Formal institutions, caste network and occupational mobility

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Abstract

Institutional factors plays a important role in occupation mobility. One important question is whether all people are able to get better opportunities in occupation choices or there are some institutional factors which creates hindrance for mobility in occupation ladder. Hence we want to determine what are key factors that affect the occupation mobility in India. In this study, we try to assess the effect of formal on occupation mobility in two ways, one is inter-generational mobility that is changing occupation with respect to father's occupation while second is moving away from caste's traditional occupation. We have used REDS data of 1999 and 2006 rounds and found that better formal networks leads to mobility towards better occupation compared to earlier generation. We further found that presence of strong formal institutions helps the individuals to defect towards better occupation from caste's traditional occupation. Our work also confirms that SC/ST people has switched occupation more compared to the general caste people in the presence of better formal institutions.

Keywords: formal courts, caste network, occupational mobility

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1 Introduction

Occupational mobility plays an important role in solving the problem of inequality. Occupational persistence across generations leads to an inefficient outcome as family tradition takes precedence over one's inherent ability while making the occupational choice. Such problems create an even bigger problem in India where the caste system provides norms that support inter generational persistence of occupation. However besides norms, inter generational occupational persistence works because it provides job training at a low cost and helps in enforcing contracts through reputation mechanism working through caste network. In the current paper, we examine whether improvement in formal institutions of contract enforcement can substitute informal network based institutions and thereby encourage people to switch occupation.

The theoretical exposition of caste system as a general community based contract enforcement system is already done by Freitas (2006). The importance of community enforcement in the context of medieval Europe is also been emphasized by Greif (2004). In a country like India where formal enforcement is weak, access such community enforcement mechanism provides incentive to stick to one's family or community's occupation. Besides contract enforcement, trade communities also provide necessary training and insurance in the face of bad shocks. The importance these issues are well discussed in the context of craft guilds in medieval Europe (Epstein et al., 1998). Therefore people have strong incentives to stick to their community profession in absence of any market or state that provides insurance, education and enforcement. The underlying theoretical premise of our paper suggests that in a place with stronger formal enforcement people are more likely to switch occupation than in a place with weaker enforcement.

Our work is in general related to the literature that deals with community enforcement of contract (Dixit, 2004; Greif, 1993; Kandori, 1992). More specifically this is related to a newly emerging area that that examines how the traditional caste system gets affected by modern institutions of market. A handful of papers identified the penetration of market by globalization and economic reform in India and examined their interaction with the traditional system. In one the pioneering paper in this field

The idea of market weakening the traditional system was further examined, albeit in a different set up, in Luke and Munshi (2011). In this paper they showed that increase in relative income of female members leads to weakening of family ties and women migration out of the community networks. The interaction between formal institutions and informal institutions was also examined by Chakraborty et al. (2015) who looked at the effect of improving formal court on businesses which largely depend on informal network. They found a negative interaction effect – strong formal court has a negative effect on business from districts which are characterized by strong informal network. In their theory, strengthening of formal court encourages entry by strangers in business which in turn weakens the close knit community system that allowed the poor entrepreneurs to enforce contracts at a low cost. Improvement in formal court encourages the more wealthy outsiders to enter the business at the cost of existing poor entrepreneurs who could not survive the increased cost of contract enforcement. Hence, entrepreneurs from the lower tail would leave the business. The net effect, they showed by empirical estimation, is negative on the number of business in India.

While most of the studies looked at the cross section, Hnatkovska et al. (2013) looked at the time series data. In their study they fond out that inter-generational education and income mobility rates of SC/STs have converged to non-SC/ST levels during post-liberalization period. Moreover, SC/STs have been changing occupations relative to their parents at an increasing rates which matches the corresponding switch rates of non-SC/STs. Our paper is also related to papers which look the generic issue of mobility in India and abroad. For example, Farooq and Kugler (2016) looks at the impact of public health insurance upon occupation and industrial mobility, she calculates the upward mobility as yearly transitions to a 3-level digit occupation/industry that have higher median earnings and requiring the same or higher educational credentials compared to their previous jobs. In a study on India Nandi (2015) looked at the effect of human and physical capital on industrial persistence relative to one's parents. He found that people with less education and asset are more likely to stay in the industry their fathers worked in.

