SEGMENTATION AND MOBILITY IN THE INDIAN LABOUR MARKET

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ABSTRACT

The present study contributes to the limited literature on labour mobility in India using the Indian Human Development Survey panel data for the years 2004-05 and 2011-12. We use three different tools- transition matrices, multinomial logistic regression and wage regressions for this study. The results show significant mobility across sectors in the economy. Mobility patterns among workers are found to differ significantly along the lines of gender, caste, education, wealth and family background among others. There is distress-driven movement of workers. Significant earnings differentials exist across paid work statuses. We observe segmentation with regard to regular vis-à-vis casual wage employment.

Keywords: Mobility; Segmentation; Informality; Distress-driven employment; Transition Matrices.

JEL Codes: C23, C25, J31, J46, J62.

Word Count: Main text & References = 8469 words; 3 full-page tables = 1500 words; 4 half-page tables = 1000 words. Total = 11000 words.

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1. INTRODUCTION

The extent of mobility of the workers among different segments of a labour market plays a crucial role in improving overall levels of efficiency and growth in an economy (Paci & Serneels, 2007). Additionally, higher labour mobility also ensures greater motivation for work, reduced social conflicts and greater equality of opportunity (Motiram & Singh, 2012). Theoretical conceptualisations of labour mobility have been broadly polarized into two opposing schools of thoughts. Mainstream neo-classical labour market models assume the existence of a single integrated labour market with free mobility of workers across sectors (Leontaridi, 1998). On the other hand, such a view has been contested by the segmented labour market models which emphasise restricted mobility of workers across sectors (Cain, 1976; Taubman & Wachter, 1987). The early dualists or the segmented school, model the labour market as composed of two distinct segments- a primary sector with better jobs and a lower tier having poor working conditions- with limited mobility across them (Leontaridi, 1998). Studies have since attempted to conceptualise segmentation within a formal-informal framework with the formal sector acting as the primary segment and the informal sector playing the role of the secondary segment (Fields, 2009).

Within the segmented model framework, the informal sector is considered an unfavourable sector with poor working conditions and the informal sector workers are queuing for better jobs in the formal sector (Hart, 1973). This contention is countered by the legalist school who consider the labour market to be integrated and the choice of informality to be voluntary due to

greater flexibility afforded in the informal sector and the prohibitory regulations associated with formality (Maloney, 1999, 2004). Later theories have further extended the model by dichotomising the informal sector as composed of two segments- an upper tier and a lower tier (Fields, 2009). Although the segmented labour market models initially generated much interest among academics as well as policymakers, it subsequently lost much of its appeal in later years due to the lack of theoretical coherency and empirical validation (Taubman & Wachter, 1987; Wachter, Gordon, Piore, & Hall, 1974).

Empirical studies on labour market segmentation have mainly relied on the presence of wage gaps, controlling for all available characteristics of workers as well as the examination of the mobility patterns of the workers (Nguyen, Nordman, & Roubaud, 2013; Nordman, Rakotomanana, & Roubaud, 2016). However, there is a lack of relevant studies in India and South Asia in general. Although Neog & Sahoo (2015) and Narayanan (2015) examine labour market segmentation in the country, these studies are based on the presence of earnings gaps using cross-section data and hence do not control for time-invariant individual heterogeneity in their model. Further, mobility analysis is not possible using such data. Khandker (1992) examines the issue by analysing wages and mobility patterns among workers. However, the study is restricted to a small geographical region and hence is not very representative at the country level.

A discussion of labour market segmentation and occupational mobility is especially pertinent in country like India given its age-old social stratifications based on caste and religion. The country with its large labour force and widespread poverty houses a significant number of the world's working poor. A large section of the workforce is also employed informally under poor working conditions (Neog & Sahoo, 2016). The country embarked on a process of

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economic reforms more than two decades ago involving the dismantling of burdensome regulation of the previous 'License Raj' regime in a number of spheres of economic activity. Although economic reforms have been associated with high growth, there has been a concurrent rise in inequalities over time and across space (Motiram & Sarma, 2014; Subramanian & Jayaraj, 2015). As argued by Buchinsky & Hunt (1999) and Jantti & Jenkins (2015), such rising inequality is not much of a concern in a highly mobile labour market, as high mobility would ensure that lifetime earnings will be much more equally distributed than inequality measured at a point in time. Hence, there is a need to analyse mobility patterns in the country.

Most of the studies on mobility in India has been in the field of inter-generational mobility exploring the influence of moderating variable such as caste, religion etc. in the persistence of education, incomes and occupations across generations (Azam, 2015; Reddy, 2015). The few studies in the intra-generational context have mostly studied the mobility of incomes or poverty status (Ranganathan, Tripathi, & Pandey, 2017; Thorat, Vanneman, Desai, & Dubey, 2017). The findings point towards a lack of convergence in mobility patterns and development outcomes between major social groups. However, income as a measure of well-being has serious drawbacks especially in rural areas (Pal & Kynch, 2000), highlighting the need to complement studies on intra-generational income mobility with studies on occupational mobility. The literature on intra-generational occupational mobility is very sparse in India. To the best of our knowledge Pal & Kynch (2000) and Khandker (1992)are the only studies dealing with intra-generational occupational mobility in India. However, their studies are based on small samples restricted to a rural/urban context.

The study contributes to the existing literature in the following ways: -

Firstly, the study provides empirical evidence in the segmented vs integrated labour market debate in the Indian economy context. Secondly, the study discusses the trends, determinants and consequences of intra-generational occupational mobility across different labour market segments in the Indian economy. Finally, the study explicitly discusses multiple job-holdings among workers and relates it to existing labour market conditions.

The paper is divided into four sections. Section two presents the data and the methodology. Section three discusses the results. Section four provides further robustness checks. Section five provides the conclusions and dwells on some policy suggestions.

2. DATA AND METHODOLOGY

2.1. Data

The study is based on panel data from the Indian Human Development Survey (IHDS) conducted for the years 2004-05 (IHDS-I) and 2011-12 (IHDS-II) (Desai & Reeve, 2015a, 2015b). Both IHDS-I and IHDS-II are representative at the national level. IHDS-I has a sample size of 41554 (215754) households (individuals) out of which 83% original and split households were resampled in IHDS-II. While the rural sample for IHDS is based on stratified random sampling, the urban sample was drawn using a stratified sample of towns and cities within states selected by probability proportional to population sampling.

Defining Informality: There is a lack of consensus in the literature on how to define informality. Labour informality has been defined in a myriad of ways in the literature ranging from definitions based on firm characteristics to ones based on job features (Fields, 2011; Neog & Sahoo, 2016). Another definition that has been extensively used in the literature is the job-type definition (Gong, van Soest, & Villagomez, 2004; Magnac, 1991). Piece workers or casual

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labourers, as well as self-employed working on their own account without any paid employees under them, are considered as informal. On the other hand, regular workers and employers are considered as formal. Unpaid family workers are classified as informal. Although this definition is much less stringent compared to a definition based on firm size or access to job-based social protection, we adopt this definition due to the lack of relevant information on firm size and social security benefits in our dataset. We argue that the evidence in favour of segmentation using a less stringent definition of informality makes the case of segmentation even stronger when a more stringent definition of informality (using firm-size or social security benefits) is used.

The focus of the study is on labour mobility characterised by movement of workers across labour market statuses. We divide the labour force into eight labour market status groups: farm workers [3], own account workers (OAWs) in non-farm business, employers in non-farm business [4], casual workers, regular workers, unpaid family workers in non-farm business, students and 'Not in the Labour force' categories. In the rest of the paper, casual workers are considered synonymous with the informal wage employed whereas regular workers are considered synonymous with the formal wage employed. Similarly, OAWs and unpaid family workers are synonymous with informal self-employment whereas employers are synonymous with the formal self-employed.

In defining the activity status of a worker, we consider the status where the worker has worked the most hours out of all economic activities the person has been involved [5] [6] [7] [8]. In case

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[3] The farm workers segment includes workers involved in the cultivation of crops as well as those involved in animal care.

