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The Informal Labour Market in India: Transitory or Permanent Employment for Migrants?

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ABSTRACT

The Informal Labour Market in India: Transitory or Permanent Employment for Migrants?

This paper studies the characteristics of the workers in the informal economy and whether migrants treat this sector as a temporary location before moving on to the organised or formal sector to improve their life time income and life style. We limit our study to the Indian urban (non-Agricultural) sector and study the characteristics of the household heads that belong to the Informal Sector (Self Employed and Informal Wage Workers) and the Formal Sector. We find that household heads that are less educated, come from the poorer households, lower social groups (castes and religions) are more likely to be in the informal sector. We distinguish between migrants who come from rural areas and urban areas to their present urban location. We find that the longer duration of a rural migrant in the urban area, the lower the probability that the household head would be in the informal wage labour sector.

JEL Classification: 017, J15, J61, J42

Keywords: informal labour markets, migrant, caste, religion

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The Informal Labour Market in India: Transitory or Permanent Employment for Migrants?^{1 2}

P.N. (Raja) Junankar and Abu Shonchoy

1. Introduction

In most developing countries there is a large sector of the economy that is called the informal sector or the unorganised sector. Employment in the informal labour market plays an important role in most developing economies. Very broadly, the informal labour market consists of workers in the informal sector plus casual workers in the formal sector. The informal labour market is a very large part of the agricultural sector, but is also a significant part of the urban sector. There is a difference between employment in the formal sector and the informal sector in terms of the conditions of work, whether workers are subject to government taxes, have access to social security or insurance, casual or contract workers, whether they receive minimum wages or not, etc.

The informal economy is a very important sector of the Indian economy: the National Council of Applied Economic Research estimates that the informal sector -“unorganised sector”- generates about 62 % of GDP, 50 % of national savings and 40 % of national exports, (ILO 2002, p. 30). In terms of employment, the informal economy provides for about 55 % of total employment (ILO 2002, p. 14). Urban areas (especially large cities) attract numerous migrants from both the rural areas and from smaller urban towns and cities in the hope of a better life.

The Indian labour market can be conceived of as a segmented market: a formal sector with workers who have salaried work, with good working conditions, and of course organised business. The informal economy would consist of small self-employed traders and business people, and casual workers in the informal or formal sectors. Some individuals are born into wealthy families who own large businesses and hence are in the formal sector by right of

¹ We are grateful for the provision of data by Desai, Sonalde, Reeve Vanneman, and National Council of Applied Economic Research, New Delhi, India. India Human Development Survey (IHDS), 2005 [Computer File]. ICSPSR22626-v7. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2010-03-25. Doi: 10.3886/ICPSR22626.

² An earlier version of this paper was presented to the Arndt-Corden School, ANU and we thank the participants (in particular, Raghav Jha, Peter Warr, and Robert Sparrow) for their helpful comments. A revised version was presented at the Workshop on Emerging Economies held at the University of New South Wales, 2012. We are grateful to our discussant Shiko Maruyama for constructive comments, and to the participants at the workshop for their helpful comments. The usual disclaimer applies.

birth. Others who are born with parents from the professional classes would almost certainly have education from good schools and universities, and have a network of contacts that would ensure that they would also join the ranks of employment in the formal sector. Some individuals may have built up sufficient assets over time to set up small businesses and hence enter the formal sector. However, most workers in the formal sector enter the formal sector through their educational achievements, or by birth (children of rich people) and through social networks. For someone who comes from a poor background (either in terms of income, or belonging to a socially disadvantaged caste or religion) the only way to enter the formal sector is via education in “good” schools³ or universities. Even with a good education, entry into the formal sector is often based on family connections. The Indian government has for some time had a policy of positive discrimination for the Dalits and as a result they may have a higher probability of finding a job in the formal (Government) sector. Migrants (especially from rural areas) who come into urban areas would likely have to spend time working in the informal sector for some time before they build good networks to enable them to move into the formal sector.

The literature on the role of the informal sector in developing countries has oscillated between treating the informal sector as a backward sector that is holding back economic development to a dynamic sector that is helping to develop the economy rapidly without straining foreign currency balances and with relatively low demands for (real) capital goods, see Mazumdar (1976), Weeks (1975), Bromley (1978), Gerxhani (2004). The informal sector is considered as a pre-capitalist form of production compared to the formal sector that is a profit maximising capitalist sector. There is a large literature on rural-urban migration (see, Harris and Todaro, 1970) that considers migrants arriving in the city and initially finding work in the informal sector and then moving on to better paid work in the formal sector. Fields (1975) developed an early model of the informal sector as a “way station” for line up for a formal job in urban areas (De Mel et al. 2010) which has been followed by others. This view of the informal sector as a temporary abode for migrants has been disputed (amongst others) by Mazumdar (1976). The debate has also ranged over whether informal sector workers are living in poor conditions with low incomes, or whether some of the informal sector workers are there out of choice and have a comfortable life, see Meng (2001). Some

³ A “good” school would almost certainly be an established private school.

individuals may have employment in the formal sector and work in the informal sector as well.

Given the set-up of the urban labour market in India, some of the important issues to investigate are whether (1) individuals who are informal sector workers are migrants; whether migrants move out of the informal sector into the formal sector after a few years; (2) whether they are from disadvantaged social and ethnic groups who do not have social networks to enter the formal sector and finally, (3) whether those with low levels of education and skills are unable to enter formal sector employment and have to find low paid work in the informal sector.

This paper is interested in studying the characteristics of the workers in the informal economy and whether migrants treat this sector as a permanent base or only as a temporary location before moving on to the organised or formal sector to improve their life time income and life style. We limit our study to the Indian urban (non-agricultural) sector and study the characteristics of the household heads that belong to the Informal Sector (self-employed and informal wage workers) and the Formal Sector. We find that members who come from the lower social groups (castes and religions) are more likely to be in the informal sector. We distinguish between migrants who come from rural areas and urban areas to their present urban location. We find that the longer duration of a rural migrant in the urban area, the lower the probability that the household head would be in the informal sector.

The following sections begin by clarifying the definition of informal labour markets and briefly reviewing the literature in Section 2; Section 3 provides a detailed discussion of the properties of the urban informal sector in India; Section 4 discusses the lexicographic preferences of people over formal sector, self-employment, and informal wage labour; Section 5 sets up an econometric model for estimating the probability of working in the informal sector and provides some results while Section 6 provides results using a multivariate logit model; Section 7 concludes with a summary of the results. In general, we find that the longer the duration of a migrant in the urban sector the less likely s/he is to work in the informal sector.

2. The Informal Labour Market: Definitions and a review of some earlier studies

In the developing country context, the informal sector is sometimes defined in terms of the activities of the enterprises (ILO, 1972) and sometimes in terms of the kind of work done by individuals as employees or as self-employed people (Hart, 1973).

In 1972 the ILO characterised the informal sector as:

- (a) Ease of entry
- (b) Reliance on indigenous resources
- (c) Family ownership of enterprise
- (d) Small scale of operation, often defined in terms of hired workers less than (say) ten
- (e) Labour-intensive methods of production and adapted technology
- (f) Skills acquired outside the formal school system
- (g) Unregulated and competitive markets

Whereas the formal sector was characterised by:

- (a) Difficult entry
- (b) Frequent reliance on overseas resources
- (c) Corporate ownership
- (d) Large scale of operation
- (e) Capital-intensive and often imported technology
- (f) Formally acquired skills, often expatriate
- (g) Protected markets (through tariffs, quotas, and licences)

Hart (1973) discussed the informal sector in terms of the conditions of work of the individuals and whether they worked for wages with good conditions or informally as self-employed workers. Informal activities included:

- (a) Farming, market gardening, self employed artisans, shoe makers, tailors, etc.
- (b) Working in construction, housing, road building
- (c) Small scale distribution, e.g. petty traders, street hawkers, caterers in food and drink, etc.
- (d) Other services, e.g. barbers, shoe-shiners etc.
- (e) Beggars
- (f) Illegal activities like drug pushing

Formal sector income earning activities included:

- (a) Public sector wage earners
- (b) Private sector wage earners (on permanent contracts, not casual workers)

Sengupta (2009, p. 3) defines the informal economy thus:

Informal Sector: The unorganised sector consists of all unincorporated private enterprises owned by individuals or households engaged in the sale and production of goods and services operated on a proprietary or partnership basis and with less than ten total workers.

Informal worker/employment: Unorganised workers consist of those working in the unorganised sector or households, excluding regular workers with social security benefits provided by employers and the workers in the formal sector without any employment and social security benefits provided by employers.

Informal economy: The informal sector and its workers plus the informal workers in the formal sector constitute the informal economy.

