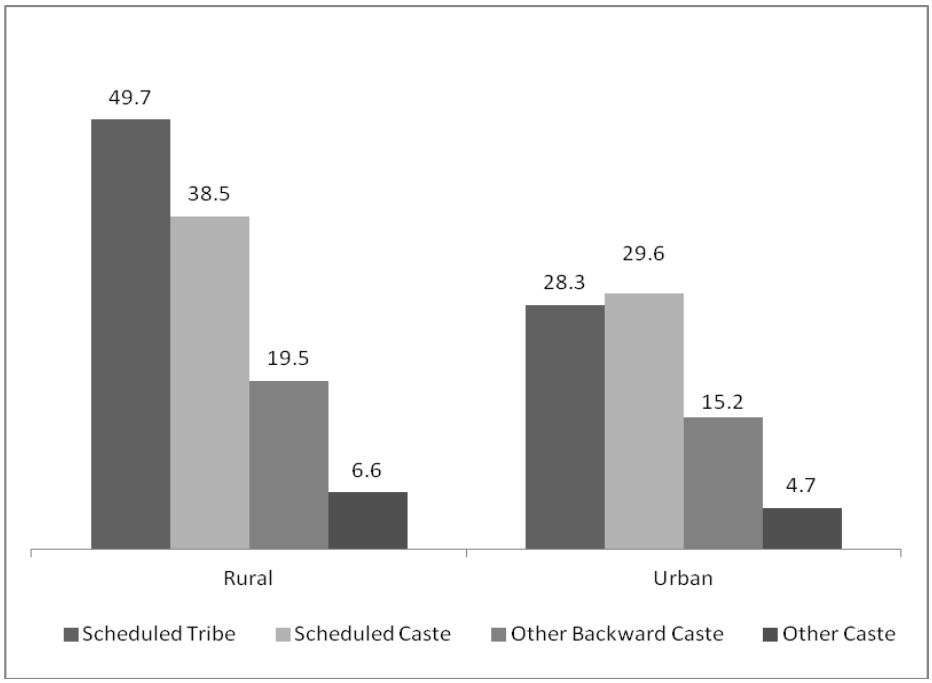

Table 1: Number of Districts by Value of Location Quotient (L.Q.) for Age Cohorts 20-24 and 35-59 years and Pursuing Engineering or Medicine

		Age Cohort 20-24 Years				
	L.Q	0-1	1-1.5	1.5-2	>2	Total
Age Cohort 35-59 Years	0-1	394	66	6	3	469
	1-1.5	55	45	30	6	136
	1.5-2	15	5	6	7	33
	>2	0	1	1	0	2
	Total	464	117	43	16	640

Source: Authors' calculation based on Census of India 2011 Tables
Note: Individuals in the age group 35-59 have completed their higher education.

Table 2: Net attendance ratio (in percentage) in higher education (for age group 18-29 years)

Region	Rural	Urban	Total
Northern	12.55	18.14	14.58
North East	8.33	20.69	10.51
Eastern	7.04	17.09	9.19
Central	10.93	18.71	12.90
Western	9.03	15.08	11.83
Southern	12.25	17.01	14.32
All India	10.06	17.21	12.38

The regions are defined as follows:
Northern: Jammu and Kashmir, Himachal Pradesh, Punjab, Chandigarh, Haryana, Delhi, and Rajasthan
North East: Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya, and Assam
Eastern: Bihar, Sikkim, West Bengal, Jharkhand, Orissa, and Andaman and Nikobar Islands
Central: Uttarakhand, Uttar Pradesh, Chhattisgarh, and Madhya Pradesh
Western: Gujarat, Daman and Diu, Dadra and Nagar Haveli, Maharashtra, and Goa
Southern: Andhra Pradesh, Karnataka, Lakshadweep, Kerala, Tamil Nadu, Pondicherry, and Telengana
Source: Authors' calculation from NSSO's 71st round (2014) data on Education

Table 3: Distribution of enrolled students over different types of courses, and regional distribution of enrolled students in each type of course

