

Synopsis of the Ph.D. Thesis Entitled as

**EDUCATIONAL ATTAINMENT IN INDIA:  
AN EMPIRICAL ANALYSIS**

**A Synopsis of the thesis submitted to Jadavpur University, West Bengal for  
the Degree of Doctor of Philosophy in Arts (Economics)**

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# **EDUCATIONAL ATTAINMENT IN INDIA: AN EMPIRICAL ANALYSIS**

## **A. Introduction**

Education refers to the act of bestowing general knowledge, strengthening one's capacity for argument and judgment, and generally preparing oneself and others intellectually for life. Education can be seen as the dissemination of a society's values and collective wisdom. Since it helps in expanding social mobility, facilitates economic development, and promotes equality of opportunity. Dixon (2016), Unni (2016), and Brown and Oterio (2020) conclude that a higher level of education increases the opportunities for prestigious employment. A balanced education system promotes not only economic development, but also economic growth. Lucas (1988); Barro (1991); Mankiw, Romer, and Weil (1992); Lin (2004) and Fukase (2010) highlights the role of educational attainment on economic growth through an increase in human capital. Evidence suggests that improved education leads to a reduction in income inequality, which in turn can contribute to higher economic growth. A higher level of education helps to reduce income inequality (Abdullah et al.,2015 and Yang and Qiu,2016).

It has been observed that educational outcome is biased by caste, religion, gender, and other demographic factors. As World Bank report (2005) points out unequal opportunities for different groups increase unequal chances of acquiring education. There has been substantial inequality of opportunity with respect to the acquisition of human capital. One aspect of inequality can be traced to the inequality of human capital in the current generation which reflects the very unequal opportunities that people have inherited from their parents. This approach focuses on intergenerational educational mobility. It shows that lower persistence in educational outcomes across generations means higher educational mobility in a society. The educational success of a

generation is dependent on the educational level of their parents in cases where public policies are not adequate.

Since ancient times in India, the right to education was graded, i.e the higher caste had access to it while those lower in the social hierarchy were deprived of it. Moreover, India has been a good case study to examine the extent of this historically persistent educational attainment gap in presence of societal stratification in terms of caste, gender, and religion<sup>1</sup>.

## **B. Survey of Literature**

We aim to present an extensive survey of literature to identify the caveats, where this thesis can contribute.

### **1. Indicators of Education Development**

Given the importance of education to expedite economic growth, it becomes imperative on our part to have a closer look at the different indicators of educational development. Widely used indicators of educational development are categorized into quantitative and qualitative measures<sup>2</sup>. To estimate the disparity in educational attainment quantitatively, the basic indicators which majority of literature have chosen are literacy<sup>3</sup> rate, enrolment ratio and drop-out rates<sup>3</sup>.

While majority of the indicators focus on quantitative aspect of education, one must remember that it is not merely the years of schooling but the depth of understanding and knowledge which defines educational outcome. So next we look into educational achievement which sheds light on qualitative aspect of education. With quality of learning gaining momentum, researchers shifted

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<sup>1</sup> See Ray and Majumder (2014), Emran and Shilpi (2015), Azam and Bhatt (2015), Kishan (2018).

<sup>2</sup> Quantitative indicator includes literacy rate, enrolment ratio and attainment. On the other hand, educational achievement is considered as qualitative indicator.

<sup>3</sup> See Kapur and Murthi (2009), Dreze and Loh (1995), Basu and Lee (2008), Sancez and Singh (2018),

to educational achievement as a measure of educational development<sup>4</sup>. Though there are papers on literacy rate, enrolment ratio, and educational attainment among the less privileged, there has not been much research with respect to qualitative disparity in education across castes in India.

## **2. Factors Affecting Educational Development**

Academic literature has identified some factors which help in explaining persistent gaps in educational attainment. In this section, we attempt to trace the role of such variables like socio-economic status (SES), caste or race, gender, geographic or regional dimension in India<sup>5</sup>.

Socioeconomic status essentially includes household factors such as parental education, parental employment status, household income, and household class in terms of poor, middle, and comfortable. Unequal opportunities for different groups (e.g., caste, gender, or class) increase unequal chances of acquiring education. Poverty can also be associated with loss of equal opportunity. The Socio-Economic Caste Census Survey (SECC) 2011 revealed that 1.6(0.91%) million of the 179 million households surveyed were suffering from severe poverty, and 87.2(48.54%) of the 179 million households surveyed were victims of deprivation<sup>6</sup>. Such an abysmal picture of reality motivated us to investigate whether such conditions are responsible for lesser educational attainment among the marginalized groups. Researchers have obtained family-related socio-economic resources to explain educational achievement gap within the different

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<sup>4</sup> While Heyneman and Loxley (1983) and Hanushek (2002) investigated it in the United States, in India this was undertaken by Shukla et al (1994), Pratham (2005), Jalan and Panda (2010) and Das (2019).

<sup>5</sup> Wadhwa (2018), Meehan, Pacheco, and Pushon (2019), Malish and Ilavarasan (2016), Kumar (2020).

