

*Research Article*

## **Intergenerational Occupational Mobility among Male Tannery Workers: Do Caste and Religion Matter?**

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### **Abstract**

Occupational mobility is an important aspect of social mobility. It often changes thinking, neighborhood, social status, and social interactions, and through them behavior. An assessment of intergenerational occupational mobility of workers into leather tannery occupations (whether upward or downward) is the primary objective of the present study. Data for the present research was drawn from a cross-sectional household study of tannery and non-tannery workers in the Jajmau area of Kanpur City in the state of Uttar Pradesh, India. Results show that all the father who worked as tannery worker 76 percent of their son remained as tannery worker. Among all the fathers belonging to the Schedule caste and engaged in tannery work, 88 percent of their sons also worked as a tannery worker. Further, among Muslim fathers who worked in the tannery, 74 percent sons are also working in the tannery.

### **Introduction**

Occupational mobility is an important aspect of social mobility. It often changes thinking, neighborhood, social status, and social interactions, and through them behavior. At the macro level it leads to changes in social relations. It is observed that the pace of occupational mobility increases with increased level of education, acquisition of skills, and motivation to seek higher positions (Smelser and Lipset, 1966). It is believed that caste being a rigid system of stratification, personal history of caste determines one's destiny in India. Indian society had been rigidly stratified along the caste lines, which were initially based on the occupation (Deshpande, 2000).

Social mobility (movement over socio-economic classes) and occupational mobility (movement over occupational classes during one individual's lifetime) are, however, two different type of mobility, but there is strong association between social and occupational mobility. Basically, Intergenerational occupational mobility depends on many factors as availability of jobs in father's profession or unavailability of employment in other occupation. Intergenerational income mobility refers to the extent to which someone's income compares to the income of his father. Certainly, economic conditions have a two-way relationship with occupational mobility. On the one hand better economic condition may facilitate occupational mobility, and on the other hand occupation mobility is normally associated with improved income. A study pointed out the reason behind the occupational mobility from one generation to another generation, says that probability of being farmer may decline if farmers do not get the profit from this profession. In that case people may switch to another occupation (Ferrie, 2005). In general, Schedule Castes (SC) and Schedule Tribes (ST) constitute a large proportion of socially and economically deprived people in India. In the caste system occupational status is ascribed, i.e., the occupation of child gets decided at the time of birth (as the status of father) It happens due to the low level of education among the lower classes and lack of alternative opportunities. As of today, there are many stories of the people belonging to families of

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cobblers, sweepers, washer men etc. making progress in occupation but such people have struggle a lot in life and suffer from failures, stigmas, and stereotypes.

Intergenerational mobility of younger people has a strong connection with the caste, class, education, income and social eminence of the head of the household. Thus there is a resilient bonding between the socio-economic status of parents and socio-economic outcomes of their children (Blanden, 2013). A study conducted in India exposed that the considerable occupational immobility, predominantly among the low-skilled and low-paying occupations and mobility in rural areas is less than the same in urban areas. The study also documents a higher downward mobility among the SC/ST (Motiram and Singh, 2012). The results suggest that caste will continue to maintain a strong relationship with occupation in rural India for a long time (Munshi and Rosenzweig, 2009). Contrary to expectations from westernization, democratization and socialistic pattern of society, there remains a role for caste and community in mobility and class differences in perspectives on life is the cause of differences in opportunities for economic advancement (Kumar et al., 2002). Another study that examines the pattern of intergenerational occupational mobility across four generations in different caste groups, shows that caste is not strongly associated with occupational mobility in general, while it may be essential for upward mobility for various castes categories (Deshpande and Palshikar, 2008).

Among both the groups occupational and educational, occupational mobility is lower than educational mobility that is showing educational progress is not being transmuted to occupational improvements (Majumder, 2010). An Indian study discloses that there has been a significant increase in educational attainment of individuals in the last 70 years, with women gaining the most in educational attainment. Educational achievement of the next generation is not controlled by the previous generation (parent's education). But, father's education is the most important determinant of attainment of the post-secondary level of education (Maitra and Sharma, 2009). It has also been observed that the intergenerational mobility in education has improved expressively across generations among all social groups and wealth categories. Consequently, the education gaps are narrowing across social groups and wealth categories (Jalan and Murgai, 2007). Ironically, while there is substantial improvement in educational mobility in post-reform India, the educational mobility remained unchanged for a significant proportion of Indian youth after two decades and half of high economic growth. We find that estimates of sibling and intergenerational mobility in occupation among men stayed almost the same over the reform period in urban areas, but may have increased slightly in rural areas (Emran and Shilpi, 2015).