	Rural				Urban			
Region	General	Technical	Vocational	Total	General	Technical	Vocational	Total
Northern	78.28	19.31	2.4	100	62.86	36.09	1.04	100
	15.35	*14.94*	*37.52*	*15.49*	*16.53*	*14.1*	*24.13*	*15.61*
North East	88.25	11.24	0.5	100	81.21	17.8	0.99	100
	4.23	*2.13*	*1.92*	*3.79*	*3.18*	*1.03*	*3.4*	*2.32*
Eastern	84.8	14.36	0.85	100	71.14	28.32	0.54	100
	18.7	*12.48*	*14.92*	*17.42*	*16.54*	*9.78*	*10.94*	*13.8*
Central	88.02	11.28	0.7	100	67.88	31.19	0.93	100
	34.66	*17.51*	*21.98*	*31.1*	*24.83*	*16.95*	*29.82*	*21.72*
Western	79.65	19.82	0.53	100	56.82	42.72	0.46	100
	10.27	*10.07*	*5.43*	*10.18*	*16.83*	*18.8*	*12.1*	*17.59*
Southern	60.18	39	0.82	100	45.28	54.26	0.46	100
	16.79	*42.88*	*18.24*	*22.03*	*22.09*	*39.33*	*19.62*	*28.97*
All India	78.98	20.03	0.99	100	59.37	39.96	0.67	100
	100	*100*	*100*	*100*	*100*	*100*	*100*	*100*

Notes: For each region, the first row gives the distribution of enrolled students across different types of courses, and the second row gives the share of that region among the students who are enrolled in each type of course.

Source: Authors' calculation from NSSO's 71st round (2014) data on Education.

Table 4: Aggregate expenditure of all households in the economy

Region	Rural			Urban		
	Total expenditure on higher education (Rs. Crore)	Total household expenditure (Rs. Crore)	Share of higher education expenditure in total household expenditure (%)	Total expenditure on higher education (Rs. Crore)	Total household expenditure (Rs. Crore)	Share of higher education expenditure in total household expenditure (%)
Northern	6,241	1,99,809	3.12	8,554	1,91,561	4.47
North East	1,077	58,489	1.84	897	20,275	4.42
Eastern	5,312	2,87,763	1.85	6,213	1,38,726	4.48
Central	5,917	3,08,571	1.92	10,242	1,82,816	5.60
Western	3,553	1,70,771	2.08	10,557	2,42,493	4.35
Southern	12,728	3,01,666	4.22	19,013	3,46,712	5.48
Total	34,828	13,27,068	2.62	55,477	11,22,583	4.94

Source: Authors' calculation from NSSO's 71st round (2014) data on Education.

Table 5: Percentage of spending on higher education for households who have at least one member in higher education

Region	Rural	Urban	Total
Northern	14.31	16.23	15.15
North East	13.45	16.93	14.53
Eastern	14.26	16.46	15.13
Central	11.32	16.52	13.18
Western	14.95	18.04	16.76
Southern	22.28	21.75	22.01
All India	15.29	18.36	16.66

Source: Authors' calculation from NSSO's 71st round (2014) data on Education.

Table 6: Per capita annual expenditure on higher education, and household's total annual expenditure

Region	Rural			Urban		
	Per capita annual expenditure on higher education	Average annual expenditure of all households	Share of per capita higher education expenditure in total household expenditure (%)	Per capita annual expenditure on higher education	Average annual expenditure of all households	Share of per capita higher education expenditure in total household expenditure (%)
Northern	25,143	1,06,879	24	41,487	1,74,709	24
North East	17,718	77,112	23	29,249	1,28,882	23
Eastern	19,035	66,244	29	34,068	1,17,465	29
Central	11,873	72,149	16	35,697	1,31,865	27
Western	21,787	89,961	24	45,436	1,52,018	30
Southern	36,063	83,602	43	49,690	1,29,597	38
Total	21,735	79,202	27	41,991	1,38,734	30

Per capita annual expenditure on higher education is calculated considering students enrolled in higher education.

Source: Authors' calculation from NSSO's 71st round (2014) data on Education.

Table 7: Distribution of enrolled students over different types of institutions

Region	Rural				Urban			
	Government	Private Aided	Private unaided	Total	Government	Private Aided	Private unaided	Total
Northern	53.42	7.63	38.95	100	52.56	14.18	33.26	100
North East	77.38	13.07	9.56	100	60.33	22.77	16.9	100
Eastern	77.29	11.29	11.42	100	67.63	14.64	17.72	100
Central	43.64	25.76	30.6	100	38.22	26.58	35.2	100
Western	27.44	60.56	12	100	23.69	59.72	16.59	100
Southern	26.27	22.99	50.74	100	20.4	24.94	54.66	100
All India	46.78	22.89	30.33	100	37.24	28.31	34.45	100

Source: Authors' calculation from NSSO's 71st round (2014) data on Education.

