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Like Father, Like Son: Intergenerational Occupational Persistence among Youth in India

Sweta Lahiri

&

Tushar K. Nandi

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Sweta Lahiri

Centre for Studies in Social Sciences,
Calcutta
swetalahiricsssc@gmail.com

&

Tushar K. Nandi

CTRPFP, Centre for Studies in Social Sciences,
Calcutta
nandi.tushar@gmail.com

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Abstract

The recent demographic change in India has engendered a lively debate on education and employment of youth. There is a growing concern that the evolving labor market has disproportionately favored skilled workers. Under this backdrop our paper analyses the incidence of high degree of intergenerational persistence of industry among youth in India. Using data from the latest three rounds of the employment-unemployment survey of NSSO, this paper studies the under-lying causes and determinants of the probability that sons (aged between 15-24) are employed in the same industry as their fathers. We use a probit model for estimating the effect of own, parental education, asset ownership and father's network on such probability. The results show that in the rural area, with increase in the level of education sons are less likely to be in the industry same as their father. There exists positive effect of household productive asset ownership on persistence. We also find evidence of significant influence of father's network on such incidence. There is indication that difference across castes and religions has been declining in recent years.

JEL Classification: D13, J24, O15.

Keywords: Intergenerational persistence, Labour market, Transition, India.

1. INTRODUCTION

India is currently experiencing demographic transition in favoUr of its working age population in general and youth [1] in particular. By 2020, India is set to become world's youngest country with almost 64% of its population in the working age group. The change in the age structure has the potential to add up to its GDP growth rate almost by 2% (Labour Bureau 2013). This phenomenon is popularly known as demographic dividend [2]. Realization of this potential in developing countries is largely related to enabling youth to escape 'working poverty' and facilitation of their successful transition from 'school to the labour market' (2013 International Labour Office – Geneva: ILO 2013). However, as early entrant youth face disproportionate difficulties in the job market in the form of lower levels of human capital, skill mismatch, experience trap, dearth of information and financial resources. In absence of well-functioning capital market and transmission of unequal socioeconomic status across the generations, young persons may have limited options and be forced to take up unproductive, low paid, insecure work. Inability to prove oneself productive member of the society can overshadow their career prospect in the longer run. They continue to be plagued by working poverty streaming from their irregularity of work and lack of formal employment and social protection (2015 International Labour Office – Geneva: ILO 2015). India is not an exception in this context, with most of its working youth population, engaged either in own-account work, unpaid family work, casual paid employment or temporary (non-casual) work (Labour Bureau 2013). It is hard to feel positive about one's future prospect when one becomes blocked at the entry level. Therefore, it is needless to say that an in-depth understanding of prevailing youth labour market situation is of crucial im-

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[1] A period of transition from childhood to the adulthood, bringing with it the prospect of social and economic freedom. Youth is defined by United Nations as persons between the ages 15-24 (2013 International Labour Office – Geneva: ILO 2013).

[2] The concept of 'demographic dividend' was conceived following the United Nations International conference on Population and Development in Cairo in 1944. Demographic contribution to accelerating economic growth became known as 'demographic dividend.'

portance to find out whether the labour market provides equal opportunities to all its young entrants. Researchers often favour equality of opportunity as an underlying goal of the society – the idea is that those who work hard should be able to succeed regardless of his/her family background (Black and Devereux 2010). Any attempt directed towards skill formation and creation of employable opportunity will be effective only if the labour market provides equal space to all its eligible performers (Bowles and Gintis 2012).

Under this backdrop we analyze one of the dimensions of inequality in the youth labour market, namely intergenerational persistence of industry. There exists extensive literature that maintains that persistence is a strong channel of transmission and perpetuation of inequality from one to other generation. Our objective in this paper is to explore the underlying causes and determinants of intergenerational persistence in the industry among youth. By persistence here we mean youth are in the industries same as their fathers. Using data from the latest three rounds of the employment-unemployment survey of NSSO we find that such persistence is very high (nearly 64 %) among youth. We use a probit model for estimating the effect of own, parental education, asset ownership and father's network on such probability. We find considerable variation in the effect of these factors in urban and rural areas. For higher (Higher Secondary, College and University) levels of education rural youth are always less likely to work in the industry same as their father. There exists positive effect of household productive asset ownership on persistence. However, such positive effect in case of rural area diminishes with increase in the size of land ownership. We also find evidence of significant influence of father's network on such incidence. There is an indication that difference across castes and religions has been declining in recent years. Rest of the paper is organized as follows. Section 2 provides a brief literature review and conceptual framework for the empirical analysis of the paper. Section 3 and 4 present the data source, descriptive statistics and the estimation results respectively. The last section concludes the paper.