<sup>6</sup> According to SECC (2011) 2/3<sup>rd</sup> of the households in the SC and ST groups belong to the lower income groups, i.e., the monthly income is less than Rs 5000.

social groups<sup>7</sup>. Individual student and household characteristics can have a significant bearing on learning outcomes<sup>8</sup>.

Gender inequality is a major obstacle to overall progress of human race. Women empowerment, defined as an adequate representation of women in all aspects of life, beginning with political decision-making, can be a powerful weapon for eradicating gender inequity<sup>9</sup>. There has been a number of literature which looks into the gender gap in educational achievement at elementary level. Katiyar (2016) and Kumar, Kumar and Rani (2016) focused on gender disparity in literacy rates using census data<sup>10</sup>.

Regional variation has also been identified as a determining factor for educational achievement. Dreze and Loh (1995); Gao and Chen (2010); Barro and Lee (2013); Sancez and Singh (2018) discussed cross-national disparities in educational attainment<sup>11</sup>.

Evidence shows that school infrastructure and home environment can also play an important role in shaping learning outcome of students. There has been an extensive literature that looks into the effect of supply-side factors like school level expenditures, teacher-student ratios, teacher quality and teacher performance on the educational attainment of children<sup>12</sup>. The effect of child effort

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<sup>7</sup>See Fryer and Levitt (2004), Magnuson and Duncan (2006) and Brooks-Gunn et al. (2010)

<sup>8</sup>See Govinda and Varghese (1993), Kindgon (2002) and Jalan and Panda (2010)

<sup>9</sup> In spite of several state laws being enacted in India since the 1950s to establish social equality between men and women, 62.90% of female headed households were found to face deprivation (SECC,2011).

<sup>10</sup> Ghosh and Kundu (2021) and Biswas and Kundu (2022) explored female enrolment, Goldin, Katz, and Kuziemko (2006) and Legewie and Diprete (2012) focused on educational achievement by girls, and Emran and Shilpi (2015) intergenerational educational mobility of women.

<sup>11</sup> Das et. al., (2013); Borooah (2012) and Khan (2022) Banerjee, et al., (2007); Chaudhuri and Roy (2009); Muralidharan and Sundararaman, (2011) and Banerjee, Das and Mohanty (2014) focus on state-wise disparity in educational attainment in India.

<sup>12</sup> See Ferguson (1998), Hanushek (2002), Hoxby (2000), Krueger and Whitmore (2001), Jalan and Panda (2010). Chudgar and Sankar (2008) focused the effect of female teacher on educational achievement. Banerjee, et al. (2007) focused remedial education program on educational achievement.

variables on educational outcome gets high attention in different literature<sup>13</sup>. Parvez and Laxminarayana (2022), Endow (2018), Kingdon (2020) explored the gap in educational achievement between private and public school.

Ever since the later Vedic ages in India, caste system emerged as an oppressor-oppressed class struggle. Later in modern India, this system created the “minorities” who were categorized as Scheduled Castes and Scheduled tribes. The entanglement of religious norms, social obligations, and financial hardships in India has forever been imposed on reserved castes. Since enactment of Indian constitution, **Reservation Policy** was implemented to eradicate socio- economic marginalization of the classes at the bottom of the social hierarchy. The association between caste and higher education in India has been a relatively under researched topic. While there have been some works which look into caste as a determinant of primary education like Nambissan (2009), Majumder (2010a), Ray and Majumder (2013), Mungekar (2009); higher education has been relatively ignored. There have been multidisciplinary papers which look into the exclusion of the “Dalits” in higher education Sukumar (2008), Neelakandan and Patil (2012).

It has also been observed that the second generation of the reserved groups who have shifted to a higher income regime, reaped the benefits of positive discrimination (Patwardhan and Palshikar 1992). It is in this context, that we aim to look into the spillover effect of the previous generation’s achievements onto the current generation. In particular, we aim to trace the intergenerational mobility in higher education. If the educational achievement of the father has a significant bearing on the son’s education level, then we would infer that mobility is absent. While there have been

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<sup>13</sup> Hamlet, Chakraborty and Kaminsky (2021) identified negative relationship between time spent on water fetching and educational achievement.

no dearth of literature on intergenerational mobility<sup>14</sup>, there has been substantial caveat when it comes to its association with reservation in higher education in India<sup>15</sup>.

How far reservation policy has been able to eliminate discrimination on the basis of caste needs to be investigated. In rural India, 71.99% of scheduled caste (SC) and 74.48% of scheduled tribe (ST) households have been suffering from deprivation of basic amenities, such as free healthcare, elementary education, and a non-agricultural workforce (SECC, 2011). However, according to the SECC survey, 31.15 percent and 39.35 percent of total SC and ST families, respectively, do not have a literate family member aged 25 or older. While the efficacy of the reservation policy has been substantially questioned<sup>16</sup>, others have opined that still necessary for higher education for different groups because without such measures exclusion and social discrimination will be strengthened in India (Ghosh, 2006) (Chalam, 1990)<sup>17</sup>.