[4] In order to distinguish OAWs from employers we use information on the cost of paid labour services for a business. Owners of businesses with positive labour cost are considered as employers whereas those without any labour cost are considered as OAWs.

[5] In the IHDS data, respondents were asked about information on multiple wage jobs held by the worker over the survey period. Our study uses information only for the major job -defined as the job where the worker has worked the maximum hours out of all the jobs.

the person does not work at all in any economic activity, he/she is considered to be outside the workforce. A person from outside the work-force who is currently enrolled in an educational institution is considered to be a student. Persons from outside the work-force who are not students comprise the 'Unemployed and Not in the Labour Force' (UNLF) category. In case of self-employed persons, there may be multiple household members engaged in a non-farm business. In such a scenario, we follow Deshpande & Sharma (2016) and classify the person who has worked the maximum number of hours within the household as the primary decision maker of the business [9] (i.e. the OAW or employer) and all other household workers as unpaid family workers. However, all household members engaged in farm work are classified as farm workers without any distinction of primary decision maker in the farm business.

2.2. Methodology

Existing attempts in the literature to check for labour market segmentation have mainly relied on the presence of wage gaps, controlling for all available characteristics of workers. However, this approach has been criticized for its inability to control for all the productive characteristics of workers (Rosenzweig, 1988). Further, a significant monetary wage gap across sectors may simply indicate compensatory wage differentials for differences in non-pecuniary rewards to jobs as workers seek to equalise utility across sectors (Maloney, 1999).

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[6] IHDS asks respondents about information on a maximum of three non-farm businesses in a household. Our study conducts its analysis using only the business with the highest net earnings among the three.

[7] There are a small number of cases where total hours worked are equal for two or more economic activities. In such cases, we consider information on net income earned from the economic activities and classify the worker to the activity where net earnings are higher.

[8] Information on hours of work was not available for persons involved in animal care. However, IHDS provides information on whether the person is involved in animal care. As such, we use the hours of work criteria to classify workers as farm workers, wage employees or self-employed. In case the person is not involved in any of the above activities but is engaged in animal care, we consider him to be involved in animal care and merge him into the 'farm worker' category.

[9] There are a small number of cases, where total hours worked are similar for two or more workers. In such cases, we use information on age of the worker and identify the more aged worker as the primary decision maker.

Given the criticisms of the wage analysis approach, other studies have relied on the evaluation of the transition of workers across sectors over time as a method to test the segmented labour market theory. Some studies have applied both mobility analysis and wage regressions to get a more robust and comprehensive picture (Duryea, Márquez, Pagés, & Scarpetta, 2006; Pagés & Stampini, 2009).

Following the empirical literature, the study relies on a three tools to understand the patterns of mobility across sectors and how such mobility is associated with individual characteristics and earnings. Firstly, the study examines the transition probabilities of workers moving across sectors using transition matrices. The study then looks at the characteristics of the movers with reference to stayers using multinomial logistic regression. Finally, the study looks at the consequences of mobility on earnings with reference to the stayers using fixed effects regression analysis.

2.2.1. Transition Probabilities

We first examine the transition probabilities for workers across sectors given by the probability of moving to sector j in period t given that the person was in sector i in period $t-1$. The transition probabilities are displayed in the form of matrix '$\mathbf{P}$'. Formally the elements of the $\mathbf{P}$ matrix are given by:

$$p_{ij} = P(S_t = j \mid S_{t-1} = i) = \frac{P(S_{t-1} = i \cap S_t = j)}{P(S_{t-1} = i)} \dots \dots \dots (1)$$

The diagonal elements of the $\mathbf{P}$ matrix, p_{ii} give us the share of members of a sector who have not moved over the period. Similarly, $(1 - p_{ii})$ gives us the turnover rate of the sector. However, we are unable of distinguish permanent movers to transitory movers who move to-and-fro

between sectors. Further, the transition probabilities from the **P** matrix are still imperfect measures of mobility as they depend on the size of the initial and terminal statuses and also on the job openings in each of them. Hence, we standardize the **P** matrix further which gives us the **V** and the **T** matrices.

Following (Maloney, 1999), the general element of the **V** matrix is given by:

$$v_{ij} = \frac{p_{ij}/p_{.j}}{(1 - p_{ii})(1 - p_{jj})} \ldots \ldots \ldots (2)$$

Here, $p_{.j}$ would indicate the share of the terminal sector, j in the population. v_{ij} would measure the disposition for a worker to move from sector i to sector j. A segmented labour market would give us a high v for a movement from informal to formal but a low v in the reverse direction.

Similarly, the general element of a **T** matrix is given by:

$$t_{ij} = \frac{N_{ij}/(N_{i.} - N_{ii})}{(N_{.j} - N_{jj})/\sum_{k \neq i}(N_{.k} - N_{kk})} \ldots \ldots \ldots (3)$$

Here, N_{ij} is the number of individuals moving from sector i to j; $N_{i.}$ is the initial size of sector i; $N_{.j}$ is the final size of sector j. The numerator of t_{ij} is the probability of joining j, conditional on having left i. The denominator is the probability of joining j for a mover from i when sector assignment is random. t_{ij} gives us the tendency for a worker to move from i to j, with values above (below) one indicating a positive (negative) tendency to make the transition. In an integrated labour market where all transitions are random, all $t_{ij}'s$ are equal to unity and the **T** matrix is equivalent to an Identity matrix (Bernabe & Stampini, 2009). Since the **V** and the

T matrices are associated with net flows, no index of mobility can be built for stayers and the diagonal elements are empty.

The information from the **P**, **V** and the **T** matrices can provide us with a rough picture of the extent of labour mobility across different sectors besides enabling us to draw a preliminary assessment of the presence of segmentation in the labour market.

2.2.2. Determinants of Mobility

After the study of the transition probabilities, we look at the characteristics of the individuals who move from one sector to another vis-à-vis the stayers. If labour mobility is associated with certain worker characteristics, this would strengthen our inference on segmentation and would give us an idea of the factors excluding workers from the desirable statuses. The theoretical framework for our model of worker transition is an extension of the rational agent model of occupational choice (Boskin, 1974). The model of occupational choice states that a rational worker would choose the sector which gives him the maximum possible utility from all available sectors. Thus the individual chooses sector i in period t if $U_{i,t} > U_{k,t}$, where $k = 1, 2, \ldots \ldots, K$ indexes the sectoral choices available to the individual. Accordingly, a worker would transit from sector i to j if there is a change in the utilities associated with the sectors so that sector j becomes the utility maximizing sector in the terminal period. That is, a worker would move from sector i in period t to sector j in period $(t + 1)$ if $U_{i,t} > U_{k,t}$ and $U_{j,t+1} > U_{k,t+1}$.

The utility from an occupational choice depends on a number of factors including expected lifetime earnings, risks and constraints anticipated in getting the job etc. (Rees & Shah, 1986; Uusitalo, 2001). The utility function is given below:

$$U = f(I, A, F, R, E) \ldots \ldots \ldots (4)$$

$$I = g[w, p(X)] = w \times p(X) \dots \dots \dots (5)$$

where *I* denoting expected lifetime earnings is the product of two terms- the sum of the discounted stream of earnings from the job over the lifetime (*w*) and the probability of getting the job (*p(X)*). *I* is positively related with *w* and *p(X)*. Finally, *p(X)* is inversely related to the constraints involved in getting the job *(X)*. Our framework is similar to the classic Harris-Todaro approach where constraints set by the limited availability of formal jobs in the urban sector lowers expected wages in the urban sector (Harris & Todaro, 1970). Similarly, *A* denotes expected autonomy in the job; *F* denotes expected flexibility afforded by the job; *R* is the risks involved in the job; *E* is the expected effort required in the job.

