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**Improvement in Economic Well-being: Does Inter-generational Occupational Mobility
Matter?**

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Abstract

This study makes use of the Indian Human Development Survey (IHDS) data to look at the effect of inter-generational occupational mobility in India on perceptions of improved economic well-being.

The study provides preliminary support to the hypothesis that inter-generational occupational mobility has a role to play in improving perceptions of economic well-being. More importantly, the study reveals that it is the direction of inter-generational occupational movement that has a significant bearing on perceptions of economic well-being. A hierarchy of occupational classes exists and it is the movement along this hierarchy that is a prime determinant in defining this relationship. Possible reasons for this are also suggested as part of the study.

Keywords: occupational mobility, IHDS, economic well-being

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Improvement in Economic Well-being: Does Inter-generational Occupational Mobility Matter?

Inter-generational occupational mobility refers to the mobility in occupational choices between household members in successive generations and has been a topic of interest for researchers across the world. The effect of intergenerational occupational mobility has been studied in diverse contexts ranging from its effect on political party preferences of American men (Knoke, 1973), on fertility (Bean & Swicegood, 1979) and on social and psychological consequences (Kessin, 1971). However, empirical evidence on the extent and reasons for inter-generational mobility is scarce (Peters, 1992). Or as Horan (1974) notes, there is little consensus in extant literature on either systematic patterns of inter-generational occupational mobility or regarding the “structure of mobility” (p.33). For example, Peters (1992) talks about two competing hypotheses to explain inter-generational occupational mobility, viz. (1) that mobility will be higher in poor and middle class families where earnings are the important component of income compared to the rich where inheritance of financial capital is more common, and (2) the presence of welfare in many different forms creates a permanent welfare class that persists across generations with little upward mobility. Hence, in the absence of a body of empirical studies, it has been difficult to estimate the nature and extent of inter-generational occupational mobility.

The situation is not very different regarding studies on inter-generational occupational mobility in India. Few systematic and rigorous studies exist on this subject in the Indian context (Singh & Motiram, 2012). Of the studies available, most have focused on inter-generational mobility in variables distinct from occupational choices. For example, Jalan and Murgai (2007) and Maitra and Sharma (2009) focus on inter-generational mobility in educational attainment.

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Surprisingly, studies of the effects of inter-generational occupational mobility on outcome variables are rare in the Indian context.

A few studies have focused on inter-generational choices for a set of variables including occupation. For example, Hnatkovska, Lahiri, and Paul (2013) study inter-generational choices for educational attainment, industry of employment, income and occupational choices. Comparing levels of intergenerational educational mobility and inter-generational occupational mobility, Majumder (2010) finds educational mobility to be more prevalent than occupational mobility across generations in India. Fewer studies have focused exclusively on inter-generational occupational choices. In these, the attempt has generally been to describe the presence of inter-generational occupational mobility in India. For example, Kumar, Heath, and Heath (2002b) and Singh and Motiram (2012) find persistence rather than mobility to be the norm for inter-generational occupational choices.

A more fundamental question is with regard to the need for inter-generational occupational mobility. One important reason for this could be due to the presence of societal inequality. Bourguignon, Ferreira, and Walton (2007) define the inequality trap as “persistent differences in power, wealth and status between socio-economic groups which are sustained over time by economic, political and socio-cultural mechanisms and institutions” (p.236). In the Indian context, societal inequality has been studied across multiple dimensions including inequality in education (Asadullah & Yalonetzky, 2010), income (Sarkar & Mehta, 2010), wealth (Jayadev, Motiram, & Vakulabharanam, 2007), social class (Vakulabharanam, 2010) and in terms of the polarization of society (Motiram & Sarma, 2011). Of these, the presence of economic inequality in society has been a prominent area of research interest. Commenting on the level of economic disparity in India and its persistence across time, Jayadev et al (2007) note

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that the top 10 per cent of individuals in India possess more than half of the total wealth. The corresponding figure for the bottom 10 per cent is 0.4 per cent. Also, as the authors note, the concentration of wealth among a few has increased over time. Sarkar and Mehta (2010) note that the increase in income inequality has widened in the post-economic reforms era as compared to the pre-economic reforms era. Even if the reasons for economic inequality can be partitioned into factors that can be controlled by the individual and those that cannot be (Roemer, 2006), the aspiration to better one's lot in life appears to be common. In part, this could explain the aspiration of people to move to a higher income class or a higher social class.