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2. LITERATURE REVIEW

During the last two decades along with globalization and technological advancement, Indian has witnessed significant economic, social and demographic changes. One of the critical aspects of this transformation is advent of a large number of young labour market participants [3]. This group of young participants often encounter number of challenges associated with the evolving economic and social structure. They largely work either as own-account worker, unpaid-family worker, casual paid employees or temporary (non-casual) labourer. These jobs are often less satisfactory, in the sense that they are low skilled, less paid and less secured (Labour Bureau 2013). These young workers are more likely to concentrate in the industries where their father works. There is high degree of intergenerational persistence of industry (Hnatkovska, Lahiri, and Paul 2012; Nandi 2016).

Researchers differ markedly regarding the cause of this observed disparity in the labour market outcomes among individuals. (Bowles and Gintis 2012) in their study on 'Inheritance of Inequality' suggest that, there are two main strands on the issue of labour market inequality at any point in time. One in which different individuals face equal opportunity in labour market and the outcome differences are accrued to one's skill and ability . The other strand emphasizes on the role of inequality of opportunities, primarily caused by intergenerational transmission of socio-economic status. Transmission of success is fair so long as differences in achieved outcomes can be explained by skills and ability. However, this is often not the case for countries with an immensely unequal socio-economic condition of its population. In presence of strong intergenerational linkages, the labour market may not appear level playing ground to all its participants and gains from growth naturally fails to trickle down properly to all of its population. There is a growing concern that India's economic growth has been accompanied by rising inequality. Therefore, intergenerational mobility in the terrain of occupation and skill among these early entrants of the

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[3]Almost quarter of its youth population in the labour market (Labour Bureau 2013).

labour market in the developing countries is one of the requisites to make economic growth an inclusive process. Focusing on the existing situation, our objective in this paper is to study the determinants of a young individual's choice of industry. Does education play the crucial role in such a choice? Or, is it that the family background matters at the time of labour market entry? Answer to these questions is important to understand whether the labour market provides equal opportunity to all its participants. If family background is more important than education for labour market choices, inequality in employment outcomes can be traced back to the transmission of advantages or disadvantages from one generation to other. Intergenerational transmission of success or failure thus can negatively affect the possibility of the realization of demographic dividend. We can broadly divide the determinants of youth labour market outcome in three categories (Freeman and Wise 1982). These are 'individual characteristics' like capital (human, physical and social) endowment, family background. The "strength of an economy" as a whole is often represented by the growth rate of personal income, average income, industry mix and poverty mix in the area of residence. Lastly, the 'demographic conditions' like proportion of youth in the population is also important determinant of labour market outocme. Under the backdrop of favorable demographic transition toward youth population in particular (Mahendra and Venkatanarayana 2011), our study focuses on individual characteristics of youth in determining their industry of employment. At the beginning of their economic life, youth incorporate all the information available to him regarding the level of capital (physical, human and social) he is endowed with and the parental background they inherit (Manski 1993; Streufert 2000). Genetic endowment is the fundamental source of intergenerational linkage (Emran and Shilpi 2011). Apart from this, parents can directly influence the levels of initial capital stock through investing in offspring's education and transferring physical and financial capital. Offspring's human capital is likely to be influenced further by 'role model effect' as children often try to imitate parents'

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educational and occupational achievements. Children can gain valuable skill and experience by observing their parents at work as well. This is more likely through informal apprenticeship at parents' workplace, especially when the work place is in close proximity to home (Laband and Lentz 1983). Successful parents often transfer reputation and a rich social network (as social capital) to their children. In other words father's network can exert varying effects on the hiring process, this in turn may influence son's choice of industry (Nandi 2016; Corak and Heisz 1999).

All these background factors or intergenerational linkages have both direct and indirect influence on youth's labour market outcome particularly in the societies with persistent wealth inequality and credit market imperfection (Ghatak and Jiang 2002). Early studies often conceptualize intergenerational linkages in terms of intergenerational earning elasticity (Becker and Tomes 1986; Blau and Duncan 1967). (Bowles and Gintis 2012) find such mechanism to be often inadequate, since lots of other factors like genetic and cultural transmission of cognitive skills, personality traits, belonging to superior race, superior health and education may govern such transmission. Further, they also find that the estimation of earning elasticity often suffers from two types of measurement error: mis-reporting of income and incorporation of transitory component in current income (often uncorrelated with permanent income). Even though, study on the intergenerational linkages in the occupation is less likely to suffer from these problems associated with income, such issues have received less attention in the context of labour market outcome of youth. Empirical studies in exploring intergenerational linkages in the context of developed countries maintain that there is both significant direct and indirect effect of parental education, occupation and income on young children's educational attainment and their choice of employment (Bowles and Gintis 2012). Lambert, Ravallion, and Walle, 2011, find significant importance of inheritance (productive household asset) and parental traits on intergenerational occupational mobility in Senegal (Lambert, Ravallion, and Walle 2011). Using data from Nepal and Vietnam, (Emran

and Shilpi 2011) have concluded that, intergenerational occupational correlation between father and son to be significantly driven by unobserved genetic endowment beyond all the widely discussed channels of education and wealth. (Corak and Heisz 1999) find strong effect of father's network on the hiring process of their off springs. They used the number of firms with which the father has worked as an indicator of network. Although, there exists few studies Majumder, 2010; (Hnatkovska, Lahiri, and Paul 2012) exploring intergenerational linkages in occupational and educational outcomes with a special focus on social groups based on caste in India, they do not shed much light on the factors responsible behind such linkages.