It is noteworthy that we extend Boskin (1974)'s framework so that occupational choice depends not only on factors such as expected lifetime earnings, autonomy and flexibility from the job but also on the constraints anticipated in the job. Such a framework enables us to study occupational choice by a rational agent given the possibility of a segmented labour market. The constraints that an individual may face in getting a job may be due to his human capital levels, credit availability, caste, religion etc. and/or due to supply-side factors such as the availability of adequate, decent formal jobs.

Since information on the given job attributes are not available to us we proxy them using individual-level worker characteristics for the initial period as suggested in Rees & Shah (1986). We used multinomial logistic regression to analyse the impact of worker attributes on worker transitions. Since there are very few number of transitions from the 'Student' group to some sectors; we merge the Student and the UNLF group to form the Students, Unemployed and Not in the Labour Force (SUNLF) category giving us a total of seven labour market status. Following (Wooldridge, 2010), the multinomial logit model can be formulated as:

$$\frac{P(S_{t-1} = i \cap S_t = j)}{P(S_{t-1} = i \cap S_t = i)} = X\beta, for \; i,j = 1,2, \dots,7 \dots \dots \dots (6)$$

Here, S_{t-1} and S_t denote the employment status of the individual in period $t-1$ and t respectively. We will have seven such models, one for each initial sector i. Additionally, X is a vector of factor affecting labour mobility whose values are considered at the initial time period i.e. 2004-05 and β is the vector of the corresponding regression coefficients. The vector X comprises the set of the standard individual level worker characteristics including age, gender [10], education, household wealth, social capital (proxied by membership in various groups/organizations), marital status, dependency ratio, rural-urban residence, caste, dummy for fluency in English, religious affiliation as well as the education and occupation of the father/husband's father of the household head [11] [12]. Finally, we attempt to control macro-level factors through the inclusion of 18 state dummies.

Although the multinomial logistic regression results can give us an idea of the characteristics of mobility, it tells us nothing about the determinants of the stayers. Hence, we complement the multinomial logistic analysis with a binomial logistic model to analyse the determinants of the probability of survival in a labour market status. The explanatory variables in the model are identical to those used in the multinomial logistic model.

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[10] There are some minor issues of mismatch in age and gender of a person across years. IHDS documentation suggests that in the event of a mismatch, information from IHDS-II should be given the priority. Accordingly, we update the information in IHDS-I (2004-05) on gender and age using information from IHDS-II (2011-12).

[11] In the absence of any variable depicting wealth of the parent of the household head we follow Fairlie (1999) and proxy it by the education of the father/husband's father of the household head. Similarly, following Hout & Rosen (2000) the labour market status of the father/husband of the household head is proxied by his/her occupational category.

[12] We divide the occupational codes of the father/husband of the household head into four groups: Professional & Executive workers; Sales-related workers; Farmers, Loggers & Fisherman; and finally, Clerical, Sales & Production workers. Our occupational classification is done so as to correspond with the employment status groups. Hence, the 'Sales workers' group relates closely with the self-employment group; 'Farmers, Loggers & Fisherman' group corresponds with the farm workers; and the 'Professional & Executive workers' as well as the 'Clerical, Sales and Production workers' group closely resemble the wage workers.

The preceding analysis is based on the assumption of a homogeneous sample of workers, conditional on observable worker characteristics. If, however, workers are heterogeneous in unobservable ways and choose the sector that maximises their welfare, they will want to remain in their preferred sector even if displaced by exogenous shocks (Pagés & Stampini, 2009). Thus mobility may be zero even in an integrated labour market. Thus we complement our mobility analysis with the study of earnings differentials.

2.2.3. Mobility and earnings

Our final section looks at the impact of labour mobility on the earnings and poverty levels of the workers [13]. To do so, we conduct fixed-effects linear regression on earnings data controlling for a number of individual and job level characteristics as well as accounting for unobserved time-invariant worker heterogeneity. Since, we have earnings data on four non-farm sectors (viz. Own-Account workers, Employers, Casual workers and Regular workers) we only consider these four groups for our regression analysis. Including a sub-sample of observation in the earnings function may generate inconsistent results due to possible selection bias. Assuming that selection bias is not due to time-varying unobserved factors, fixed-effects corrects for such bias [14] (Fortin, Lemieux, & Firpo, 2011). Further, proper identification in fixed-effects regression relies on a sufficient number of movers across the labour market sectors (Nordman et al., 2016). We verify that this, actually, is the case as seen from Table 2.

Our fixed effects model is given by:

$$y_{it} = \alpha_i + x'_{it}\beta + \gamma OAW_{it} + \delta E_{it} + \eta CW_{it} + \varepsilon_{it} \dots\dots\dots (7)$$

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[13] Earnings for OAWs and employers are obtained by deducting from gross business earnings, costs incurred in running the business. Wage earnings includes cash wages as well as income earned as bonus from the job. Earnings of the worker is then divided by hours worked in that activity to arrive at the hourly earnings figures.

[14] Attrition bias can be considered as a special case of sample selection bias and as such our results are robust to possible attrition bias under the given assumptions (Verbeek & Nijman, 2008).

Here, i indexes individuals and t indexes time. Further, y_{it} is the net hourly earnings of the worker; α_i is the time-invariant individual fixed effect; OAW_{it}, E_{it} and CW_{it} are dummy variables taking the value one if the worker is an Own Account worker, employer and casual worker respectively and zero otherwise; and ε_{it} is the *i.i.d.* error term such that $E(\varepsilon \mid x, \alpha, OAW, E, CW) = 0$. We exclude the dummy for regular workers from our model and interpret our results considering it as the reference category. The estimated coefficient for OAW (i.e. $\hat{\gamma}$) can thus be interpreted as the earnings penalty/premium for those moving from regular work to OAW. $\hat{\eta}$ and $\hat{\delta}$ can similarly be interpreted. We re-run our model changing our reference category in order to get a picture of the sectoral earnings gap with reference to the other labour market states. Finally, x'_{it} is a vector of individual attributes which includes the standard variables such as age, years of education, education of the father of household head, dummy for urban residence as well as dummies for household headship and being married. Additional control variables include dummies for computer and English usage, occupational and industry dummies.

Earnings differentials are important as they provide a useful measure of the monetary differentials other job attributes needs to compensate for even if they are an inadequate measure of utility differential (Pagés & Stampini, 2009). However, there is a need to be cautious while comparing the earnings differentials between the wage employed and the self-employed since the earnings for the latter may include capital returns (Pagés & Stampini, 2009). Earnings for the self-employed may also be inflated as many businesses in our study are family-based, and their earnings may include the remuneration for unpaid family workers.

3. RESULTS AND DISCUSSION

3.1. Descriptive Statistics

We discuss below the characteristics of the workers engaged in the different employment sectors.

[Insert Table 1]

Table 1 shows that farm workers as a group have the largest share in the workforce, closely followed by casual workers. Employment sectors such as employers and regular worker are concentrated in urban areas relative to other groups. The age composition of the workforce shows unpaid workers, students and the UNLF categories are significantly younger than the other groups. OAWs, employers and regular workers have the most aged workforce in the sample (Table 1). The gender composition of the employment groups shows OAWs, employers, regular workers and casual worker being considerably male-dominated with the females mostly concentrated in the UNLF and farm groups.

The education profile of the workers over both the periods show regular workers and employers doing significantly better, followed by the OAWs and Unpaid family workers with the rest having the poorest educational outcomes (Table 1). Our results dispel the notion of self-employed having a significantly lower education than their wage employed peers (Robinson & Sexton, 1994). The caste composition shows General and OBC category workers have higher representation in better employment outcomes such as employers and regular work whereas SC/ST groups are involved mostly in casual work. Similarly, we find large variation in the distribution of workers by religion and marital status.

Finally, judging in terms of incomes and assets we find employers and regular workers doing significantly better followed by OAWs and unpaid family workers with the casual workers doing the worst in this regard (Table 1). In line with the literature, we also find variability in

earnings to be much higher among the self-employed relative to the wage employed (Åstebro & Chen, 2014). Consistent with the international literature we also find work hours to be quite high among the self-employed (Blanchflower, 2004) as well as regular workers whereas they are found to be lower among the casual workers.