3. The Indian Informal Labour Market: Some Background Information

A recent Report of the National Commission for Enterprises in the Unorganised Sector by the Government of India (Sengupta 2009) finds that 86% of the total employment in 2004-2005 was in the informal sector. Further, the agricultural sector consists almost entirely of informal workers. The non-agricultural workers in the informal sector were 36.5 % of the total, most of whom were self-employed. From 1999-2000 to 2004-2005 most of the increase in employment in the formal sector was of informal workers (Sengupta 2009, p.14). The NSSO (2012, p ii) document finds that in 2009-2010 in the non-agriculture sector, nearly 71 % of the workers in rural areas and 67 % in the urban areas worked in the informal sector. It finds that the informal sector activities are concentrated mainly in the manufacturing, construction, wholesale and retail trades, and transport, storage and communication industries.

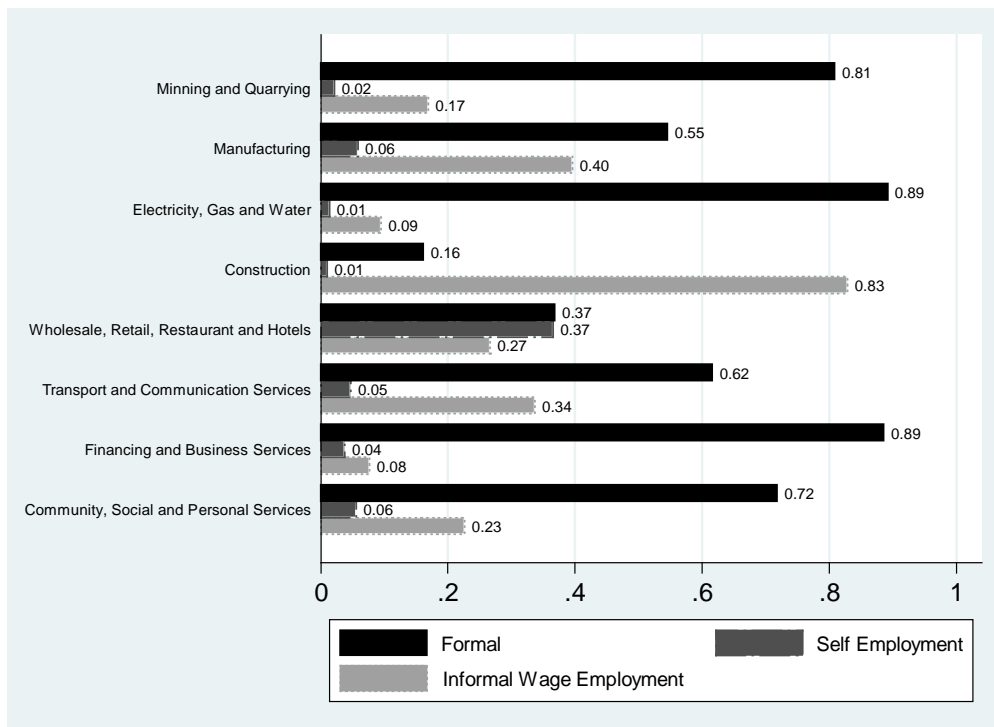
In our study we are using data from the India Human Development Survey (IHDS) 2005, conducted by the Inter-university Consortium for Political and Social Research, Ann Arbor, Michigan, USA. The survey is a nationally representative, multi-topic survey of 41,554 households in 1,503 villages and 971 urban neighbourhoods across India. The data set has detailed information on household employment by industry and occupation, and detailed

information about household characteristics including age, education, ethnicity, religion, and migration status. In this study we have limited our analysis to the informal labour markets in the urban sector who are not engaged in any agricultural activities.

Our data set consists of 12,056 heads of households for whom we had data on their age, education, marital status, gender, religion, caste, income source, migration status and years since migration to urban sector, slum dwelling, and assets, etc.

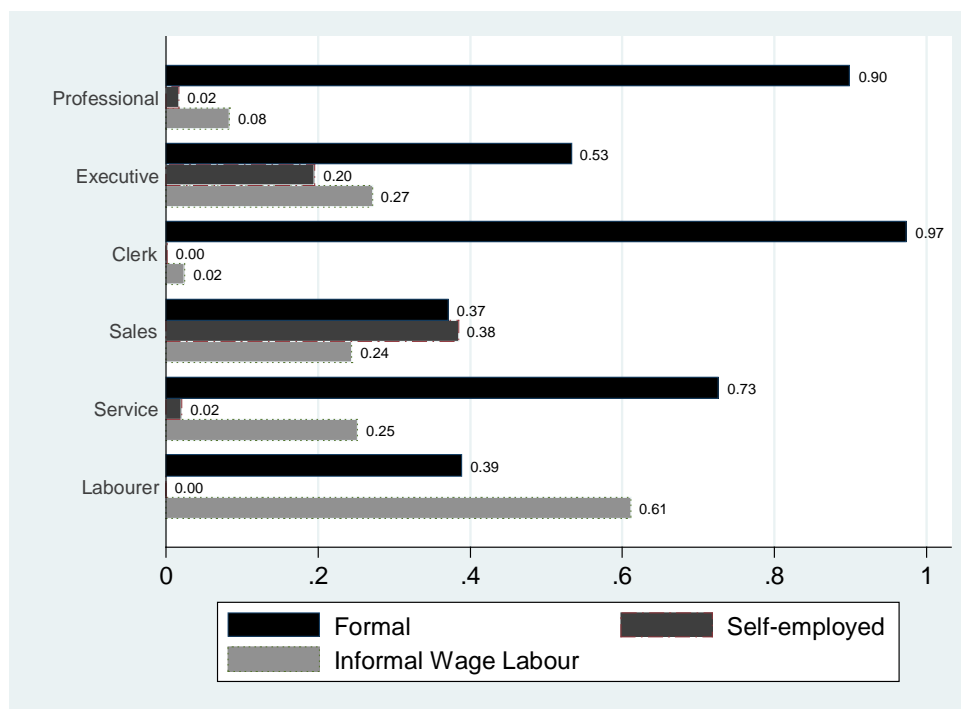
We define the Urban Informal Sector as artisans, petty traders, small business (who do not hire any labour), and non-agricultural casual workers in the Informal or Formal Sectors. The Informal Sector consists of the self-employed and informal wage labour. We define Self-Employment as petty traders who do not hire any workers and those in the organised trade/business category who do not hire any workers. Note that this is a stricter definition than that suggested by, for example, Sengupta (2009). The Informal Wage Labour category covers those who are in the Informal Sector but are not self-employed, that is, the artisans, and non-agricultural labour who are casually employed. The Formal Sector consists of salaried employment, professionals, and organised trade/business who hire workers. In our study we are limiting our analysis to only Heads of Household.

Figure 1: Distribution of Employment over Industries



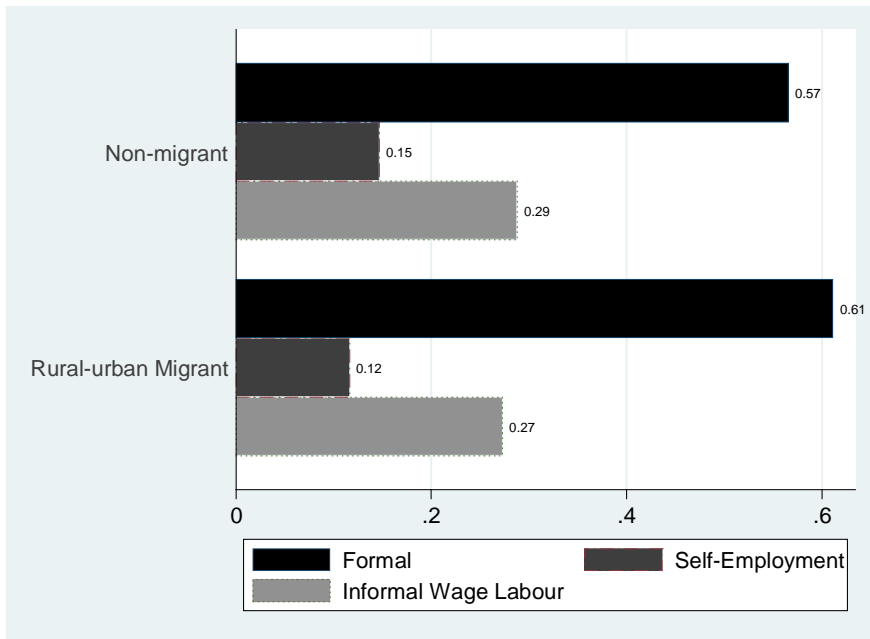
It is interesting to notice the Industry and Occupational distribution of the Formal and Informal Sectors of the economy for our sample data. Most of the Informal Wage Labour is in Manufacturing, Construction, Wholesale, Retail trades, Restaurants, and Hotels, and in Community, Social and Personal Services. Self-Employment is concentrated (not surprisingly) in the Wholesale, Retail trades, Restaurants, and Hotels. Informal Wage Labour is concentrated in occupations: Production and Related Workers, Transport Equipment Operators and Labourers (presumably the unskilled workers).