Nandi 2016, demonstrated the importance of parental education, family wealth and father's network in determining the degree of intergenerational persistence of industry in India. The study concluded that mobility in employment is more likely among the well-off families and less at the top and bottom end of the occupational ladder. In developing countries that often lack investable resources, understanding intergenerational linkages in the labour market appears fundamental to the formulation of effective public policies that make the society level playing field for its younger members. Despite of the fact that, there is a renewed interest in literature in exploring observed differences in the economic outcome from an intergenerational perspective, such issues in the context of developing countries is less interrogated and almost nonexistent in the context of youth. In order to address the issues discussed above, this paper looks into the incidence intergenerational persistence of industry among working youth, aged between 15-24 years in India. The analysis covers three consecutive employment unemployment surveys (conducted by the National Sample Survey organization) in order to study the change in the determinants of intergenerational persistence. It attempts to find out whether education or family background is the prime force behind choice of industry.

3. DATA DESCRIPTION

We use data from the Employment and Unemployment Surveys in India, carried

out by the National Sample Survey Organization. This is the primary source of data on various labour market issues from a nationally representative sample. The survey collects data since 1972-73 and provides vast set of detailed socio-economic and demographic information on each individual of the households selected in the sample. We use data from the 61st (2004-05), 66th (2009-10) and 68th (2011-12) round surveys – latest three rounds - on employment and unemployment in India. Our analysis focuses on the industry of employed youth (15-24 years) and their fathers. Industries for employed individuals are recorded in these three rounds using National Industrial Classification (NIC) 1998, 2004, and 2008, respectively. As the classifications changed from one year to another, they were not comparable. We used concordance tables to convert them into the NIC 2008 [4]. In NIC 2008, there are 21 broad industries (2 digits). After the conversion, industries are further clubbed into 6 broad industry groups [5]. Using these broad industrial groups we observed that almost 64 percent of the young sons work in the industry where their fathers are also employed in 2004-05. The percentage remains almost unaltered in 2009-10, but falls slightly in 2011-12.

Table 1 reports the intergenerational persistence of industry (%) among the youth, cross tabulated by two age groups, five educational levels, and the area of residence (rural and urban).

It also provides breakdown of persistence for different social and religious groups at three rounds of survey. Intergenerational persistence is defined as the event in which a father-son pair is observed to be employed in same broad industry group, while intergenerational mobility is when they are employed in different industries. The figures in the first column of the table present the intergenerational persistence

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[4]To make the NIC-1998 and NIC-2004 comparable with NIC-2008 we use the concordance tables published by Central Statistical Organisation (CSO). Partial or full alignment was required for all the industries except agriculture & fishing, construction and extraterritorial activities.

[5]Observing the percentage concentration of sons and fathers in 21 industries, we have grouped them broadly into the following six categories - Agriculture & fishing, Manufacturing, Construction, Wholesale & retail trade, Transport, Other. The category other is dominated by tertiary or service sectors. After this categorization we have calculated the percentage of persistence.

for the full sample in a survey round. The persistence in 64% in 2004-05, increases slight to 65% in 2009-10 and then falls to 61% in 2011-12. Among the two groups – younger group (15-19 years) has higher persistence than the older group (20-24 years) in all the three rounds of survey. Now comparing association between persistence and levels of general education, we observe that a higher level of education is associated with lower intergenerational persistence. A movement from no education to college or university level education reduces the persistence from 72 % to 52%, 72% to 55% and 66% to 56% in 2004-05, 2009-10 and 2011-12 respectively. The rural youth tends to engage more in their father's occupation than the urban youth. However, it seems that this urban-rural difference has reduced over time. In 2004-05, the urban-rural difference in persistence was around 10 percentage point. In 2011-12, it has come down to 6 percentage point.

Looking at the columns for caste, we find that intergenerational persistence is highest among the Schedule Tribe (ST) and lowest among the Schedule Caste (SC) for all youth and across both age groups, in all the three rounds of survey; the General Caste (GEN) and Other Backward Caste (OBC) always remain in between ST and SC, with difference between them increasing over time. As mentioned above, higher education is associated with lower occupational persistence., however, the influence of education appears to be very strong among SC in all years and ST in first two years. The fall in persistence with higher education is much lower for ST in 2011-12 than in previous years. The Scheduled Tribes have the highest persistence in rural areas, while the General Caste has the highest persistence in the urban areas. Furthermore, it appears that the persistence among ST has increased over time in rural areas.

