Intergenerational Educational Mobility in India: Does Caste Matter?

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Background

- Education plays a vital role in economic growth and development of the society. It endows individuals to enhance their skills, knowledge, health outcomes, social network and productivity. Moreover, it reduces poverty and boosting shared prosperity (World Bank, 2018).

- It is also considered as a well-established channel of social mobility (Guo et al.,2019; Asher et al.,2018; Kishan,2018; Azam and Bhatt,2012; Raitano and Vona,2010; Maitra and Sharma,2009; Jalan and Murgai,2007).

- Several social classes, especially in developing countries, are often excluded from the process of capability formation and income-earning opportunities due to various forms of discrimination such as caste , gender and racial discrimination (Madheswaran and Attewell,2007; Majumder,2013, Thorat,2007).

- In India, exclusion revolves around the social interrelations and institutions that exclude, discriminate, isolate, and deprive some groups on the basis of their group identity such as their caste, ethnic and religious identity (Thorat and Sabharwal,2010).

- The caste system in India is based on a system of graded inequality which has excluded certain sections of people from different walks of life.

- The fundamental characteristic feature of caste based inequality is a kind of 'forced exclusion' based economic and social rights. Exclusion in basic rights and freedoms is inherent in the caste system(Thorat and Sabharwal,2010).

- In India, the marginalized social groups of society, including the Scheduled Castes (SCs) and Scheduled Tribes (STs) (Thorat and Mahamallik, 2006), have been by and large discriminated and face social exclusion on the basis of caste.

- Among the poor and marginalized group in India ,the Scheduled Castes and Scheduled Tribes constitute a substantial share (25.24 %) of total population (Census,2011).

- Evidence shows that unequal access to resources and inequality is differentially affecting these marginalized groups (Jalan and Murgai,2007).

- Studies show that caste based discrimination affect both opportunity and outcome relating to access to education, occupation, income (Deshpande ,2010;Deshpande,2000, Majumder and Ray,2010; Hnatkovska et al.,2012; Thorat and Sabharwal, 2014, Majumder,2013; Thorat and Newman,2010).

- Earlier studies have shown the relationship between education and caste(Maitra and Sharma,2009; Azam and Bhatt,2012; Majumder,2013; Ray,2014).

- Independent India has had a long history of policies, especially education policies, to alleviate inequalities suffered by these socially and economically disadvantaged groups (SCs/STs).

- In addition to policies at the primary education level, this includes reservation policies or policies of affirmative action specifically directed at public higher education institutions and jobs in the public sector targeted at SCs and STs(Vaid,2018).

- India has long advocated affirmative action policies in public sector education. These policies have been targeted and encouraged in Scheduled Castes and Scheduled Tribes for their upward mobility.

- A high degree of intergenerational persistence suggests that family background plays an important role in children's later success in life while a low degree of persistence implies the opposite.

- Two aspects affect parental education's role on children's educational attainment, i.e. years of schooling attainment and progression across different schooling levels(Maitra and Sharma,2009).

Literature Review

- Despite the various policies, separate strands of research underline the persisting effect of factors such as caste, class of origin and gender on the opportunities to gain access to education (Desai and Kulkarni,2008).

- Moreover , inherited endowments especially parental education plays an important in educational mobility of children (Guo et al.,2019; Kishan,2019; Jalan and Murgai,2007).

- Educational mobility is the association between parent and adult children's schooling attainment (Torche,2019).

- The influence of apart of family background is one of the determinants of a child's educational attainment; for example, When the parents are illiterate, the community effects are more pronounced on the educational outcomes of the student (Borooah and Iyer,2005).

- Parents believe that investing in their children's education can significantly improve their children's future earnings hence invest in children's education (Becker and Tomes, 1986).

- However, parental investment in education depends on the parents income and education levels.

- Better educated parents who earn a higher income are more likely to have the resources to invest in their children than are parents with less education and a lower income. Hence, it is expected that the parent's level of education significantly influences their children's education (Lee and Lee,2020).

- The persistence of education gaps persist could create with substantial intergenerational stickiness in educational attainment among SCs and STs (Jalan and Murgai,2008; Maitra and Sharma,2009; Majumder,2013) Majumder,2010).