While most of the studies looked at how market opportunities weakened the incentive of occupational persistence, there is not much on how improvement

in formal institutions of contract enforcement – which is the onus of the state – may incentivize more efficient allocation of human resources across occupation. Our work attempts to fill in this gap in the literature.

In this study, we examine effect of formal institutions on mobility in occupation choice from the earlier generation or caste's traditional occupation. Key question that we answer in this research is whether presence of strong formal networks helps individual to move up in occupation ladder or chose that occupations which have higher educational requirements. We explore the effect of formal networks on occupation mobility in two ways, one is inter-generational mobility that is changing occupation in respect to father's occupation while second is moving away from caste's traditional occupation. We also compare the inter-generational occupation mobility for low caste and high caste people in the presence of varying quality of formal institutions. Occupation mobility is defined as change in occupation level based upon 2-digit NCO code. In addition to this, we define upward mobility as moving towards those occupations which requires higher educational skills compared to previous occupation.

We find that given all other things constant, increase in formal networks helps individuals in mobility towards better occupation from their father's occupation by 0.115 or 11.5% more and 0.311 or 31.1% more from caste's traditional occupation because our theoretical premise is that improvements in the formal institutions will remove the barrier created by informal networks and enable free-flow of information between castes and create job opportunities for everyone which was not earlier possible because of traditional caste networks. So in the presence of strong formal networks, a person will move to a job which matches his skill sets irrespective of his caste. Also we have found that SC/ST people benefit more from this formal networks settings or they defect more as compared to General Category people in occupation choices as compared to both father's occupation and caste's traditional occupation. As a result, children in SC/ST households continue to be more likely to work in a different occupation than their parent relative to children from non- SC/ST households.

The rest of the paper is organized as follows. In Section 2, we describe the REDS data and the construction of the various variables used in our analysis.

In Section 3, we describe our empirical model and estimation strategy. In Section 4, we present the results of effects of formal networks on occupational mobility. Section 5 concludes.

2 Theoretical Framework

Let us assume that occupations are indexed by θ where $\theta \in [0, 1]$. When an individual i is born he/she is endowed with a natural ability for a specific occupation (call it natural occupation which is denoted by θ_i^n and connection to his father's (or community's) occupational network denoted by θ_i^f. She then decides to join an occupation θ_i where she produces an amount q . However, she faces a potential moral hazard problem in her work place. As a result she may loose an amount c from her production. Hence, her net pay-off from work is

$$v_i = q_i - c_i \tag{1}$$

However, how much she can produce and how much she would be cheated depends on her natural occupation (θ_i^n), her father's occupational network (θ_i^f) and her chosen occupation (θ_i^c). For explaining this choice problem further we define the following distance functions

$$d_1 = d(\theta_i^n, \theta_i) \tag{2}$$

and

$$d_2 = d(\theta_i^f, \theta_i) \tag{3}$$

The first function measures the distance between natural occupation and chosen occupation while the second function measures the distance between her natural occupation and father's occupation. These distances have implications for her pay-off functions in the following way

$$q_i = q(d_1), q' < 0 \tag{4}$$

$$c_i = c(d_2), c' > 0 \tag{5}$$

Equation (4) means that the further one's chosen occupation is from her natural occupation, the lower is one's productivity. Equation (5) means the further one's chosen occupation is from her father's occupation, the higher is the extent of loss she suffers from workplace cheating. Hence, an individual's problem is to choose θ_i such that v_i is maximized. There are two extreme

positions that one can take. One can pick his natural occupation, thereby producing the maximum possible q(say,$\overline{q}$) In that case his payoff would be

$$v_n^i = \overline{q} - c(d_2(\theta_i^f, \theta_i^n)) \tag{6}$$

However there is no guarantee that $v_n > 0$. If $c(d_2(\theta_i^f, \theta_i^n)) < \overline{q}$, choosing natural occupation is not a rational decision. Whether v_n^i is positive or negative depends on the magnitude of cheating one faces when one steps out of the community network.