Figure 2: Distribution of Households over Occupations



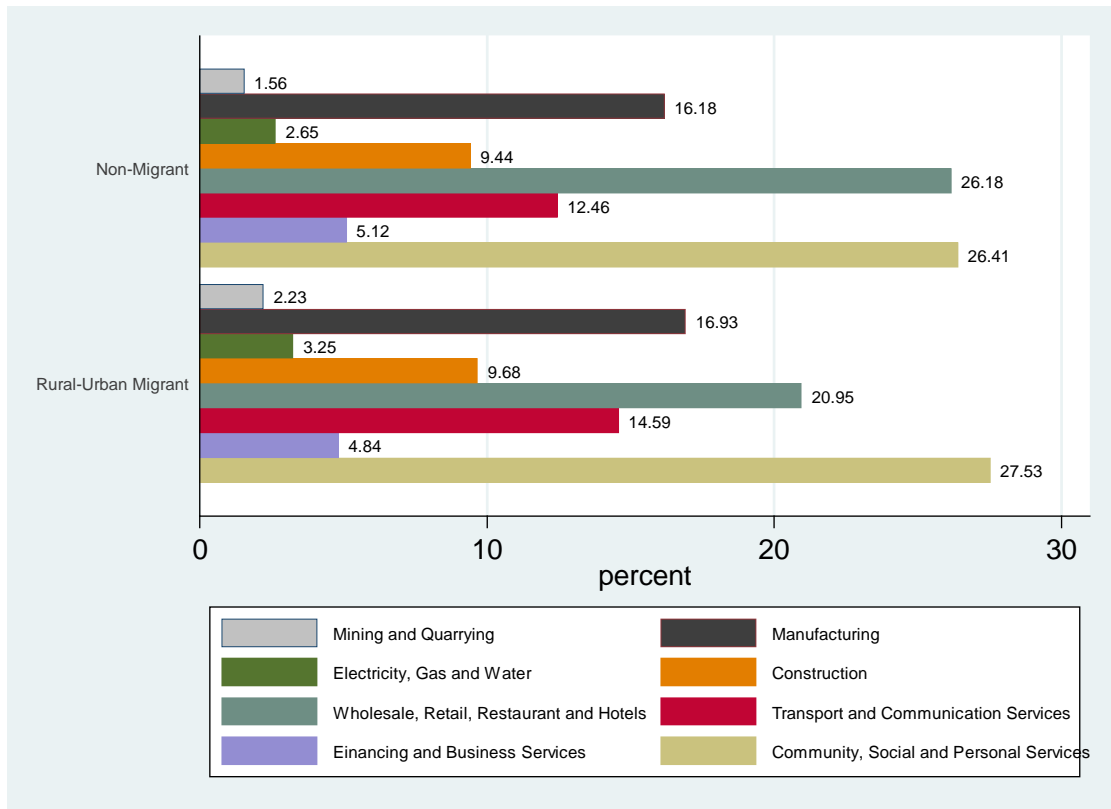
If we look at the distribution of migrants over these sectors we find that 38.88% of the migrants work in the Formal sector, almost 21.58% are self-employed entrepreneurs and 17.30% are informal wage workers.

Figure 3: Employment Category based on Migration Status



A high proportion of Migrants (28 %) are working primarily in the Community, Personal and Social Services, 21 % in Wholesale & Retail Trades, Restaurants and Hotels, and 17 % in Manufacturing.

Figure 4: Migrants by Industry



Of the migrants a high proportion (34%) are in the occupation Production and Related Workers, Transport Equipment Operators and Labourers, and almost 20% are Sales and Service workers. It is interesting to note that the main income source of migrants was Salaried (52% of the migrants), and 18% of migrants were in Non-Agricultural Labour.

Figure 5: Migrants by Occupation

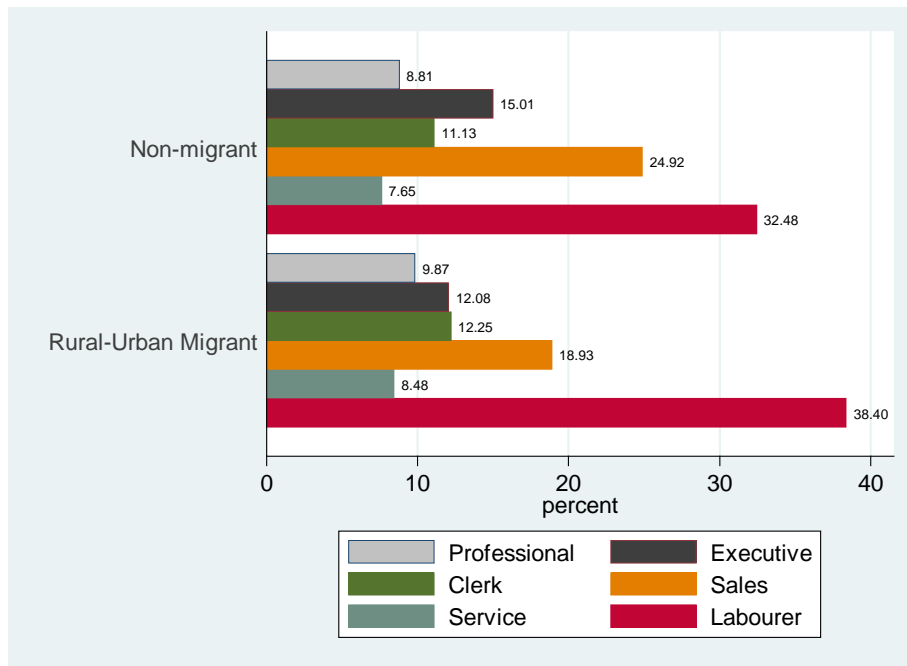
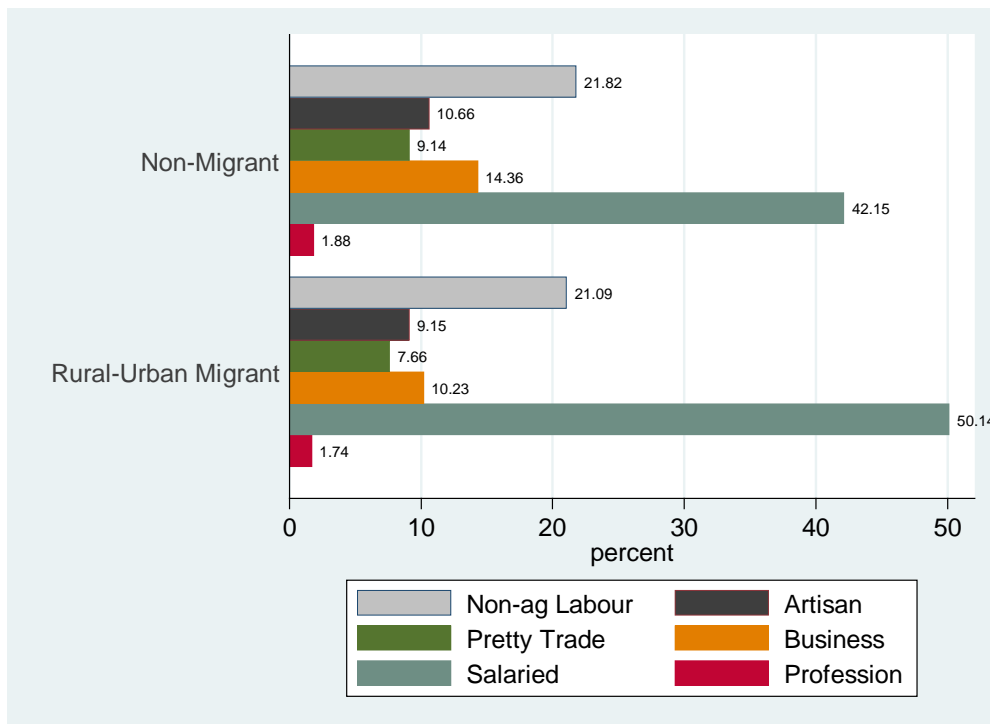


Figure 6: Migrants and Income Source



It is interesting to see the caste and religion breakdown for the Formal and Informal Sectors (Self Employed and Informal Wage Labour). As we would suspect, Brahmins and High Caste

people are more likely to be in the Formal Sector, compared to the lower social castes and Muslims. If we look at the distribution of people by caste and religion for the principal source of the household incomes we see that Brahmins and High Caste people are more likely to be Salaried or Professionals, whilst Dalits and Muslims are more likely to be Non-Agricultural labourers or artisans (see Table 1).