An interesting feature of the Indian labour market is the large share of workers who are involved in more than one job. Additional Table A1 shows that more than 10 percent of the workers in the workforce is involved in more than one job and this number has increased over the period. Further, we find that a majority of such multiple job holders are involved in farm and wage work. Multiple job holding is seen to be more common among casual workers and OAW and quite rare for farm and regular workers (Additional Table A1). This issue is discussed further in the next few sections.

3.2. Transition Matrices

We now look at the transition matrices of the workers across the various employment groups.

[Insert Table 2, 3 and 4]

A first look at the diagonal elements of the **P**-matrix shows labour turnover to be very high for the self-employed groups whereas it is very low for the wage employed and farm workers (Table 2). We also find high two-way mobility between farm work and casual work which may signify the seasonal nature of agricultural work as workers move intermittently between agriculture and casual work to eke out a living. We look at this issue further in the next section. Considerable two-way mobility is also noticeable among the wage employment groups (between casual and regular workers) and the self-employment groups (among OAWs, employers and unpaid family workers) (Table 2). Finally, the significant movement of people

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from outside the workforce (composed of students and UNLF) into farm work and casual work groups signify the role that these groups serve as points of entry for new entrants into the workforce (Table 2). Such a phenomenon may imply that workers move into such sectors to gain work experience (either voluntarily or due to the limited supply of formal (or regular) job opportunities) before moving into better-paying activities.

Looking at the **T** matrices shows that most of the *t* indices are near unity signifying random worker transition (Table 4). The indices from the **V** matrix also indicate in most cases a high level of symmetry among the various sectoral flows consistent to the integrated labour market view (Table 3). However, in certain cases, we also notice a high tendency of workers to move between the self-employed categories of employer, OAW and unpaid family work (Table 4). The *v* indices in such cases are not very symmetric especially with reference to movements associated with unpaid family work (Table 3). A high tendency of mobility for workers is also noticeable among casual and regular work categories with the *v* indices being asymmetric (Table 3 and 4). Such cases indicate the possibility of segmentation in the labour market, especially in the wage employment section.

3.3. Mobility and individual characteristics

Although the analysis of mobility until this point has provided us with a good idea of the extent of movement of workers across different employment groups, it doesn't tell us anything about the characteristics of workers making a move to other job categories. Hence, we use the multinomial logistic regression results to get a better idea of the different attributes of workers associated with mobility. We complement the discussion of the results from the multinomial logistic regression with the logistic regression results illustrating the characteristics of the stayers.

Given the large movements of workers from farm work to casual work, we first look at the characteristics of such movers (Table 2). We find that with reference to staying in farm work, movements into casual work is mainly undertaken by the young, the less educated, males, the poor and the backward castes (Table 5). Given the relatively high poverty rates for such movers before and after moving (as seen from Additional Table A4) and the attributes of the workers moving from the former to the later, movements out of agriculture is likely to be of a distress-driven nature undertaken mainly by workers to supplement their meagre family incomes.

Looking at the issue further, we find that most of the movers from farm to casual work hold multiple jobs, simultaneously working in farm and casual work in both the periods. At the same time, the number of such multiple job holders have almost tripled over the period (Additional Table A7). Further, most of such movement from farm to casual work is not into Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) work but private casual work indicating that such work is not due to the lure of relatively better MGNREGA work [15]. This fact together with our earlier findings of high poverty rates among movers from farm work to casual work may indicate declining productivity in agriculture as people move into casual work alongside farming activities to supplement meagre agricultural incomes.

Interestingly, around 17 per cent of the workers undertake the opposite movement from casual to farm work. Such movers are generally better-off in terms of education, caste-affiliation and assets (Table 6). Incidence of multiple job-holding also falls dramatically among such movers (Table A7). Such differences in the characteristics of the movers from farm to casual work, and vice versa, offers some argument against the possibility that movements between farm

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[15] We do not present the results in regard to this contention. Results are available upon request.

and casual work is random and that the movement from the former to the later represents genuine symptoms of distress among the farmers.

The findings tally with those in the literature which finds evidence of declining profitability as well as rising risks and indebtedness in Indian agriculture notwithstanding the silver lining of rising agricultural productivity in recent years (Deokar & Shetty, 2014; Mishra & Reddy, 2010). Our findings are also in line with the global trend of rising diversification of farm-based households into non-farm activities (Davis et al., 2010; J. Lanjouw & Lanjouw, 2001). Our results are also similar to Lanjouw & Shariff (2004) who find that much of the diversification into non-farm work by the poor is into casual work.

Given the high *t* indices between OAW and employers, we take a look at the attributes of movers into employer jobs. We see that relative to staying in OAW, moving into employer category is mainly undertaken by the young, those with better educational background and the wealthy (Table 5). This may be an indication of the presence of liquidity constraints in the economy as small well to do businesses with enough financial capital undertake investments to enlarge their business (Table 5). This contention is further corroborated by the very low initial poverty rates among the OAWs undertaking the move into employer category (Additional Table A4).

[Insert Table 5]

We also notice high mobility of workers from casual work into regular work. We see that movers from casual to regular work have better endowments in terms of higher education, fluency in English as well as being more likely to be rich; from urban areas and privileged castes and religions (Table 6). The scenario of low turnover for regular workers, the high tendency for

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casual workers to move into regular work and the superior characteristics of such movers, points to a situation where casual workers queue for scarce well-paying regular jobs, and it is mainly the better endowed of the casual workers who get to move into regular work. Consistent with this view, we find that the reverse movements of workers from regular into casual work is mainly associated with the less educated and the poor (Table 6). Looking at the persistence in casual or regular work, we find that, consistent with our earlier conjecture, education, fluency in English and household wealth are positively associated with survival in regular work but negatively related with survival in casual work (Additional Table A5).

We conclude the section with a few general remarks: -

Firstly, our results in general show a consistent pattern wherein the occupational status of the father/husband of the household head has a significant influence on the mobility patterns of the workers (Table 5, 6; Additional Table A2, A3, A5). In general, workers within a family tend to move into or persist in the employment status related to the occupation of the father/husband of the household head. Hence, workers whose father/husband of the household head were in sales-related occupations are more likely to move into (or persist in) self-employment work (Table 5, 6; Additional Table A3, A5). Similar results are evident for the farm work and wage work group. The results corroborate the literature on the impact of parental occupations on self-employment entry and survival (Parker, 2009; Simoes, Crespo, & Moreira, 2016). The results also support the literature on limited intergenerational occupational mobility in India (Reddy, 2015).

Secondly, the mobility patterns display a definite gender pattern with males more likely to move into (or persist in) paid work categories such as OAW, Employer, casual and regular work whereas females are more likely to move into (or persist in) unpaid family work or outside

the workforce (Table 5, 6 and Additional Table A2, A3). This is consistent with the literature which finds high mobility within the workforce for men and high mobility into joblessness for women (Royalty, 1998; Theodossiou & Zangelidis, 2009). Thirdly, we fail to find any general impact of social capital proxied by membership in socio-political institutions on labour market mobility (Table 5, 6 and Additional Table A2, A3). Fourthly, we also find that in line with the findings in the literature, SCs/STs are more likely to be exiting self-employment and less likely to be entering and surviving in self-employment (Table 6 and Additional A.5) (Ahn, 2011; Fairlie, 1999). Lastly, education is found to positively impact mobility and survival in the more favourable outcomes such as employer and regular work (Table 5, 6 and Additional Table A2, A3, A5).

[Insert Table 6]

3.4. Mobility and Earnings

We finally a look at the impact of labour mobility on individual earnings. Taking a look at Additional Table A3 and A6, we find that movements into statuses such as OAW, employer and regular work from other sectors such as farm and casual work are associated with positive changes in household consumption levels as well as wage levels. The aggregate statistics on consumption and wage changes associated with worker mobility, however, do not control for individual-level attributes. To look at the impact of worker mobility on earnings controlling for observable and time-invariant unobservable worker attributes, we look at the results of the fixed effects regression analysis.