The other extreme decision one can take is to stick to the family occupation. In this case the cost of moral hazard will be the minimum. Let us define $c(d_2(\theta_i^f, \theta_i^f)) = 0$. Then if one chooses his family occupation, his pay-off will be

$$v_f^i = q_i(d_1(\theta_i^n, \theta_i^f)) \tag{7}$$

Note, that it is reasonable to assume that v_f^i can not be negative. This implies that between two extreme decisions – *follow your instinct* vis-a-vis *follow your family* – the latter (loosely speaking, because so far there is no element of uncertainty in our model) seems to be a safer option. The optimal choice of occupation will depend on two things – how choosing an occupation farther from your talent reduces your productivity and how choosing an occupation farther from your network can increase the extent of cheating.

Let us now introduce formal institutions in this set up. Formal institutions enforce contracts – the better the formal institutions, the lower the extent of cheating. In terms of our model, improvements in formal institutions would mitigate the problem of cheating by reducing c. We characterize formal institutions by the parameter $\alpha \in [0, 1]$ such that the pay-off function of the agent looks like the following

$$v_i = q_i - \alpha c_i \tag{8}$$

If formal institutions are improved the cost one incurs because of migrating from one's network can be mitigated. This means when formal institutions are at the best possible quality $\alpha = 0$. Under this condition, one does not have to pay any weightage to her family occupation and the she can earn the maximum by choosing $\theta_i = \theta_i^n$. The higher the value of α, the more costly it becomes to diverge from the family occupation.

The next question we ask is whether such improvements in formal institutions differentially affects upper castes and SC/ST. Ideally, it should not at least when the communities are horizontal – i.e. no hierarchy between communities. In presence of such hierarchy (which is the case for caste system) however, an upper caste who tries to join a network is expected to get a more favorable reception than a member of SC/ST community trying to join a network outside his community. Therefore, the marginal effect of distance d_2 on cost should be higher for SC/ST making it more difficult for them to make the switch than her upper caste counterpart. Hence, the effect of formal institutions on occupational switch should be higher for SC/ST than that on general caste members.

From the above analysis, it follows that as formal institutions improve, people are more likely to switch to the occupations in which they have natural talent. However, it is difficult to identify in data if the workers have natural talent in one occupation. Nevertheless, if our analysis is correct we expect to see that improvement in formal institutions workers switch to a more skilled occupation. In other words the switch they make following improvement in formal institutions is characterized by upward mobility.

3 Empirical Methodology

The underlying theoretical framework in the previous section yields two important hypotheses. First, the presence of a formal network helps in occupational mobility. Second such marginal effect will vary by the caste. To be more specific, this means that a better formal network will matter more for occupational mobility of SC/ST people in relation to the general category individuals.

Empirically, therefore we want to test that whether the presence of a strong formal network helps an individual to move away from occupations of earlier generations or the traditional occupation of his/her caste . The main specification to address this question is given by the following equation:

$$\text{Mobility}_{ihvd} = \beta_0 + \beta_1 \text{Formal}_{vd} + \beta_3 X_i + \beta_4 X_h + \beta_5 X_v + D_d + \epsilon_{ihvd} \quad (9)$$

Here, $Mobility_{ihvd}$ is the variable capturing whether an individual i in household h in village v in district d is moving away from the earlier or

more traditional occupation. $Formal_v$ is the variable capturing the presence of a formal network in the village v and X corresponds to all individual, household as well as village level variables.The interest lies in estimating the parameter β_1 which would give us the relationship between the presence of formal network in the village and the mobility chances of an individual residing in that village.

One empirical challenge comes in terms of identification. It is possible that in districts which are more traditional, more individuals tend to rely on informal networks to sort out any problems and at the same time, individuals residing in those conservative districts may be more reluctant to move away from the more traditional occupations. To address such concerns, we include district fixed effects D_d in the model. Basically we are then comparing villages within a district.