- The level of education among the social groups is low because of the lack of educational institutions, poverty, lack of nutrition and healthcare, low literacy, poor enrolment at schools and high dropouts from schools (Suresh and Rajasenan,2014).

- Many studies look into caste based educational inequalities however intergenerational mobility has received less attention. Hence this study particularly focused on this aspect.

- Given this background, this paper analyses the patterns and determinants of education mobility among India's social groups

Objective of the study

- We explore Intergenerational Educational Mobility. We ask two specific questions

    1.Whether father's years of education has any impact on son's years of education.

    2.We explore whether father's years of education increases the probability of son's achieving higher levels of education than their father's, i.e., upward mobility of son's.

- Both these questions are explored in the context of various caste groups.

Data Source and Methods

- Indian Human Development Survey (IHDS) 2011-12 data.

- The data provides actual number of completed years of education for both son's and father's.

- For this analysis, we consider only son-father pair data aged from 21 to 65.

- The data allows to identifies the father's who are both co-resident and non-co-residents for creating the son-father pairs.

- We created categories of levels of education based on the required number of years for the completion of a particular level of education in India. The following are the levels of education.

    1)Illiterate (0)

    2)Primary(>0 <=5)

    3)Middle (>=6 <=8)

    4)Secondary(>=9 <=10)

    5)Higher Secondary(>=11 <=12)

    6)Graduate & Above (>=13 <=15)

- Social Groups (SG) → General, Other Backward Castes (OBC), Scheduled Castes/ Scheduled Tribes(SCs/STs).

Measuring Intergenerational Educational Mobility

1.Intergenerational Transition Matrix

2.Regression Analysis

- We used Ordinary Least Squares (Elasticity), Logit and Multinomial Logit Regression (Upward mobility) to identify the effect of father's education on son's education mobility .

Table 1: Son's level of education by Father's level of education in India

Father	Son						
	Illiterate	Primary	Middle	Secondary	Higher Secondary	Graduate & Above	Total
Illiterate	36.25	21.03	17.53	15.79	5.78	3.61	100
Primary	9.18	23.92	20.24	26.73	9.91	10.02	100
Middle	4.36	10.05	25.08	29.69	14.92	15.89	100
Secondary	2.93	3.98	9.61	38.61	19.18	25.69	100
Higher Secondary	1.09	2.91	6.6	22.42	27.94	39.05	100
Graduate & Above	0.72	1.33	2.77	12.85	14.58	67.75	100

Source: Author's calculation based on IHDS (2011-12)

Table 2:Caste wise level of education of Son-Father pairs in India

Father	Son						
	Illiterate	Primary	Middle	Secondary	Higher Secondary	Graduate & Above	Total
General							
Illiterate	28.44	21.09	19	19.32	6.53	5.62	100
Primary	6.48	17.55	20.31	29.31	13.13	13.22	100
Middle	4.12	9.2	21.31	29.06	16.88	19.43	100
Secondary	1.67	3.14	8.4	33.47	21.82	31.49	100
Higher Secondary	0.93	2.15	2.26	18.54	24.95	51.18	100
Graduate & above	0.18	0.61	2.11	10.06	13.25	73.8	100
OBC							
Illiterate	34.83	20.94	18.83	15.92	6.03	3.44	100
Primary	8.56	24.37	21.2	27.49	9.3	9.08	100
Middle	3.48	10.1	27.67	29.08	14.59	15.08	100
Secondary	4.03	4.67	10.4	40.04	17.48	23.38	100
Higher Secondary	0.71	2.9	9.06	25.91	31.18	30.24	100
Graduate & above	2.05	1.84	3.87	16.24	15.83	60.17	100
SCs/STs							
Illiterate	41.6	21.11	15.4	13.93	5.13	2.82	100
Primary	13.16	30.23	18.6	22.63	7.36	8.02	100
Middle	6.67	11.46	26.33	32.12	12.13	11.28	100
Secondary	3.59	4.47	10.81	47.76	16.55	16.82	100
Higher Secondary	2.57	5.04	11.85	23.48	27.18	29.89	100
Graduate & Above	0	3.83	3.33	18.67	18.33	55.85	100

Source: Author's calculation based on IHDS (2011-12)