Table 1: Caste and Religion by Source of Income

	Non-Ag labour	Artisan	Petty traders	Business	Salaried	Professionals	Total
Brahmin	56	67	68	136	705	43	1,075
High Caste	254	182	277	536	1,429	59	2,737
OBC	875	437	341	446	1,438	56	3,593
Dalit	664	205	105	108	803	18	1,903
Adivasi	97	11	16	35	238	6	403
Muslim	598	295	211	256	471	29	1,860
Sikh, Jain	9	20	32	61	129	5	256
Christian	54	19	4	20	126	6	229
Total	2,607	1,236	1,054	1,598	5,339	222	12,056

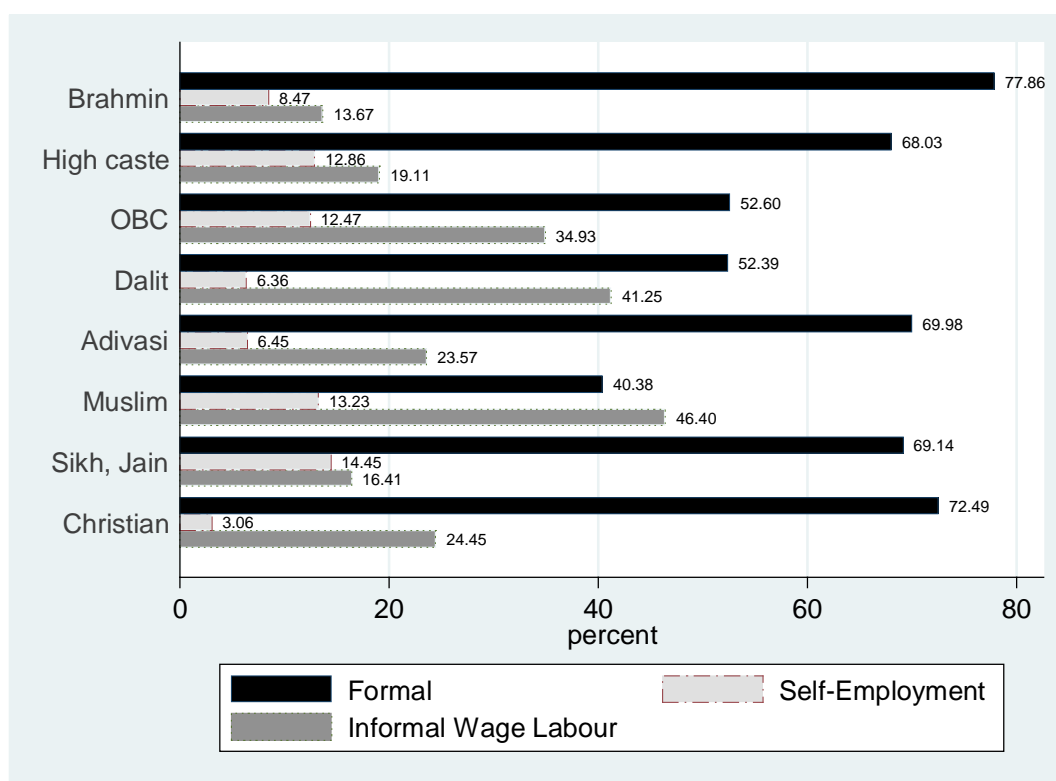
Source: India Human Development Survey

Table 2: Caste and Religion by Occupation

	Brahmin	High caste	OBC	Dalit	Adivasi	Muslim	Sikh, Jain	Christian	Total
Professions, Technical and Related Workers	195	280	245	105	49	72	27	22	995
Administrative, Executive and Managerial Workers	135	357	427	147	28	243	35	27	1,399
Clerical and Related Workers	188	329	361	191	50	84	23	24	1,250
Sale Workers	190	746	765	235	52	445	97	21	2,551
Service Workers	71	172	210	248	44	87	11	18	861
Production, Transport and Labourers	159	551	1,236	799	141	732	41	67	3,726
Missing	137	302	349	178	39	197	22	50	1,274
Total	1,075	2,737	3,593	1,903	403	1,860	256	229	12,056

Source: India Human Development Survey

Figure 7: Caste and Religion by Sector



When we look at the distribution of occupations by caste and religion we note that Brahmins and High Caste people are more likely to be in the higher level occupations, while Dalits and Muslims are more likely to be in the lower level occupations. When we look at the distribution of industries that the different castes and religions are located in, we see that Manufacturing, Transport, and Finance etc. are important for most groups.

4. The Informal Economy: Some Analytical Features

We assume that individuals would prefer to be employed in the formal sector, either as employees, or as owners/managers in the formal sector. This is based on the idea that the formal sector provides a better life not only in terms of present and future income, but also in terms of better conditions of work (security of tenure, social security benefits, access to unions, safer working conditions, etc). If they are unable to enter the formal sector, we assume that they would prefer to be self-employed (as long as their expected incomes are not below that in the informal wage sector). Employees in the informal wage sector would prefer to become self-employed if they had access to credit to set up a small business. Many of them

may simply be “waiting” for a job in the formal sector. In the Harris-Todaro model, rural migrants come to the urban area as long as their expected wages (urban wage multiplied by the probability of finding a job) are greater than their rural subsistence wage. Migrants who do not find work in the urban formal sector then enter the urban informal sector which is meant to be a form of “wait unemployment”. Essentially, we are arguing that individuals have lexicographic preferences over these choices. However, what we observe is a reduced form depending on the household head’s choice and the success in the formal labour market, and the constraints in the credit market that determines whether they can become self-employed. Informal wage labour then is a residual category.

In fact if we look at the actual incomes (based on our sample) we find that the incomes of these three groups overlap to some extent, with the lowest incomes for informal wage labour, followed by self-employment, followed by formal sector incomes. Figure 8 presents the kernel densities of the logs of Informal Wage Labour, Informal Self Employment, and Formal Incomes respectively. As can be seen the Informal Wage Labour Incomes are distributed to the left, the Informal Self Employment Incomes are in the middle, and Formal Incomes are to the right of the other distributions. There is some overlap at the lower tails of the distributions, but Self Employment and Formal Incomes have tails spread out at the higher income levels.

Figure 8: Kernel Densities of Log Income by Employment



Table 3: Distribution of Log Incomes by Sector

Variable: Log of Income	Obs.	Mean	Std. Dev.	Min	Max
Formal	6916	11.2313	0.81603	6.21461	15.6904
Self-Employment	1324	10.7466	0.76783	6.8024	13.7695
Informal Wage Labour	3744	10.4617	0.70924	6.44883	13.731

Source: India Human Development Survey

A Kolmogorov-Smirnov test reveals that there are significant differences in these kernel densities. (All pairwise Kolmogorov-Smirnov tests are statistically significant with a p-value of 0.000). Table 3 provides some summary statistics to illustrate the differences in the distribution of incomes. As discussed above the mean (log) incomes of the formal sector is greater than that of the self-employed and that is greater than the informal wage workers. The only curious result seems to be that the minimum of the formal sector is lower than that of the other two groups.

To be in the Formal sector, domestic capitalists need to have significant amounts of capital and access to credit. Inheritance plays a large part in providing either the original capital or access to credit. Multinationals come in with large amounts of capital with technology that is labour saving (embodied technological change). Employment in the Formal sector is then limited by the use of imported technology and limited amounts of capital. Note there is limited amount of labour-capital substitution possible because of embodied technology.

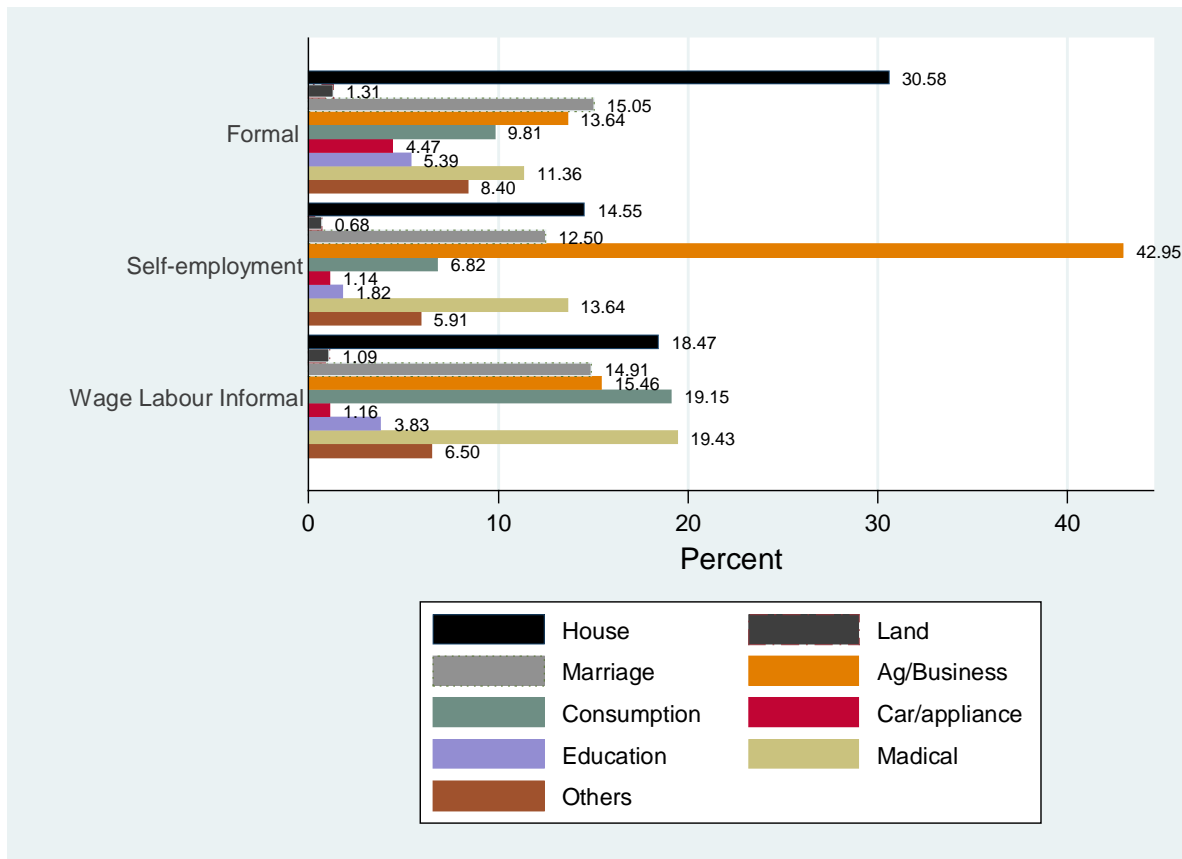
Wages in Formal Sector are fixed by government (minimum wages) or by unions or by employers using efficiency wage ideas, or by Multinational Firms who feel constrained to pay good wages. Employers in Formal Sector ration employment by using education/experience as an index of productivity, and using religion/caste as a signal for productivity (statistical discrimination). Given two people with the same education/skill levels they would prefer a high caste Hindu to a low caste Hindu or to a Muslim. Note: being in the formal economy is not a guarantee against poverty, (see ILO 2002, p.31).