A potential roadblock in the aspiration to 'move up' could be the nature of the existent social structure. Occupations in India have traditionally been decided on the basis of caste. Even though, this may no longer be strictly true, expectations regarding occupations are coloured by occupations followed within the family in prior generations (Horan, 1974). Describing inequality of opportunities, Singh (2012) shows that outcome differences among individuals can be accounted for by pre-determined circumstances which lie beyond individual control including parental education, parental occupation, caste, religion etc. As Horan (1974) notes, inter-generational occupational choices are not determined simply by the handing down of occupations from fathers to sons based on caste. The movement involves an "extensive structuring of occupational aspirations and expectations and an equally extensive structuring of access to occupational skills" (p. 39). Clearly, intergenerational occupational mobility in the Indian context is neither expected nor easy to execute. A possible reason for this could be the presence of sub-caste networks that provide mutual insurance to their members (Munshi & Rosenzweig, 2009). Therefore, for a person to move away from the occupational choices followed by the previous generation, there should be clear benefits on offer and a higher payoff

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expected. Some evidence for such shifts is presented by Hnatkovska et al (2013) where the authors find inter-generational occupational mobility to be on the rise for the scheduled castes and scheduled tribes in India. Hnatkovska et al (2013) credit affirmative action initiated by the Government of India to be an important contributor for this.

Extant literature in the area, therefore, indicates a multitude of reasons for persistence in occupational choices across generations. Inter-generational mobility is higher with respect to other factors (e.g. education) than with occupation. However, evidence also exists of increasing inter-generational occupational mobility in India. For this paper, it is therefore posited that inter-generational occupational mobility will be avoided by households if there are no substantial payoffs from undertaking the exercise. So, the broad causal relationship of interest in this study can be stated as follows:

‘Households which have successfully changed occupations across generations will perceive themselves to be better off’.

Data, issues and data manipulations

This study has made use of the Indian Human Development Survey (IHDS) 2005 data. The IHDS survey was jointly organized by researchers from the University of Maryland and the National Council of Applied Economic Research (NCAER). The data is nationally representative, covering 41554 households in 1503 villages and 971 urban neighborhoods across India (Desai et al, 2010). Data on a host of socio-economic measures has been collected in this survey. For the purpose of this study the IHDS 2005 cross-sectional data has been used.

The IHDS data has some unique advantages in studies dealing with inter-generational occupational mobility (Singh & Motiram, 2012). For every individual in the survey, the data provides the relation of the individual to the head of the household. If the individual is the head

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of the household, the data is coded as 'Head'. Using this, it is possible to uniquely identify the head of the household. The primary source of income for the household has been considered as the occupation of the household head. For each individual in the survey, the data provides information on the occupation of the father or husband. For household heads who are males, this provides occupational information of the previous generation. However, for household heads who are females, this provides information of their husbands' occupation. Table 1 provides information of the household heads by gender in the available data

Data on HH Heads	
Gender	Numbers
Male	37,507
Female	4,047
Total	41,554

Table 1: Tabulation of household heads by gender

Since inclusion of female household heads would not provide occupational information across generations, only male household heads have been considered for the study. This is consistent with the approach adopted by Singh and Motiram (2012).

The other issue faced in this study is with regard to the classification of occupations across generations. With regard to current occupation, a close-ended question has been used in the survey with 11 choices, viz. cultivation, allied agriculture, agricultural wage labor, non-agricultural wage labor, artisan/independent work, petty shop/other trade, organized trade/business, salaried employment, profession NEC, pension/rent/dividend/ etc and other. For father's occupation, on the other hand, an open-ended question has been used. Even though an attempt has been made during data collection to code the responses into meaningful subsets, 91 such subsets exist for occupational data pertaining to the father's occupation.

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For a meaningful comparison of occupational choices across generations, a 1-to-1 mapping needed to be done. However, as noted by Singh and Motiram (2012), there is no consensus in literature with regard to the construction of occupation groups across generations. In their comparative study of inter-generational occupational mobility in the USA and Britain, Long and Ferrie (2005) have classified a multitude of occupations into 4 occupational groups, viz. white collar, farmer, skilled and semi-skilled, and unskilled. Cogneau and Amesple-Somps (2008), on the other hand, have chosen three occupational categories common across generations for 5 Sub-Saharan African countries, viz. farmer, non-farmer (low education) and non-farmer (high education). Using IHDS data, Singh and Motiram (2012) have classified occupations into 7 occupational categories, viz. (a) farmers, (b) self employed in non-agriculture, (c) agriculture laborers, (d) professionals officials and related, (e) clerks, service workers, skilled agriculture, (f) craftsmen, plant operators and related and (g) Elementary occupation and others.