So it becomes imperative to trace whether these policies have attributed to intergenerational mobility, thus reducing inequality even within these communities.

Intergenerational educational mobility or fluidity is the degree of difference in educational attainment between parents and offspring. Simply educational mobility- is the degree to which a child's education is "unconnected" to their parents' education. High levels of intergenerational educational persistence result in a vicious circle of low level educational attainment trap. India has

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<sup>14</sup> See Cheng and Dai (1995), Checchi (1997), Bowles and Gintis (2002), Louw, Berg, and Yu (2006), Checchi, Fiorio, and Leonardi (2013a), Brown, McIntosh, and Taylor (2011)

<sup>15</sup> There has been some significant contribution by Kumar, Heath, and Heath (2002a) , Kumar, Heath, and Heath (2002b), Jalana and Murgaib (2008), Maitra and Sharma (2009), Majumder (2010), Ray a and Majumder (2013), Motriam and Singh (2021), Hnatkovska, Lahiri, and Paul (2013)

<sup>16</sup> The anti-reservation policy lobbyists claim; the same families might continue to have access to these opportunities generation after generation.

<sup>17</sup> The representation of SC/ST population in formal job market and higher educational institution is still lower than their counterpart (Louis, 2003). The reservation policy creates upward mobility in higher education among SC/ST in India (Weisskope, 2004) (Benjamin, 2008).

been a good case study to examine the extent of this persistent educational attainment gap in presence of societal stratification in terms of caste, gender, and religion<sup>18</sup>.

One such pertinent question is whether intergenerational educational mobility is intertwined with both caste and religion. Needless to say that both caste and religion have profound bearing on political process and hence decision making. Marginalization on the basis of ethnicity, religion, gender and economic status is a socioeconomic and political process. It has evolved historically and there exists barriers of different kinds pertaining to vertical mobility. India, being an excellent case study because of its diverse ethnicity and classes, have commanded sufficient academic interest.

However, there has been a serious dearth of literature pertaining to intergenerational mobility within the “socially backward” classes. While there have been some papers like Kumar et al. (2002a, 2002b), who have explored class mobility, there have been lesser studies on educational mobility across generations. A more recent paper by Majumdar (2010) has observed substantial upward educational mobility within the reserved classes. Similar line of research by Ray and Majumdar (2013), Kishan (2018), Azam and Bhatt (2015) and Asher, Novosad and Rafkin (2021) using secondary data like the Indian Human Development Survey (IHDS) data base have considered the effects of ethnicity and religion, in particular on educational mobility in India. Using NSSO survey, Hnatkovska, Lahiri and Paul (2013) finds that intergenerational educational mobility among SC/ST converged to non-SC/ST during 1983 and 2005. Our research is an analogous attempt to interrogate the complex hierarchy based on existing economic privilege and socio cultural identities of different groups. In this research, we also aim to identify the three

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<sup>18</sup> Ray and Majumder (2014), Emran and Shilpi (2015), Azam and Bhatt (2015), Kishan (2018).



interconnected factors—caste, reservation, and intergenerational higher educational mobility—using only observations of the reserved category in India. In particular, we aim to trace the intergenerational mobility in higher education. If the educational achievement of the father has a significant bearing on the son's education level, then we would infer that mobility is absent. Moreover, poverty can be one of the factors behind educational attainment as it is like an opportunity cost to education. Children in poor families can be utilized as an alternative source to earnings rather than providing them with education (Dreze and Kingdon 2001). In this regard public policies may have a significant effect on parental decision making. This research is an attempt to reflect on such barriers of inter-generational mobility and how policy specific measures can be introduced to address such inequalities.

In several research papers, many indicators have been used to measure intergenerational educational mobility. Following their study, we have focused on relative, absolute, vertical, upward and overall mobility in our thesis.

A thorough review of the literature indicates that there are substantial caveats in the literature regarding caste based disparity in learning outcomes in India. This research is an attempt in this direction to identify the qualitative educational achievement gap between the general caste and the reserved castes in India based on secondary data. We found that there is a significant achievement gap between general and reserved caste children in India. This disparity in achievement motivated us to explore whether this was a one-point phenomenon or was being transmitted through generations within these marginalized groups. So next, we took up the concept of intergenerational educational mobility in India. Observing significant achievement gap among SC/ST children in primary education, we wanted to look into the higher education scenario in India. Reservation policy has been implemented with the objective of facilitating education among the marginalized

classes. So the thesis looks into the role of reservation policy in educational attainment in intergenerational framework of reserved classes. We obtained that while the possession of caste certificate gave an impetus at the entry to the reserved category, it is not sufficient for completion of the degree. So we undertake a primary survey to get a firsthand idea with respect to the role of public policy on intergenerational educational mobility. We found that public policy variables not only increase vertical mobility, but also reduces the degree of association between children and parental years of schooling.