Leather tannery workers are susceptible to many chemicals and physical hazards, just because they are liable to be affected by their exposure to a lot of hazardous materials and processes during tanning work in a very hazardous work environment. Tannery workers usually engaged in following tanning process operations which can be categorized as a **beam house work**: In the beam house, the raw hides processing starts by either stretching the hides on bamboo frames or by pegs or spreading the hides on the ground in mild sun. Beam house worker frequently comes in touch with water and chemicals during preparatory operations such as soaking, liming, fleshing, deliming, bating and picking. **Wet Finishing**: The wet finishing process includes splitting, shaving, waxing, and oiling. Operations are predominantly performed standing at machines. **Dry Finishing**: Laborers in the dry finishing stage perform operations such as drying, shaving, buffing, pressing, staking, padding, and spraping. **Miscellaneous Work**: There is a group of miscellaneous workers such as packers, sweepers, carriers, and mixers of chemicals. Carriers carry wet hides, mixing of chemicals is usually done with bare hands. In contrary, non-tannery workers are engaged in lesser hazardous work as they are involved in **Industrial work** that includes: mechanical workers, small scale industry workers, repairing workers, furniture workers, hotel workers, mill workers, machine operators, factory workers, manufacturing workers, welding workers, etc. **Manual workers** include bora handling (*bora dhona*), rickshaw pullers, horse driving, loading & unloading workers, paining workers, plumbers, etc. **Construction workers** include raajmishtri, construction labors, contractors, etc. **Clerical workers** include accountant, clerk, official job, stock in charge, supervisor, computer operators, etc. **Business & shop include** own business, hair cutting shop, *thela* vendor, electric shop, food shop, a fruit seller, vegetable vendor, *Paan* shop, general store, *lakdika Taal*, milk man, scrap business, stall, tailor, tea

shop, etc. **Others** include air force job, bank job, call center, manager, priest, security guard, drivers, etc. The key issue is that tannery as well as non-tannery workers belong to the same socio-economic background and living in the same locality having different work exposures and that could be linked with the parental occupation.

In the Indian context very limited studies on intergenerational occupational mobility have been conducted, the reason being the unavailability of the panel data. Retrospective surveys with questions on intergenerational mobility can fill the gap. In this context, this study is based on primary data on the intergenerational occupational mobility among male tannery workers of Kanpur in Uttar Pradesh, India. An assessment of intergenerational occupational mobility of workers into leather tannery occupations (whether upward or downward) is the primary objective in the present study. This study is trying to canvass the reasons behind the intergenerational occupational mobility or process of entry into tannery occupation. Why and how they chose to engage in such a hazardous occupation is an important objective of this research. A sample of the same size was also drawn from among the non-tannery workers living in the same locality.

## Methodology

Data for the present research was drawn from a cross-sectional household study of tannery and non-tannery workers in the Jajmau area of Kanpur City in the state of Uttar Pradesh. The study was conducted during the period January-June, 2015. The first author collected all the data from the field. For comparative purposes, a total of 284 tannery and 289 non-tannery workers from the study area were interviewed.

## Study Area

Since British regime, Kanpur has emerged as major leather-processing region in Uttar Pradesh in North India. Kanpur has a total GDP (PPP) of 22 billion US\$ and it ranks as 9<sup>th</sup> among top 10 Industrial cities in India. The area Jajmau suburb is located in an area south-east of the city, close to the military cantonment area, and on the southern bank of the river Ganga. Kanpur has traditionally been an industrial city and a major economic center in Uttar Pradesh. Currently there are 402 registered leather tanneries, which are located in eastern part of city with an estimated 20,000 tannery workers (Rastogi et al., 2008). More than 20,000 people were working in leather industry, and among them substantial proportion of tannery workers was living in the Jajmau Area. From the major concentrations of tannery industry in and around Kanpur, Jajmau was selected for the study, which is the industrial suburb of Kanpur city. It is known as Leather City as it contains some of the largest and finest tanneries in India. This study was focused on leather tannery workers, i.e., those who were engaged in tanning work in leather industry.