4 Data

Data for our study comes from Rural Economic Demographic Survey (REDS) data from 1999 and 2006 rounds. REDS data set is a nationally representative survey of 8659 households residing in 242 vilages in 17 states across India.

The dependent variable is the mobility status of an individual residing in a household in one particular village. We have captured occupational mobility in two different manners - one is by looking at inter-generational occupational mobility and the other is by examining the shifting of occupation away from the traditional occupation of the caste of the individual.In order to capture inter-generational occupational mobility, we use a dummy variable which takes value 1 if the occupation of an individual is different from his/her father's occupation and 0 otherwise. Similarly, for the study about occupation mobility from caste's traditional occupation, the outcome variable is a dummy variable which takes value 1 if individual's occupation is different from his/her caste's traditional occupation and 0 otherwise. To identify the caste's traditional occupation, we make use of one particular question in REDS which specifically asks for the traditional occupation of each caste in each village.

The variable of interest is the prevalence of formal institutions in the village.To define this measure, we use one survey question in REDS data which asks individuals about whom they approach to solve problems related to pub-

lic good. Out of the options given in this survey to answer this question,we only consider the formal sources to construct this measure. We converted the responses to a continuous variable by aggregating those to the village level. This village level measure represents the fraction of people in a village who approached formal network sources to solve their problems. This thus captures the degree of reliance of the people in a village on the formal institutions.

We also control for a rich set of individual, household and village level variables. Individual variables include age, education and migration status. We divide age into four age groups of age 16 - 25, 26-40, 41 -60 and 61-70. The youngest group is taken as the reference category for this categorical variable. Education is measured by years of completed education in some specifications while in some other specifications, it is taken as a categorical variable. Primary and secondary education are clubbed together under the category "Secondary & Below ", higher secondary and some college level is re-coded as " College Dropouts" while graduation and post-graduation comes under the category "Bachelors & Above" .Illiterate education level remains the reference category. The migration status variable is a dummy variable which takes the value of 1 if a person has migrated in the village in last 5 years for employment reasons and 0 otherwise.

At the household level, we control for the caste of the household. This is again a categorical variable with three categories - SC, ST, OBC with the fourth category General as the reference category. A host of village-level variables including village population, total travel time to nearest district headquarter, total number of households affected by natural shocks in the village and total number of industrial establishments in the village have been added as controls.All these variables affect the individual's decision regarding change of occupation and hence are essential to control for.

Our sample has been restricted to males with age ranging from 16 to 70 for whom we have occupation level information [1].The sample reduced to 9152 individuals for the analysis of inter-generational mobility and 4162 observations for the analysis on shifting of occupations away from the traditional occupation of the caste.

A descriptive statistics of important variables for inter-generational oc-

[1]REDS data set contains information about the three-digit occupation code (based on the 1968 National Classification of Occupation (NCO)) associated with the work that each individual performed. For this study, we convert three digit Occupation code into two digit occupation level.

cupation mobility study is shown in table 1.

To begin with, 33.25% of people have changed their occupation from that of their father. On average 49% of individuals in a village believe in formal networks. Average age of an individual belonging to the second generation referred to as child is 27.47 years while the average age of an individual from the first generation referred to as father is 50.26 years. In the first generation, average years of completed education is 5.39 while it is 8.34 years for second generation. Also, 13.86% of households are SC, 6.63% are ST and 31.56% households belong to General category. On average, there are around 59.13 industry establishments in the village in past 3 years while average population of village in logarithmic terms is 7.63.

Table 2 shows the descriptive summary of the variables for the analysis on occupation mobility from caste traditional occupation. First, for this sample, we can see that there are 54.64% people who changed their occupation as compared to their caste's traditional occupation. In this sample, on average,in a village, 49.5% of people believe in formal institutions. Average age of people is 39.70 years. If we look at education level of people in this sample, we find that there are 26% are illiterate people while 48.30% people are have education below secondary level and only 8.06% people has bachelors and above education. Also,7.83% households are SC, 6.01% are ST and 30.56% households belong to general category. Finally on average, there are around 52.01 industry establishments in the village in past 3 years while average population of village in logarithmic terms is 7.50.