Self-employment (in the Informal Sector) is constrained by limited amounts of credit and access to capital. The higher the social class and the higher the level of education, the easier people have access to credit. Note: ILO (2002, p. 31) provides evidence that many in the informal economy, especially the self-employed, in fact earn more than unskilled or low-skilled workers in the formal economy.

Informal Sector employment is a residual: the lower the employment in the Formal Sector, the greater the number who look for work in the informal sector and hence, the lower the wages (incomes) for this sector.

The Figure 9 below shows that 43 % of the self-employed have taken out loans for business purposes, compared to only 14 % of the Formal Sector, and 16 percent of the Informal Wage labour group. It is clear that the self-employed have to take out loans for setting up and running a small enterprise. Presumably many of the informal wage workers would be interested in setting up a small business but are unable to access credit.

Figure 9: Purpose of Loan by Sector



To summarise this section, we argue that households have a lexicographic preference ordering over the different outcomes, formal, self-employment, or informal wage labour. Migrants, especially rural migrants would have little access to credit or to the formal labour market, at least until they have spent some years in the urban sector.

5. Probability of working in the Informal Sector

In this section we estimate the probability of a household head working in the Informal Wage employment sector, to be Self-employed, or in the Formal Sector. As discussed earlier our hypotheses are that those households who come from the lower social classes/groups are more likely to be working in the Informal Sector. Some of these households may have the entrepreneurial skills or have access to small amounts of capital to set up as self-employed workers. We hypothesise that households who come from higher social classes/groups, and/or who have higher levels of education are more likely to be working in the Formal sector. Further we hypothesise that migrants who come into the urban areas would initially find employment in the Informal sector and after some time when they

have accumulated sufficient funds or developed social networks or skills are more likely to move into the Formal sector. In our analysis below we distinguish migrants are whose origin is in a rural area, as a result, individuals who have come from other urban areas are considered as "Urban Natives". We hypothesise that the duration of migration from a rural origin influences the sector of employment.

5.1 Econometrics and Identification Strategy

The fundamental challenge of estimating the causal impact of migration duration on the probability of working in the informal sector is the possibility of unobserved individual characteristics that might influence the migration decision, survival at a migration destination, and duration as well as the likelihood of working in the informal sector. For example, it might be possible that individuals with high unobserved ability or entrepreneurial skills might opt to move out of the rural area early in their life and remain in the urban area, and such unobserved skills and ability will also influence their choice of sector in the migration destination. Without controlling for this, estimation may be biased and inconsistent.

If we had panel data we could have used methods to control for individual heterogeneity. Another ideal method that could be used, to disentangle such unobserved influences on migration duration and job status would be by using some natural experimental framework or by randomly inducing people to migrate out of the rural areas to estimate the causal impact of migration on job choice. Lacking the availability of such methods, we need to opt for an instrumental variable approach (IV) where we would instrument migration duration with a set of variables which do not have a direct influence on job placement or current job status. One instrument that has been recently used to instrument for migration is the historic migration rate as an instrument for current migration status (for example see, Woodruff and Zenteno (2007), Hanson and Woodruff (2003); McKenzie and Rapoport (2007, 2011); López-Córdoba (2005); and Hildebrandt and McKenzie (2005)).

Following these sets of influential work, we therefore used the historic state-level migration rates as an instrument for current migration duration. In particular, we use the Indian migration rates from data collected in 1991 census at the state level and use this variable as an instrument in which the household is currently located.

These historic migration rates can be argued to be the result of the massive development of railroad and other transportation system in India coupled with rapid economic expansion of large cities which created extended job demand. These historic

migration rates can also be considered as signal of migration friendliness, strong migration networks which can effectively lower the cost of migration and increase the survival for future potential migrants, they become self-perpetuating, and as a result, continue to influence the migration decisions of households today.

Our identifying assumption is that historic state-level migration rates do not affect the current job placement of the individuals, apart from their influence through current migration. Instrumental variables estimation relies on this exogeneity assumption, and so it is important to consider and counteract potential threats to its validity.

One potential threat is that historic level of inequality and lower economic class (lower caste and religious group) could induce the historic migration rate and is also influencing the current one due to intergenerational transition. To tackle these potential pitfalls we also used interaction terms of historic migration rate with the caste dummies as additional instruments.⁴ We have also controlled for City and District level fixed effects to control for spatial differences and location preferences and report our results based on standard errors clustered at the state level to correct for arbitrary correlation in the error structure of individuals within a state (McKenzie *et al.* 2012).

As our main outcome of interest is whether migrants use the informal sector as their temporary base (like a stepping stone), we studied the impact of migration duration of individuals on their placement in the informal sector. The reduced form IV approach consists of estimating a two-stage model of the following form, where I_j is the outcome variable of interest (individual j 's current employment sector), M_{jk} is individuals j 's migration duration who is currently staying at State k (years of migration from the origin), and Z_k is the set of instrumental variables. Hence the reduced-form first stage equation for migration M_{jk} , following Amemiya (1978), would be:

$$M_{jk}^* = \beta_0 + \beta_1 Z_k + \beta_2 X_{jk} + \gamma_k^m + \epsilon_{jk}^m, \quad (1)$$

$$M_{jk} = \begin{cases} M_{jk}^*, & \text{if } M_{jk}^* > M_0 \\ 0, & \text{if } M_{jk}^* \leq M_0 \end{cases},$$

and the equation for employment at the informal sector I_{jk} is

$$I_{ik}^* = \alpha_0 + \alpha_1 M_{jk} + \beta_2 X_{jk} + \gamma_k^i + \epsilon_{jk}^i, \quad (2)$$

⁴ For robustness check we have run regressions without land holding variables and our regression remained consistent.

$$I_{jk} = \begin{cases} 1, & \text{if } I_{jk}^* < I_0 \\ 0, & \text{if } I_{jk}^* \geq I_0 \end{cases}$$

Here M_{jk}^* is the latent variable for migration decision and M_{jk} is the observed years of migration duration to the current state k from origin once individual j decides to migrate to state k by comparing the costs and benefits using a net benefit function or latent index expressed in equation (1). Similarly, I_{ik}^* is the latent job placement and I_{jk} is dummy of job placement at the formal and informal sector for the same individual j living in state k which can be seen arising comparing the job qualifications and job related network information (like informal or formal referral system) required for the job placement expressed in equation (2). In this set-up the first dependent variable, M_{jk} appears in the second equation as an endogenous variable. Here, X_{jk} includes the following set of controls: personal and household characteristics, family background information, family composition information, religion, and a dummy variable indicating whether the person is an urban native or not (the dummy is equal to one if the individual i who currently resides in state k is born in urban area and zero if the person is a rural to urban migrant). Personal characteristics include age, age², sex, education and marital information whereas household characteristics include wealth status of the household which has been constructed using the principal component analysis of the household non-durable assets.⁵ Family background information contains variables on father's education and occupation history. γ_k^M and γ_k^I are unmeasured determinants of M_{ik} (for example migrant's own community network) and I_{ik} that is fixed at the state level (for example state's specialization in particular occupational sector). M_0 and I_0 are unknown thresholds. Finally, ϵ_{ik}^M and ϵ_{ik}^I are non-systematic errors which follow $E(\epsilon_{ik}^M | X_{ik}, Z_k, \gamma_k^M) = 0$ and $E(\epsilon_{ik}^I | X_{ik}, \gamma_k^I) = 0$.