Table 4: Patterns of Total Educational Mobility in India

| Patterns of Mobility	Per cent
No Mobility	33.42
Downward Mobility	6.47
Upward Mobility	60.11
Total	100

Source: Author's calculation based on IHDS (2011-12)

Table 5: Pattern of Educational Mobility among the Social Groups in India

Social Groups	No Mobility	Downward mobility	Upward Mobility	Total
General	28.24	7.66	64.1	100
OBC	32.64	6.49	60.87	100
SCs/STs	38.89	5.41	55.7	100

Source: Author's calculation based on IHDS (2011-12)

Figure 1: Pattern of Educational Mobility among the social Groups in India

Legend: ■ General ■ OBC ■ SC/ST

	No Mobility	Downward mobility	Upward Mobility
General	28.24	7.66	64.1
OBC	32.64	6.49	60.87
SC/ST	38.89	5.41	55.7
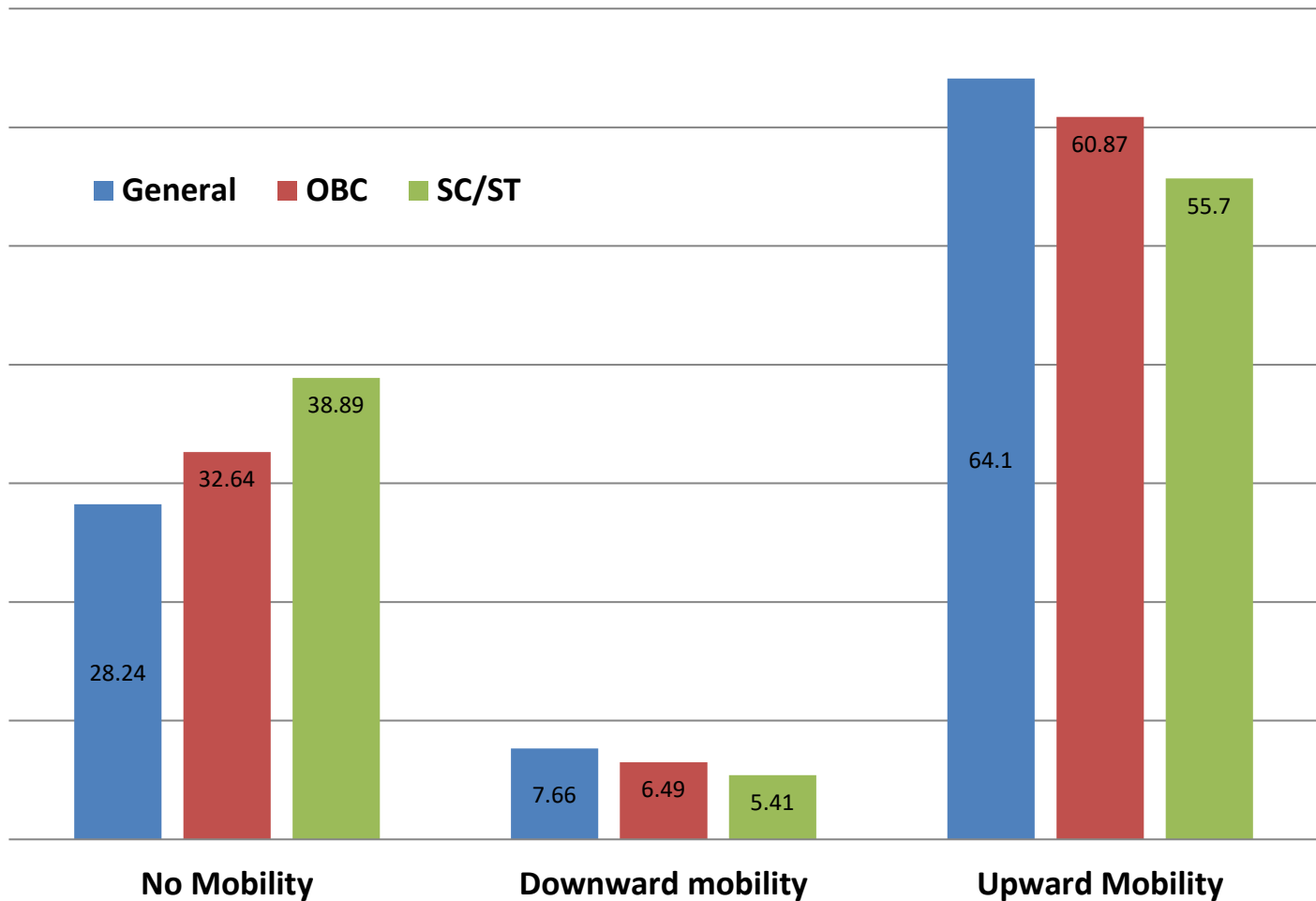
Source: Author's calculation based on IHDS (2011-12)