5 Results

5.1 Inter-generational Mobility in Occupation Choice

The results of the main estimating equation for inter-generational occupational mobility are presented in Table 3. Column 1 shows the bi-variate relationship without controlling for covariates. The coefficient indicates that with an increase in reliance on formal institutions, more individuals are likely to shift their occupations away from their father's. occupations.However as mentioned before, unobserved regional factors may be correlated with both

the formal institutional quality and the mobility status of an individual.It may be possible that less people rely on formal networks to sort out their problems in districts with more traditional values and at the same time, on average less number of individuals would like to shift their occupations in those very districts. Hence to counter this, we add district fixed effects. We can then identify the marginal effect by comparing villages within a district.All the other columns in Table 3 therefore include the district fixed effects. The coefficient becomes insignificant in column 2. Column 3 reports the results after controls for individual characteristics namely age and years of education have been included. In column 4 we include the caste information at the household level. Finally column 5 which is the full specification model includes a host of village level variables in addition to individual and household level variables. All these variables affect the decision of an individual to change his/her occupation.

The significant positive relationship between the measure of prevalence of formal institutions and chances of occupational mobility is robust to the inclusion of all these variables. The coefficient in the full specification model indicates that if the proportion of people relying on formal institutions increases by one unit, there would be 11.5% higher inter-generational occupational mobility.This result supports our hypothesis that an increase in strength of formal networks will facilitate switching of occupations for the current generation as opposed to the earlier generation.

The coefficients on the control variables suggest expected results.Negative coefficients on age groups imply that younger individuals shift their occupations more in comparison to the older people. However the coefficient is significant only for the 61-70 age group. The reference category being the youngest group, this means specifically that individuals in the age group 16-25 years will be more likely to change than people falling in older age group. The younger group has a longer time horizon to reap the benefits of any change and hence evidently will be more likely to change. People with a better education are more likely to shift their occupations as probably they will have more exposure and hence will be more aware of greater opportunities.

For the caste variables, the coefficients are significant and positive for both SC/ST and OBCs. Hence in comparison to individuals from general category,our results suggest that individuals from backward classes are more likely to change their occupations.

The coefficients on village level variables also show intuitive results. Travel time serving as the proxy for the quality of transport in a village has a nega-

tive and significant coefficient.An inconvenient transport system resulting in higher travel time may act as a hindrance to the efforts of an individual to change occupations. The positive coefficient on industrial establishment indicates that a higher presence of industrial establishments facilitate a higher switching of occupations maybe due to greater available opportunities. Population shows a negative coefficient as with more people around, it may be difficult to get new openings and hence lesser are chances of shifting.

5.2 Mobility in Occupation Choices from Caste's Traditional Occupation

Traditionally, individuals rely on own caste network to start a new enterprise. A network can not only provide important information needed to start a new enterprise but also provide loan and ensure enforceability of contracts that are required for a business. If an individual defects from the traditional occupation then he/she cannot depend on his informal caste network for any future help in terms of loans or contractors to work with. Hence, most individuals tend to stick to the industry that is in the traditional occupational category of his/her caste.Hence, next, we try to find out whether formal institutions help individuals to move away from caste's traditional occupation.

Results are presented in table 4.Columns are organized in a similar manner to that of table 3. Results indicate a positive relationship between the measure of formal institutions and the chances of shifting the occupation. The coefficients become significant only after adding household and village level variables. The coefficent on the formal measure for the full specification model in column 5 indicates that for an additional unit increase in the proportion of individuals going to formal sources for problem solving,32.1 percent of individuals change occupation away from the caste's traditional occupation.The coefficients on control variables show more or less the same results as obtained in the earlier model of inter-generational occupational mobility.

5.3 Upward or Downward Occupation Mobility from Caste Traditional Occupation

In the previous section, we have established one important result that formal networks increase the probability of switching occupation from caste's tradi-

tional occupation Next, we examine that whether these occupation switches involve an improvement or deterioration in occupations. In other words we try to find out that whether formal networks helps in upward occupational mobility.