Table 8: Average expenditure by region, sector, and type of institution

Region	Rural			Urban		
	Government	Private Aided	Private unaided	Government	Private aided	Private unaided
Northern	13708	37595	38336	20373	50447	62744
North East	13925	21785	44705	24885	25319	49883
Eastern	12028	22361	61552	17541	44729	88965
Central	8868	10735	16974	17551	22606	65371
Western	11362	22321	42584	25834	39087	96368
Southern	15128	29811	49661	20001	45692	62379
All India	11877	20734	37625	19766	38445	67718

Source: Authors' calculation from NSSO's 71st round (2014) data on Education.

Table 9: Average expenditure by region, sector and type of course

Region	Rural			Urban		
	General	Technical	Vocational	General	Technical	Vocational
Northern	15395	62948	38830	21404	75225	84314
North East	12798	55863	24585	19404	74002	32103
Eastern	10801	65539	55060	14455	83420	29627
Central	8629	36282	26657	12948	84516	59160
Western	13176	56548	16061	18602	81291	30550
Southern	16696	66001	33746	18660	75448	66625
All India	12072	59117	36140	17013	78817	59084

Source: Authors' calculation from NSSO's 71st round (2014) data on Education.

Table 10: Total Amount of Cash Loans Outstanding and Cash Loans for Education

	Rural			Urban		
Region	Outstanding Total Cash Loans (Rs Crore)	Outstanding Cash Loans for Education (Rs Crore)	Share of Educational Loans in Total Cash Loans (%)	Outstanding Total Cash Loans (Rs Crore)	Outstanding Cash Loans for Education (Rs Crore)	Share of Educational Loans in Total Cash Loans (%)
Northern	76,882	438	0.57	80,263	1,571	1.96
North East	3,420	73	2.14	4,496	110	2.44
Eastern	52,625	1,207	2.29	45,831	2,048	4.47
Central	81,716	390	0.48	101,828	1,882	1.85
Western	58,305	1,228	2.11	152,592	2,071	1.36
Southern	234,874	9,768	4.16	323,551	19,105	5.90
Total	**507,822**	**13,104**	**2.58**	**708,561**	**26,788**	**3.78**

Source: Calculations from Unit Level Data

Table 11: Distribution of Total Cash Loans and Cash Loans for Education by Region

	Rural		Urban	
	Share Total Cash Loans	Share in Total Educational Loans	Share Total Cash Loans	Share in Total Educational Loans
Northern	15.1	3.3	11.3	5.9
North East	0.7	0.6	0.6	0.4
Eastern	10.4	9.2	6.5	7.6
Central	16.1	3.0	14.4	7.0
Western	11.5	9.4	21.5	7.7
Southern	46.3	74.5	45.7	71.3
Total	100	100	100	100

Source: Calculations from Unit Level Data
For grouping states by regions please see Table 2.

Table 12: Distribution of Outstanding Loans by Decile Class of Asset Holding

	Rural		Urban	
Decile Class of Asset Holding	Share in Volume of Total Cash Loan	Share in Volume of Cash Loan for Education	Share in Volume of Total Cash Loan	Share in Volume of Cash Loan for Education
1 (Bottom 10 per cent)	3.0	5.3	0.66	4.85
2	2.7	4.1	1.41	9.15
3	4.2	5.8	2.38	8.33
4	4.8	4.3	3.34	7.54
5	5.8	3.2	3.53	6.27
6	7.2	6.1	4.35	4.93
7	8.9	16.6	6.56	8.22
8	11.6	12.2	10.75	13.93
9	17.4	15.0	19.89	17.89
10 (Top 10 per cent)	34.4	27.4	47.12	18.89
Total	100.0	100.0	100.00	100.00

Source: Calculations from Unit Level Data
Note: The decile classes are generated separately for rural and urban India after using household weights

Table 13: Source of Outstanding Volume of Cash Loans for Education

	Rural			Urban		
	Institutional	Money Lender (agricultural moneylender, professional moneylender)	Other Non-Institutional	Formal Institutions	Money Lender	Other Non-Institutional
Northern	56	24	20	91	4	5
North East	34	61	6	77	8	15
Eastern	76	19	5	82	14	5
Central	54	36	10	78	3	19
Western	80	4	17	87	2	11
Southern	70	22	8	80	16	4
Total	70	21	9	81	13	6

Institutional: Government, co-operative society/bank, commercial bank incl. regional rural bank, insurance, provident fund, financial corporation/institution, financial company, self-help group-bank linked (SHG-BL), self-help group, non-banking financial companies (SHG-NBFC), other institutional agencies
Other non-institutional: Landlord, Input Supplier, Relatives and Friends, Doctors, Lawyers & Other professionals, Others.
Source: Calculations from Unit Level Data