As can be seen from Table 7, earnings are significantly higher in the employer group as compared to all other sectors. The finding that employers earn significantly more than OAWs

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along with our earlier observation about the attributes of the movers from OAW into employer category offer further support to our earlier inference on employer category being the more desired employment status. Our findings are also similar to those found in Vietnam and Madagascar (Nguyen et al., 2013; Nordman et al., 2016). Similarly, casual workers fare the worst in terms of wages in comparison to all other segments. OAWs and regular workers are positioned in between the extreme cases of casual work and employers (Table 7).

We see that regular workers earn significantly better than their casual worker counterparts (Table 7: Column 4). This result in combination with our earlier evidence on a lower turnover in regular work as well as the superior attributes of the workers moving from casual to regular work provides ample evidence in favour of the segmented labour market view at least within a formal (or regular) vs informal (or casual) wage employment framework. Our findings are synonymous with the literature on Latin America, Vietnam and Madagascar and South Africa which finds overwhelming evidence of a formal wage premium over informal sector wage workers (Duryea et al., 2006; Nguyen et al., 2013; Nordman et al., 2016; Pagés & Stampini, 2009).

[Insert Table 7]

4. ROBUSTNESS CHECKS

The authors conclude the discussion with a few robustness checks:

Firstly, we consider the issue of possible endogeneity in our earnings regression model. Specifically, proper identification of the regression coefficients relies on the fact that movers do not change their employment states systematically for better earnings, i.e. transition is random. We follow Nordman et al., (2016) and check whether mobility is systematically associated with earnings increase (or decrease) relative to the stayers. Out of the 12 cases, where workers change

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employment status, earnings increase with regard to the stayers in five cases whereas we find earnings decreasing compared to the stayers in six cases (Additional Table A6). This provides some argument against the endogeneity concerns in the earnings function.

Secondly, it might be argued that the multinomial logistic regression results as well as the results from the transition matrices are biased due to non-random attrition of individuals from the sample. We accordingly model the attrition process and attempt to correct for any attrition bias under the assumption of selection on observables (Wooldridge, 2010). Following Wooldridge, (2010), let y be the dependent variable or outcome of interest and X be the vector of independent variables as discussed earlier. We define A to be the attrition dummy equal to 1 if y is non-missing in both the periods and 0 otherwise. Additionally, Z is a vector of auxiliary variables affecting the probability of attrition such that,

$$P(A = 1 \mid y, X, Z) = P(A = 1 \mid Z) \dots \dots \dots \dots (8)$$

Assumption (1) is referred to in the econometrics literature as 'selection on observables' (Wooldridge, 2010). Under the assumption of 'selection on observables', possible bias due to non-random attrition can be corrected through the Inverse Probability Weighting (IPW) estimation. IPW estimation relies on the presence of variables in Z which are good predictors of attrition. We include in Z variables such as dummies for relationship with the household head as well as the person identifier [16]. Additionally, Fitzgerald, Gottschalk, & Moffitt, (1998), suggests that Z should also include lagged values of the dependent variable. Hence, we also include in Z, dummies for employment status in the initial period. All the above variables are found to have a significant influence on A.

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[16] Person identifier are numbers assigned to the family member by the interviewer. We posit that persons interviewed first have a lesser probability of attrition than others.

Under IPW estimation, we estimate a probit model of A on X and Z and generate the fitted probabilities p. In the second step, the outcome model is weighted by the inverse of p i.e. $1/p$ to give us our attrition-bias corrected estimates. Accordingly, we estimate our multinomial logistic regression model as well as the transition matrices after correcting for possible attrition bias and compare our results with the uncorrected models. Our results are effectively similar and our conclusions remain the same under the attrition corrected case. We do not present the results for The attrition-adjusted results are not presented here. Results are available upon request.

Finally, the analysis of our study is conducted considering all members of the household irrespective of age. In developing countries like India, defining a working age group is difficult as largescale poverty and informality means that a significant section of the population outside the conventionally defined age groups are engaged in economic activities. As such, restricting our sample to a particular working age group may lead to bias emanating from arbitrary selection of cut-offs for the working age group. However, we check for the robustness of our results by experimenting with different working age group samples and find the results are similar across the different specifications. Results for the alternative specifications of working age groups are not shown but are available upon request.

5. CONCLUSION

The present study contributes to the limited literature on the patterns and consequences of labour mobility in the India. In doing so its provides robust empirical evidence on the segmented labour market theory. Our study finds significant mobility across sectors in the economy. Characteristics such as gender, caste, education, marital status, wealth as well as the occupation of the father/husband's father of the household head are found to influence mobility significantly. Further, our study finds evidence of significant earnings differentials across paid

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work statuses. The study finds evidence of segmentation with regard to regular (or formal) vis-à-vis casual (or informal) wage employment. We also notice large-scale distress driven movements of workers, especially from OAW and farm work into casual work.

Given the distress-driven nature of movement from OAW and farm work into casual work, policy measures need to be taken to identify and alleviate the nature of the problems in such activities. Further, adequate measures need to be taken to improve the growth prospects of the small business enabling them to enlarge and generate decent employment. In this regard, policy efforts need to be made especially towards alleviating capital constraints in small business given the important role of capital availability in facilitating business growth. Furthermore, given the gender-specific patterns of job mobility, policy measures need to be undertaken to improve the workforce participation of females and their mobility into paid work statuses. Finally, policy efforts should be directed to improve the self-employment prospects among the SC/STs.

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TABLES

Table 1: Descriptive Statistics								
	Farm worker	OAW	Employer	Casual Worker	Regular Worker	Unpaid Family Worker	Student	UNLF
Urban[a]	0.05	0.40	0.54	0.21	0.55	0.44	0.30	0.35
Age	36.97	41.05	40.95	36.84	40.23	32.75	11.22	32.55
Years of Edu	4.63	6.93	9.27	4.29	9.93	7.07	5.06	3.84
Male[a]	0.47	0.84	0.94	0.69	0.81	0.61	0.54	0.31
Caste Groups [a] (Column totals for all caste groups sum to 1)								
General	0.28	0.32	0.47	0.17	0.38	0.34	0.29	0.31
OBC	0.46	0.48	0.42	0.39	0.35	0.50	0.42	0.43
SC/ST	0.26	0.20	0.11	0.44	0.27	0.17	0.29	0.26
Hindu[a]	0.86	0.79	0.77	0.84	0.82	0.77	0.81	0.79
Married[a]	0.74	0.89	0.90	0.82	0.85	0.61	0.01	0.62

Household Poor[a][b]	0.26	0.20	0.07	0.36	0.10	0.18	0.31	0.33
Monthly per Capita household real Income	735.03	1002.44	2295.59	717.36	2158.56	1127.21	851.91	941.65
Assets	11.51	14.53	18.55	10.49	17.89	15.87	13.16	13.26
Mean per hour real earnings (Std. Deviation)	27.27	40.41	49.74	9.49	28.08			
Annual hours worked	729.60	2104.67	2328.13	1529.99	2472.93	1163.93		
Obs. Total	67928	9202	2964	58498	14225	5787	64867	77895
Obs. 2004-05	30037	3987	1311	26437	5245	2293	33126	48247
Obs. 2011-12	37891	5215	1653	32061	8980	3494	31741	29648

Notes: [a] indicates proportionate shares of the variable in total population of the different groups.

 [b] The poverty rates are calculated using per capita household consumption and the official poverty lines (Tendulkar Committee poverty lines) (Planning Commission, 2009).

 Estimated results are calculated using sampling weights (2004-05).

 Figures shown are means of the variables unless otherwise mentioned.

 OAW refers to Own Account Workers.

 UNLF refers to Unemployed and Not in the Labour Force.

Source: Authors' calculations based on IHDS data.