Upward occupational mobility is mobility is defined as moving towards the occupation level which requires higher educational skills as compared to previous occupation while downward mobility is defined as moving towards the occupation level which requires lesser educational skills as compared to previous occupation[2]. To estimate the above relationship we use the same specification as in the earlier analyses. The dependent variable is a dummy variable which takes value 1 if individual has changed occupation compared to caste's traditional occupation and moved towards the occupation which requires higher education skills and it takes values 0 otherwise. As we have already discussed earlier occupation ranking is calculated by average level of education years required to perform that job.Table 5 shows the results for upward mobility.

Results show a positive and statistically significant coefficient on formal measure which confirms our hypothesis that a higher prevalence of strong formal networks leads to mobility towards better occupation. An additional increase in formal networks leads to a 0.155 or 15.5% increase in probability of switching occupation towards better jobs. This positive results shows that formal networks creates supportive environment for upward occupation mobility which can translate in growth of economy. Other coefficients on control variables also have consistent sign as expected from theory.

5.4 Heterogeneity Analysis

In order to identify the pathway through which this positive relationship works, we ran a heterogeneity analysis by running the regressions separately for different castes. As expected, people from backward castes may not get the requisite information from the informal networks to change their occupations and start a new career. For example, an individual belonging to a backward caste which traditionally worked in the leather industry is unlikely

[2]Generally, ranking of occupation level is determined by wages but we don't have wage information of the occupation level hence we use other important parameter education level to rank the occupation.

to get any help from his/her own caste network to start a business in the textile industry. If the individual defects from the traditional occupation then he/she cannot depend on his informal caste network for any future help in terms of loans or contractors to work with. This is more of a problem for the backward castes as the other informal networks dominated by higher castes will be totally inaccesible to them. However, if the formal judicial system is strong, formal financial institutions would be more willing to give business loans to these marginalised castes and hence facilitate the occupational mobility of these castes more in relation to general category individuals. Results are shown in table 6. As expected, SC/ST people are changing occupations more as compared to Non SC/ST people in the presence of formal networks. Though both the coefficients are statistically significant, the coefficient of formal for SC/ST is 0.59 while for Non SC/ST it is 0.490 .

6 Conclusion

In this study, we examine the effect of formal institutions upon occupation mobility using Rural Economic Demographic Survey (REDS) data set from 1999 and 2006 rounds. This is particularly important in the context of developing countries where occupation choices are generally based upon information provided by community or caste networks. We define occupation mobility in two ways, first is inter-generational occupation mobility which is change in occupation compared to earlier generation while second is switching occupation relative to caste's traditional occupation. We further define upward and occupation mobility to assess the improvement or deterioration in change in occupation level.

We find that formal institutions affect the occupation mobility positively for both cases . Specifically, for 1 unit increase in formal measure, there would be 11.5% higher inter-generational occupation mobility. Similarly, for an additional unit increase in formal networks will increase the probability of changing occupation from the caste's traditional occupation by 32.1%. Further, we have found out that prevalence of strong formal leads to switching occupation towards better occupation choices. Main result of paper is formal networks affects the mobility in occupation choices positively. In addition to this, we further found that in presence of formal networks, SC/ST who are

considered as marginalized or low-level castes changes occupation more compared to General category people.

1.2pt

Table 1: Descriptive Summary of the Variables for Intergenerational Occupation Mobility Study