Observing data on the different religions, it is evident that for all religions, persistence has reduced over the years and there is a negative relation between education and persistence. We find that Muslims have the lowest persistence in all years. The relation seems week for Muslim in 2004-05 and 2009-10, compared

to other religions. In rural areas, Hindus have higher persistence than Muslims in all years. However, the persistence is higher among Muslims than Hindus in rural areas. The Hindu-Muslim difference in persistence in rural areas has narrowed in recent years.

Table 1: Persistence of industry across the generation among social and religious groups

	Full sample	GEN	OBC	SC	ST		Hindu	Muslim	Christian	Others
2004-05										
All	64	64	65	61	71		65	60	69	69
Younger (15-19)	66	65	66	62	76		67	60	76	70
Older (20-24)	63	63	63	59	68		63	60	65	68
Education										
No formal education	72	69	72	70	78		72	66	86	79
Primary	65	62	67	60	75		65	60	82	68
Secondary	62	63	62	55	66		63	56	62	63
Higher Secondary (HS)	57	64	55	47	49		58	52	24	76
More than HS	52	56	51	37	52		52	50	53	56
Rural	67	65	67	64	74		67	62	72	73
Urban	57	61	57	50	51		57	58	58	52
2009-10										
All	65	64	66	60	70		65	63	62	69
Younger (15-19)	68	68	68	63	76		68	66	71	71
Older (20-24)	63	62	65	58	66		63	60	58	68
Education										
No formal education	72	64	72	71	81		73	65	63	81
Primary	65	64	64	61	73		65	61	67	68
Secondary	64	64	66	56	67		64	63	64	65
Higher Secondary (HS)	62	65	63	49	57		62	61	46	65
More than HS	55	57	55	53	45		56	55	48	63
Rural	67	64	68	63	71		68	60	64	70
Urban	60	63	61	53	63		58	67	56	64

2011-12									
All	61	60	62	58	67	62	57	61	65
Younger (15-19)	63	59	64	59	73	65	58	71	62
Older (20-24)	60	60	61	58	63	61	57	58	66
Education									
No formal education	66	60	68	65	71	67	62	75	73
Primary	61	56	61	56	75	63	54	76	52
Secondary	63	60	61	57	63	60	57	60	70
Higher Secondary (HS)	63	63	64	61	59	65	54	48	66
More than HS	56	60	54	40	62	57	48	52	61
Rural	63	60	64	61	68	64	58	63	66
Urban	57	59	58	52	59	57	56	58	61

From Table 1, we conclude that the incidence of persistence is higher among the lower age cohort across all the social and religious groups in all years. Association between the education and intergenerational persistence decreases for higher levels for all the years, particularly among the SCs and STs.

Table 2 presents a transition matrix – cross tabulation of industries where sons and their fathers are employed. A row in a transition matrix gives the distribution of son's industry, given employment of father in a particular industry. It is widely used to present the movement from one industry to other across the generations[6].

Based on the percentage concentration of fathers and sons in twenty one industries, we have grouped them into six broad industry categories for the transition matrix. The six categories are - Agriculture & fishing (Agri), Manufacturing (Manu), Construction (Const), Wholesale & retail trade (W & R), Transport (Trans) and Other (Other) respectively. Upper panel of the Table 2 presents the distribution of sons' employment in different industries (son's industry) given their father's industry of employment (father's industry) for rural area. The transition matrix for the urban area is presented in the lower panel. The diagonal elements of the matrix give the measure of persistence and the off diagonal elements show mobility across

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[6]Used in studies (Driver 1962; Robert Erikson and J. H. Goldthorpe 2002; Cheng and Dai 1995; Kumar, A. Heath, and O. Heath 2002; Hnatkovska, Lahiri, and Paul 2012; Biblarz, Bengtson, and Bucur 1996; Beller and Hout 2006; Louw, Berg, and Yu 2006)

Table 2: Intergenerational Industry Transition Matrix

NSS rounds	2004-05						2009-10						2011-12					
Father's industry	Son's industry																	
	Rural																	
	Agri	Manu	Const	W & R	Trans	Other	Agri	Manu	Const	W & R	Trans	Other	Agri	Manu	Const	W & R	Tran	Other
Agri	76	6	5	5	4	4	76	4	7	4	4	5	70	6	10	5	4	5
Manu	17	63	6	6	2	5	13	69	8	3	3	3	19	58	11	4	4	3
Const	23	6	59	4	4	4	16	5	66	4	4	5	14	4	71	4	3	4
W & R	25	7	4	54	4	6	20	6	8	56	4	5	21	8	8	55	4	5
Trans	40	8	7	8	31	6	24	9	19	5	35	7	25	11	14	10	31	10
Other	38	6	5	9	5	38	35	7	9	8	4	37	29	7	10	9	4	42
	Urban																	
	Agri	Manu	Const	W & R	Trans	Other	Agri	Manu	Const	W & R	Trans	Other	Agri	Manu	Const	W & R	Tran	Other
Agri	53	11	9	13	7	7	60	8	11	9	5	7	59	8	9	10	6	9
Manu	2	68	6	13	4	8	1	71	5	10	2	11	0	68	8	10	4	9
Const	2	16	54	13	5	10	1	11	63	12	5	9	3	11	61	10	4	12
W & R	2	10	5	70	4	9	1	9	7	72	4	8	1	11	7	64	4	12
Trans	3	20	11	23	27	17	3	16	20	16	27	18	2	16	18	23	26	15
Other	5	15	7	16	8	49	3	10	11	20	5	51	3	12	10	17	7	52