Table 2: Transition Probabilities (**P** Matrix)								
	Terminal Sector							
Initial Sector	**Farm worker**	**OAW**	**Employers**	**Casual Worker**	**Regular Worker**	**Unpaid Family Worker**	**Student**	**UNLF**
Farm worker	57.30	2.11	0.48	19.48	2.11	1.23	1.84	15.45
OAW	14.65	27.36	6.37	25.74	5.23	6.75	0.19	13.71
Employer	10.87	26.32	20.84	15.99	8.35	7.14	0.11	10.37
Casual Worker	17.37	4.42	0.85	58.08	8.09	1.10	0.16	9.92
Regular Worker	6.79	3.53	1.45	20.63	52.16	0.70	0.05	14.69

Unpaid Family Worker	11.63	16.65	4.94	19.14	4.35	19.87	2.35	21.07
Student	22.71	0.82	0.29	11.92	2.93	2.72	49.90	8.72
UNLF	17.16	1.74	0.47	10.64	2.62	1.72	31.53	34.13

Notes: OAW refers to Own Account Workers.

UNLF refers to Unemployed and Not in the Labour Force.

Estimated coefficients are calculated using sampling weights (2004-05).

Source: Authors' calculations based on IHDS data.

Table 3: Transition Probabilities (**V** Matrix)

Initial Sector	Terminal Sector							
	Farm worker	**OAW**	**Employer**	**Casual Worker**	**Regular Worker**	**Unpaid Family Worker**	**Student**	**UNLF**
Farm worker		2.09	1.55	4.87	1.99	1.69	0.41	2.91
OAW	1.81		12.19	3.78	2.90	5.44	0.02	1.52
Employer	1.23	14.07		2.16	4.25	5.28	0.01	1.05
Casual Worker	3.72	4.46	2.82		7.77	1.54	0.04	1.90
Regular Worker	1.28	3.12	4.20	4.60		0.86	0.01	2.47
Unpaid Family Worker	1.30	8.79	8.56	2.55	2.19		0.28	2.11
Student	4.07	0.69	0.80	2.54	2.36	3.18		1.40
UNLF	2.34	1.12	0.98	1.72	1.60	1.53	4.51	

See Notes in Table 2.

Source: Authors' calculations based on IHDS data.

Table 4: Transition Probabilities (**T** Matrix)

Initial Sector	Terminal Sector							
	Farm worker	**OAW**	**Employer**	**Casual Worker**	**Regular Worker**	**Unpaid Family Worker**	**Student**	**UNLF**
Farm worker		0.76	0.58	1.53	0.53	0.61	0.16	1.75

OAW	0.71		5.95	1.55	1.00	2.56	0.01	1.19
Employer	0.50	6.92		0.91	1.52	2.58	0.01	0.86
Casual Worker	1.20	1.74	1.13		2.20	0.60	0.02	1.23
Regular Worker	0.49	1.45	2.00	1.84		0.40	0.00	1.90
Unpaid Family Worker	0.52	4.24	4.23	1.06	0.76		0.14	1.68
Student	1.35	0.28	0.33	0.88	0.68	1.26		0.93
UNLF	0.82	0.47	0.43	0.63	0.49	0.64	2.07	

See Notes in Table 2.

Source: Authors' calculations based on IHDS data.

Table 5: Mobility and individual characteristics							
	Status of Destination						
Status of Departure	**Farm worker**	**OAW**	**Employer**	**Casual Worker**	**Regular Worker**	**Unpaid Family Worker**	**UNLF & Student**
Farm worker							
Urban[a]		1.56***	1.58**	1.51***	2.70***	3.20***	2.53***
Age		0.98**	0.97***	0.97***	0.99***	1.01	1.05***
Years of Education		1.05***	1.07***	0.98**	1.18***	1.01	0.98**
Speaks English[b]		1.14	2.08**	1.01	1.28*	0.7	1.1
Education of Father of Household head		1.01	1.01	0.95***	0.95***	0.98	0.99
Gender[c]		3.43***	8.75***	2.36***	1.43***	0.57***	0.28***
Dummy for Caste Affiliation (Base: General category)							
Other Backward Caste		1.52***	0.79	1.31**	1.01	1.02	0.81**
SC/ST		0.98	0.8	2.16***	1.59*	1.07	0.96
Religion[d]		1.18	0.64	1.01	1.18	1.2	0.93
Marital Status[e]		1.29	1.93**	1.12	0.52***	0.22***	0.08***
Assets		1.04**	1.17***	0.90***	1.01	1.07***	1.03***
Member of Employee Union/Business Group[f]		1.08	1.41	1.04	1.22	1.44	1.05
Member of SHG[f]		1.17	1.67	1.12	1.62**	0.75	0.98

Member of Savings group[f]		0.93	0.78	1.03	1.17	1.06	0.96
Dependency ratio		1.01	0.29**	1.36	1.67	1.81**	2.51***
Occupational Group of the father of the household head (Base: Farmers, Service and Production Workers)							
Professional & Executive Workers		1.58	1.05	1.08	1.63**	0.96	1.29
Sales Workers		5.12***	2.29	1.03	2.74**	5.29***	2.01***
Clerical, Service & Production Workers		1.91***	1.27	1.50**	1.76***	1.51**	1.37***
Own Account Work (OAW)							
Urban[a]	0.15***		1.29	0.89	1.63**	0.82	1.22
Age	1.02***		0.99**	0.97***	0.96***	1.01	1.06***
Years of Education	1.01		1.03	0.96	1.04	0.97	0.98
Speaks English[b]	1.19		1.05	0.79	1.09	0.8	0.93
Education of Father of Household head	1.02		1.05**	1.02	1.01	0.98	0.98
Gender[c]	0.31***		0.97	0.94	1.19	0.36***	0.08***
Dummy for Caste Affiliation (Base: General category)							
Other Backward Caste	0.83		0.8	0.99	0.82	0.62**	0.79
SC/ST	0.62**		0.85	1.41	0.94	0.62	0.70*
Religion[d]	1.28		0.69*	1.18	1.05	1.40**	1.23
Marital Status[e]	0.39**		1.75***	0.93	0.65	0.34***	0.15***
Assets	0.96***		1.05**	0.91***	1.04	1.08***	1.02
Member of Employee Union/Business Group[f]	1.79		1.19	1.04	0.89	1.38	0.79
Member of SHG[f]	1.86*		0.87	1.26	0.5	0.76	0.9
Member of Savings group[f]	0.82		1.41	0.97	1.65	1.16	1.02
Dependency ratio	1.22		1.8	0.72	0.58	0.9	1.14
Occupational Group of the father of the household head (Base: Farmers, Service and Production Workers)							
Professional & Executive Workers	0.51		0.9	1.36	2.09	2.96***	1.67
Sales Workers	0.21***		1.26	0.56***	0.66	2.36***	1.26
Clerical, Service & Production Workers	0.47***		1.04	1.11	1.08	2.32***	1.16

Note: [a] Urban is equal to one if the individual resides in an urban location, zero otherwise;

[b] Speaks English equals one if the individual can converse in English, zero otherwise;

[c] Gender is equal to one if male, zero otherwise;

Table 6: Mobility and individual characteristics							
Status of Departure	**Status of Destination**						
	Farm worker	**OAW**	**Employer**	**Casual Worker**	**Regular Worker**	**Unpaid Family Worker**	**UNLF & Student**
Casual Worker							
Urban[a]	0.15***	1.35**	0.99		1.64***	1.71**	1.26
Age	1.03***	1.02***	1.02**		1.01	1.01	1.08***
Years of Education	1.03***	1.06***	1.08***		1.16***	1.01	1.03***
Speaks English[b]	0.9	1.08	0.8		1.40***	1.32	0.99
Education of Father of Household head	1.01	1.01	0.99		1.02**	1.01	1.04
Gender[c]	0.49***	1.56**	4.14***		0.83	0.41***	0.14***
Dummy for Caste Affiliation (Base: General category)							
Other Backward Caste	0.77**	0.89	0.66**		0.81	1.18	0.73**
SC/ST	0.54***	0.62***	0.58**		0.65***	0.48**	0.67***
Religion[d]	1.22	0.87	0.87		1.50***	0.77	1.06
Marital Status[e]	0.84*	1.13	0.94		0.99	0.56*	0.18***
Assets	1.05***	1.11***	1.20***		1.12***	1.10***	1.09***
Member of Employee Union/Business Group[f]	0.56***	0.8	1.66*		1.56***	1.43	1.68***
Member of SHG[f]	0.91	0.68*	0.59*		0.93	0.52**	0.77*
Member of Savings group[f]	1.04	0.92	0.98		0.96	1.08	0.86*
Dependency ratio	1.38	1.09	2.24		1.61*	0.25**	1.22