Panel A: Outcome Variable			
		Mean	sd
Occupation Differs from Father's Occupation	Yes	2888	33.25
	No	5798	66.75
Panel B			
Variable of Interest		Mean	sd
Formal Measure		0.419	0.219
Panel C: Control Variables		Mean	sd
i.Individual Level Variables			
Age (Father)		50.26	12.73
Age (Child)		27.47	8.01
Age-Group	16 to 25 years	1464	16.77
	26 to 40 years	2950	33.78
	41 to 60 years	3349	38.35
	61 to 70 years	969	11.10
Average Education Years (Father)		5.39	4.92
Average Education Years (Child)		8.34	4.49
In - Migration reason is Employment	Yes	4672	67.15
	No	2286	32.85
ii.Household level variables			
	category	counts	percentage
Caste-Grouping	Sc	1206	13.83
	St	607	6.63
	Obc	4498	48.61
	General	2890	31.58
III. Village-level variables			
		Mean	sd
Log(Population)		7.63	0.901
Industrial Establishments near the village		59.13	76.35
Households affected by Shocks		526.81	483.15
Travel time to the nearest district			

1.2pt

Table 2: Descriptive Summary of the Variables for Caste Occupation Mobility Study

Panel A: Outcome Variable			
		Mean	sd
Occupation Differs from Caste Occupation	Yes	2271	54.64
	No	1888	45.36
Panel B			
Variable of Interest		Mean	sd
Formal - Measure		0.495	0.223
Panel C: Control Variables		Mean	sd
i.Individual Level Variables			
Age		39.70	13.73
	category	counts	percentage
Education	Illiterate	1068	26.00
	Secondary & Below	1984	48.30
	College Dropout	725	17.64
	Bachelors & Above	331	8.06
Age-Group	16 to 25 years	775	18.62
	26 to 40 years	1515	36.40
	41 to 60 years	1522	36.57
	61 to 70 years	350	8.41
Average Education Years (Father)		5.39	4.92
Average Education Years (Child)		8.34	4.49
In - Migration reason is Employment	Yes	2298	67.38
	No	1091	32.19
ii.Household level variables			
	category	counts	percentage
Caste-Grouping	Sc	326	7.83
	St	250	6.01
	Obc	2314	55.60
	General	1272	30.56
III.Village-level variables			
		Mean	sd
Log(Population)		7.504	0.872
Industrial Establishments near the village		52.201	67.18
Households affected by Shocks		514.14	445.92
Travel Time to Nearest District HQ		114.45	67.54

1.2pt

Table 3: Intergenerational Occupation Mobility : Formal Measure

VARIABLES	(1) col1	(2) col2	(3) col3	(4) col4	(5) col5
Formal	0.109***	0.106	0.108***	0.078*	0.115**
	(0.023)	(0.022)	(0.022)	(0.036)	(0.061)
SC/ST				0.11***	0.14***
				(0.016)	(0.020)
OBC				0.035**	0.048***
				(0.014)	(0.017)
age (26 to 40)			0.005	0.008	-0.003
			(0.018)	(0.018)	(0.021)
age (41 to 60)			-0.026	-0.020	-0.022
			(0.019)	(0.019)	(0.022)
age (61 to 70)			-0.096***	-0.086***	-0.089***
			(0.028)	(0.028)	(0.032)
Years of schooling			0.012***	0.011***	0.011***
			(0.000)	(0.000)	(0.000)
Affected by Shocks					-0.000**
					(0.000)
Employment Migration					-0.021**
					(0.024)
Log(population)					-0.056***
					(0.012)
Travel Time					-0.033***
					(0.005)
Industrial Establishments					0.003***
					(0.000)
Constant	0.675***	0.575***	0.709***	1.193***	0.251*
	(0.031)	(0.033)	(0.038)	(0.106)	(0.012)
Observations	9,094	9,081	9,081	6,226	6,226
R-squared	0.020	0.035	0.041	0.042	0.026
district FE	NO	Yes	Yes	Yes	Yes
Number of districtid		94	94	94	77

Source: REDS data set, Author's Own Calculation
Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