### **C. Objectives and Research Questions**

The objectives of the proposed research are given below:

- The first objective is to find out the scholastic achievement gaps between general and reserved categories in pre-primary and primary levels of education and the effect of household conduciveness factors, child effort variables and school factors on such gap (see chapter 2).
- The second objective is to find out intergenerational inertia in higher educational attainment and the efficacy of reservation policy for reserved category (see chapter 3).
- The third objective is to analyze the extent of intergenerational educational mobility and its association with selected socio-economic and policy variables using a primary survey in selected districts of West Bengal (see chapter 4).

The objectives and the research questions are closely tied to one another. In the proposed study, the following research questions have emerged:

- Whether there exist any scholastic achievement gaps between general and reserved categories in pre-primary and primary level of education and which factors are responsible for such gap?
- How reservation policy particularly caste certificate affects higher educational intergenerational mobility for reserved category in India?
- How socio-economic and policy variables affects intergenerational educational mobility in West Bengal?

The proposed research is organized into the following chapters.

Chapter 1 Introduction, literature review – research gap and objective – organization of proposed research

Chapter 2: Gap in educational achievement in India: A primary level Analysis

Chapter 3: An intergenerational perspective of education in India across social hierarchies

Chapter 4: A socio economic perspective of intergenerational educational mobility in West Bengal: A primary Survey

Chapter 5: Conclusion

#### **D. Gap in Educational Achievement in India: A Primary Level Analysis**

**Objective:** Chapter 2 examines the educational achievement gap between the general caste and the reserved castes in India based on secondary data. In other words, it was examined that there exists any type of scholastic achievement gap among different caste groups which can be measured in terms of learning ability in reading and writing test scores, and the ability to reason through mathematics test scores. This chapter explores reading, writing and mathematics test scores of

primary school going children aged 8-11 years in the light of their caste. The chapter also focus on the effects of household conducive variables, child effort variables at home and school on test scores as well as achievement gap between general and reserved category student.

The students have then been divided in two age groups, i.e. 8-9 years which is categorized as the pre-primary students (class III- IV) and 10-11 years which is categorized as primary students (class V – VI). This step is taken to understand whether educational achievement gap decreases when one student promoted from standard III-IV to standard V-VI. Chapter 2 also explores the sensitivity of the estimated caste gaps in test scores a wide variety of alternative specifications and subsamples of the data. Also, the responsiveness of how changes in various controlling covariates within a caste group effect the test scores is investigated. The chapter also focuses test score gap with taking into account of school fixed effect in regression analysis. We present a full regression model in our research that includes an exhaustive set of roughly 60 covariates that capture household conducive variables, child effort variables, parental employment status etc.

**Findings:** We have identified substantial test score gap between general and reserved categories. We also find that the test score gap is the maximum for the scheduled tribes in both pre-primary and primary schooling. This implies that in spite of the efforts undertaken by the government, the scenario has not improved much for the scheduled tribes. However, as the students move from pre-primary to primary, the gap reduces for all the three reserved categories. Our analysis also conforms to the general hypothesis that with better socio-economic status like higher household income and parental education the test score gap reduces. An interesting finding is that the gap reduces and becomes almost zero when we compare within groups across geographical locations i.e., between rural households and non-metro urban households. This once again suggests that when the opportunity set available to the different castes, general of otherwise is the same, then

there is nearly no difference in educational outcome. SC and ST female child perform much worse in each test score than their brother. Gender gap in educational achievement is biased by caste for SC and ST. The results suggest that students of all reserved categories attending in private school perform slightly better than public school. Incorporating the school fixed effect in our regression, and we see that the test score gap between general and OBC students completely disappears while the test score gap between SC and ST students and general students significantly narrows. With the exception of the gap between OBC and general caste students, the gap does not alter considerably after taking into account an exhaustive set of covariates in the model. The results of this chapter suggests that rather than having reservation for the sake of it, with time it has become more important to expand the opportunity set available to all. So educational achievement gap between general and reserved categories motivated us to examine the role of reservation policy particularly the efficacy of caste certificate on educational attainment.

## **E. An Intergenerational perspective of Education in India across Social Hierarchies**

**Objectives:** In this chapter, we aim to investigate how far such reservation has been instrumental in increasing the incidence of higher education within the reserved sub groups. In particular, we aim to analyze how far the possession of caste certificate has contributed to higher level of academic achievement among the reserved groups. In this chapter, we mainly estimate higher educational attainment in the framework of intergenerational educational mobility using transition matrix and Altham metric methodology. Next, we reran the same regression on different subgroups of individuals. The subgroups that we have considered are family income below median, family

income above median, father's education level higher secondary and above and father's education level below higher secondary.

**Findings:** For both the methodologies undertaken, we observe the incidence of vertical mobility and the effect being more prominent for the third generation sons. In particular, for the first methodology, we obtain that there has been substantial change in the degree of association between father-son educational achievements if the household possesses caste certificate, but it is not so for the group which do not have caste certificate. With regard to the regression analysis, we obtain that if the father's educational attainment is equal and above higher secondary, then caste certificate does not have a significant contribution towards upward mobility. Caste certificate becomes very important when we consider father's education below the higher secondary level. 3rd generation becomes more mobile in this group. We also identify that the probability of higher educational mobility is maximum for the groups having income above median and staying in urban region. The result is logically consistent in the sense that the demand for children's higher education among lower income households is more elastic and opportunity set is more available in the urban area. For the targeted reserved category (those with incomes below the median and fathers with just secondary schooling or less), having a caste certificate is required at the entry level, but it is insufficient to obtain a higher education degree. Therefore, although reservation policy is still significant today, it is not the only factor affecting higher education for reserved castes. To make higher education more convenient, it must be combined with socioeconomic opportunities like expansion of household income, enhanced supply of educational infrastructure, proper efficacy of public policy at all levels, among others.

