



Moving up or down the Job Ladder in India: Examining Informality- Formality Transitions

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Background and Motivation

- One of the most salient features of the economies of developing countries is the existence of a large informal sector.
- Among developing countries, India has the largest number of informal workers, and has a very high proportion of informal workers in the total workforce, at 83.5 per cent in 2017-18 (NSSO 2019).
- The persistence of informality in India has been a puzzling feature of India's economic development pathway, given the rapid growth of the Indian economy since the early 1990s (Raj and Sen 2016, Bardhan 2018).
- Further, the persistence of informality in India makes the country “atypical” among fast growing Asian economies, most of which having seen a decline in size of the informal sector in recent decades (McCaig and Pavcnik 2018).

Duality in Informal Employment

- The earlier literature on the informal economy viewed the latter as a ‘monolithic’ bloc where all those without access to the formal sector find themselves in (Ranis and Stewart 1999; La Porta and Shleifer 2014).
- More recent studies have highlighted the heterogeneous nature of the informal economy, recognising the inherent duality in both self-employment and wage employment (Chaudhuri and Mukhopadhyay, 2010; Gunther and Launov, 2012; Harati, 2013; Kanbur, 2017; Canelas, 2019).
- A growing literature on informal labour markets in developing countries characterize them as two-tiered, with informal workers either being in “lower-tier” or “upper tier” self/wage employment (Fields 2005, 2019).
- Several studies have documented the heterogeneous nature of India’s labour market, and that both the self-employed and the wage employed in informal work have both “upper tier” and “lower tier” segments in India (see in particular, NCEUS 2007 and Kannan and Papola 2007).

Informality in India

- There is a large existing scholarship on the informal sector in India, which have looked at both self-employment and wage employment.
- Studies focusing on self-employment have examined the productivity implications of household and non-household enterprises (Marjit and Kar, 2011; Kathuria et al. 2013; Mazumdar and Sarkar, 2013; Raj and Sen, 2016; Banerjee et al. 2016; Raj and Sen, 2020).
- Studies focusing on wage employment have tried to understand whether government regulations (such as labour laws) can explain why a formal firm may use informal workers instead of formal workers, the relationship between wage employment and poverty, and the conditions of work among informal wage workers (Unni, 1998; Unni and Rani, 2003; Besley and Burgess 2004; NCEUS 2009; Saha et al. 2013; Barnes, 2015; Kathuria and Raj, 2016).
- However, these studies do not examine the likelihood that workers can transition from one work status to another, as they mostly use repeated cross-sectional surveys of the National Sample Survey Organisation.

Our Contribution

- We ask: how likely is it for informal workers to transition to formal jobs, and are reverse transitions possible?
- Does mobility patterns differ between self-employed and wage workers?
- Does “lower-tier” informal work provide a pathway to a better paid job?
- Or is it a dead end activity, with very limited possibility for upward mobility?
- How are education, caste, gender and location of worker associated with mobility?
- And what are the implications of transitions in informal and formal work status for income gains or losses?
- **We examine the patterns, correlates and consequences of worker transition, both from informal to formal jobs and from lower-tier to upper-tier informal jobs using an unique longitudinal dataset for over 37,000 workers drawn from the Indian Human Development Surveys of 2004-2005 and 2011-2012.**

Heterogeneity in Informal Employment

- The early literature on modelling labour markets in developing countries characterized the dualism inherent in these labour markets in terms of two formality statuses– formal employment, which offers relatively attractive wages and other terms and conditions of employment, and informal employment, which offers relatively unattractive pay and conditions of employment (Harris and Todaro 1970).
- More recent literature has pointed out the multi-layered nature of labour markets in developing countries, arguing that two sector models do not seem to be consistent with the empirical realities of labour markets in developing countries (Fields 2005, 2019).
- In particular, there are two distinct characteristics of work status that need to be captured in an empirical grounded model of the labour market in developing countries.
- Firstly, workers can either be in **wage employment or self-employment**, which can exist in both formal and informal employment.
- Secondly, informal employment is characterized by its own internal duality, where both wage employed and self-employed workers can be in **upper-tier or lower-tier informal employment** (Fields 1990).

Formal versus Informal Employment

- The 17th International Conference of Labour Statisticians at the ILO has provided a consistent definition of informal employment which has been widely adopted in the literature, and which we follow in our study (see ILO 2018).
- According to this definition, informal employment is understood as work that lacks any type of legal recognition or protection, and where workers do not have secure employment contracts, workers' benefits, social protection or workers' representation.
- This implies that within self-employment, formal self-employed are those enterprises that are registered with national state authorities (for example, with social security, sales or income tax authorities) or contributing to social security, while informal self-employment are those enterprises that are unregistered.
- Within wage employment, formal wage employed are workers who contribute to social security, and informal wage workers are who do not contribute to social security.

Heterogeneity in Informal Employment

- Three Approaches.
- The first approach is to take upper-tier informal employment as being ‘voluntary’ in nature, where workers choose to be in jobs that offer more independence and better earnings and working conditions as compared to working in the formal sector (the so-called ‘exit’ view of informal work, see Maloney 1999, 2004).
- In contrast, lower-tier informal work is ‘involuntary’ and employment of last resort, when individuals cannot find employment in formal or upper-tier informal work (the ‘exclusion’ view of informality, see Fields 2005, 2019).
- A second approach for classifying workers in upper-tier or lower-tier informality is to use outcome-based performance measures—such as earnings, business profits or enterprise productivity—as the sorting criteria (see for example, Grimm et al. 2012, who use a size and productivity criterion to classify informal entrepreneurs as ‘upper-tier’ and ‘lower-tier’).