1.2pt

Table 4: Occupation Mobility from Caste Traditional Occupation : Formal Measure

VARIABLES	(1) col1	(2) col2	(3) col3	(4) col4	(5) col5
Formal	0.182	0.195	0.223	0.311*	0.321**
	(0.151)	(0.222)	(0.173)	(0.176)	(0.098)
SC/ST				0.133***	0.119***
				(0.035)	(0.036)
OBC				0.258***	0.259***
				(0.036)	(0.036)
age (26 to 40)			-0.015	-0.008	-0.017
			(0.018)	(0.018)	(0.021)
age (41 to 60)			-0.046**	-0.039*	-0.038*
			(0.019)	(0.019)	(0.022)
age (61 to 70)			-0.119***	-0.108***	-0.110***
			(0.032)	(0.031)	(0.032)
Years of schooling			0.000	0.002	0.002
			(0.002)	(0.002)	(0.002)
Affected by Shocks					-0.000
					(0.000)
Employment Migration					-0.092**
					(0.036)
Log(population)					-0.085***
					(0.030)
Travel Time					0.004
					(0.003)
Industrial Establishments					0.003***
					(0.000)
Constant	0.452***	0.450***	0.501***	0.497***	0.634***
	(0.051)	(0.121)	(0.122)	(0.122)	(0.253)
Observations	4,162	4,162	4,155	4,155	3,162
R-squared	0.009	0.014	0.019	0.038	0.072
district FE	NO	Yes	Yes	Yes	Yes
Number of districtid		94	94	94	75

Source: REDS data set, Author's Own Calculation
Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

1.2pt

Table 5: Upward Occupation Mobility from Caste Traditional Occupation : Formal Measure

VARIABLES	(1) col1	(2) col2	(3) col3	(4) col4	(5) col5
Formal	-0.224***	0.045	0.069	0.163**	0.155*
	(0.047)	(0.099)	(0.094)	(0.096)	(0.096)
SC/ST				0.133***	0.119***
				(0.035)	(0.036)
OBC				0.258***	0.259***
				(0.036)	(0.036)
Age (26 to 40)			0.052**	0.045*	0.044*
			(0.023)	(0.023)	(0.023)
Age (41 to 60)			0.093***	0.071***	0.069***
			(0.023)	(0.023)	(0.024)
Age (61 to 70)			-0.072**	-0.114***	-0.112***
			(0.036)	(0.036)	(0.036)
Secondary & Below				0.081***	0.082***
				(0.022)	(0.022)
College Dropouts				0.198***	0.201***
				(0.027)	(0.027)
Bachelors & Above				0.411***	0.377***
				(0.033)	(0.034)
Travel Time					-0.000
					(0.000)
Constant	0.570***	0.432***	0.201***	0.064	0.121
	(0.026)	(0.052)	(0.053)	(0.063)	(0.076)
Observations	2,269	2,269	2,269	2,239	2,179
R-squared	0.010	0.000	0.105	0.114	0.104
district FE	NO	Yes	Yes	Yes	Yes
Number of districtid		94	94	94	91

Source: REDS data set, Author's Own Calculation
Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

1.2pt

Table 6: Heterogeneity Analysis

VARIABLES	SC/ST	Non SC/ST
Formal	0.590**	0.480***
	(0.219)	(0.092)
Age (26 to 40)	-0.061*	0.008
	(0.032)	(0.021)
Age (41 to 60)	-0.092***	-0.025
	(0.033)	(0.021)
Age (61 to 70)	-0.104*	-0.101***
	(0.053)	(0.030)
Secondary & Below	0.023	-0.051**
	(0.032)	(0.019)
College Dropouts	-0.089**	-0.051**
	(0.044)	(0.024)
Bachelors & Above	0.023**	0.029**
	(0.013)	(0.013)
Shocks	-0.0005	0.0004
	(0.0004)	(0.000)
Migration for Employment	-0.205	-0.0764*
	(0.175)	(0.044)
Log(population)	0.155	-0.115***
	(0.179)	(0.036)
Travel Time	0.0004	0.0005
	(0.0020)	(0.0004)
Industrial Establishments	-0.002	0.003***
	(0.003)	(0.0006)
Constant	0.539***	0.268***
	(0.119)	(0.050)
Observations	435	2,666
R-squared	0.059	0.032
Number of districtid	30	67
district FE	Yes	Yes

Source: REDS data set, Author's Own Calculation
Standard errors in parentheses , *** p<0.01, ** p<0.05, * p<0.1

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