Given the setup of binary outcomes with a continuous endogenous variable, we use maximum-likelihood to estimate a multivariate probit model, which we will refer by following common practice to mention it as IV-Probit model.⁶

⁵ This variable ranks 1 to 6, where rank 1 being the lowest total asset value of household non-durables being less than 500 rupees whereas rank 6 being asset values more than 20,000 rupees. On 12th March 2013 exchange rates were: 100 INR=1.84 USD.

⁶ Estimations were carried out by using the IVProbit command with MLE option in STATA version 11.2

5.2 Estimation

As discussed above we estimated limited information maximum likelihood model for the probability of an individual being in the informal sector as a function of the duration of migration (for rural to urban migrants), demographic characteristics, household characteristics, religion and family background information in Table 4. In addition we include district and city level fixed effects to capture unobserved geographical and regional impacts on an individual's job placement in the informal sector. To show consistency and robustness of our regressions, we have estimated the same specification with standard errors clustered at the state level using the full sample (column 1) as well different subsamples like males with age cut-offs between 15 to 65 years (column 3) and only with males (column 5). In all regressions, using different sub-samples, our results are largely consistent and none of the variables changed sign. We have also reported the marginal effects of all estimations in the respective sub-sample estimations in columns 2, 4 and 6 respectively. To show consistency in our estimation, we have also estimated a simple probit model without treating the duration of migration as endogenous in column 7. The probit result shows a small and negative but statistically weak significance of migration duration on probability of someone being in the informal sector. Once we instrument for migration duration in columns 1 to 6, however, these effects become larger and statistically more significant.

Table 4: IV-Probit Estimates of Probability of Informal Sector Employment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent Variable:	Full Sample		Age 15 to 65		Male only		Full Sample Probit
Informal Sector Employment	Coefficient	M.E.	Coefficient	M.E.	Coefficient	M.E.	Coefficient
Urban Native	-0.535***	-0.195***	-0.551***	-0.202***	-0.541***	-0.199***	-0.152***
	-0.101	-0.037	-0.105	-0.038	-0.107	-0.039	-0.049
Rural to urban migration duration	-0.076***	-0.029***	-0.079***	-0.031***	-0.076***	-0.029***	-0.004*
	-0.02	-0.008	-0.022	-0.009	-0.021	-0.009	-0.002
Age	-0.009	-0.003	-0.023	-0.009	-0.007	-0.003	-0.037***
	-0.013	-0.005	-0.016	-0.006	-0.013	-0.005	-0.01
Age Square	0.0000	0.0000	0.000**	0.000**	0.0000	0.0000	0.000***
	0.0000	0.0000	0	0	0.0000	0.0000	0
Male	0.423***	0.153***					0.518***
	-0.093	-0.029					-0.092
No. of Households	0.026***	0.010***	0.029***	0.011***	0.027***	0.010***	0.036***
	-0.008	-0.003	-0.008	-0.003	-0.009	-0.004	-0.007
Married	0.065	0.025	0.044	0.017	0.038	0.015	0.015
	-0.095	-0.036	-0.114	-0.043	-0.106	-0.041	-0.127
Primary Education	-0.128*	-0.049*	-0.079	-0.03	-0.072	-0.028	-0.172**
	-0.073	-0.027	-0.071	-0.027	-0.069	-0.026	-0.085
Secondary Education	-0.300***	-0.113***	-0.274***	-0.104***	-0.260***	-0.099***	-0.364***
	-0.081	-0.029	-0.075	-0.027	-0.076	-0.028	-0.078
Matric Completed	-0.539***	-0.194***	-0.530***	-0.193***	-0.523***	-0.191***	-0.652***
	-0.101	-0.03	-0.093	-0.029	-0.097	-0.031	-0.064
Tertiary Education	-0.693***	-0.240***	-0.682***	-0.239***	-0.678***	-0.237***	-0.865***
	-0.128	-0.034	-0.121	-0.033	-0.124	-0.034	-0.089
Graduate	-0.928***	-0.327***	-0.946***	-0.334***	-0.921***	-0.328***	-1.150***
	-0.147	-0.04	-0.14	-0.039	-0.142	-0.04	-0.076
High caste	0.112***	0.044**	0.062	0.024	0.105**	0.041**	0.119**
	-0.043	-0.017	-0.044	-0.017	-0.045	-0.018	-0.05
OBC	0.140***	0.055***	0.132**	0.051**	0.149***	0.058***	0.220***
	-0.049	-0.019	-0.051	-0.02	-0.047	-0.018	-0.073
Dalit	0.041	0.016	-0.013	-0.005	0.018	0.007	0.061
	-0.055	-0.021	-0.052	-0.02	-0.054	-0.021	-0.066
Adivasi	-0.207**	-0.078**	-0.244***	-0.091***	-0.209**	-0.079**	-0.263***
	-0.092	-0.033	-0.088	-0.031	-0.101	-0.036	-0.093
Muslim	0.166**	0.065**	0.158**	0.062**	0.186**	0.073**	0.318***
	-0.078	-0.03	-0.074	-0.029	-0.075	-0.029	-0.069
Sikh, Jain	0.078	0.031	-0.032	-0.012	0.049	0.019	0.183*
	-0.087	-0.034	-0.075	-0.029	-0.077	-0.03	-0.094
Christian	-0.003	-0.001	0.041	0.016	-0.002	-0.001	-0.002
	-0.134	(.)	-0.153	-0.06	-0.145	-0.056	-0.121
Father's Occupation: Professional	-0.103	-0.039	-0.084	-0.032	-0.076	-0.029	-0.209***
	-0.07	-0.026	-0.07	-0.026	-0.068	-0.026	-0.057
Father's Occupation: Executive	-0.367***	-0.133***	-0.344***	-0.126***	-0.356***	-0.130***	-0.468***
	-0.096	-0.031	-0.121	-0.041	-0.114	-0.038	-0.112
Father's Occupation: Clerk	-0.335***	-0.123***	-0.367***	-0.135***	-0.336***	-0.124***	-0.494***
	-0.102	-0.033	-0.097	-0.032	-0.102	-0.034	-0.076
Father's Occupation: Sales	0.130***	0.051***	0.145***	0.057***	0.146***	0.057***	0.171***
	-0.049	-0.019	-0.045	-0.018	-0.048	-0.019	-0.052
Father's Occupation: Service	-0.285***	-0.106***	-0.286***	-0.107***	-0.266***	-0.100***	-0.343***

	-0.069	-0.023	-0.075	-0.026	-0.071	-0.025	-0.055
Father's Occupation: Agro	0.036	0.014	0.018	0.007	0.042	0.016	-0.241***
	-0.11	-0.043	-0.107	-0.042	-0.111	-0.043	-0.044
Father's Education: Primary	-0.117***	-0.045***	-0.120***	-0.046***	-0.119***	-0.046***	-0.131***
	-0.034	-0.013	-0.039	-0.015	-0.036	-0.014	-0.037
Father's Education: Secondary	-0.170***	-0.065***	-0.172***	-0.066***	-0.168***	-0.065***	-0.185***
	-0.045	-0.016	-0.044	-0.016	-0.044	-0.016	-0.045
Father's Education: Tertiary	-0.257***	-0.096***	-0.293***	-0.109***	-0.259***	-0.097***	-0.330***
	-0.094	-0.032	-0.09	-0.031	-0.099	-0.034	-0.073
Father's Education: Graduation	-0.311***	-0.115***	-0.314***	-0.116***	-0.319***	-0.118***	-0.334***
	-0.095	-0.032	-0.095	-0.032	-0.093	-0.032	-0.101
Asset Status (1 to 6)	-0.120***	-0.046***	-0.132***	-0.051***	-0.123***	-0.048***	-0.148***
	-0.03	-0.011	-0.03	-0.011	-0.031	-0.012	-0.023
City Dummies	Yes		Yes		Yes		Yes
District Dummies	Yes		Yes		Yes		Yes
Observations	10,521		9,685		9,668		10,521
Log Pseudo-likelihood	-42761		-38409		-39067		-5754
chi2	29420		672226		57984		
Wald test of Exogeneity	6.579***		5.506***		6.38***		
F-Statistics at First Stage	31.77***		29.38***		30.00		
H ₀ : Coefficient of IVs are zero	66.88***		58.92***		49.44***		

Source: Indian Human Development Survey 2005: Authors own Calculations.

Notes: Standard errors in parentheses, adjusted for clustering at the State Level. Significance code: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. M.E. Stands for Marginal Effects which have been calculated at the mean. In all these specifications, we are considering only those as migrant who have migrated from rural to urban areas for jobs. Those who were born in urban setup and migrated to another urban area for job are not considered as migrants. Best specification is column (1). Estimations used in column 1-6 are based on Maximum Likelihood (MLE). The instruments used in the first stage of the regressions are historic state-level migration rate and interaction of the variable with Caste Dummies.