The approach adopted in this study for classification of occupations derives from extant literature in the area but also takes into account the limitations of the IHDS data. The aim was to have distinct categories with minimal overlap across categories. For household heads' current occupation, only 9 of the 11 occupational classifications have been considered. (a) pension/rent/dividend etc and (b) other are excluded from the analysis as they do not give any credible information regarding the occupation. For occupation of the household head's father, a manual analysis of the 91 occupational subsets was undertaken. Since the occupations included in the 91 subsets have considerable overlap across subsets, a classification based on fine distinctions was impractical. Therefore, for each of the 91 subsets, the occupation containing the majority of the observations within the subset was considered to be defining the subset. This was then mapped to the 9 occupations defining the household head's current occupation. Using trial

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and error, a set of 4 occupational categories were arrived at for further analysis, viz. (1) agriculture and wage labor, (2) Artisan or independent worker, (3) trade or business, (4) salaried employment or profession. The 4 occupational categories were considered sufficiently distinct and allowed inclusion of all the occupation types. Though different in many dimensions, the set of occupational categories developed for this study can be considered most similar to the occupational categories developed by Kumar et al (2002a; 2002b). This classification also allows an intuitive sense of hierarchy from agriculture and wage labor at the bottom to salaried employment or profession at the top.

The aim of this study has been to evaluate the effect of successful intergenerational occupational mobility on improved perceptions of being economically better off. A question has been asked to the respondents in the survey (IN17) to state their perceptions of being economically better off as compared to ten years ago. The answer to this particular question gives an indication of the household head's state of mind regarding economic improvement in the household. From this study's point of view, the key information available is the 'perception of being economically better off'. The time period of 10 years specified in the question would be vaguer in the mind of the respondent. The contention being made here is that a household head who has expended effort in taking up a new occupation (with the hope of a higher payoff) has a higher probability of stating an improved perception regarding the current economic condition. Hence, the answer to this particular question has been taken as the dependent variable of interest.

Analysis and findings

To get an indication of the level of inter-generational occupational mobility, a transition matrix was constructed. Table 2 depicts the transition matrix at the aggregate national level.

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Father's Occupation	Current Occupation of HH Head (%)			
	1	2	3	4
1	69.62	4.80	7.83	17.75
2	30.82	27.62	16.69	24.87
3	14.10	7.75	51.73	26.42
4	18.49	5.60	14.16	61.74

1 - Agriculture and wage labor, 2- artisan or independent worker,
3 - trade or business, 4 - salaried employment or profession

Table 2: Occupational transition matrix – All India

Consistent with the findings of Singh and Motiram (2012), the diagonal in the matrix indicates a high degree of persistence in inter-generational occupational choices across occupational categories.

Father's Occupation	Current Occupation of HH Head (%)			
	1	2	3	4
1	81.30	3.60	5.28	9.83
2	37.24	35.96	10.11	16.69
3	27.17	7.28	50.59	14.96
4	40.55	5.57	10.71	43.17

1 - Agriculture and wage labor, 2- artisan or independent worker,
3 - trade or business, 4 - salaried employment or profession

Table 3: Occupational transition matrix – Rural India

Table 3 and Table 4 depict the transition matrices for rural and urban India. For rural India, the inter-generational occupational persistence is highest in the agriculture and wage labor category (occupational category 1) while for urban India, it is highest for salaried employment or profession (occupational category 4). However, as is seen at the national level, significant inter-generational occupational persistence is visible across occupational categories both in rural and urban India.

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Father's Occupation	Current Occupation of HH Head (%)			
	1	2	3	4
1	31.86	8.70	16.06	43.38
2	26.41	21.88	21.22	30.50
3	9.87	7.90	52.10	30.13
4	8.38	5.62	15.75	70.26

1 - Agriculture and wage labor, 2- artisan or independent worker,
3 - trade or business, 4 - salaried employment or profession

Table 4: Occupational transition matrix – Urban India

For the causal relationship of interest for this study, the dependent variable under consideration is the ‘perception of being economically better-off’. The relevant question in the survey grades this perception from worse to better. A cross tabulation table of inter-generational occupational mobility and responses to perceptions of being economically better off provides the following picture.

Perception of economic well being	Continuing the father's occupation (%)	
	Yes	No
Worse	40.00	30.73
Same	45.65	59.81
Better	14.36	9.45

Table 5: Cross tabulation of variables of interest in the causal relationship

Clearly, the distribution of answers is not very different across household heads with inter-generational occupational mobility and households with no inter-generational occupational mobility. To check whether a relationship exists, we needed a deeper analysis. The perception of economically being better off could be looked at in two ways - (1) not worse off and (2) better off. We have analyzed the data in both ways to get a better understanding of the data. For the first case, the causal relationship of interest was stated as:

$$lifeimprovNW = \beta_0 + \beta_1 intergen + u$$

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where *lifeimprovNW* is a binary variable with a value of 0 for perception rated as ‘worse’ and 1 for ‘same’ or ‘better’

intergen is a binary variable with value 0 for no inter-generational occupational mobility and value 1 for inter-generational occupational mobility.