## **F. Socio Economic Perspective of Intergenerational Education Mobility in West Bengal: A primary Survey**

**Objectives:** We have explored absolute and relative intergenerational educational persistence in chapter IV using an extensive primary survey in West Bengal. We have also investigated the interrelationship between socio economic, demographic and regional variables in explaining vertical mobility between parents, both father and mother with their sons and daughters. We have broken the sample into subgroups and investigated the extent of intergenerational educational mobility. This analysis looks into the inter relationship between parental educational attainment and the child's probability of reaching different educational attainment across religion, castes, gender, economic condition and region. The role of public policies on relative, absolute and vertical mobility gets high attention in this chapter.

**Findings:** The empirical analysis indicates that in West Bengal there is a strong association between parents' and child's (both son and daughters) educational attainment in both relative and absolute terms. Absolute mobility is higher in terms of mother education. After inclusion of household and individual specific factors, public policy variables and education migration variable, we find a substantial decrease in degree of association between children and parent's years of schooling. The results of transition matrices highlight a strong intergenerational educational persistence in West Bengal. From the transition matrix analysis, we conclude that across all socio-economic groups persistence is lower at lower-level education category, but persistence is much higher at the tertiary level of education in West Bengal. Using ordered logistic regression method, we find that the likelihood that a child will complete tertiary level of education depends on whether the parent's education level fall in the category of tertiary education. If mother is at least secondary level educated, then the chances of descendants to attain tertiary level of education is higher compared to the descendants of father with at least secondary education.

Mother education is also very important for SC/ST children's educational achievement. So, in West Bengal, female educational achievement is an important predictor to enhance education of future generation. When we disaggregated our analysis across all socio-economic groups using ordered logistic regression, we observed that vertical mobility has been varied across the subgroups. Hindus are more mobile compared to Muslim. We do not identify any significant difference in intergenerational persistence between general and OBC groups. However, we find SC/STs are mobile than OBC and general children in terms of Altham metric analysis. Our findings confirm males are more mobile than female and we also observe cross pair effect is stronger than same pair effect. Using all three methodologies, we identify that all the policy variables considered play a positive and significant role on mobility. All policy variable helps to decrease the degree of association between children and parent's years of schooling. Using Altham metric, the results suggest that those received policy variables are more mobile than those are not. On the other hand, using ordered logistic regression methodology, we find that all policy variables like mid-day meal, scholarship, sanitation, all weather road etc. have a significant positive impact on the probability of reaching secondary or tertiary level of education by the descendants. We also make an attempt to understand whether the chance of higher education of an individual is shaped by his/her parental education in terms of his/her place of residence. We identify that in areas where state policies like scholarships are sparse and school infrastructure is generally subpar, raising a child's educational aspirations solely depends on their parents' education levels. Although these results do not suggest causation, they do give insight into the potential causes of the persistent immobility and aid in the formulation of policy recommendations.



## Bibliography

- Abdullah, A., Doucouliagos, H., & Manning, E. (2015). Does Education Reduce Income Inequality? A Meta- Regression Analysis. *Journal of Economic Surveys* , 29(2), 301-316. doi:<https://doi.org/10.1111/joes.12056>
- Asher, S., Novosad, P., & Rafkin, C. (2021). Intergenerational Mobility in India: New Measures and Estimates Across Time and Social Groups. <http://paulnovosad.com/pdf/anr-india-mobility.pdf>.
- Azam, M., & Bhatt, V. (2015). Like Father, Like Son? Intergenerational Educational Mobility in India . *Demography*, 52(6), 1929–1959. doi:<https://doi.org/10.1007/s13524-015-0428-8>
- Banerjee, S., Das, N., & Mohanty, A. (2014). Impact of Teacher Competence and Teaching Effectiveness on Students' Achievement in Life Science Subject at the Upper Primary Stage. *Journal of Indian Education*, XXXIX(4), 29-48.
- Banerjee, A. V., Cole, S., Duflo, E., & Linden, L. (2007). Remedying Education: Evidence from Two Randomized Experiments in India. *The Quarterly Journal of Economics*, 122(3), 1235–1264. doi:<https://doi.org/10.1162/qjec.122.3.1235>
- Benjamin, J. (2008). Dalit and Higher Education in India. *The Indian Journal of Political Science*, 69(3), 627-642.
- Barro, R. J. (1991). Economic Growth in a Cross Section of Countries Get access Arrow. *The Quarterly Journal of Economics*, 106(2), 407–443. doi:<https://doi.org/10.2307/2937943>
- Barro, R. J., & Lee, J. W. (2013). A new data set of educational attainment in the world, 1950–2010. *Journal of Development Economics*, 104, 184-198. doi:<https://doi.org/10.1016/j.jdeveco.2012.10.001>
- Basu, K., & Lee, T. (2008). A new and easy-to-use measure of literacy, its axiomatic properties and an application. *Social Choice and Welfare*, 32, 181–196.
- Biswas, P., & Kundu, A. (2022). Determinants of Enrolment of Girl Children in Primary Education in Rural India: A Region-based Analysis. *Indian Journal of Human Development*, 16(2). doi:<https://doi.org/10.1177/09737030221120474>