## Sampling Design

This study has adopted three-stage sampling design. At the first stage, seven localities in the Jajmau area namely Tadbagiya, Kailash Nagar, J.K. colony, Asharfabad, Motinagar, Chabeelepurwa and Budhiyaghat, were selected based on higher concentration of leather tannery worker's population in these areas as reported by various stakeholders in the city. At the second stage, three out of the seven localities namely Budhiyaghat, Tadbagiya and Asharfabad were selected using probability proportional to size (PPS) sampling technique after arranging them in an increasing order of estimated number of HHs of leather tannery workers. Subsequently, a comprehensive household listing and mapping was completed in each of the three localities and all the household were classified in to three groups- *households having at least one tannery worker, irrespective of having or not having any non-tannery worker, households having non-tannery worker (s) and households having no worker*. The first two groups of households constituted two independent sampling frame in each of the three selected localities. While the third groups of households were excluded from the study. Once the updated and comprehensive sampling frames were developed in each of the three localities included

in the study, a circular systematic random sampling was used for selection of households at the third and the last stage. In case, if more than one worker were in a household, the target respondent was selected using KISH table (Kish 1949). In each of the three selected areas, 100 households were selected for each of the two categories i.e. tannery as well as non-tannery workers, using a circular systematic random sampling procedure. Thus, a total of 600 HHs were selected for the interview and a total of 284 HHs having at least tannery worker and 289 HHs of non-tannery worker(s) were interviewed successively.

### Participants and Occupational Categories

The study comprised 284 male tannery and 289 non-tannery workers of age group 18-70 years from Jajmau in suburban Kanpur. We have inquired about the occupation of the respondent and classified them into two categories that is tannery and non-tannery workers. In addition, we collected the information of father's occupation whether they worked or are currently working in tannery and non-tannery work, from the respondents.

### Analysis

As mentioned above, the study of intergenerational occupational mobility in India, particularly among the low paid workers, is hampered due to the dearth of panel data. In this study, we analyse the intergenerational occupational mobility through cross-classification table or mobility table. Basically, cross-classification table is a square matrix with same occupational categories for fathers and sons occupation. Father's occupational categories in column is referred to as "Origin" and son's occupational categories in rows is referred as "Destination" (Altham 1970; Altham and Ferrie 2007; Agresti 2007; Xie 1992; Xie and Killewald 2013).

A contingency table with I rows and J columns is called an  $I \times J$  table. We denote as observed frequency in the  $i^{\text{th}}$  row ( $i=1, 2, 3 \dots N$ ) and  $j^{\text{th}}$  column ( $j=1, 2, \dots, N$ ) in the mobility tables with N rows and N columns as  $f_{ij}$ . The diagonal cells in the mobility table represent immobility. The simple measures of mobility, the "absolute mobility rate" M, measures the proportion of individuals in the off-diagonal cells. Absolute mobility rate is defined as:

$$M = 1 - \frac{(\sum_i^N f_{ii})}{f_{++}} \quad (1)$$

Where,  $(\sum_i^N f_{ii})$  is the sum of diagonal cells of the mobility table and  $f_{++} = (\sum_{i=1}^N \sum_{j=1}^N f_{ij})$  is the grand total of the cells of the mobility table. The absolute mobility rate, M, is a combination of both differences in father's and son's occupational distribution of (prevalence) and net association between fathers and sons (association) (Reddy, 2015; Azam, 2015).

In this study, we have compared the occupations of father (engaged in tannery or non-tannery work) and sons (engaged in tannery or non-tannery work). We can show this information in a  $2 \times 2$  contingency table. The elements of  $2 \times 2$  contingency table can be classified in this manner.

$f_{ij}$  = Number of sons engaged in tannery occupation whose fathers were also engaged in tannery occupation

$f_{ij*}$  = Number of sons engaged in tannery occupation whose fathers were or are engaged in non-tannery occupation

$f_{i*j}$  = Number of sons engaged in non-tannery occupation whose fathers were or are engaged in tannery occupation

$f_{i*j*}$  = Number of sons engaged in non-tannery occupation whose fathers were or are also engaged in non-tannery occupation

We have also disaggregated the occupational categories of sons and fathers by caste and religion to study the variations in caste and religion categories (Reddy and Swaminathan, 2014).

## Results

### Work Related Characteristics of Tannery and Non-Tannery Workers

The work related characteristics of tannery and non-tannery workers has been presented in Table 1. The mean age of male tannery workers was 38 years (SD=1.4). The vast majority of male tannery workers (89%) are working on temporary job contracts, and the rest (11%) engage in this occupation on a permanent basis. The respondents work in various tannery processes. A little over 8 percent are involved in beam house work, 24 percent in wet finishing, 50 percent in dry finishing and 17 percent in miscellaneous kinds of work. In addition to that non-tannery workers worked in numerous job categories that are broadly classified into six domains. Around 12 percent of the non-tannery workers engage in industrial work, 27 percent in manual work, 20 percent in construction work, 10 percent in clerical work, 25 percent have own business and shop and 7 percent in other job categories. The mean duration of their job was 10 (SD=0.9) years. Average work experience of male tannery workers was 18 years. The male tannery workers also reported that they worked almost every day of the week with a 9-hour working day as the norm. On average they worked 6.5 days (SD=0.6) a week and 9.5 hours (SD=0.2) a day that is the violation of labor law according to the factory act in India.