Table 14: Type of Security & Outstanding Volume of Cash Loans for Education by Source of Borrowing

	Rural			Urban		
	Institutional	**Money Lender (agricultural moneylender, professional moneylender)**	**Other Non-Institutional**	**Institutional**	**Money Lender (agricultural moneylender, professional moneylender)**	**Other Non-Institutional**
Surety Security or Guarantee by Third Party	16.18	1.56	8.01	15.70	3.80	0.21
Mortgage of Immovable Property	21.78	2.91	0.11	15.39	13.64	0.03
Bullion / Ornaments	11.40	5.84	15.93	9.87	13.56	4.53
Personal Security	33.47	83.35	75.22	43.08	67.84	86.35
Others*	17.17	6.33	0.73	15.96	1.17	8.88
Total	100.00	100.00	100.00	100.00	100.00	100.00

Institutional & Other Non-Institutional: Please see Table 4.
*** Others**: Crop, First charge on immovable property, Shares of companies, government securities and insurance policies etc, Agricultural commodities, movable property other than bullion, ornaments, shares, agricultural commodities etc., Other type of security
Source: Calculations from Unit Level Data

Table 15: Net attendance ratio by households' usual consumption expenditure quintiles

Expenditure Quintiles	Rural	Urban	Total
0-20	3.27	6.11	4.21
20-40	6.69	10.01	7.68
40-60	8.48	16.31	11.1
60-80	13.52	21.43	16.31
80-100	18.54	32.38	22.8
Total	10.06	17.2	12.38

Source: Authors' calculation from NSSO's 71st round (2014) data on Education.

References:

Agrawal Tushar (2014) Essays on Education and Labour Marker in India, Ph.d Thesis, Indira Gandhi Institute of Development Research, Mumbai, India

Castelló-Climent Amparo, Abhiroop Mukhopadhyay (2013) "Mass Education or a Minority Well Educated Elite in the Process of Growth: The Case of India" Journal of Development Economics 105(2013) p.303–320

Chandrasekhar S and Ajay Sharma (2013) "Internal Migration for Education and Employment among Youth", Chapter 9 in State of the Urban Youth, India 2012: Employment, Livelihoods, Skills, Report Commissioned by UN-HABITAT's Global Urban Youth Research Network, Available: http://www.esocialsciences.org/general/a201341118517_19.pdf

Chapman Bruce (2006) Government Managing Risk: Income contingent loans for social and economic progress, Routledge

Chakrabarty K C (2009) GenNext Banking : Issues and Perspectives, Panel Discussion on GenNext Banking at the 4th International Finance and Banking Conference organized by the Indian Merchant's Chamber on November 25, 2009, Mumbai Available http://rbidocs.rbi.org.in/rdocs/Speeches/PDFs/GNSDC251109.pdf

Deloitte and Confederation of Indian Industry (2013) "Status of Higher Education in South India 2013" Available https://www2.deloitte.com/content/dam/Deloitte/in/Documents/IMO/in-imo-higher-education-in-southern-region-noexp.pdf

Geetha Rani, P.(2015) Interstate Disparities in Interest Subsidies on Education Loans in India: Why and How does it Persist? University News, 53 (48), p.74-85.

Geetha Rani, P. (2014a) Equity in the distribution of government subsidies on education in India, International Journal of Education Economics and Development, 5(1), p.1-39.

Geetha Rani, P. (2014b) Education Loans and Financing Higher Education in India: Addressing Equity, Higher Education for the Future, 1(2), p.183-210.

Government of India (2015) Key Indicators of Social Consumption in India: Education, NSS KI (71/25.2), National Sample Survey Office, Ministry of Statistics and Programme Implementation, Government of India, June 2015

Government of India (2014) Key Indicators of Debt and Investment in India, NSS KI (70/18.2),National Sample Survey Office, Ministry of Statistics and Programme Implementation, Government of India, December 2014

Government of India (2013) Twelfth Five Year Plan (2012–2017) Social Sectors, Volume III, Planning Commission, Government of India

Tilak J B G (2004) Inclusive Growth and Education: On the Approach to the Eleventh Plan, Vol. 42, Issue No. 38, 22 Sep, 2007, Economic and Political Weekly (pp 3872-77)

Tilak J B G (2004) Public Subsidies in Education in India, Vol 39 No 4, Economic and Political Weekly (pp 343-359)

Tilak J B G (1992) Student Loans in Financing Higher Education in India, Vol 23 No 4, Higher Education (pp 389-404)

Ziderman, Adrian (2004) Policy Options for Student Loan Schemes. Bangkok: UNESCO Bangkok/IIEP, 2004