- Bowles, S., & Gintis, H. (2002). The Inheritance of Inequality. *Journal of Economic Perspectives*, 16(3), 3-30.
- Borooah, V. K. (2012). Social Identity and Educational Attainment: The Role of Caste and Religion in Explaining Differences between Children in India. *The Journal of Development Studies*, 48(7). doi:<https://doi.org/10.1080/00220388.2011.621945>
- Brooks-Gunn, J., Razza, R. A., & Martin, A. (2010). Associations among family environment, sustained attention, and school readiness for low-income children. *Developmental Psychology*, 46(6), 1528–1542.
- Brown, S., McIntosh, S., & Taylor, K. (2011). Following in Your Parents' Footsteps? Empirical Analysis of Matched Parent–Offspring Test Scores. *Oxford Bulletin of Economics and Statistics*, 73(1), 40-58. doi: <https://doi.org/10.1111/j.1468-0084.2010.00604.x>
- Brown, P., & Souto-Otero, M. (2018). The end of the credential society? An analysis of the relationship between education and the labour market using big data. *Journal of Education Policy*, 35(1), 95-118. doi:<https://doi.org/10.1080/02680939.2018.1549752>
- Chaudhuri, K., & Roy, S. (2009). Gender gap in educational attainment: evidence from rural India. *Education Economics*, 17(2). doi:<https://doi.org/10.1080/09645290802472380>
- Chalam, K. S. (1990). Caste Reservations and Equality of Opportunity in Education. *Economic and Political Weekly*, 25(41), 2333-2339. doi:<https://www.jstor.org/stable/4396871>
- Cecchi, D. (1997). Education and Intergenerational Mobility in Occupations: A Comparative Study. *The American Journal of Economics and Sociology*, 3, 331-351. doi: <https://doi.org/10.1111/j.1536-7150.1997.tb03364.x>
- Cecchi, D., Fiorio, C. V., & Leonardi, M. (2013). Intergenerational persistence of educational attainment in Italy. *Economics Letters*, 118(1), 229-232. doi:<https://doi.org/10.1016/j.econlet.2012.10.033>
- Cheng, Y., & Dai, J. (1995). Intergenerational Mobility in Modern China. *European Sociological Review*, 11(1), 17–35. doi:<https://doi.org/10.1093/oxfordjournals.esr.a036347>

- Chudgar, A., & Sankar, V. (2008). The relationship between teacher gender and student achievement: evidence from five Indian states. *Compare: A Journal of Comparative and International Education*, 38(5). doi:<https://doi.org/10.1080/03057920802351465>
- Das, A. K., Gichuru, M., & Singh, A. (2013). Implementing inclusive education in Delhi, India: regular school teachers' preferences for professional development delivery modes. *Professional Development in Education*, 39(5), 698-711. doi:<https://doi.org/10.1080/19415257.2012.747979>
- Das, D. (2019). Academic Resilience among Children from Disadvantaged Social Groups in India. *Social Indicators Research*, 145, 719–739.
- Dixon, J. (2016). Opportunities and challenges: supporting journeys into education and employment for young people leaving care in England. *Revista Española de Pedagogía*, 74(263), 13-29.
- Dreze, J., & Loh, J. (1995). Literacy in India and China. *Economic and Political Weekly*, 30(45), 2868-2878 .
- Dreze, J., & Kingdon, G.G. (2001). School Participation in Rural India. *Review of Development Economics*, 5(1), 1-24. <https://doi.org/10.1111/1467-9361.00103>
- Emran, M. S., & Shilpi, F. (2015). Gender, Geography, and Generations: Intergenerational Educational Mobility in Post-Reform India. *World Development*, 27, 362-380.
- Endow, T. (2018). Inferior Outcomes: Learning in Low-cost English-medium Private Schools—A Survey in Delhi and National Capital Region. *Indian Journal of Human Development*, 21(1). doi:<https://doi.org/10.1177/0973703018779>
- Ferguson, R. F. (1998). Can schools narrow the Black–White test score gap? In C. Jencks & M. Phillips (Eds.), *The Black–White test score gap*, 318–374.
- Fryer, R., & Levitt, S. (2004). Understanding the Black-White Test Score Gap in the First Two Years of School. *The Review of Economics and Statistics*, 86(2), 447-464.
- Fukase, E. (2010). Revisiting Linkages between Openness, Education and Economic Growth: System GMM Approach. *Journal of Economic Integration*, 25(1), 193-222.