Status of people can be identified by knowing their current occupation and all the jobs are done in their life that also shows the stability and growth of anyone's life. Table 2 presents the description of all the job done in their life and age of initiation of work force reported by the tannery workers. Results show that around 11 percent of the tannery workers started working at age 6 to 14 years, i.e., age of "child labor" in India. Further, the majority of the tannery workers (40%) started working in the age group 15-19 years. An enormous proportion of workers (98%) initiated first work at a current place, and rest of the workers (2%) was started working other than current place. Around ninety-five percent of the workers did the first job as a tannery worker. Further, 78 percent of those who worked outside tannery chose tannery as the second work. A study has collected the information about the income of first and second job with their duration of works at the first and second job. Mean income of the first job was (5179±224 Rs.) and it was little less (5055±870 Rs.) for the second job. It is worth mentioning that workers chosen second work on lesser salary may be due to unavailability of the job, due to migration, some health issues, etc. Further, mean duration of the first and second job was 12 and 11 years.

### Educational Attainment, Income Level and Migration Characteristics

Educational attainment and income level of the tannery and non-tannery workers with their father is presented in Table 3. About 66 percent of the male tannery and 62 percent of non-tannery workers was illiterate, and only 12 percent had a high school or higher education while 20 percent of the non-tannery workers was studied up to high school or higher education. A substantial proportion of the tannery workers (24%) and 31 percent of non-tannery workers earn rupees 4000 in a month, and only 15 percent tannery workers and 17 percent of non-tannery workers earn rupees 7001 & above in a month. Around half of the fathers of tannery workers (49%) were engaged in tannery occupation and only 16 percent of fathers of non-tannery workers were involved in the non-tannery occupation. The outsized proportion of father of tannery workers (92%) was illiterate while this percentage was 85 percent for the fathers of non-tannery workers. Income level was also lower among the father of tannery workers than non-tannery workers. More than half of the father of tannery workers (56%) are/were earning up to 4000 per month, and only 4 percent earn 7001 & above in a month. There is a caveat here without standardizing for inflation; it is difficult to compare the income of the two generations meaningfully.

Migration characteristic of tannery workers is presented in Table 4. The majority of the tannery workers (81%) were residing by their birth in the study area; only 19 percent of the workers belong to other places. Tannery workers whose birth place was elsewhere were also mostly living here for a long time, and duration of the stay at the current place was (21.4±3.5) years. The study also investigated the reason for coming to this place, a majority of the tannery workers (83%) reported

they came to this location due to unemployment/ in search of a job. Around one-fourth of the workers were found help from family members or neighbors in finding a tannery job. Four in ten of the tannery workers told that their friends helped them to engage in tannery occupation. Further, 34 percent of the tannery workers reported that they found a tannery job themselves.

### **Intergenerational Occupational Mobility**

Intergenerational occupational mobility refers to the change from one occupation to another occupation. Table 5 shows the intergenerational occupational mobility (father to son). Mobility matrices equate the occupation of a father to the occupations of their sons in the study population. Each column of the mobility matrices shows the distribution of son's different destinations from a given occupation of father. The off-diagonal cells indicate intergenerational occupation mobility between father and son. Results show that all the father who worked as tannery worker 76 percent of their son remained as tannery worker. Whereas, 24 percent were engaged in the non-tannery work. Correspondingly, all fathers who involved in the non-tannery occupation, 38 percent of their sons worked as tannery workers. And, remaining 62 percent involved in a non-tannery (father's) occupation.

### **Intergenerational Occupational Mobility by their Caste**

Indian society had been rigidly stratified along the caste lines, which were initially based on the occupation and there is a strong association between caste and occupation. Table 6 shows the intergenerational occupational mobility for SC, OBC, and other castes groups (OC) in the study population. Among all the fathers belonging to the SC and engaged in tannery work, 88 percent of their sons also worked as a tannery worker, but among fathers from the SC engaged in non-tannery work 51 percent of their sons worked as tannery workers. Among OBC group, 52 percent of the sons work as tannery workers (tannery occupation as father's occupation) whereas merely 27 percent of workers engaged in tannery occupation although their father was engaged in the non-tannery occupation. Furthermore, among OC group 67 percent of sons involve in tannery occupation as their father's occupation and 25 percent of sons work as a tannery workers while their father was engaged in the non-tannery occupation.