We would expect the higher the education of an individual, the lower the probability of belonging to the informal sector. The evidence, see Table 4, shows clearly that the higher the level of education of the household head the lower the probability of being in the informal sector, and the coefficients get smaller (bigger in absolute value) respectively. The results for father's education are very similar to the household head's education levels. Further, we would expect that if the father of the individual was of a higher social class (in terms of occupation), the probability of being in the informal sector would be lower. Again the evidence supports the view that the parent's occupation clearly influences an individual's employment placement: if the father's occupation is formal in nature like Executive or Clerk, the probability of being in the informal sector is lower, while if the father's occupation is Sales (which is mostly informal in nature in the Indian context), then there is a higher probability of being in the informal sector. As discussed earlier we would expect a person from a socially disadvantaged caste, or religion would be more likely be in the informal sector: we find that OBC (Other Backward Classes) and Muslims are more likely to be in the informal sector. We did not find any statistically significance for Dalits (the lower social

castes) in the informal sector compared with Brahmins which may be attributable to the government's positive discrimination in employment in the Government sector (reservation system) for Dalits. As we would expect the wealthier the household head, the less likely s/he would be in the informal sector. Our results suggest that urban natives are more likely to be in the formal sector as they have more access to better schools, social networks and job information and referrals compared with the rural to urban migrants. Our main variable of interest is Rural Migration Duration: in all cases it is negative and significant at the 1 % level. In other words, the longer a rural migrant has been in the urban area the less likely an individual would be in the informal sector and would have moved to the formal sector. (Note the rural migration duration variable has been instrumented).

The validity of IV estimations depends on the power of instruments in explaining the predicted values at the first stage. As reported, all the first stage regressions have very high F-statistics (for example for our preferred specification of column 1, the first stage F-statistic is 31.77). We have also tested for the joint significance of our IVs and the results are overwhelmingly in rejection of the null of no joint significance. The Wald statistic of the exogeneity test has rejected the null hypothesis of no endogeneity. We have also tested the instruments using the typical 2SLS models to test for over-identification test (Anderson canonical correlations test) and under-identification test (Sargan-Hansen test) which have duly supported our instruments.

6.0 Multinomial Estimation (Formal, Self-Employed, and Informal Wage)

In this section we have separated the Informal sector into those who are self-employed and those who work in the informal or formal sectors as wage labourers to check if whether highly qualified individuals are employed in the formal sector or not and also to check if migrants use the informal sector as their temporary base by employing a multinomial logit job attainment model following the work of Xin Meng (2001).

6.1 Econometrics

Standard neo-classical economic rationality of individual's job placement (labour supply) is a function of individual endowments and human resources (for example level of education and experience). However, other related factors that could also have an impact on an individual's labour supply, especially in the context of India, could be the family size

(Brown *at el.* 1980), family background, Caste and Religious affiliation (for example see Banerjee and Knight (1985) or Ito (2009). Another less frequently studied factor that might be critical is the job related network, for example, job-opening information, formal and informal channels of job search and referral (for example see Holzer 1987 or Calvó-Armengol, A., & Zenou, Y. (2005)). Since urban natives usually have a better endowment of job-related networks and referrals, we could hypothesise that migrants will acquire access to such networks as their migration duration increases and hence are less likely to be in informal wage labour.

A multinomial logit model is specified below to capture how these variables will influence an individual j 's probability of working in sector s . Formally the model is:

$$P_{js} = \text{prob}(y_j = \text{sector}_s) = \frac{e^{x_j'\beta_s}}{\sum_{s=1}^S e^{x_j'\beta_s}} \quad j = 1, \dots, N; s = 1, \dots, S. \quad (3)$$

Where N is the size of the sample, S is the number of sectors and x_j is a vector of variables affecting the labour placement outcome y_j . The dependent variable y_j for equation (3) is the nature of an individual's current job in either of the three sectors; Formal sector, Self-employment or Informal wage labour sector. Our main variable of interest, years of migration duration is endogenous in nature. Hence to allow for the endogeneity in estimating equation (3), we first used the fitted value of migration duration using all the instruments (estimation done through OLS). In the second step we used the fitted value of the migration duration in equation 3. The standard errors of the estimates in the second step have been estimated through a bootstrapping process with 100 replications.

6.2 Estimations

The results of marginal effects of endogenous multinomial probit estimations have been reported in Table 5 (with full sample) and in Table 6 with male only sub-sample. The dependent variable has been categorized into three groups; where Formal sector employment has been used as a base category.

Tables 5 and 6 are broadly similar to those reported in the section 5 of IV-probit model (Table 4). For both the Self-Employed and Informal Wage labour, education, father's characteristics, and caste and religion coefficients have essentially the same signs and significance. The main point of difference is that the duration of a rural migrant does not significantly influence the probability of being in the self-employed sector, but is negative

and significant for the informal wage labour sector. In other words, we find that the longer a rural migrant has been in the urban sector the less likely he would be in informal wage employment. For instance, an individual with one additional year's of migration duration from the rural area reduces his/her probability to be in the informal wage employment by 2.52%, however this variable has no statistically discernible effect on him/her being in the self-employed or formal sector. Results on education are consistent with the other findings that with more years of education, individuals will be less likely to be in the informal sector. In case of self employment, the education level up to tertiary level does not have any statistically significant impact, however, for tertiary level education and higher, the probability of someone being in the self-employment reduces significantly.

Table 5: Marginal effects of Multinomial Logit regression (Full sample)

VARIABLES	(1) Formal	(2) Self-employment	(3) Informal Wage Labour
Urban Native	0.0466*** -0.0134	-0.00768 -0.00815	-0.0389*** -0.0119
Rural to urban migration duration	0.0169 -0.013	0.00723 -0.0104	-0.0241** -0.0104
Age	0.00770** -0.00384	-0.00319 -0.00324	-0.00451 -0.00347
Age Square	-8.11e-05*** -2.80E-05	3.34E-05 -2.14E-05	4.77e-05* -2.74E-05
Male	-0.171*** -0.0156	0.0614*** -0.00812	0.110*** -0.0137
No. of Households	-0.0152*** -0.00271	0.0018 -0.00172	0.0134*** -0.00219
Married	0.00122 -0.0493	-0.0383 -0.0377	0.037 -0.0294
Primary Education	0.0319 -0.0253	0.0308* -0.0183	-0.0627*** -0.0159
Secondary Education	0.0935*** -0.0211	0.0252* -0.0141	-0.119*** -0.0128
Matric Completed	0.179*** -0.0187	0.00299 -0.0127	-0.182*** -0.0112
Tertiary Education	0.218*** -0.0178	-0.0103 -0.0133	-0.208*** -0.0106
Graduate	0.339*** -0.0172	-0.0396*** -0.0117	-0.300*** -0.0136
High caste	-0.0474* -0.0249	0.0238 -0.0159	0.0235 -0.0219
OBC	-0.0743*** -0.0248	0.0322** -0.0147	0.0421* -0.0232
Dalit	-0.0177 -0.0275	-0.0372*** -0.0111	0.0549** -0.0262
Adivasi	0.0571* -0.0347	-0.0288 -0.0208	-0.0283 -0.0289
Muslim	-0.115*** -0.0289	0.0415* -0.023	0.0737*** -0.026
Sikh, Jain	-0.0473 -0.0443	0.0457 -0.0318	0.00166 -0.0446
Christian	0.0358 -0.065	-0.0655 -0.0661	0.0297 -0.0441
Father's Occupation: Professional	0.0505** -0.0243	0.00458 -0.0173	-0.0551*** -0.0178
Father's Occupation: Executive	0.144*** -0.0333	-0.0153 -0.0252	-0.129*** -0.0243

Father's Occupation: Clerk	0.144*** -0.0245	-0.0331*** -0.0127	-0.111*** -0.0183
Father's Occupation: Sales	-0.0764*** -0.0214	0.148*** -0.0212	-0.0716*** -0.0139
Father's Occupation: Service	0.106*** -0.0178	-0.0123 -0.0134	-0.0940*** -0.0138
Father's Occupation: Agro	0.0346 -0.0409	-0.0228 -0.0304	-0.0119 -0.0328
Father's Education: Primary	0.0450*** -0.0119	-0.00915 -0.00751	-0.0358*** -0.00989
Father's Education: Secondary	0.0706*** -0.0181	-0.0122 -0.0108	-0.0584*** -0.0159
Father's Education: Tertiary	0.121*** -0.0284	-0.0234 -0.0168	-0.0973*** -0.0226
Father's Education: Graduation	0.137*** -0.0355	-0.0203 -0.0245	-0.117*** -0.0236
Asset Status (1 to 6)	0.0615*** -0.0045	-0.00687** -0.00273	-0.0547*** -0.00462
City Dummies	Yes	Yes	Yes
State Dummies	Yes	Yes	Yes
District Dummies	Yes	Yes	Yes
Observations	10,521	10,521	10,521

Source: Indian Human Development Survey 2005: Authors Own Calculation.