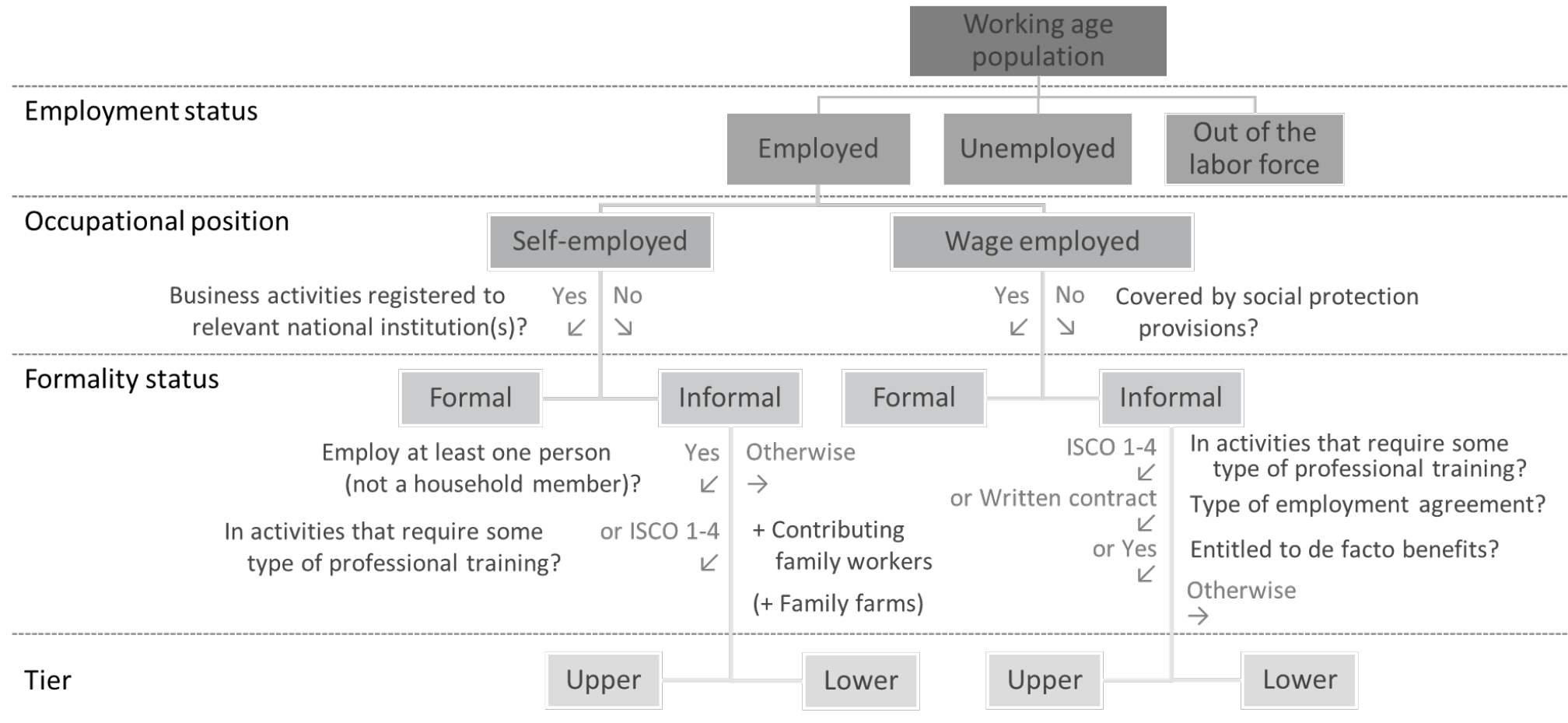
Our Preferred Approach

- We take upper-tier informal work as ‘restricted entry’ employment and lower-tier informal work as ‘free entry’ (Fields 1990).
- In the former case, there are barriers to entry to the job, which could be a certain level of capital if the worker is self-employed or some necessary professional training required for the job if the worker is wage employed.
- In the latter case, by definition, ‘free entry’ employment does not require sizeable accumulation of financial capital or are jobs without any need for prior training.
- The advantage of this approach is that the classification of informal work as upper-tier or lower-tier is undertaken based on the *observable characteristics of the job*, rather than the latent unobserved preferences of workers as in the first approach and outcome measures of job hierarchies as in the second approach.

Categorising Upper Tier and Lower Tier Informal Employment

- We take upper-tier informal self-employment as self-employed workers with unregistered business activities who either employ at least one person (who is not a household member) or are in activities that require some type of professional training (defined as ISCO groups 1–4, covering managers, professionals, technicians, and clerks), while other non-professional own-account workers with unregistered business activities are classified as lower informal (examples of which are street vendors and waste pickers).
- All contributing family workers are classified as lower informal, irrespective of the nature of the enterprise.
- Workers in smallholder agriculture (family farms) would be classified as lower informal but have been excluded from the main analysis presented in this paper.
- Among the wage workers not covered by social protection provisions (who are classified as informal workers, in line with the ILO definition), those in professions that require some type of professional training (ISCO 1–4) are classified as upper informal, as they are ‘restricted entry’.
- In addition, we check whether workers report having a written employment agreement and/or are entitled to de facto benefits such as paid sick or maternity leave.
- The remainder are classified as lower informal.