### **Intergenerational Occupational Mobility by their Religion**

In Indian context, some of the occupation can be linked with religion. Table 7 shows the intergenerational occupational mobility for religion Hindu and Muslims in the study population. Among Hindu fathers who work (ed) in tannery, 83 percent sons are working in tannery but among those fathers who worked outside tannery, only 37 percent of their sons are working in the tannery. The corresponding percentages among Muslims are 74 and 38 percent, respectively. However, the proportion is higher among the sons (workers) belong to the Hindu than Muslim religion, at the same time number of Muslim workers is higher than Hindu workers. For instance, we can comprehend that the Muslim religion dominates the tannery occupation.

### **Intergenerational Income Mobility**

We have looked at the variation in the income level from one generation to another (Father to Son). Table 8 shows the intergeneration income mobility that refers to the extent to which income levels can change across generations (father to son). Each column of the mobility matrices shows the distribution of son's different destination from a given income level of fathers. The off-diagonal cells indicate intergenerational income mobility between father and son. All the fathers who are/were earning up to 5000 a month, fifty percent of their son's remained in the same income categories and other 50 percent sons moved to earning more than 5000 Rs. a month. Among fathers who earned 5001 & above, twenty-three percent of their sons are earning less than 5000 a month, implying downward mobility. However, the reason could be the scarcity of job due to the recession, less demand on the

particular job in which you are skilled, under employment and closure of factories, etc. Nevertheless, 77 percent sons of fathers in the higher income bracket are earning more than 5000.

### **Intergenerational Educational Mobility**

Intergenerational educational mobility is well connected with the economic status of the study population. Table 9 shows the intergenerational educational mobility (father to son) in a study population. Each column of the mobility matrices shows the distribution of son's different destination from a given origin of fathers' occupations. Findings reveal that, among all illiterate fathers, 69 percent sons remained illiterate and 31 percent sons were literate. Further, the result shows that all the literate father, 24 percent of their sons still illiterate. Moreover, three-fourths of the sons (76%) of literate fathers are literate.

### **Discussion and Conclusion**

An intergenerational occupational mobility of workers into leather tannery occupations is the primary objective in the present study. This study is trying to canvass the reasons behind the intergenerational occupational mobility of workers into the leather tannery occupation. Why and how they engaged in such hazardous occupation, remains an important area of research. Specific issues emerge from our findings from this study are intergenerational occupational, educational, income mobility among tannery as well as non-tannery workers. Majority of the tannery workers engaged in this occupation from long time and living in the study area since birth, it attests that they are closely associated with tannery occupation. In continuation of this finding enormous proportion of workers did the first job as tannery occupation and one-fourth of them were found help of family members or neighbors in finding a tannery job. Results show that majority of the father who worked as tannery worker, their son remained as tannery worker. From all these findings, we can determine that the tannery occupation is family occupation. Apart of that huge proportion of tannery workers worked on temporary job contract that means they are working irrespective of uncertainty of work in tannery. Further, tannery workers also reported that they worked almost every day of the week with a 9-hour working day as the norm. A study conducted in Indian villages also supported that the intergenerational occupational mobility was lower among the manual workers belonging to SC than manual workers from other castes and SC men are unable to get out of rural manual employment (Reddy and Swaminathan, 2014). It appears that there has been no weakening of the links between father and son's class positions, or between caste and class. Overall, both with father/son class mobility and caste/class mobility, the dominant picture is one of continuity rather than change (Kumar et al., 2002). The study also documents a higher downward occupational mobility among the SC/ST (Motiram and Singh, 2012).

More importantly, around two-thirds of the tannery as well as non-tannery workers were illiterate that can be allied with parent's educational attainment. Our findings also show that the outsized proportion of father of tannery workers was illiterate while this percentage was fewer for the fathers of non-tannery workers. Another important finding piercing that among illiterate father who worked in tannery occupation, sixty-nine percent of their remained illiterate. The study found that intergenerational education and income mobility rates of SC / ST have converged to non-SC / ST levels, and SC/ST have almost same occupational mobility rates as non-SC / STs. The study concluded that structural changes in India have coincided with a breaking down of caste-based barriers to socioeconomic mobility (Hnatkovska et al., 2013). Turning to the study that is focusing on educational mobility in India, results show that significant improvements in educational mobility across generations and social groups (Azam and Bhatt, 2012). A study on educational and occupational mobility in India indicates the intergenerational immobility in both levels of educational attainment and occupational distribution among the SC and ST (Majumder, 2010). However, the proportion is higher among the sons (workers) belong to the Hindu than Muslim religion at the same time number of Muslim workers is higher than Hindu workers. For instance, we can comprehend that the Muslim religion dominates the tannery occupation. Among all the fathers belonging to the SC and