- Gao, Y., & Chen, R.-S. (2010). Empirical analysis of the correlation of factors impacting on the scale of higher education based on the gross enrollment rate. *Procedia - Social and Behavioral Sciences*, 2(2), 4070-4073. doi:<https://doi.org/10.1016/j.sbspro.2010.03.642>
- Ghosh, S., & Kundu, A. (2021). Women's Participation in Higher Education in India: An Analysis Across Major States. *Indian Journal of Human Development*, 15(2). doi:<https://doi.org/10.1177/097370302111030>
- Ghosh, J. (2006). Case for Caste-based Quotas in Higher Education. *Economic and Political Weekly*, 41(24), 2428-2432. doi:<https://www.jstor.org/stable/4418343>
- Goldin, C., Katz, L. F., & Kuziemko, I. (2006). The Homecoming of American College Women: The Reversal of the College Gender Gap. *Journal of Economic Perspectives*, 20(4), 133-156.
- Govinda, R., & Varghese, N. V. (1993). *Quality of Primary Schooling in India: A Case Study of Madhya Pradesh*. Paris: International Institute for Educational Planning and National Institute of Educational Planning and Administration.
- Hanushek, E. A. (2002). Chapter 30 Publicly provided education. *Handbook of Public Economics*, 4, 2045-2141. doi:[https://doi.org/10.1016/S1573-4420\(02\)80009-X](https://doi.org/10.1016/S1573-4420(02)80009-X)
- Heyneman, S. P., & Loxley, W. A. (1983). The Effect of Primary-School Quality on Academic Achievement Across Twenty-nine High- and Low-Income Countries. *American Journal of Sociology*, 88(6).
- Hamlet, L. C., Chakrabarti, S., & Kaminsky, J. (2021). Reduced water collection time improves learning achievement among primary school children in India. *Water Research*, 203, 117527. doi:<https://doi.org/10.1016/j.watres.2021.117527>
- Hanushek, E. A. (2002). Chapter 30 Publicly provided education. *Handbook of Public Economics*, 4, 2045-2141. doi:[https://doi.org/10.1016/S1573-4420\(02\)80009-X](https://doi.org/10.1016/S1573-4420(02)80009-X)
- Hnatkovska, V., Lahiri, A., & Paul, S. B. (2013). Breaking the Caste Barrier Intergenerational Mobility in India. *The Journal of Human Resource*, 48(2), 435-47. doi:[doi:10.3368/jhr.48.2.435](https://doi.org/10.3368/jhr.48.2.435)

- Hoxby, C. (2000). Peer Effects in the Classroom: Learning from Gender and Race Variation. *National Bureau of Economic Research*. doi:10.3386/w786
- Jalan, J., & Panda, J. (2010). *Low Mean and High Variance: Quality of Primary Education in Rural West Bengal*. Calcutta: Centre For Studies in Social Science.
- Jalana, J., & Murgai, R. (2008). Intergenerational Mobility in Education in India. *4th Annual Conference on Economic Growth and Development*. Delhi : ISI.
- Khan, K. (2022). Choice of higher education in India and its determinants. *International Journal of Economic Policy Studies*, 16, pages237–251.
- Katiya, S. P. (2016). Gender Disparity in Literacy in India. *Social Change*, 45(1). doi:<https://doi.org/10.1177/0049085715618558>
- Kingdon, G. (2002). School-sector effects on student achievement in India. In R. Chakrabarti, & P. E. Peterson (Eds.), *School choice international: exploring public-private partnerships*, 111-139. Retrieved from . <https://nbnresolving.org/urn:nbn:de:0168-ssoar-69375>
- Kingdon, G. G. (2020). The Private Schooling Phenomenon in India: A Review. *The Journal of Development Studies*, 56(10), 1795-1817. doi:<https://doi.org/10.1080/00220388.2020.1715943>
- Kishan, P. K. (2018). *Is the Past Still Holding Us Back? A Study on Intergenerational Education Mobility in India*. Indian Institute of Management , Economics Area. Ahmedabad-380 015: Indian Institute of Management .
- Krueger, A. B., & Whitmore, D. M. (2001). The Effect of Attending a Small Class in the Early Grades on College-test Taking and Middle School Test Results: Evidence from Project Star. *The Economic Journal*, 468(111), 1–28. doi:<https://doi.org/10.1111/1468-0297.00586>
- Kapur, S., & Murthi, M. (2009). Literacy in India. *Innovation Management Research*. Retrieved from <http://www.ems.bbk.ac.uk/research/wp/2009/07>
- Kuma, D. (2020). Tracking the Progress of a Child from Enrolment to Completion of Secondary Education in India. *Universal Secondary Education in India*, 221–243.