Work Status Classification



Data Source: A Brief

India Human Development Survey: Nationally representative, multi-topic survey on households and individuals

Two waves: 2004-05 and 2011-12

- ❑ Selection of households using stratified random sampling
- ❑ Information pertaining to the household and the individuals in the household were collected from a knowledgeable member—in most cases, the male head of the household

Advantage:

- 83 percent of the original households were resurveyed in 2011-12
- Balanced panel of 150,983 individuals

Data: Final Sample

- Confined to individuals in the prime working age (15-65 years old)
- focused on workers engaged in non-farm activities and agricultural wage workers in the initial wave of the survey panel as against farmers or those unemployed
- Elimination norms:
 - Eliminated individuals with income above the 99th percentile
 - Dropped individuals with missing values in our variables of interest
 - Final sample with a balanced panel of 37,356 individuals
- **Robustness tests** for the total sample of prime working age population

Worker and Activity Status

- **Defining a worker:**
 - Based on the minimum number of hours they have worked in a year
 - Individuals who have reported to have put in at least 240 hours in a particular activity are counted as being in the workforce
 - Activities constitute wage or salary work, animal care, or working on the household farm or business
 - maintains comparability with the definition used in employment surveys of the National Sample Survey Office of India (more than 30 days)
- **Activity Status:**
 - Main job: the job where the worker has spent maximum hours in the last year

Work Status Classification: Six Mutually Exclusive Categories

Category	Description
Formal wage employees	All wage workers with permanent job contracts are classified as formal wage employees. All permanent workers in India are offered labour law protection and are also entitled to social security benefits.
Upper-tier informal wage employees	Informal wage workers are classified as upper-tier informal either if they work in occupations that require some type of training or if they receive some type of de facto benefits (such as meals or housing) from the employers.
Lower-tier informal wage employees	All remaining informal workers are classified as lower-tier informal.
Formal self-employed	All self-employed workers who are in professions that require a high level of skills (Division 0-1, INCO), or employ ten or more workers are classified as formal self-employed.
Upper-tier informal self-employed	All informal self-employed workers who employ fewer than ten but at least one hired worker are classified as upper-tier informal. These also include workers who employ more than ten workers but operate from home or from a mobile location.
Lower-tier informal self-employed	All informal self-employed workers who employ only household workers are classified as lower-tier informal self-employed. All contributing family workers are also included in this category.

Empirical Strategy: Aggregate Mobility

- **Extent of Mobility and Pattern of Mobility across Work Status**

- Transition Matrices: allow us to follow individuals over time, exploiting the longitudinal dimension of the data
- Employed a simple transition probability matrix and compute the conditional probability as follows:

$$P_{ki} = \Pr(S_t = i | S_{t-1} = k) = \frac{\Pr(S_t = i \cap S_{t-1} = k)}{\Pr(S_{t-1} = k)}$$

- P_{kj} refers to the probability of finding a worker in state j at the end of the period, given that worker was at state k at the beginning of the period.
- Each cell in the matrix represents the probability that a worker is moving from one state to another
- High levels of probability values indicate larger numbers of individuals prefer to stay in their initial work status, indicating high persistence or immobility

Empirical Strategy: Mobility and Individual Characteristics

- **Individual attributes and the probabilities of transitioning between work status**

- Modelled labour market transitions using a multinomial logit model
- Estimated six multinomial logit regressions, one for each status of departure
- The generic form of the model takes the following form:

$$\Pr \frac{(E_{i,t+1} = s)}{(E_{i,t} = n)} = \frac{\exp(W_i' \gamma_{m|n})}{\sum_{l=0}^N \exp(W_i' \gamma_{j|n})}$$

- Coefficients are rarely used for inference in practice, hence marginal effects are computed and reported:

$$\frac{\partial \Pr(E_i = s)}{\partial w_k} = \Pr(E_i = s|W) \cdot \left[\gamma_k^s - \sum_{l=0}^N \gamma_k^l \Pr(E_i = l|W) \right]$$

- The dependent variable is a categorical variable that takes the value '0' if the individual maintains the same work status between 2006 and 2012. For each of the five possible outflows, the dependent variable assumes values '1–5'.
- The vector W includes a set of worker and household attributes, namely, age, gender, social group, marital status, whether head of the household, educational level, and geographical location

Empirical Strategy: Mobility and Individual Characteristics

- **Income Dynamics**

- Welfare implication of transitions: how the transition across different work status affects the earnings levels of workers
- Employed a dynamic income model to probe the association between worker transition and changes in earnings

$$\Delta \ln W_{it} = \alpha_0 + \alpha_1 \ln W_{it-1} + \alpha_2 E_{it-1} + \alpha_3 (E_{it} * E_{it-1}) + \sum_{k>1} \gamma_k X_{it-1} + \epsilon_i$$