engaged in tannery work, 88 percent of their sons also worked as a tannery worker. Overall, religion and caste is playing a very crucial character for involvement in tannery occupation. Among fathers who earned 5001 & above, twenty-three percent of their sons are earning less than 5000 a month, implying downward mobility. It is worth mentioning that workers chosen second work on lesser salary may be due to unavailability of the job, due to migration, some health issues, etc. Further, mean duration of the first and second job was 12 and 11 years. With all this findings we can conclude that the tannery workers were engaged in this occupation because mostly it is being taken by those people where previously a parent or someone in the household was also involved in the same occupation (inter-generational occupation). Therefore, it could be said that it is a traditional occupation carried from generation to generation which continues within a social class (religion or caste) due to rigidity in the mobility for persons engaged in this occupation. Basically, low level of living standard, educational attainment and unemployment of father could be the prime reason of involvement in tannery occupation. Intergenerational occupational mobility depends on many factors as availability of jobs in father's profession or unavailability of employment in other occupation. Probably they are engaged in this occupation because mostly it is being taken by those people where previously a parent or someone in the household was also involved in the same occupation (inter-generational occupation). Therefore, it could be said that it is a traditional occupation carried from generation to generation which continues within a social class (religion or caste) due to rigidity in the mobility for persons engaged in this occupation.

## **Declarations**

### **Availability of data and material**

This study is based on the primary data. We would like to share data set with the journal.

### **Competing interests**

The authors have no conflicts of interest to declare.

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### **Ethical Consent**

This work being based on the Ph. D. work of the first author, we have received the ethical clearance from the Student Research Ethics Committee of International Institute for Population Sciences Mumbai, India. We have also received consent to participate from each of the respondents before starting the interview.

### **List of Abbreviations**

**SC**- Schedule Castes

**ST**- Schedule Tribes

**PPS**- Probability Proportional to Size

**OC**- Other Caste

**HHs**- Household

## **References**

- Agresti, A. (2007). Logistic regression. *An Introduction to Categorical Data Analysis, Second Edition*, 99-136.
- Altham, P. M. (1970). The Measurement of Association of Rows and Columns for an  $r \times s$  Contingency Table. *Journal of the Royal Statistical Society: Series B (Methodological)*, 32(1), 63-73.
- Altham, P. M., & Ferrie, J. P. (2007). Comparing contingency tables tools for analyzing data from two groups cross-classified by two characteristics. *Historical Methods: A Journal of Quantitative and Interdisciplinary History*, 40(1), 3-16.

- Azam, M. (2015). Intergenerational Occupational Mobility among Men in India. *The Journal of Development Studies*, 51(10), 1389-1408.
- Azam, M., & Bhatt, V. (2015). Like father, like son? Intergenerational educational mobility in India. *Demography*, 52(6), 1929-1959.
- Blanden, J. (2013). Cross-country rankings in intergenerational mobility: a comparison of approaches from economics and sociology. *Journal of Economic Surveys*, 27(1), 38-73.
- Deshpande, A. (2000). Does caste still define disparity? A look at inequality in Kerala, India. *American Economic Review*, 90(2), 322-325.
- Deshpande, R., & Palshikar, S. (2008). Occupational mobility: How much does caste matter?. *Economic and Political Weekly*, 61-70.
- Emran, M. S., & Shilpi, F. (2012). *Gender, geography and generations: intergenerational educational mobility in post-reform India*. The World Bank.
- Ferrie, J. P. (2005). *The end of American exceptionalism? Mobility in the US since 1850* (No. w11324). National Bureau of Economic Research.
- Hnatkovska, V., Lahiri, A., & Paul, S. B. (2013). Breaking the caste barrier intergenerational mobility in india. *Journal of Human Resources*, 48(2), 435-473.
- Jalan, J., & Murgai, R. (2007). „intergenerational mobility in education in india“, Processed. Delhi: the World Bank.
- Kish, L. (1965). Survey sampling.
- Kumar, S., Heath, A., & Heath, O. (2002). Changing patterns of social mobility: Some trends over time. *Economic and Political Weekly*, 4091-4096.
- Kumar, S., Heath, A., & Heath, O. (2002). Determinants of social mobility in India. *Economic and Political Weekly*, 2983-2987.
- Maitra, P., & Sharma, A. (2009, November). Parents and children: Education across generations in India. In *6th annual conference of Indian Statistical Institute, Delhi, India*.
- Majumder, R. (2010). Intergenerational mobility in educational and occupational attainment: A comparative study of social classes in India. *Margin: The Journal of Applied Economic Research*, 4(4), 463-494.
- Motiram, S., & Singh, A. (2012). How close does the apple fall to the tree? Some evidence from India on intergenerational occupational mobility. *Economic and Political Weekly*, 56-65.
- Munshi, K., & Rosenzweig, M. (2009). *Why is mobility in India so low? Social insurance, inequality, and growth* (No. w14850). National Bureau of Economic Research.
- Rastogi, S. K., Pandey, A., & Tripathi, S. (2008). Occupational health risks among the workers employed in leather tanneries at Kanpur. *Indian journal of occupational and environmental medicine*, 12(3), 132.
- Reddy, A. B. (2015). Changes in intergenerational occupational mobility in India: Evidence from national sample surveys, 1983–2012. *World Development*, 76, 329-343.
- Reddy, A. B., & Swaminathan, M. (2014). Intergenerational Occupational Mobility in Rural India: Evidence from Ten Villages. *Review of Agrarian Studies*, 4(1), 95-134.
- Smelser, N. J., & Lipset, S. M. (Eds.). (1966). *Social structure and mobility in economic development*. Transaction Publishers.
- Xie, Y. (1992). The log-multiplicative layer effect model for comparing mobility tables. *American sociological review*, 380-395.
- Xie, Y., & Killewald, A. (2013). Intergenerational occupational mobility in Great Britain and the United States since 1850: Comment. *American Economic Review*, 103(5), 2003-20.