Abriviations used: "Agri"= Agriculture - Fishing, "Manu"= Manufacturing, "Const"= Construction, "W&R"= Wholesale -Retail trade, "Trans"= Transport, "Other"= group of sixteen industries (dominated by the servicesector).

generations.

In the rural area, persistence is highest in the agriculture & fishing sector; the persistence in this sector has declined from 76% in 2004-05 to 70% in 2011-12. Among the rest of the industries worth mentioning are manufacturing, construction, wholesale & retail trade where the persistence is higher than 50 percent. Persistence is least in the transport industry. During 2009-10, persistence in most industries increased from their 2004-2005 levels, except for rural agriculture and urban transport industries where the persistence remained the same. In the latest period we observe a reduction in persistence except for construction sector. It is important to note that in rural areas, a significant percentage sons with fathers employed in non-agricultural sector move to agricultural sector.

In the urban area, persistence is highest in the wholesale & retail trade industry where almost 70 percent of the sons are likely to work provided their fathers are employed in the same. This is followed by manufacturing industry where the percentage is 68. The incidence is least in case of transport industry, like in case of the rural area. We also observe a pattern, similar to rural areas, of increase of persistence in 2009-20 and a slight fall in 2011-12.

To sum up, we find that persistence was initially highest in agriculture and

currently it is highest in construction among the youth in the rural area. For the periods of 2004-2005 and 2009-2010, persistence is considerably high in wholesale and retail industry followed by the manufacturing industry in the urban areas; in 2011-2012 persistence was highest in manufacturing industry and then the wholesale and retail industry. In both rural and urban areas in period 2011-2012, for fathers employed in the service sector, the likeliness of the sons being in the same has shown an increase.

4. ESTIMATION

Using a probit model we examine the effect of educational attainment and family background on the probability that the young son and his father are employed in the same industry. Our dependent variable takes the value one if the son and father work in the same industry, otherwise zero. Within the category of individual determinants, we include age, education and other background variables like caste and religion. We employ two sets of specifications. In one, we incorporate the variables for ownership of productive assets. In the other, we include father's occupation (proxy for father's network). These two set of variables are included in two different specifications as they are likely to be highly correlated. In order to control for district specific macro factors that may affect the employment conditions in different industries, we incorporate district fixed effects. Table 3 reports marginal effects and standard errors from probit estimation for urban and rural area for three rounds of the survey.

The estimation results for first specification show that own education does not exert any significant impact on probability of persistence among urban youth. However, levels of education have a different and varying role to play in the rural area for the three years under consideration. During the initial period an individual with at least primary education is more probable to join an industry different from his father. The marginal effect of education on persistence is not only negative but also becomes stronger at higher levels. However, in the following periods only higher

and college level education has such significant negative effect on the probability of persistence. In the last years, 2011-12, the effects are only marginally significant. This indicates that education as an instrument for occupation mobility has become less effective over the years.

We also observe that intergenerational persistence is higher among GEN individuals compared with individuals from SC, ST and OBC only during 2004-05 in urban area. During the following two periods such incidence is significantly less likely only among SCs. Estimation results show that Muslims are less likely to work in their fathers industry in rural areas over the period. In Urban area this pattern prevails almost same except during the last period.

We also incorporate parental education in our model. They also serve as proxy for a permanent income of a household and innate ability. Although, there is considerable variation across the areas of residence and periods of survey, there is an indication that father's education is negatively associated with the probability of sons being employed in father's industry in the rural area. The son is more likely to work in the different industry if the father has an education beyond primary level in the rural area. In urban area no educational level of father, except secondary education, is negatively associated with the probability of persistence. Surprisingly, mother's higher secondary education is positively associated with persistence in urban areas.