Occupational Group of the father of the household head (Base: Farmers, Service and Production Workers)							
Professional & Executive Workers	0.62**	1.37**	1.52		1.01	1.78	0.99
Sales Workers	0.83	2.27***	2.83***		1.02	2.17*	1.25
Clerical, Service & Production Workers	0.39***	1.03	1.38		1.07	1.76	1.07
Regular Worker							
Urban[a]	0.12***	1.28	1.08	0.95		1.08	1.19
Age	1.11***	1.01	0.98	0.99		1.01	1.16***
Years of Education	0.94*	0.94*	0.93**	0.89***		1.04	0.99
Speaks English[b]	0.68	0.94	0.64	1.04		0.33***	0.85
Education of Father of Household head	0.98	1.01	1.02	1.04		1.06	0.95***
Gender[c]	0.62**	4.00***	7.95**	1.75***		0.53	0.23***
Dummy for Caste Affiliation (Base: General category)							
Other Backward Caste	0.52**	1.27	1.66	0.91		2.36*	0.84
SC/ST	0.67	0.44***	0.62	0.54***		1.65	0.70**
Religion[d]	0.86	0.62	1.01	0.78**		1.48	0.73
Marital Status[e]	0.20***	1.94	1.02	0.57		0.13***	0.16***
Assets	0.97	0.99	1.05	0.89***		1.13***	1.02
Member of Employee Union/Business Group[f]	0.62	0.7	0.41*	0.60*		0.4	0.78*
Member of SHG[f]	1.12	1.28	0.51	1.25		0.27	1.55*
Member of Savings group[f]	2.25***	1.7	1.46	1.11		1.01	1.14
Dependency ratio	3.76***	0.63	0.99	2.12		4.89	1.19
Occupational Group of the father of the household head (Base: Farmers, Service and Production Workers)							
Professional & Executive Workers	0.65	0.48**	0.62	0.64*		0.64	0.94
Sales Workers	1.13	0.89	0.94	1.3		2.25	1.22
Clerical, Service & Production Workers	0.49**	0.89	0.73	1.11		0.79	1.25
Note: See Notes in Table 5.							
Source: Authors' calculations based on IHDS data.							

Table 7: Fixed Effects Regression results				
Fixed Effects Regression Coefficients	Column 1	Column 2	Column 3	Column 4
	Reference Categories			
	OAW	Employer	Casual Worker	Regular Worker
OAW		-12.43***	5.78***	3.63*
Employer	12.43***		18.21***	16.06***
Casual Worker	-5.78***	-18.21***		-2.15**
Regular Worker	-3.63*	-16.06***	2.15**	

Note: Additional control variables included in the model include age, years of education, education of the father of household head, dummy for urban residence, dummies for knowledge of computer and English usage, occupational dummies, industry dummies as well as dummies for household headship and being married.

Significance levels: *** 1%; ** 5%; and * 10%.

Estimated coefficients are calculated using sampling weights (2004-05)

Estimations have been conducted using real earnings at 2004-05 price levels.

Standard errors are clustered by 34 state regions.

The different columns report coefficients for separate regressions with different reference categories.

Source: Authors' calculations based on IHDS data

ADDITIONAL TABLES

Additional Table A1: Multiple Job Holdings across Sectors					
	Single Job	F and S	F and W	S and W	FSW
2004-05					
Farm Worker	87.19	1.56	10.83		0.42
Own Account Worker	65.76	26.37		4.11	3.76
Employer	76.84	20.28		1.93	0.95
Casual Worker	60.11		37.40	1.12	1.36
Regular Worker	81.07		17.38	1.11	0.44
Unpaid Family Worker	77.98	19.33		1.64	1.05
Total					
2011-12					
Farm Worker	85.46	1.57	12.61		0.37
Own Account Worker	66.77	23.40		4.61	5.22
Employer	77.59	18.19		1.79	2.43
Casual Worker	56.83		41.06	1.11	1.00
Regular Worker	80.91		17.32	1.12	0.65
Unpaid Family Worker	73.68		21.82	1.46	3.03
Total					

Notes: Table shows the share of workers employed across multiple job holding groups for each sector.

F, S and W denotes Farm Work, Self-Employment and Wage Employment respectively.

Row totals sum up to 100.

Source: Authors' calculations based on IHDS data.

Additional Table A2: Mobility and individual characteristics							
Status of Departure	**Status of Destination**						
	Farm worker	**OAW**	**Employer**	**Casual Worker**	**Regular Worker**	**Unpaid Family Worker**	**UNLF & Student**
Employer							
Urban[a]	0.17***	1.37		1.11	1.84**	0.96	1.90**
Age	1.02	1.01		0.98	0.98	1.01	1.04***
Years of Education	0.97	0.97		0.86***	1.02	0.89***	0.87***
Speaks English[b]	0.48	0.49***		0.72	1.19	0.78	0.86
Education of Father of Household head	0.99	1.01		1.03	1.05*	1.04	1.11***
Gender[c]	0.09*	0.82		0.46	3.81	0.07**	0.05***
Dummy for Caste Affiliation (Base: General category)							
Other Backward Caste	1.02	0.96		1.08	1.35	1.91***	0.93
SC/ST	4.60***	3.53***		6.27***	2.76	2.02	2.59***
Religion[d]	1.63	2.54***		1.01	1.14	1.11	1.33
Marital Status[e]	0.33**	0.58		0.43**	0.29**	0.18**	0.43
Assets	0.91***	0.96		0.90**	0.91	1.02	1.01
Member of Employee Union/Business Group[f]	5.16***	1.19		0.99	1.8	1.43	0.81
Member of SHG[f]	1.18	1.05		0.52**	1.24	0.27	0.15***
Member of Savings group[f]	0.7	0.52*		0.98	0.51	0.51	1.38

Dependency ratio	2.49	1.35		0.55	3	0.6	0.18***
Occupational Group of the father of the household head (Base: Farmers, Service and Production Workers)							
Professional & Executive Workers	0.27	0.49**		0.39**	0.49	0.57	0.26***
Sales Workers	0.25**	0.74		0.56*	0.29***	1.32	0.51***
Clerical, Service & Production Workers	0.23***	0.57**		0.62*	0.56	0.43**	0.39***
Unpaid Family Worker							
Urban[a]	0.12***	0.76	0.87	0.73	0.87		0.94
Age	1.03***	0.99	1.01	0.99	0.98		1.05***
Years of Education	1.01	0.98	1.08	0.97*	1.19***		0.97
Speaks English[b]	0.85	1.18	0.94	0.94	1.51		1.58**
Education of Father of Household head	1.02	0.99	1.04	0.96	0.99		1.03
Gender[c]	0.59	3.19***	6.60***	2.96***	1.68		0.31***
Dummy for Caste Affiliation (Base: General category)							
Other Backward Caste	0.48**	0.91	1.36	0.96	0.56		0.77
SC/ST	1.2	1.54	0.54*	2.39*	3.31***		2.06
Religion[d]	1.61	1.18	0.99	0.78	2.15*		1.12
Marital Status[e]	0.86	2.59***	2.13***	1.4	1.5		0.36***
Assets	0.92***	0.95***	1.02	0.86***	0.95		0.94***
Member of Employee Union/Business Group[f]	1.35	0.83	1.1	0.78	0.55		1.51
Member of SHG[f]	2.61**	1.25	0.73	1.52	1.33		0.66
Member of Savings group[f]	0.92	1.62	2.80***	2.51**	1.82		1.96**
Dependency ratio	5.24**	0.49	3.94	2.06	2.77		1.68
Occupational Group of the father of the household head (Base: Farmers, Service and Production Workers)							

Professional & Executive Workers	0.29***	1.5	0.66	0.72	1.39		0.6
Sales Workers	0.14***	1.39*	0.89	0.30***	0.37**		0.82
Clerical, Service & Production Workers	0.46***	1.12	1.13	0.81	1.22		0.44***

Note: See Notes in Table 5.