We progressively controlled for demographic factors, household composition factors, education factors and consumption and income factors and used the linear probability model to estimate the following regression model:

$$lifeimprovNW = \beta_0 + \beta_1 intergen + \beta_2 demographics + \beta_3 household\ composition + \beta_4 education + \beta_5 income + u$$

where $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$ and β_5 are vector representations of the coefficients for each set of variables. The details of the actual control variables used in estimation and the results from the estimation are provided in table 4 below:

Independent Variable	(1)	(2)	(3)	(4)	(5)
Intercept	0.856 (0.002)	0.837 (0.011)	0.845 (0.011)	0.803 (0.012)	0.815 (0.012)
Intergeneration occupation change (1=Yes, 0=No)	0.049* (0.004)	0.050* (0.004)	0.048* (0.004)	0.027* (0.004)	0.022* (0.004)
Demographic variables					
Age		-0.000 (0.000)	-0.001 (0.000)	-0.001 (0.000)	-0.001 (0.000)
Marital status (1=married, 2=single)		-0.027 (0.005)	-0.023 (0.005)	-0.021 (0.004)	-0.021 (0.005)
Household composition					
No of persons			0.014 (0.001)	0.009 (0.001)	0.008 (0.001)
No of children			-0.024 (0.002)	-0.015 (0.002)	-0.011 (0.002)
Education					
maximum educational status of any member in HH				0.007 (0.001)	0.006 (0.001)
education completed for respondent				0.001 (0.001)	-0.001 (0.001)
Consumption and income					
Monthly per capita consumption					0.000 (0.000)
Total Income					0.000 (0.000)
Whether under poverty line (0=No, 1=Yes)					-0.051 (0.005)
R²	0.005	0.008	0.013	0.024	0.033
No of observations	32506	32506	32506	32506	32505

* - significant at 1% level of significance

Table 6: Regression estimate results

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With a progressive increase in the number of control variables from (1) to (5), the independent variable of interest, *intergen*, continues to remain statistically significant at a 1% level of significance. The positive sign of the coefficient for all the equations indicates that inter-generational occupational mobility has a positive impact on perceptions of economic well-being. The absolute value of the coefficient for the variable ranges from 0.049 to 0.022. This can be interpreted to mean that intergenerational occupational mobility increases the probability of the perception of not being economically worse off by 2.2% to 4.9%.

Next, we repeated the analysis considering that perceptions of economic well-being could be considered better only if the respondents explicitly state it as being better. This is closer to our causal relationship of interest as we are explicitly modeling for an improvement in the perception of being economically better-off with inter-generational occupational mobility. The modified regression equation estimated in this case was:

$$lifeimprov = \beta_0 + \beta_1 intergen + \beta_2 demographics + \beta_3 household\ composition + \beta_4 education + \beta_5 income + u$$

where the dependent variable *lifeimprov* takes a value of 0 if the respondent answers ‘worse’ or ‘same’ and takes a value of 1 only if the respondent answers ‘better’.

The interpretation of the independent variable of interest, control variables and coefficients are the same as before. The results from the estimation of the linear probability model are provided in table 7 below:

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Independent Variable	(1)	(2)	(3)	(4)	(5)
Intercept	0.456 (0.003)	0.365 (0.016)	0.370 (0.017)	0.221 (0.017)	0.226 (0.017)
Intergeneration occupation change (1=Yes, 0=No)	0.142* (0.006)	0.144* (0.006)	0.141* (0.006)	0.073* (0.006)	0.059* (0.006)
Demographic variables					
Age		0.002 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)
Marital status (1=married, 2=single)		-0.050 (0.007)	-0.040 (0.007)	-0.032 (0.007)	-0.032 (0.007)
Household composition					
No of persons			0.032 (0.002)	0.017 (0.002)	0.016 (0.002)
No of children			-0.050 (0.003)	-0.024 (0.003)	-0.013 (0.003)
Education					
maximum educational status of any member in HH				0.018 (0.001)	0.014 (0.001)
education completed for respondent				0.006 (0.001)	0.001 (0.001)
Consumption and income					
Monthly per capita consumption					0.000 (0.000)
Total Income					0.000 (0.000)
Whether under poverty line (0=No, 1=Yes)					-0.106 (0.007)
R²	0.018	0.023	0.034	0.081	0.111
No of observations	32506	32506	32506	32506	32505

* - significant at 1% level of significance

Table 7: Regression estimate results

The results for regression equations (1) to (5) with progressive addition of control variables continue to show statistical significance at a 1% significance level for the coefficient to the causal variable of interest. The direction of causality continues to indicate that inter-generational occupational mobility has a positive impact on improving perceptions of economic well-being. However, the major difference in the results of the estimate of the modified equation is with regard to the magnitude of the coefficients. Now, the coefficient values range from 0.142

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to 0.059. The interpretation for this is that intergenerational occupational mobility increases the probability of the perception of being economically better off by 5.9% to 14.2%. From a real-world impact perspective, these values can be considered significant.