Ownership of productive asset can influence the household's decision to invest in young sons' employable educational activities. This in turn may affect the incentive to search employment opportunities elsewhere mainly in following two ways. On one hand, the person will be less likely to work outside if the he is forced to maintain subsistence family enterprise or, if there are fewer options in the labour market the expected gain from employment outside is also very low. On the other hand, depending on the size of the household asset and return from it, his incentive to find better employment opportunity outside may increase. In this case, size of the

Table 3: Probit Estimation Results: Intergenerational Persistence and Household Assets

	2004-05				2009-10				2011-12			
	1				2				3			
	Urban		Rural		Urban		Rural		Urban		Rural	
Area of residence	Marginal Effect	S. Error	Marginal Effect	S. Error	Marginal Effect	S. Error	Marginal Effect	S. Error	Marginal Effect	S. Error	Marginal Effect	S. Error
Variables												
Age	0.003	0.003	-0.007 ***	0.002	-0.004	0.004	-0.010 ***	0.002	0.006	0.005	-0.011 ***	0.003
Own Education												
primary education	0.024	0.026	-0.060 ***	0.013	-0.044	0.036	-0.024	0.020	-0.036	0.038	-0.028	0.023
secondary education	0.010	0.025	-0.096 ***	0.012	-0.040	0.032	-0.027	0.018	0.022	0.034	-0.037 *	0.020
Higher secondary(HS)	-0.023	0.039	-0.157 ***	0.021	-0.010	0.044	-0.048 *	0.026	0.068	0.046	-0.004	0.028
More than HS	-0.032	0.042	-0.236 ***	0.026	-0.035	0.048	-0.124 ***	0.034	-0.017	0.050	-0.061 *	0.034
Castes												
ST	-0.214 ***	0.053	0.018	0.020	0.007	0.066	-0.015	0.027	-0.024	0.062	0.046	0.030
SC	-0.139 ***	0.029	-0.033 **	0.015	-0.048	0.033	-0.067 ***	0.020	-0.100 ***	0.037	-0.006	0.023
OBC	-0.069 ***	0.023	-0.008	0.013	-0.020	0.027	-0.006	0.018	-0.023	0.029	0.013	0.019
Religion												
Muslim	-0.053 **	0.024	-0.057 ***	0.017	0.083 ***	0.030	-0.112 ***	0.021	-0.041	0.030	-0.065 ***	0.023
Christian	-0.028	0.075	-0.046	0.037	-0.105	0.086	-0.031	0.049	-0.195 *	0.104	-0.054	0.055
Other religion	-0.042	0.047	0.033	0.030	0.026	0.057	0.068	0.044	0.064	0.066	-0.041	0.049
Father's Education												
Primary education	0.018	0.024	-0.012	0.013	0.002	0.031	-0.029 *	0.017	0.036	0.033	-0.038 **	0.019
Secondary education	0.006	0.024	-0.095 ***	0.013	0.032	0.028	-0.101 ***	0.017	-0.064 **	0.030	-0.052 ***	0.019
Higher secondary (HS)	-0.039	0.051	-0.202 ***	0.031	-0.047	0.052	-0.206 ***	0.037	-0.052	0.061	-0.197 ***	0.042
More than HS	-0.008	0.050	-0.211 ***	0.033	-0.051	0.058	-0.320 ***	0.046	0.051	0.058	-0.272 ***	0.050
Mother's Education												
Primary education	0.017	0.026	0.015	0.016	0.010	0.031	0.019	0.021	0.005	0.035	-0.048 *	0.024
Secondary education	0.037	0.029	-0.001	0.021	0.035	0.033	-0.014	0.025	0.011	0.036	0.030	0.026
Higher Secondary(HS)	0.169 **	0.076	-0.073	0.076	0.173 **	0.086	-0.001	0.082	0.176 **	0.084	0.094	0.092
More than HS	0.088	0.080	0.121	0.099	0.088	0.087	0.060	0.174	0.026	0.082	0.185	0.133
Household asset												
Father self employed	0.194 ***	0.017			0.137 ***	0.021			0.093 ***	0.022		
land owned			0.059 ***	0.004			0.067 ***	0.006			0.059 ***	0.007
land owned squared			-0.002 ***	0.000			-0.003 ***	0.000			-0.002 ***	0.000
Log likelyhood	-2825.96		-7445.19		-1981.80		-4384.71		-1757.73		-4044.66	
No of observation	4627		13267		3289		7848		2913		6855	

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asset may have a favourable effect by easing credit constraint and provide incentive to find a job elsewhere.

Variables for the household productive assets are represented by household enterprise (proxied by father's self-employment) and land ownership (in hectare) in urban and rural areas, respectively. The estimation result shows that father's self-employment increases the probability that the father and son will be in the same industry. In order to capture the differential impacts of land ownership on intergenerational persistence across varying size of land holding, we also introduce a quadratic term in the estimation. The quadratic term is negative and significant. The result suggests that the probability of persistence increases with land ownership at a decreasing rate. At the lower levels of land ownership there is an incentive for the young sons of the household to be in their father's industry of employment. Nevertheless, after a threshold level of land holding such incentive falls. This is indicative of the fact that large land ownership has a negative impact on the incidence of persistence. This nonlinear effect of asset ownership has a crucial importance in the literature (Becker and Tomes 1986). The conjecture is that poor households (in our case it is in terms of land ownership) face a weightier borrowing constraint than their well-off counterparts. Our result indicates that large land holding of household may not encounter financial constraints at the time of human capital investment of their younger generation. This in turn enhances the likeliness of mobility in the sectors of employment across the generations. Comparing the three time points in concern, we see that the positive marginal strength increases during the initial periods of (2004-05 and 2009-10), followed by a decrease in the last periods (2011-12).