**Table 1: Work related characteristics of tannery and non-tannery workers**

Variables	Percent (%)	Number (N)
Age in years (Mean $\pm$ SD)	38.5 $\pm$ 1.4	284
Type of Job contract		
Temporary job (daily wages)	89.1	252
Permanent job	10.8	32
Type of work engagement of tannery workers*		
Beam house work	8.4	24
Wet finishing work	24.2	69
Dry finishing work	50.5	142
Miscellaneous work	16.8	49
Type of work engagement of non-tannery workers**		
Industrial work	11.7	34
Manual work	26.5	76
Construction work	20.0	59
Clerical work	10.0	24
Business & shop	24.5	73
Others	7.0	23
Work experience in current tannery (Mean $\pm$ SD)	10.1 $\pm$ 0.9	284
Work experience in previous tannery (Mean $\pm$ SD)	7.9 $\pm$ 1.3	99
Average working hours in day (Mean $\pm$ SD)	9.5 $\pm$ 0.2	284
Average working days in a week (Mean $\pm$ SD)	6.5 $\pm$ 0.1	284
<p><b>*Note: Beam house work:</b> In the beam house, the raw hides processing starts by either stretching the hides on bamboo frames or by pegs, or spreading the hides on the ground in mild sun. Beam house worker frequently come in touch with water and chemicals during preparatory operations such as soaking, liming, fleshing, delimiting, bating, and picking. <b>Wet Finishing:</b> The wet finishing process includes splitting, shaving, waxing, and oiling. Operations are predominantly performed standing at machines. <b>Dry Finishing:</b> Laborers in the dry finishing stage perform operations such as drying, shaving, buffing, pressing, staking, padding, and spraping. <b>Miscellaneous Work:</b> There is a group of miscellaneous workers such as packers, sweepers, carriers, and mixers of chemicals. Carriers carry wet hides, mixing of chemicals is usually done with bare hands. <b>**Industrial work</b> that includes: mechanical workers, small scale industry workers, repairing workers, furniture workers, hotel workers, mill workers, machine operators, factory workers, manufacturing workers, welding workers, etc. <b>Manual workers</b> include bora handling (<i>bora dhona</i>), rickshaw pullers, horse driving, loading &amp; unloading workers, painting workers, plumbers, etc. <b>Construction workers</b> include raajmishtri, construction labors, contractors, etc. <b>Clerical workers</b> include accountant, clerk, official job, stock in charge, supervisor, computer operators, etc. <b>Business &amp; shop include</b> own business, hair cutting shop, <i>thela</i> vendor, electric shop, food shop, a fruit seller, vegetable vendor, <i>Paan</i> shop, general store, <i>lakdikaTaal</i>, milk man, scrap business, stall, tailor, tea shop, etc. <b>Others</b> include air force job, bank job, call center, manager, priest, security guard, drivers, etc. The key issue is that tannery as well as non-tannery workers belong to the same socio-economic back ground and living in the same locality having different work exposures.</p>		