The income and consumption control variables are not statistically significant and have been removed for the purpose of further analysis. So, regression equation (4) from table 5 was used as the regression model equation for all further analysis.

The binary nature of the dependent variable meant that probit and logit estimation methods could also be used along with LPM for estimating the coefficients. So, we began by looking at the probit and logit estimation methods to check whether any major variations exist in these estimates vis-à-vis the OLS estimations. The comparisons between the OLS estimates, the logit estimates, the probit estimates and the marginal effects of logit estimates are given in table 8 below.

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Independent Variable	OLS (1)	Logit (2)	Logit - Marginal Effects (3)	Probit (4)
Intergeneration occupation change (1=Yes, 0=No)	0.073* (0.006)	0.313* (0.026)	0.073* (0.007)	0.019* (0.016)
Demographic variables				
Age	0.000 (0.000)	0.002 (0.001)	0.000 (0.000)	0.001 (0.001)
Marital status (1=married, 2=single)	-0.032 (0.007)	-0.139 (0.030)	-0.032 (0.003)	-0.086 (0.018)
Household composition				
No of persons	0.017 (0.002)	0.073 (0.008)	0.004 (0.000)	0.045 (0.005)
No of children	- 0.024 (0.003)	- 0.106 (0.012)	- 0.006 (0.001)	- 0.065 (0.008)
Education				
maximum educational status of any member in HH	0.018 (0.001)	0.076 (0.004)	0.004 (0.000)	0.047 (0.003)
education completed for respondent	0.006 (0.001)	0.027 (0.004)	0.001 (0.000)	0.017 (0.003)
R²/Pseudo R²	0.081	0.060	NA	0.060
No of observations	32506	32506	32506	32506

Table 8: Regression estimate results using OLS, Logit and Probit

We observe that the sign of the coefficients of the causal variable are the same across the different estimation methods. The marginal effects estimate using logit provide estimates for the coefficients of the variables in the study which are very similar to the OLS estimates. For the coefficient of the variable of interest, the marginal effects estimate using logit are virtually the same as the OLS estimates. Based on this, we can conclude that the results are not very different across the principal estimation methods for limited dependent variable models. With this insight, we have used LPM as our preferred estimation method for the remainder of this paper.

Building on the results we have obtained at the national aggregate level, we then analyzed this data for rural and urban households separately. IHDS data contains information about urban and urban slum populations separately. For the purpose of this analysis, we looked

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at rural households, urban households, urban slum households and total urban households separately. Table 9 below contains the results of the estimates.

Independent Variable	Rural (1)	Urban (2)	Urban Slum (3)	Total Urban (4)
Intercept	0.152 (0.021)	0.359 (0.032)	0.111 (0.199)	0.360 (0.031)
Intergeneration occupation change (1=Yes, 0=No)	0.106* (0.008)	0.030* (0.010)	-0.045 (0.043)	0.028* (0.009)
Demographic variables				
Age	0.001 (0.000)	-0.001 (0.000)	-0.002 (0.002)	-0.001 (0.000)
Marital status (1=married, 2=single)	-0.031 (0.008)	-0.032 (0.014)	0.037 (0.063)	-0.032 (0.013)
Household composition				
No of persons	0.023 (0.002)	0.008 (0.003)	0.020 (0.016)	0.008 (0.003)
No of children	-0.032 (0.003)	-0.010 (0.005)	-0.022 (0.023)	-0.011 (0.005)
Education				
maximum educational status of any member in HH	0.017 (0.001)	0.020 (0.002)	0.021 (0.008)	0.020 (0.002)
education completed for respondent	0.003 (0.001)	0.010 (0.002)	-0.000 (0.008)	0.009 (0.002)
R²	0.069	0.079	0.062	0.081
No of observations	21898	10085	523	10648

* - significant at 1% level of significance

Table 9: Regression estimate results for rural and urban households

The results for rural, urban and total urban households remain statistically significant at the 1% significant level. The results are therefore in line with the previous national aggregate results. The sign of the statistically significant coefficients are in line with the earlier results. From a practical significance point of view, the effect of inter-generational mobility seems to be higher in rural households than in urban households. The results can be interpreted as an increase in probability of 10.3% in improved perceptions of economic well-being with inter-generational

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occupational mobility in rural households. The corresponding increase in probability for urban households ranges from 2.8% to 3.0%. For the first time, we see a negative sign for the coefficient of inter-generational occupational mobility with regard to urban slum households. A possible reason for this could be that occupational changes here might have been forced rather than voluntary in nature. However, not much can be read into the results for the urban slum households as the results are not statistically significant even at the 10% significance level.