$\Delta \ln W_{it}$ is the changes in earnings

$\ln W_{it-1}$ represents the individual's initial log earnings

E_{it-1} stands for individual's work status at the baseline

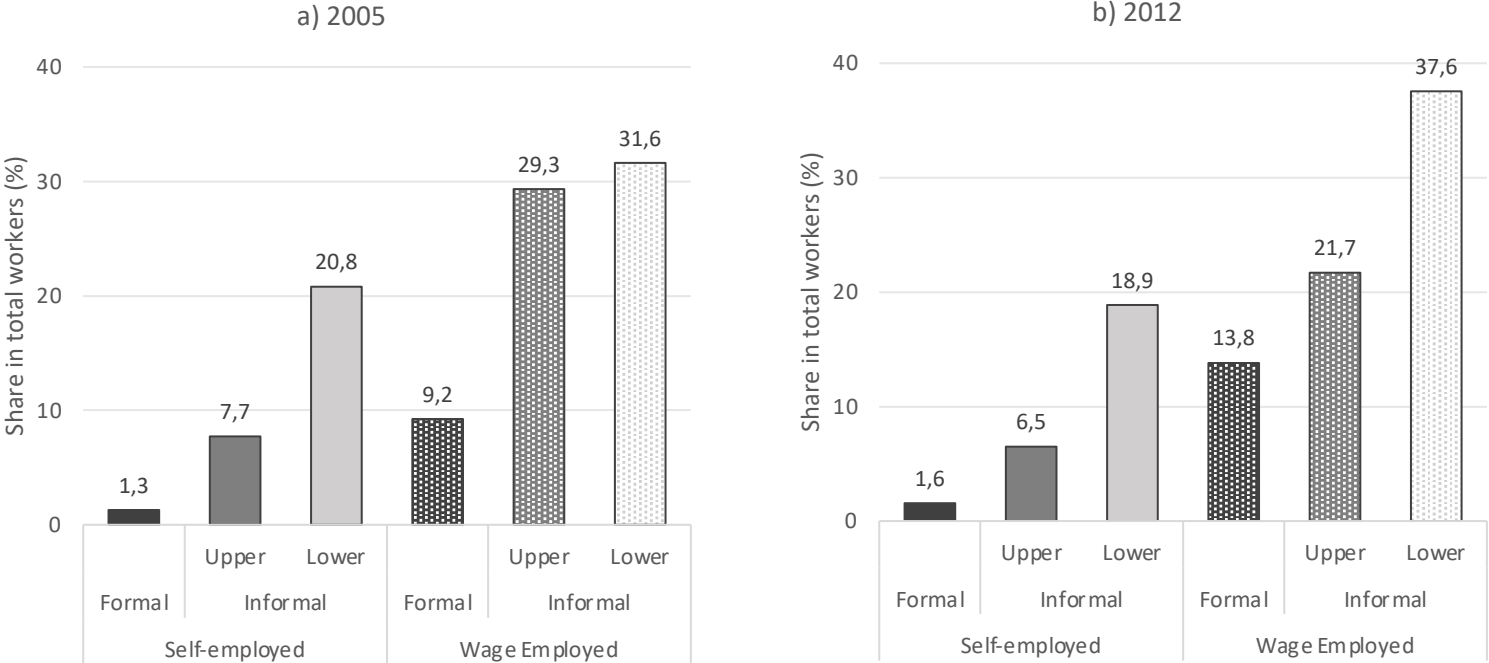
X_{it-1} is the vector of variables representing worker-specific attributes

an interaction term between initial and final work status ($E_{it} \times E_{it-1}$) to understand the income implications of worker mobility

α_2 and α_3 together represents the penalty/premium associated with staying in or transitioning to a different work status

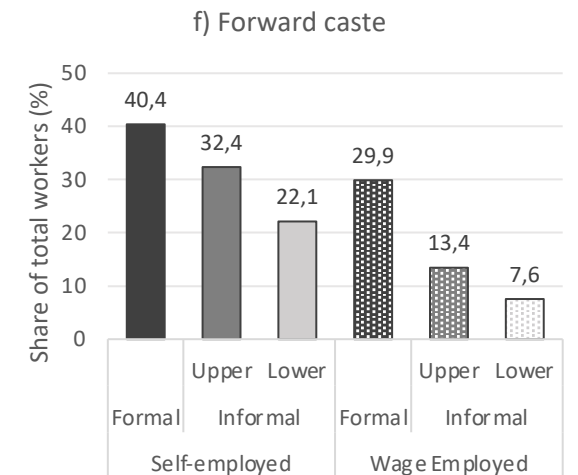
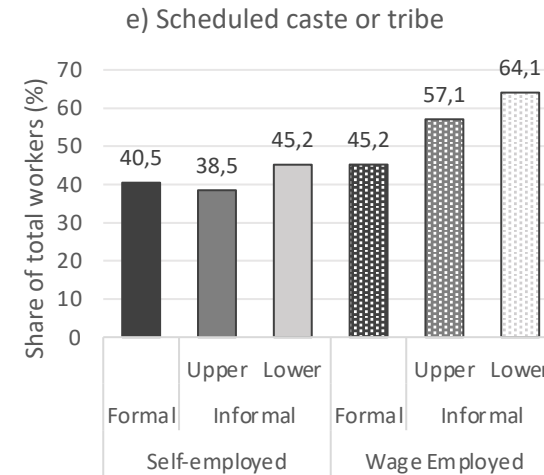
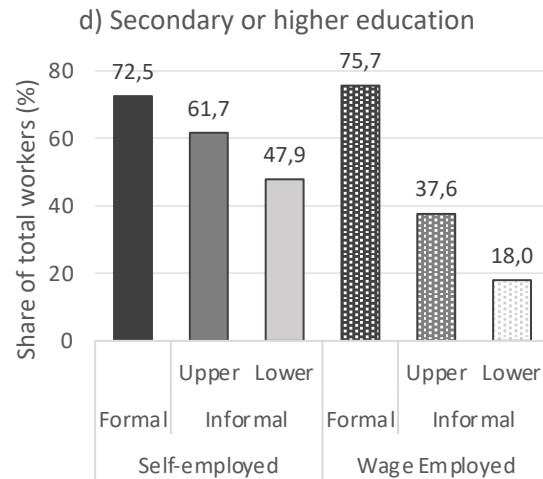
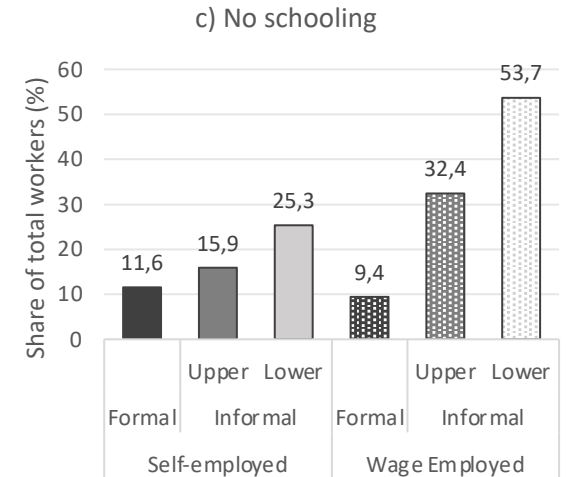
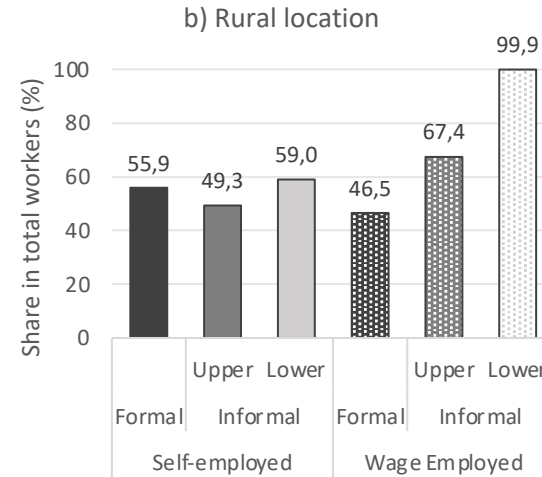
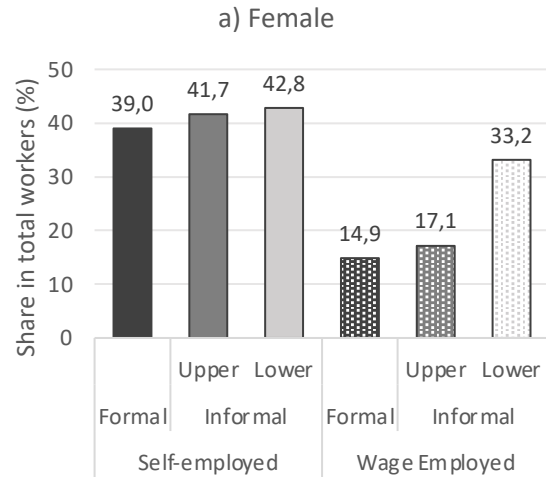
Characteristics of workers in India's multi-tiered labour market