**Table 2: Percent distribution of tannery workers by their job description**

Variables	Percent (%)	Number (N)
Age of work initiation		
6 to 14 Years	11.2	31
15-19 Years	39.9	111
20-24 Years	30.2	84
25 & above Years	18.7	52
Place of first work		
Current place	98.3	279
Elsewhere	1.7	5
Place of second work		
Current place	94.4	17
Elsewhere	5.6	1
Type of first work		
Tannery work	94.4	266
Non-tannery work	5.6	18
Type of first work among those who took the present work in second attempt		
Tannery work	77.8	14
Non-tannery work	22.2	4
Average income of first work	5179.1 $\pm$ 224.9	284
Average income of second work	5055.5 $\pm$ 870.0	18

Mean duration of first work	12.2±1.0	284
Mean duration of second work	10.7±6.3	18

**Table 3: Percent distribution of tannery workers and their fathers by education and income**

Variables	Tannery workers Percent (%)	N	Non-tannery workers Percent (%)	N
Workers' education				
Illiterate	66.1	189	62.2	179
Up to primary	13.4	38	9.0	26
Middle school	8.8	25	8.7	25
High school & above	11.7	33	20.1	58
Workers' monthly Income (Rs.)				
Up to 4000	24.3	69	30.8	89
4000 to 7000	60.9	173	52.2	151
7001 & above	14.8	42	17.0	49
Father's Occupation (Current/Past)				
Tannery work	49.3	140	16.0	46
Non-tannery work	50.7	144	84.0	243
Father's education				
Illiterate	91.9	261	84.8	245
Up to primary	2.8	8	6.2	18
Middle school	2.8	8	3.1	9
High school & above	2.5	7	5.9	17
Father's Income (Rs.)				
Up to 4000	56.0	117	54.6	118
4000 to 7000	40.2	84	38.0	82
7001 & above	3.8	8	7.4	16
Total	100.0	284	100.0	289

**Table 4: Migration characteristics of tannery workers**

Variables	Percent (%)	Number (N)
Place of birth		
Current Place	80.6	229
Elsewhere	19.4	55
Duration of stay among those who came from elsewhere (Years)	21.4±3.5	55
Reason for coming this place		
Family migration/ family matters	16.7	10
Due to unemployment/Job	83.3	45
Who has helped you to work in tannery occupation		
Family members/ Relatives	22.4	56
Friends	40.0	100
Neighbors	3.6	9
Self	34.0	85

**Table 5: Intergenerational occupational mobility (Column %)**

Son's Occupation (Destination)	Father's Occupation (Origin)		N
	Tannery work	Non-tannery work	
Tannery work	75.8	37.7	284
Non-tannery work	24.2	62.3	289
Column Sum	186	387	573

**Note:** Table shows distribution of men by occupation of origin and destination. Cell values as percentage of column sum.

**Table 6: Intergenerational occupational mobility for schedule caste vs OBC vs other castes, (Column %)**

Son's Occupation (Destination)	Father's Occupation (Origin)		N
	Tannery work	Non-tannery work	
Schedule Caste			
Tannery work	88.1	51.1	189
Non-tannery work	11.9	48.9	102
Column Sum	109	182	291
Other Backward Caste (OBC)			
Tannery work	52.3	27.1	52
Non-tannery work	47.7	72.9	99
Column Sum	44	107	151
Other Castes Group			
Tannery work	66.7	24.5	46
Non-tannery work	33.3	75.5	85
Column Sum	33	98	131
<b>Note:</b> Cell values as percentage of column sum.			

**Table 7: Intergenerational occupational mobility for Hindu vs Muslim, (Column %)**

Son's Occupation (Destination)	Father's Occupation (Origin)		N
	Tannery work	Non-tannery work	
Hindu			
Tannery work	82.9	37.0	98
Non-tannery work	17.1	63.0	116
Column Sum	41	173	214
Muslim			
Tannery work	73.8	38.3	189
Non-tannery work	26.2	61.7	170
Column Sum	145	214	359
<b>Note:</b> Cell values as percentage of column sum.			

**Table 8: Intergenerational income mobility (Column %)**

Son's Income (Destination)	Father's Income (Origin)		Row Sum
	Up to 5000	5001 & above	
Up to 5000	50.1	23.0	191
5001 & above	49.9	77.0	234
Column Sum	345	80	425
<b>Note:</b> Cell values as percentage of column sum. Income in Indian rupees			

**Table 9: Intergenerational educational mobility (Column %)**

Son's education (Destination)	Father's Education (Origin)		N
	Illiterate	Literate*	
Illiterate	69.4	23.9	336
Literate*	30.6	76.1	205
Column Sum	504	67	571
<b>Note:</b> Cell values as percentage of column sum.			