Next, we analyzed the data based on the age groups of the household heads. Table 10 provides a tabulation of inter-generational occupational mobility across different age groups of the household heads. Again, it is noticeable that persistence in inter-generational occupational choices is high across the age groups.

Age Group	Continuing the father's occupation (%)	
	Yes	No
< 25	69.23	30.77
25-34	63.40	36.60
35-44	63.10	36.90
45-54	64.70	35.30
55-64	68.52	31.48
>= 65	74.56	25.44

Table 10: Inter-generational occupational mobility across age groups

Subsequently, we analyzed whether the effect of inter-generational occupational mobility on the perception of economic well-being differs across age groups of the head of the household. Table 11 gives the details of the analysis.

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Independent Variable	< 25	25-34	35-44	45-54	55-64	> 65
Intercept	0.231 (0.107)	0.222 (0.043)	0.319 (0.034)	0.343 (0.032)	0.269 (0.038)	0.091 (0.039)
Intergeneration occupation change (1=Yes, 0=No)	0.067 (0.044)	0.103* (0.014)	0.072* (0.011)	0.064* (0.012)	0.078* (0.015)	0.021 (0.019)
Demographic variables						
Marital status (1=married, 2=single)	0.004 (0.046)	-0.038 (0.024)	-0.078 (0.018)	-0.055 (0.016)	-0.060 (0.015)	0.024 (0.011)
Household composition						
No of persons	0.053 (0.019)	0.011 (0.006)	0.016 (0.004)	0.011 (0.004)	0.013 (0.005)	0.022 (0.005)
No of children	-0.062 (0.031)	-0.018 (0.008)	-0.032 (0.005)	-0.028 (0.005)	-0.014 (0.008)	-0.023 (0.009)
Education						
maximum educational status of any member in HH	0.023 (0.011)	0.017 (0.004)	0.016 (0.003)	0.017 (0.002)	0.017 (0.002)	0.023 (0.002)
education completed for respondent	-0.006 (0.011)	0.007 (0.004)	0.010 (0.003)	0.005 (0.002)	0.006 (0.002)	0.004 (0.002)
R²	0.065	0.078	0.088	0.073	0.079	0.098
No of observations	585	5333	9277	8586	5175	3550

* - significant at 1% level of significance

Table 11: Regression estimate results for HH heads across age groups

We see that the results are not noticeably different across age groups. The signs of the coefficient for inter-generational occupational mobility continue to be positive indicating a positive effect of inter-generational occupational mobility on perceptions of improvement in economic well-being. Excluding the age groups of ‘less than 25 years’ and ‘greater than 65 years’ (which are not statistically significant even at the 10% level of significance), the coefficients for the other age groups are significant at the 1% level of significance. Also, the magnitude of the coefficients ranges from 0.064 to 0.103. This means that inter-generational occupational mobility across age groups increases the probability of the perception of being economically better off by 6.4% to 10.3%. This can be considered to be practically significant.

Based on the analysis thus far, we found preliminary evidence that inter-generational occupational mobility has a positive effect on improving perceptions of economic well-being.

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However, to get a more complete understanding of the phenomenon, we needed to understand the direction of inter-generational occupational mobility. From an intuitive view point, the occupational categories defined in this study seem to have a hierarchical structure ranging from (1) agriculture and wage labor at the bottom to (4) salaried employment or profession at the top. To validate this, we looked at the mean incomes for the 4 occupational categories for the household heads' current occupation in table 12 below.

Current occupational category of HH Head	Mean Income
1	36192
2	44551
3	77878
4	94883

1 - Agriculture and wage labor, 2- artisan or independent worker, 3 - trade or business, 4 - salaried employment or profession

Table 12: Mean income of HH heads across current occupational categories

From table 12, a hierarchy in terms of income levels seems to be present across the 4 occupational categories. We then looked at the mean incomes of household heads in terms of the inter-generational occupational mobility matrix. Table 13 provides the details.

	Total Income				
		Current Occupation			
		1	2	3	4
Father's Occupation	1	36931	41613	65655	87988
	2	33557	43343	67979	73255
	3	39589	52238	89245	104619
	4	39323	53696	121248	120905

1 - Agriculture and wage labor, 2- artisan or independent worker, 3 - trade or business, 4 - salaried employment or profession

Table 13: Mean income of HH heads in the inter-generational occupational matrix

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The diagonal elements in table 13 represent mean income levels of household heads with no inter-generational occupational mobility. However, mean incomes seem to increase for household heads who have moved up the occupational hierarchy. For example, mean incomes are higher for household heads with inter-generational occupational mobility from occupation category 1 to occupation categories 2, 3 or 4. The trend remains the same for inter-generational movement from the other occupational categories as well.