In our following set of estimations in Table 4, we try to examine the impact of father's network through his occupation on the incidence of persistence of industry across generations. We argue that father's occupational status is an important factor in influencing son's sector of employment. A number of empirical studies lend

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support to the conjecture that a father's occupational hierarchy exerts network influence in the determination of son's labour market outcome (Corak and Heisz 1999; Nandi 2016). According to (Corak and Heisz 1999), there exists strong relationship between father's informational network and hiring process of his offspring. In this context, they have used information on the number of firms the father has worked with. (Nandi 2016) using data on father's occupation found that at the top and bottom end of occupational ladder, father's influence on the hiring process affects son's industry of employment. NSS data does not provide any retrospective information on father's previous employment and employers, hence, in order to find out such network influences on the incidence of persistence we consider father's occupation.

We incorporate description of occupation division as per NCO (National Classification of Occupation) -1968 and -2004 for NSS 61st (2004-05) and 66th (2009-10), 68th (2011-12) round respectively in the estimation. The occupations are categorized based on skill level, as high, medium and low-skilled[7] occupations; two dummy variables are used for the first two categories.

Estimation results from Urban Sample show that a father being in the high and medium skilled occupations is associated with higher probability of persistence. This may reflect network influence of a father in hiring process of the firm where he works, or in other firms in the same industry. Comparing the marginal effects we

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[7]For collection of information on occupation of workers three digit NCO code was used during NSS rounds. NCO 2004 was used in NSS 68th (2011-12) and 66th 2009-10) rounds and in the quinquennuial rounds prior to that 3-digit code of NCO 1968 was used. Concordance between 3-digit code of NCO-2004 and NCO-1968 is not possible (NSS, 2009-10). There are seven and nine major occupational categories in NCO-1968 and NCO-2004 respectively. In our study for 2004-2005 (NCO-1968) we consider 'low-skilled' category as 'Farmers, Fishermen, Loggers, Hunters and Related workers (code-6), 'Operator and Labourers (code-7-8-9)'. The category comprises of 'Skilled Agricultural and Fishery (code-6)', 'Craft and related (code-7)', 'Craft and Related Workers (code-7)', 'Plant and Machine Operators (code-8)' and 'Unskilled Workers (code-9) for 2009-10 and 2011-12 (NCO-2004). The 'medium-skilled' is comprised of 'Clerical and Related (code-3)', 'Sales (code-4)' and 'Service (code-5)' Workers in case of NCO-1968. We consider 'Clerks (code-4)' and 'Service workers and Shop and Market Workers (code-5) under this category for NCO-2004. We incorporate 'Professional, Technical and Related Workers (code-0-1), 'Administrative and Executive and Managerial Workers (code-2)' as high-skilled category for NCO-1968. For NCO-2004 we consider 'Legislator, Senior Officials and Managers (code-1)', 'Professionals (code-2)', 'Technicians and Associate Professionals (code-3) as 'high-skilled' workers.

Table 4: Probit estimation results – intergenerational persistence and father's network