Determinants of Intergenerational Educational Mobility

- The paper examines the role of the father's completed years of education in determining the educational mobility of his son. Further, we test this intergenerational educational mobility is conditioned by their respective caste status.

  → Elasticity Issues

- We first test for the elasticity of the son's years of education with respect to his father's years of education.

  → Mobility Issues

- Further, we analyze the upward mobility of the individual with respect to his father's level of education.

- The first question is answered using an OLS model (Model 1), while the second question is answered using logit (Model 2) and multinomial models(Model 3).

- To bring out the effect of caste interactions with father's education interaction dummies are introduced in the model.

Model 1 (OLS)

→ We use the years of education of the son as the dependent variable.

$$Y_i = \alpha + \beta_1 PCI + \beta_2 HHSize + \beta_3 fatheroccu + \beta_3 fatheryrsch + \beta_4 Sector + \beta_5 SG + \beta_6 Religion + \varepsilon$$

Model 2 (Logit)

→We use the following categorization to check for upward mobility.

Mobility =   0 if No mobility (the son's years of schooling is equal to or less than the father's)

= 1 if Upward mobility (son's years of education is greater than father's)

Model 3 (MNLR)

→ We use the following categories for mobility as the dependent variable.

Mobility =   0 if No mobility (the son's years of schooling is equal to the father's)

1 if Downward mobility (son's years of education are less than father's)

2 if Upward mobility (son's years of schooling is greater than of father)

Variables	Description
PCI	Per Capita Income
HH size	Household Size
Fatherroccu	Father's Occupation
Fatheryrssch	Father's years of schooling
Sector	Urban=1 Rural=0
Social Group (SG)	General=1 Other Backward Caste (OBC)= 2 Scheduled Castes / Scheduled Tribes (SCs/STs)=3
Religion	Hindu=1 Muslim=2 Christians=3 Others=4

Source: Author's calculation based on IHDS (2011-12)

Model 1 (OLS)
(Dependent Variable –Sons years of education)

Variables	Model Without Interaction Coefficient	Model with Interaction Coefficient
Fatheryrssch	0.559*** (0.015)	0.395*** (0.008)
OBC x Fatheryrssch	- - -	0.042*** (0.011)
SC x Fatheryrssch	- - -	0.081*** (0.014)
ST x Fatheryrssch	- - -	0.133*** (0.023)
Fatheyrssch2	-0.012*** (0.001)	- - -
Fatheroccu	0.052** (0.023)	0.056** (0.023)
PCI	0.820*** (0.021)	0.812*** (0.021)
HH Size	0.471*** (0.044)	0.467*** (0.044)
Sector (Rural)		
Urban	0.804*** (0.046)	0.813*** (0.046)
SG (General)		
OBC	-0.600*** (0.047)	-0.771*** (0.063)
SC	-1.272*** (0.057)	-1.538*** (0.071)
ST	-1.450*** (0.076)	-1.784*** (0.089)
Religion(Hindu)		
Muslim	-1.632*** (0.062)	-1.671*** (0.063)
Christian	0.401*** (0.127)	0.373*** (0.128)
Others	-0.087 (0.098)	-0.099 (0.098)
Constant	-2.991*** (0.245)	-2.678*** (0.248)
No of Observations	39547	
R2/Pseudo R2	0.3076	0.3072

Model 2 (Logit)