Being part of society, it can be assumed that people are aware of income levels across occupational categories. If this information is freely available, it can be expected that the occupational categories higher up in the income hierarchy should be more aspirational. For further exploration, we analyzed the effect of the direction of inter-generational occupational movement on improving perceptions of economic well-being. For this, we analyzed the inter-generational occupational movement from each of the occupational categories separately. Within this, we also analyzed the effect of the direction of inter-generational occupational movement on perceptions of improved economic well-being. Table 14 depicts the results of this analysis.

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Independent Variable	(1)	(2)	(2a)	(2b)	(3)	(3a)	(3b)	(4)
Intercept	0.188 (0.019)	0.383 (0.084)	0.383 (0.102)	0.439 (0.110)	0.382 (0.069)	0.439 (0.077)	0.394 (0.084)	0.429 (0.060)
Intergeneration occupation change (1=Yes, 0=No)	0.130* (0.007)	-0.022 (0.028)	0.030 (0.033)	-0.083** (0.033)	-0.001 (0.021)	0.054** (0.025)	-0.081* (0.029)	-0.134* (0.019)
Demographic variables								
Age	0.000 (0.000)	-0.001 (0.001)	0.000 (0.001)	0.004 (0.001)	-0.001 (0.000)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Marital status (1=married, 2=single)	-0.030 (0.007)	-0.039 (0.030)	-0.068 (0.035)	0.001 (0.037)	-0.044 (0.028)	-0.035 (0.030)	-0.043 (0.032)	-0.010 (0.024)
Household composition								
No of persons	0.020 (0.002)	0.021 (0.009)	0.018 (0.010)	0.041 (0.012)	0.017 (0.007)	0.009 (0.008)	0.022 (0.009)	0.005 (0.006)
No of children	-0.026 (0.003)	-0.032 (0.013)	-0.032 (0.016)	-0.054 (0.017)	-0.020 (0.011)	-0.012 (0.013)	-0.027 (0.013)	-0.010 (0.010)
Education								
maximum educational status of any member in HH	0.016 (0.001)	0.017 (0.005)	0.016 (0.006)	0.014 (0.006)	0.017 (0.004)	0.018 (0.005)	0.014 (0.005)	0.024 (0.004)
education completed for respondent	0.003 (0.001)	0.005 (0.005)	0.004 (0.006)	0.001 (0.006)	0.007 (0.004)	0.004 (0.005)	0.004 (0.005)	0.001 (0.004)
R²	0.079	0.051	0.048	0.057	0.055	0.053	0.059	0.086
No of observations	25991	1528	1057	893	2078	1624	1529	2909

* - significant at 1% level of significance

** - significant at 5% level of significance

Table 14: Regression estimate results for direction of inter-generational occupational movements

In table 14, estimates related to regressions (1), (2), (3) and (4) depict estimates of inter-generational occupational movement from occupational categories 1, 2, 3 and 4 respectively to all other occupational categories. For example, the estimates under (1) are for the sample of respondents whose inter-generational occupational movement is from 1 to 2, 3 or 4. Similarly estimates under (2) are for the sample of respondents whose inter-generational occupational movement is from occupational category 2 to 1, 3 or 4. Movement from occupational categories 1 and 4 can only be unidirectional (upward in the occupational hierarchy from 1 and downward in the occupational hierarchy from 4). The estimates of the coefficient of interest for (1) and (4) are statistically significant at the 1% level of significance. With magnitudes of 0.130 and 0.134 respectively, they are also practically significant. However, the signs for the 2 coefficients are

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opposite to each other. This can be explained by the direction of inter-generational occupational movement. For (1), the movement is upward in the occupational category hierarchy. Hence, the sign of the coefficient of interest is positive. This can be interpreted as an increase in probability of 13.0% in improved perceptions of economic well-being with inter-generational occupational mobility from occupational category 1. On the other hand, for (4), the movement is unequivocally downward in the occupational hierarchy. Hence, the sign of the coefficient of interest is negative. This can be interpreted as a decrease in probability of 13.4 % in improved perceptions of economic well-being with inter-generational occupational mobility from occupational category 4.

The direction of inter-generational movement from occupational categories 2 and 3 can be bi-directional (movement both in the upward and downward directions are possible). Estimates from (2) represent the sample of household heads with inter-generational occupational mobility from occupational category 2 to all other occupational categories. The interpretation for estimates from (3) is similar. What we find in table 14 is that the estimates of the coefficients of interest for (2) and (3) are not statistically significant even at 10% levels of significance. Further analysis is required to make any comment on inter-generational occupational movement from occupational categories 2 and 3. This is done in (2a), (2b), (3a) and (3b).