Years	2004-05				2009-10				2011-12			
			4				5				6	
Area of residence	Urban		Rural		Urban		Rural		Urban		Rural	
	Marginal Effect	S. Error	Marginal Effect	S. Error	Marginal Effect	S. Error	Marginal Effect	S. Error	Marginal Effect	S. Error	Marginal Effect	S. Error
Age	0.003	0.003	-0.004 **	0.002	-0.006	0.004	-0.007 ***	0.002	0.006	0.005	-0.008 ***	0.003
Own Education												
primary education	0.022	0.026	-0.053 ***	0.013	-0.046	0.036	-0.023	0.020	-0.042	0.038	-0.023	0.022
secondary education	0.008	0.025	-0.077 ***	0.012	-0.045	0.032	-0.008	0.018	0.014	0.034	-0.025	0.020
Higher secondary(HS)	-0.042	0.038	-0.124 ***	0.021	-0.020	0.044	-0.010	0.026	0.054	0.046	0.021	0.027
More than HS	-0.047	0.042	-0.189 ***	0.026	-0.070	0.048	-0.065 *	0.033	-0.032	0.050	-0.016	0.034
Castes												
ST	-0.229 ***	0.053	-0.002	0.020	-0.004	0.066	-0.031	0.027	-0.034	0.062	0.008	0.029
SC	-0.159 ***	0.029	-0.074 ***	0.014	-0.049	0.033	-0.093 ***	0.020	-0.103 ***	0.037	-0.053 **	0.022
OBC	-0.068 ***	0.023	-0.023 *	0.013	-0.007	0.027	-0.010	0.018	-0.018	0.029	-0.008	0.019
Religion												
Muslim	-0.036	0.024	-0.053 ***	0.017	0.086 ***	0.030	-0.107 ***	0.021	-0.041	0.030	-0.068 **	0.022
Christian	-0.033	0.076	-0.058	0.036	-0.109	0.085	-0.035	0.048	-0.203 **	0.104	-0.042	0.054
Other religion	-0.046	0.046	0.035	0.030	0.029	0.057	0.058	0.044	0.067	0.066	-0.030	0.048
Father's Education												
Primary education	0.012	0.024	0.009	0.013	-0.003	0.031	-0.006	0.017	0.037	0.033	-0.017	0.019
Secondary education	-0.012	0.024	-0.049 ***	0.013	0.016	0.028	-0.063 ***	0.017	-0.071 **	0.030	-0.024	0.019
Higher secondary (HS)	-0.081	0.050	-0.104 ***	0.031	-0.089 *	0.052	-0.154 ***	0.038	-0.085	0.062	-0.129 ***	0.042
More than HS	-0.090 *	0.050	-0.092 ***	0.035	-0.124 **	0.058	-0.210 ***	0.046	0.000	0.058	-0.175 ***	0.051
Mother's Education												
Primary education	0.014	0.026	0.028 *	0.016	0.007	0.032	0.030	0.021	0.002	0.035	-0.042 *	0.023
Secondary education	0.044	0.029	0.027	0.021	0.044	0.033	-0.004	0.025	0.006	0.036	0.042	0.026
Higher Secondary(HS)	0.201 ***	0.075	-0.045	0.076	0.162 *	0.086	0.069	0.083	0.163 *	0.085	0.099	0.090
More than HS	0.095	0.079	0.104	0.100	0.099	0.087	0.070	0.175	0.021	0.082	0.212	0.130
Father's occupation												
High skilled	0.153 ***	0.026	-0.265 ***	0.023	0.162 ***	0.027	-0.173 ***	0.023	0.119 ***	0.029	-0.151 ***	0.024
Medium skilled	0.056 ***	0.019	-0.243 ***	0.014	0.059 **	0.028	-0.237 ***	0.022	0.050	0.031	-0.181 ***	0.024
Log likelyhood	-2863.47		-7523.22		-1978.38		-4476.68		-1755.71		-4168.54	
No of observation	4617		13528		3279		7977		2909		7019	

Note: All specifications include district fixed effects.

*, **, *** stand for 10%, 5%, and 1% significance respectively.

find that the strength of such network increased in the initial phase but decreased in the following phases. When the father works in a low-skilled occupation, such persistence is lower. This may imply that these low skilled categories include the occupations which provide limited opportunity for network influence. For rural area the pattern is just the reverse. Here skilled occupations are associated with lower persistence compared to low skilled occupations. Our result shows that top and bottom ends of occupation are significantly associated with the incidence of persistence in urban and rural areas, respectively.

5. CONCLUSION

This paper studies the intergenerational persistence of industry among the youth in India. Using data from the latest three rounds of nationally representative sample survey, we find that high intergenerational persistence among youth is evident in recent years. We focus on the relative strength of human capital and family background in explaining the probability of such incidence. We find that education is significant only in rural area in reducing the probability of persistence; however, only college or an educational level beyond that is associated with intergenerational mobility across the industries throughout the period of analysis. Household ownership of productive assets exerts a positive impact on the probability that son works in the industry where his father works. In case of rural area this effect declines with land size and there is a critical level of land ownership beyond which such persistence declines. This nonlinear relationship is suggestive of the widely discussed 'easing of credit constraint'. This effect indicates that wealthier households invest in their childern's human capital subsequently increasing their accessibility to different industries of the economy. Occupational hierarchy of the father is another significant factor, especially in urban area, which strongly affects the likelihood of the son to be employed in the same industry as his father. In rural areas, however, we find such influence to be reversed. The possibility of transmission of information and skill through informal channels is stronger especially if the father is engaged

in low skilled occupation in this area. Here, sons of the father at the bottom end (low-skilled) of the occupational hierarchy are more probable to be employed in the sector same as their father. The implication of our results is significant from policy perspective. Though education can enhance opportunity in labour market, the family background still matters to a larger extent. Strong and positive association between asset ownership, father's occupation and intergenerational persistence may be an indication of the difficulties faced by young individuals with poor family background at the beginning of their career. Further research should focus on the labour market opportunities (demand side factors) in this regard. It is encouraging to find that the influence of caste and religion has declined over the recent years.

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