Source: Authors' calculations based on IHDS data.

Additional Table A3: Mobility and individual characteristics							
	Status of Destination						
Status of Departure	**Farm worker**	**OAW**	**Employer**	**Casual Worker**	**Regular Worker**	**Unpaid Family Worker**	**UNLF & Student**
Students, Unemployed and Not in the Labour Force							
Urban[a]	0.14***	1.08	1.03	0.84*	1.44***	0.79***	
Age	1.00**	1.01	0.99**	1.01	0.99*	0.99*	
Years of Education	1.14***	1.23***	1.32***	1.22***	1.39***	1.14***	
Speaks English[b]	0.81**	0.73**	0.59**	0.9	1.11	0.79	
Education of Father of Household head	0.97***	0.93***	0.93***	0.92***	0.96***	0.95***	
Gender[c]	1.33***	6.75***	19.72***	3.21***	3.98***	2.14***	
Dummy for Caste Affiliation (Base: General category)							
Other Backward Caste	1.12	1.37**	0.99	1.37***	1.14	1.32***	
SC/ST	0.97	0.92	0.89	2.03***	1.73***	0.97	
Religion[d]	1.06	0.83*	0.75	0.62***	0.92	0.83*	
Marital Status[e]	2.17***	4.80***	6.39***	3.19***	1.77***	1.43***	
Assets	0.93***	0.93***	1.06***	0.84***	0.93***	0.99	

Member of Employee Union/Business Group[f]	0.80**	0.91	0.85	1.38	1.17	0.94	
Member of SHG[f]	1.05	0.91	0.35**	0.98	1.1	0.57**	
Member of Savings group[f]	0.96	1.17	0.96	1.01	0.82	1.02	
Dependency ratio	0.19***	0.13***	0.11***	0.05***	0.12***	0.08***	
Occupational Group of the father of the household head (Base: Farmers, Service and Production Workers)							
Professional & Executive Workers	0.84	2.01***	1.15	1.27	1.45***	1.74***	
Sales Workers	0.52***	2.48***	2.09***	1.02	0.9	3.09***	
Clerical, Service & Production Workers	0.59***	1.76***	1.23	1.27***	1.35**	1.89***	
Note: See Notes in Table 5.							
Source: Authors' calculations based on IHDS data.							

Additional Table A4: Mobility and poverty							
	Status of Destination						
Status of Departure	Farm worker	OAW	Employer	Casual Worker	Regular Worker	Unpaid Family Worker	UNLF & Student
Farm worker							
Household Poor (2005)	0.33	0.30	0.13	0.46	0.26	0.33	0.31
Household Poor (2011)	0.17	0.16	0.02	0.31	0.13	0.13	0.22
OAW							
Household Poor (2005)	0.29	0.28	0.17	0.34	0.17	0.23	0.27
Household Poor (2011)	0.19	0.13	0.04	0.21	0.09	0.11	0.17
Employer							
Household Poor (2005)	0.17	0.11	0.09	0.14	0.11	0.08	0.11

Household Poor (2011)	0.16	0.08	0.04	0.18	0.09	0.10	0.08
Casual Worker							
Household Poor (2005)	0.53	0.45	0.31	0.49	0.29	0.48	0.40
Household Poor (2011)	0.26	0.14	0.04	0.28	0.11	0.20	0.22
Regular Worker							
Household Poor (2005)	0.25	0.13	0.10	0.25	0.09	0.14	0.10
Household Poor (2011)	0.11	0.05	0	0.16	0.04	0.06	0.07
Unpaid Family Worker							
Household Poor (2005)	0.39	0.24	0.19	0.35	0.26	0.16	0.23
Household Poor (2011)	0.23	0.14	0.12	0.23	0.15	0.15	0.19
Students, Unemployed and Not in the Labour Force							
Household Poor (2005)	0.47	0.33	0.13	0.50	0.24	0.36	0.37
Household Poor (2011)	0.21	0.15	0.04	0.23	0.08	0.12	0.20

Notes: The numbers reported are the shares of poor individuals under different groups.

See Notes in Table 1.

Source: Authors' calculations based on IHDS data.

Additional Table A5: Persistence in labour market status and individual characteristics							
	Farm worker	**OAW**	**Employer**	**Casual Worker**	**Regular Worker**	**Unpaid Family Worker**	**UNLF & Student**
Urban[a]	0.47***	1.25	0.86	1.1	1.14	1.48	2.15***
Age	0.99*	0.99	0.99	0.96***	0.94***	0.98**	1.01
Years of Education	1.01	1.02	1.08**	0.94***	1.07***	1.01	0.84***
Speaks English[b]	0.88	0.99	1.45	0.79***	1.18*	0.81	1.05
Education of Father of Household head	1.02**	0.99	0.97*	0.98*	0.99	0.99	1.05***

Gender[c]	0.99	2.70***	4.12	2.41***	1.30*	0.81	0.50***
Dummy for Caste Affiliation (Base: General category)							
Other Backward Caste	0.99	1.19	0.91	1.27***	1.11	1.22	0.84***
SC/ST	0.68***	1.06	0.27***	1.66***	1.65***	0.57	0.80***
Religion[d]	0.99	0.87	0.66**	0.87	1.29**	0.89	1.12*
Marital Status[e]	2.64***	2.07***	2.80***	1.64***	3.16***	0.85	0.47***
Assets	1.02**	1.02*	1.06	0.92***	1.05***	1.08***	1.10***
Member of Employee Union/Business Group[f]	0.9	0.88	0.69	0.87*	1.52**	0.93	0.96
Member of SHG[f]	0.92	0.89	1.34	1.22**	0.76*	0.89	1.03
Member of Savings group[f]	0.99	0.93	1.49	1.05	0.76**	0.52***	1.03
Dependency ratio	0.48***	0.85	0.93	0.70**	0.39***	0.55	7.12***
Occupational Group of the father of the household head (Base: Farmers, Service and Production Workers)							
Professional & Executive Workers	0.79*	0.81	2.48***	1.12	1.41***	1.31	0.96
Sales Workers	0.50***	1.29	1.71***	0.83	0.83	1.51***	1.09
Clerical, Service & Production Workers	0.67***	1.01	2.10***	1.28***	1.03	1.39*	1.11*
Note: See Notes in Table 5.							
Source: Authors' calculations based on IHDS data.							

Additional Table A6: Mobility and earnings change				
	Terminal Sector			
Initial Sector	**OAW**	**Employer**	**Casual Worker**	**Regular Worker**
OAW	14.48	47.89	-16.29	3.02

Employer	-5.03	22.90	-85.63	-12.68
Casual Worker	52.13	71.88	33.30	34.17
Regular Worker	7.57	61.07	22.40	22.40

Notes: See Notes in Table 2.

 The numbers reported are percentage change in real earnings associated with change in employment status.

Source: Authors' calculations based on IHDS data.

Additional Table A7: Multiple job holding among movers between farm and casual work				
	Farm work to casual work		Casual work to farm work	
	2004-05	2011-12	2004-05	2011-12
Single Job	76.14	29.17	30.97	61.42
F & S	1.55			1.56
F & W	21.33	68.79	65.55	36.10
S & W		0.43	0.89	
F, S & W	0.98	1.61	2.58	0.92

Notes: See Notes in Additional Table A1.

Column Totals add to 100.

Source: Authors calculations based on IHDS data.