Estimates from (2a) represent the sample of household heads with inter-generational occupational mobility from occupational category 2 to higher occupational categories (categories 3 and 4) only. The coefficient of interest for (2a) is positive indicating improvement in perceptions of economic well-being. Though the sign of the coefficient is in line with expectations, the coefficient is not statistically significant even at 10% significance levels. Hence, no comment is made regarding its interpretation. However for the coefficient of interest

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estimated for (3a), the coefficient is statistically significant at 5% significance level. The sign and the magnitude of the coefficient indicate both statistical and practical significance along expected lines.

Estimates from (2b) represent the sample of household heads with inter-generational occupational mobility from occupational category 2 to lower occupational categories (category 1) only. The coefficient of interest for (2b) is negative indicating reduction in probability of improvement in perceptions of economic well-being. The coefficient of interest is statistically significant at 5% significance level. The sign and the magnitude of the coefficient indicate both statistical and practical significance along expected lines. The interpretation for the coefficient of interest from (3b) is similar to this. The coefficient is statistically significant at the 5% significance level. The sign and the magnitude of the coefficient indicate both statistical and practical significance along expected lines.

Discussion and conclusions

The analysis done in this study using IHDS data suggests that persistence exists with regard to inter-generational occupational choices. However, inter-generational occupational mobility also exists and there is preliminary evidence to suggest that inter-organizational occupational mobility has an effect on improving perceptions of being economically better off.

However, on deeper analysis, it is clear that this perception is shaped based on the direction of movement in the occupational category hierarchy. From our analysis of mean income levels of occupational categories, it is evident that mean income levels vary across the occupational categories. These variations present an intuitive hierarchy of occupational categories. It can safely be assumed that respondents are aware of the economic benefits of moving into a higher occupational category in the hierarchy as there would be visible symbols of

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economic prosperity being displayed by members belonging to the higher economic categories. Therefore, higher occupational categories in the hierarchy would be more aspirational.

With the expected payoffs known, respondents would be expected to try and move up the occupational hierarchy. However, this would entail higher levels of effort (e.g. education, learning vocational skills etc). So, respondents who have been successful in making an upward shift would also be expected to have a higher probability of reporting improved perceptions of economic well-being. This is validated by the results of the study.

At the same time, respondents have also exhibited downward mobility in the occupational category hierarchy. Since it has been assumed that people are aware of the economic status of all the occupational categories, movement down the hierarchy should be associated with a reduction in probability of reporting improved perceptions of economic well-being. This too is validated by the results of the study. Another contributor to the reduced probabilities could be that downward mobility could be because of reasons beyond the control of the respondent which in turn would contribute to deteriorated perceptions of well-being.

Our dependent variable of interest in the study is the *perception* of being economically better off. One probable reason for the findings in the study could be due to the *actual* improvements or deterioration in economic well being based on the inter-generational occupational movement either up or down in the occupational hierarchy. Another probable reason could be that the findings reflect a need for self-justification. For example, a respondent who has made the difficult journey to a higher occupational category justifies the effort involved by stating an improved perception of economic well-being. These or other probable reasons have not been explored in this study and remain a possible avenue of future research.

However, the evidence from this study seems to clearly suggest that the direction of

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movement in inter-generational occupational mobility could potentially be an indicator of changes in perceptions of economic well-being.

Limitations of the study and avenues for future research

For this study, we have built an occupational category hierarchy based on the IHDS data. With respect to occupational data, the IHDS data has many limitations. So, there is an element of judgment involved in the creation of the occupational categories. Even though earlier approaches in literature have been considered for this and care has been taken to reduce any possible errors, a different researcher might have come up with a different occupational category hierarchy. Since our occupational category hierarchy is novel and distinct from existing studies, it reduces the possibilities of comparison with similar studies in the same area.

For our dependent variable of interest, we have taken the answers provided to a specific question as a proxy for 'improved perceptions of economic well-being'. The question has a specific time period attached to it (in the last 10 years). We have contended that the perceptions asked for in the question are of greater significance than the time period stated. Hence, this variable can be used as a proxy for "improved perceptions of economic well-being". Other innovative methods of creating this dependent variable can also be attempted.

The research literature in the area of inter-generational occupational mobility is still at a nascent stage in the Indian context. Interesting research questions can be formulated and tested. IHDS data is particularly useful for this as the richness and the large size of the dataset are especially conducive for research dealing with inter-generational occupational mobility. Another interesting research contribution would be in the development of a set of occupational categories that could be used across studies dealing with inter-generational occupational mobility.

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