- Kumar, N., Kumar, N., & Rani, R. (2016). Gender Disparity in Literacy: Districts Level Evidence from Selected States of India. *Educational Quest- An International Journal of Education and Applied Social Sciences*, 7(3), 243-254. doi: 10.5958/2230-7311.2016.00045.3
- Kumar, S., Heath, A., & Heath, O. (2002). Determinants of Social Mobility in India. *Economic and Political Weekly*, 37(29), 2983-2987.
- Legewie, J., & DiPrete, T. A. (2012). School Context and the Gender Gap in Educational Achievement. *American Sociological Review*, 77(3), 463–485. doi: 10.1177/0003122412440802
- Lin, T.-C. (2004). The role of higher education in economic development: an empirical study of Taiwan case. *Journal of Asian Economics*, 15(2), 355-371. doi: <https://doi.org/10.1016/j.asieco.2004.02.006>
- Lucas, R. E. (1988). On the mechanics of economic development. *Journal of Monetary Economics*, 22(1), 3-42. doi: [https://doi.org/10.1016/0304-3932\(88\)90168-7](https://doi.org/10.1016/0304-3932(88)90168-7)
- Louis, P. (2003). Scheduled Castes and Tribes: The Reservation Debate. *Economic and Political Weekly*, 38(25), 2475-2478 .
- Louw, M., Berg, S. V., & Yu, D. (2007). Convergence of A Kind: Educational Attainment and Intergenerational Social Mobility in South Africa . *South African Journal of Economics*, 75(3), 548-571. doi: <https://doi.org/10.1111/j.1813-6982.2007.00137.x>
- Magnuson, K. A., & Duncan, G. J. (2006). The role of family socioeconomic resources in the black–white test score gap among young children. *Developmental Review*, 26(4), 365-399. doi: <https://doi.org/10.1016/j.dr.2006.06.004>
- Maitra, P., & Sharma, A. (2010). Parents and Children: Education Across Generations in India. *Unpublished Work*.
- Majumder, R. (2013). *Intergenerational Mobility*. SpringerBriefs in Economics.

- Malish, C. M., & Ilavarasan, P. V. (2016). Higher education, reservation and scheduled castes: exploring institutional habitus of professional engineering colleges in Kerala. *Higher Education, 72*, 603–617.
- Mankiw, N. G., Romer, D., & Weil, D. N. (1992). A Contribution to the Empirics of Economic Growth. *The Quarterly Journal of Economics, 107*(2), 407–437.  
doi:<https://doi.org/10.2307/2118477>
- Meehan, L., Pacheco, G., & Pushon, Z. (2019). Explaining ethnic disparities in bachelor's degree participation: evidence from NZ. *Studies in Higher Education, 44*(7).  
doi:<https://doi.org/10.1080/03075079.2017.1419340>
- Muralidharan1, K., & Sundararaman, V. (2011). Teacher opinions on performance pay: Evidence from India. *Economics of Education Review, 30*(3), 394-403.
- Mungekar, B. (2009). *The Report of the Steering Committee on Elementary Education and Literacy, For the Eleventh five year plan (2007-12)* . New Delhi: Planning Commission (Education Division).
- Nambissan, G. B. (2009). *The Indian middle classes and educational advantage*. Routledge.
- Neelakandan, S. M., & Patil, S. M. (2012). Complexities of inclusion and exclusion: Dalit students and higher education in India. *Journal of Social Inclusion, 3*(1).
- Parvez, A., & Laxminarayana, K. (2022). Mathematics learning inequality among children of private and public schools. *Asia Pacific Education Review, 23*, 257–269.
- Pratham. (2005). *Annual Status of Education Report*. Mumbai : .: Pratham Resource Center.
- Ray, J., & Majumder, R. (2013). Structural Change or Social Fluidity? Examining Intergenerational Mobility in Education in India. *MPRA\_paper\_54516.pdf*. Retrieved from <https://mpra.ub.uni-muenchen.de/54516/>
- Ray, J., & Majumder, R. (2014). Occupation and Income Mobility in India: Evidences from Recent NSSO Surveys. *Journal of National Sample Survey Office*(99), 125-140.
- Sánchez, A., & Singh, A. (2018). Accessing higher education in developing countries: Panel data analysis from India, Peru, and Vietnam. *World Development, 109*, 261-278.

- Shukla, S., Garg, V. P., Rajput, S., Jain, V. K., & Arora, O. P. (1994). *Attainment of Primary school Children in Various States*. New Delhi: NCERT.
- Sukumar, N. (2008). Living a Concept: Semiotics of Everyday Exclusion. *Economic and Political Weekly*, 43(46), 14-17.
- Unni, J. (2016). Skill Gaps and Employability: Higher Education in India. *Journal of Development Policy and Practice*, 1(1). doi:<https://doi.org/10.1177/2455133315612310>
- Wadhwa, R. (2018). Unequal origin, unequal treatment, and unequal educational attainment: Does being first generation still a disadvantage in India? *Higher Education*, 76, pages279–300.
- Weisskopf, T. E. (2004). Impact of Reservation on Admissions to Higher Education in India. *Economic and Political Weekly*, 39(39).
- Yang, J., & Qiu, M. (2016). The impact of education on income inequality and intergenerational mobility. *China Economic Review*, 37, 110-125.  
doi:<https://doi.org/10.1016/j.chieco.2015.12.009>