Variables	Model Without Interaction Coefficient	Model With Interaction Coefficient
Fatheryrssch	0.230*** (0.010)	-0.166*** (0.005)
OBC x Fatheryrssch	...	0.038*** (0.007)
SC x Fatheryrssch	...	0.071*** (0.008)
ST x Fatheryrssch	...	0.105*** (0.013)
Fatheyrssch2	-0.036*** (0.001)	...
Fatheroccu	-0.024* (0.014	0.015 (0.013)
PCI	0.356*** (0.013)	0.317*** (0.013)
HH Size	0.227*** (0.026)	0.219*** (0.026)
Reference Category (Rural)		
Urban	0.405*** (0.029)	0.402*** (0.028)
Reference Category (Social Groups)		
OBC	-0.335*** (0.030)	-0.456*** (0.040)
SC	-0.700*** (0.035)	-0.918*** (0.045)
ST	-0.755*** (0.045)	-1.053*** (0.053)
Reference Category (Religion)		
Muslim	-0.789*** (0.036)	-0.790*** (0.036)
Christian	0.328*** (0.082)	0.346*** (0.078)
Others	0.014 (0.060)	0.010 (0.059)
_cons	-2.564*** (0.153)	-1.968*** (0.150)
No of Observation	39547	
R2/Pseudo R2	0.0921	0.0596

Model 3 (MNLR)

Variables	Model Without Interaction		Model With Interaction	
	Downward Mobility	Upward Mobility	Downward Mobility	Upward Mobility
	Coefficient		Coefficient	
Fatheryrssch	0.888*** (0.019)	0.405*** (0.011)	0.281*** (0.010)	-0.091*** (0.006)
OBC x Fatheryrssch	....	....	0.078*** (0.013)	0.063*** (0.008)
SC x Fatheryrssch	....	....	0.122*** (0.016)	0.103*** (0.010)
ST x Fatheryrssch	....	....	0.163*** (0.024)	0.164*** (0.017)
Fatheyrssch2	-0.048*** (0.001)	-0.045*** (0.001)	....	....
Fatheroccu	0.031 (0.025)	-0.012 (0.015)	0.096*** (0.025)	0.030** (0.015)
PCI	-0.185*** (0.022)	0.311*** (0.014)	-0.226*** (0.022)	0.272 (0.014)
HH Size	0.012 (0.051)	0.230*** (0.028)	0.005 (0.051)	0.221*** (0.028)
Sector (Rural)				
Urban	0.003 (0.052)	0.402*** (0.031)	0.008 (0.053)	0.398*** (0.030)
SG (General)				
OBC	0.102* (0.053)	-0.301*** (0.033)	-0.266** (0.109)	-0.471*** (0.042)
SC	0.089 (0.067)	-0.663*** (0.038)	-0.441*** (0.127)	-0.914*** (0.046)
ST	0.171* (0.094)	-0.723*** (0.048)	-0.428*** (0.149)	-1.065*** (0.055)
Religion (Hindu)				
Muslim	0.160** (0.068)	-0.744*** (0.039)	0.173*** (0.068)	-0.748*** (0.039)
Christian	0.028 (0.146)	0.331*** (0.093)	0.089 (0.150)	0.357*** (0.090)
Others	-0.100 (0.120)	0.005 (0.064)	-0.067 (0.120)	-0.002 (0.063)
Constant	-1.862*** (0.267)	-2.201*** (0.165)	-0.734*** (0.275)	-1.585*** (0.162)
No of Observations	39547			
R2/Pseudo R2	0.1479		0.1147	

Discussion and Conclusion

- The paper attempted to examine the patterns and determinants of education mobility among social groups in India.

- We used Indian Human Development Survey 2011-2012 data.

- Overall, results show that intergenerational mobility in education across generations has increased.

- It finds that there has been an improvement in educational mobility across social groups.

- We observed that in the Social groups - the OBC, SCs/STs, the father's education plays a significant role in the son's education. However, we see that the probability of the son having downward mobility is higher in these groups as compared to the general category.

- We can also see from the interaction model that the father's years of education play a very significant role in the son's education especially for SCs/STs and OBC categories compared to those in the General category.

- We can conclude that the father's education is an important factor affecting the son's educational mobility, apart from other factors like the father's occupation, per capita income of the household, household size and sector wise for those belonging to SCs/STs and General category.

Thank You