Distribution of Workers by Work Status (in per cent)



Characteristics of workers in India's multi-tiered labour market

Average Worker Characteristics by Work Status (per cent)



Transitions in Informal and Formal Employment: Who moves up or down?

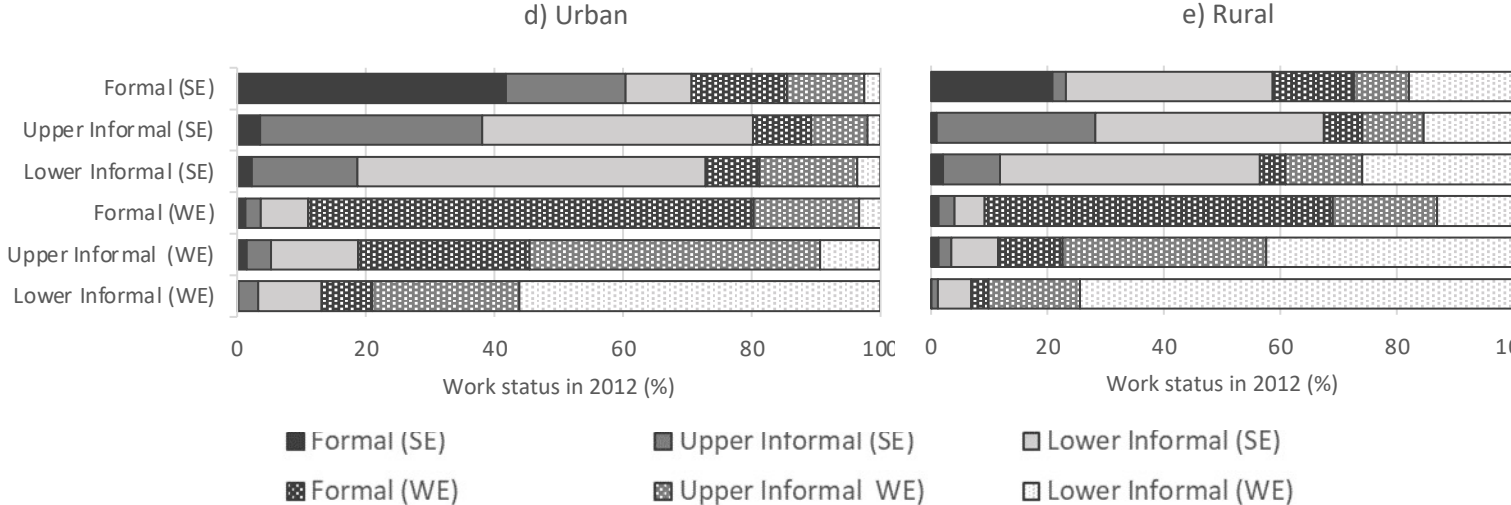


Transitions in Informal and Formal Employment: Who moves up or down?

By Gender

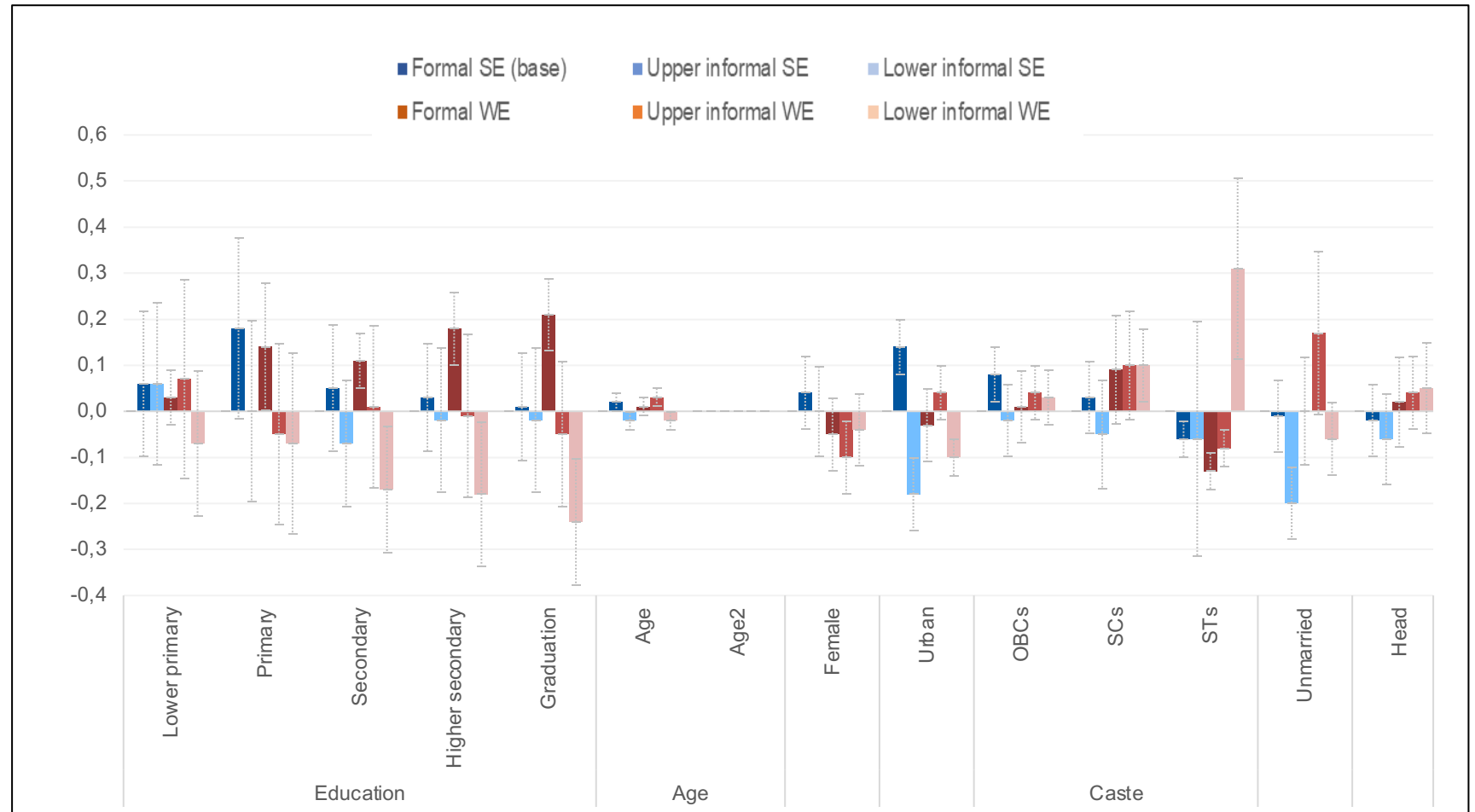


By Location



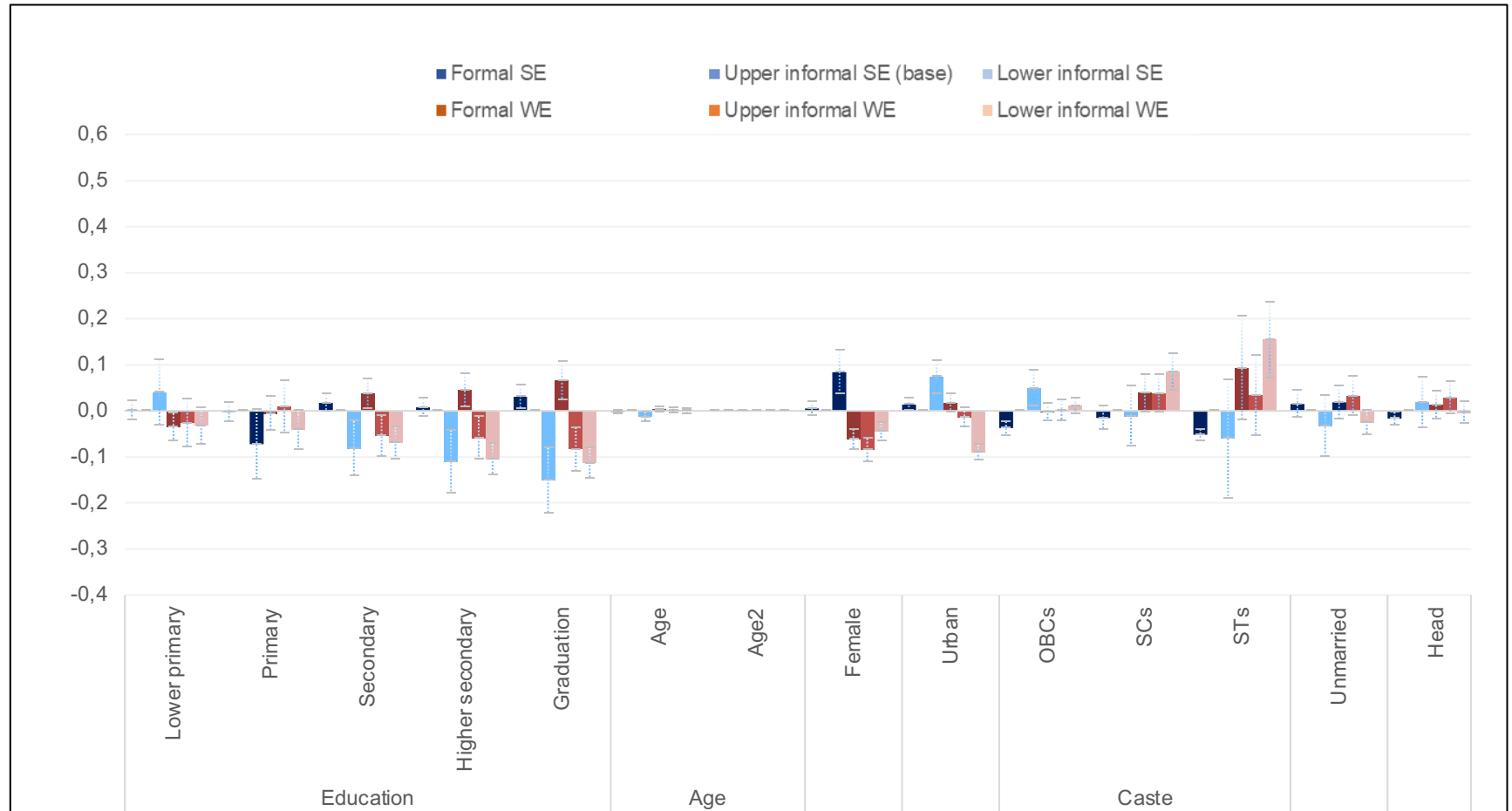
Correlates of worker transition

Transitions from formal self-employment



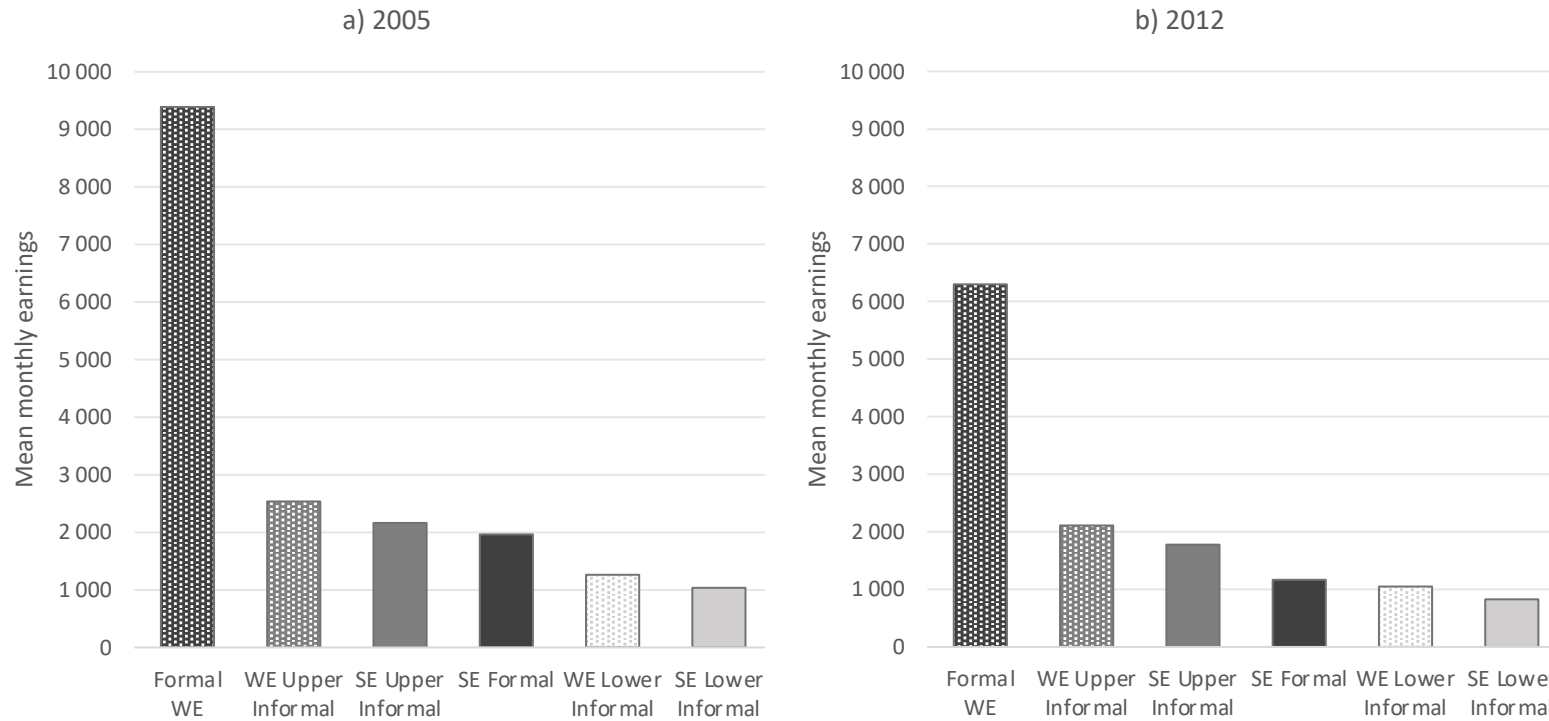
Correlates of worker transition

Transitions from upper informal self-employment



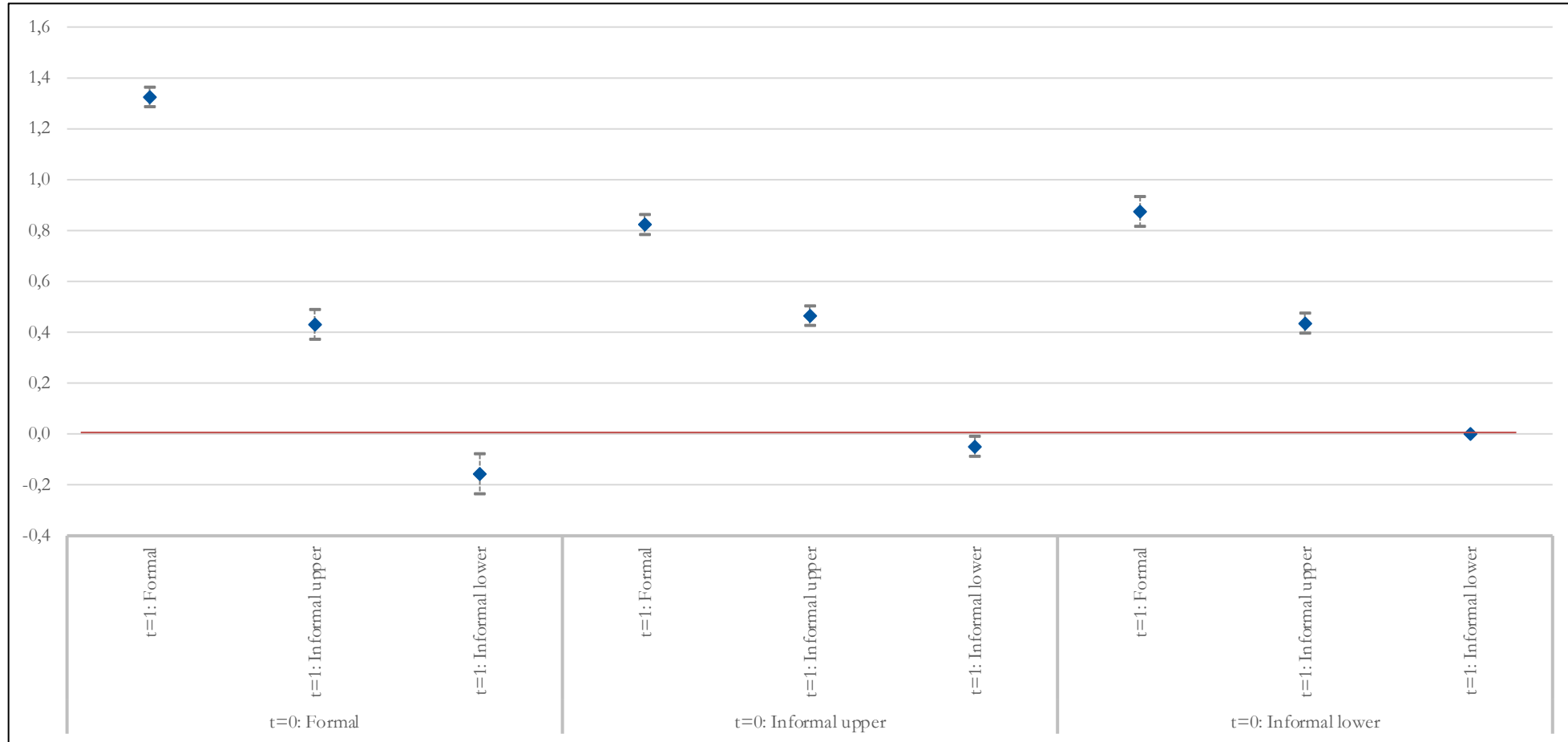
Consequences of worker transition: Income gains and losses

Job ladder: Mean monthly earnings by work status (2004-05 Indian Rupees)



Consequences of worker transition: Income gains and losses

Labour income dynamics



Conclusions - 1

- We find significant worker flows across different labour market states, although with limited entry into formal than informal employment.
- Overall, the transition probabilities suggest relatively more fluidity among self-employed workers than wage workers.
- The findings also point to relatively strong segmentation between wage employment and self-employment.
- Our transition probabilities suggest that workers in formal self-employment are more likely to remain in that state or move into lower-tier self-employment than to move into wage employment.
- We do not find significant movement of workers from informal self-employment to formal self-employment.

Conclusions -2

- Another noteworthy finding is the high persistence within the lower-tier of informal wage employment, with about three-fourth of the workers in this segment not making the transition upwards.
- Our analysis on the correlates of labour market transitions suggests a significant role for education, age, gender, social group and geographical location in shaping mobility patterns.
- Our analysis on the implication of transitions on earnings suggest that the rise in earnings are substantially higher for those who have made the transition to formal status.
- Further, positive income gains are also observed for those who transitioned from lower-tier to upper-tier informality as compared to those who failed to make th
- **Overall, our results suggest that lower-tier informal workers, whether in self or wage employment, have limited upward transition possibilities, and are in a “dead end” work status. e transition.**