Note: Base outcome is formal employment. The variable "Rural to urban migration duration" has been considered endogenous, hence fitted value of the migration duration has been estimated using OLS using all variables and instruments at the first stage. The instruments used are historic state-level migration rate and interaction of the variable with Caste Dummies. Standard errors are in parentheses which have been computed using bootstrapped method with 100 repetitions. Significance code: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 6: Marginal effects of Multinomial Logit regression (Male only sample)

VARIABLES	(1) Formal	(2) Self-employment	(3) Informal Wage Labour
Urban Native	0.0502*** -0.0128	-0.00966 -0.00844	-0.0405*** -0.0121
Rural to urban migration duration	0.0156 -0.014	0.00831 -0.0109	-0.0239** -0.0116
Age	0.00781 -0.00511	-0.004 -0.00394	-0.00381 -0.00453
Age Square	-7.71e-05** -0.0000371	0.0000397 -0.0000259	0.0000375 -0.0000346
No. of Households	-0.0166*** -0.00317	0.00176 -0.00174	0.0149*** -0.00252
Married	0.00762 -0.0514	-0.0359 -0.0347	0.0283 -0.037
Primary Education	0.0057 -0.0308	0.0434* -0.0227	-0.0491*** -0.0174
Secondary Education	0.0813*** -0.0267	0.0286 -0.0185	-0.110*** -0.0172
Matric Completed	0.175*** -0.023	0.00523 -0.0184	-0.180*** -0.0149
Tertiary Education	0.215*** -0.0225	-0.00755 -0.018	-0.207*** -0.0126
Graduate	0.339*** -0.0235	-0.0363** -0.0177	-0.302*** -0.0172
High caste	-0.0412* -0.0239	0.0239 -0.0157	0.0173 -0.0208
OBC	-0.0727*** -0.0217	0.0332** -0.0144	0.0395** -0.02
Dalit	-0.00579 -0.0257	-0.0402*** -0.0137	0.0460** -0.0229
Adivasi	0.0588* -0.0318	-0.0238 -0.0195	-0.035 -0.027
Muslim	-0.122*** -0.0272	0.0437** -0.0217	0.0783*** -0.0276
Sikh, Jain	-0.0336 -0.0484	0.0502 -0.038	-0.0166 -0.0446
Christian	0.0382 -0.0693	-0.0689 -0.0645	0.0307 -0.0441
Father's Occupation: Professional	0.0392 -0.0281	0.00944 -0.0203	-0.0486** -0.023
Father's Occupation: Executive	0.138*** -0.0381	-0.0172 -0.0282	-0.121*** -0.0266
Father's Occupation: Clerk	0.144*** -0.0189	-0.0251* -0.013	-0.119*** -0.0159
Father's Occupation: Sales	-0.0816*** -0.023	0.158*** -0.0217	-0.0760*** -0.0143
Father's Occupation: Service	0.100***	-0.0051	-0.0951***

	-0.0214	-0.0122	-0.0156
Father's Occupation: Agro	0.0377	-0.0239	-0.0138
	-0.0442	-0.0322	-0.0351
Father's Education: Primary	0.0455***	-0.0101	-0.0354***
	-0.0134	-0.00814	-0.0116
Father's Education: Secondary	0.0700***	-0.0131	-0.0570***
	-0.017	-0.0128	-0.0136
Father's Education: Tertiary	0.123***	-0.025	-0.0983***
	-0.0282	-0.0171	-0.0231
Father's Education: Graduation	0.141***	-0.0205	-0.121***
	-0.0319	-0.0223	-0.0273
Asset Status (1 to 6)	0.0632***	-0.00656**	-0.0567***
	-0.00527	-0.00297	-0.0047
City Dummies	Yes	Yes	Yes
State Dummies	Yes	Yes	Yes
District Dummies	Yes	Yes	Yes
Observations	9668	9668	9668

Source: Indian Human Development Survey 2005: Authors Own Calculation.

Note: Base outcome is formal employment. The variable "Rural to urban migration duration" has been considered endogenous, hence fitted value of the migration duration has been estimated using OLS using all variables and instruments at the first stage. The instruments used are historic state-level migration rate and interaction of the variable with Caste Dummies. Standard errors are in parentheses which have been computed using bootstrapped method with 100 repetitions.

Significance code: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The validity of multinomial regression lies on the strong assumption of Independence of Irrelevant Alternatives (IIA) assumption, which means that adding or deleting alternative outcome categories does not affect the odds among the remaining outcomes. To check whether this assumption holds in our case, we have performed the test for the IIA assumption and we find no evidence of violating the assumption (using full sample specification of Table 5).

6. Conclusions

In our paper we have used the definition of migrants as those individuals who have migrated from rural to urban areas. Those who were born in urban areas and migrated to another urban area are not considered as migrants.⁷ Also note that in our multinomial logit regressions, for the sake of simplicity of estimation, we used only the rural to urban migration duration as endogenous and properly took care of such endogenous regression by using Instruments to predict the fitted value of the variable and plugged in the fitted value in the

⁷ Those who were born in other countries are not part of the sample in our estimations.

final Multinomial regression. One could, however, argue that urban to urban migration could also be endogenous. We have also used urban to urban migration as endogenous in separate regression estimations in the multinomial logit framework (not reported) and in linear probability model and in both cases the variable was insignificant and does not appear to be influential in explaining the likelihood of the placement in the informal labour market.

In this paper we have argued that there are segmented labour markets in the urban sector: people who are from the lower social classes (castes or religions) are more likely to work in the informal sector. We found that getting more education is one way of getting a job in the formal sector, but perhaps more importantly family networks provide an entry into the formal labour market. We argued that when rural migrants move to the urban sector they initially find themselves working in the informal sector where they have lower incomes and work in industries like Construction, Manufacturing, Wholesale, Retail trades, Restaurants and Hotels, Transport, and Social and Personal services. Their occupations are mainly in the lower social grades: production and related workers, transport etc., and labourers; and Sales and Service workers. We noted that caste and religion was important: the principal source of incomes of Dalits and Muslims was Non-Agricultural labour or Artisans. Brahmins and High caste people are more likely to be in higher level occupations.

We argued that there was a hierarchy of preferences: people would prefer to work in the formal sector, the self-employed sector, or if not in the informal wage labour market. However, entry into the formal sector was constrained by education, social class, and family ties. Self-employment was constrained by access to the credit market.

We estimated a model of the probability of working in the informal sector as a function of demographic characteristics, education, father's education and occupation, caste and religion, and duration of a migrant in the present occupation. We distinguished between migrants who had come from rural areas from those who had moved from other urban areas. We treated the duration of the migrant as an endogenous variable and estimated a two stage least squares model. We found that most of the explanatory variables were significant and of the expected signs. In particular, we found that education and father's education and occupational status were important. Muslims and Other Backward Classes were more likely to be working in the informal sector.

The most interesting finding of our research is that the longer a rural migrant has been working in the urban sector, the less likely s/he is to be working in the informal wage sector.

The results support the view that, for migrants informal wage labour market may be is a stepping stone to a better life in the formal sector.

However, using cross-sectional data set to analyse migration and urban employment is a challenging task. Migrants have a higher attrition probability due to the mobility of the population. Hence, when a researcher is confronted with a migrant population, it is difficult to define the population at hand, as there are constant inflows and outflows of individuals with different traits. Moreover duration raises the possibility of right censoring which could not be addressed with the data at hand. These results need to be researched further using panel data, which unfortunately are not available as yet.

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Appendix Table A1: Summary Statistics

	Formal	Informal	Total
Male	0.902 (0.297)	0.935 (0.246)	0.916 (0.277)
Rural to urban migration	0.283 (0.45)	0.246 (0.431)	0.267 (0.443)
Rural to urban migration duration	4.337 (9.077)	3.595 (8.355)	4.023 (8.787)
Income (in Rupees)	103171.280 (124176.363)	49812.840 (51689.736)	80625.834 (103573.581)
Age	45.968 (11.936)	43.181 (12.299)	44.791 (12.169)
Size of the Household	4.842 (2.089)	5.066 (2.089)	4.937 (2.092)
Married	0.984 (0.124)	0.983 (0.128)	0.984 (0.126)
Primary Education	0.053 (0.223)	0.148 (0.355)	0.093 (0.290)
Secondary Education	0.168 (0.374)	0.301 (0.459)	0.224 (0.417)
Matriculation Complete	0.177 (0.382)	0.170 (0.376)	0.174 (0.379)
Tertiary Education	0.163 (0.370)	0.099 (0.299)	0.136 (0.343)
Graduate	0.399 (0.490)	0.123 (0.328)	0.283 (0.450)
Adivasi	0.041 (0.197)	0.024 (0.152)	0.033 (0.180)
Dalit	0.143 (0.350)	0.178 (0.382)	0.158 (0.365)
Muslim	0.108 (0.310)	0.218 (0.413)	0.154 (0.361)
Father's Occupation: Professional	0.111 (0.314)	0.056 (0.230)	0.089 (0.285)
Father's Occupation: Executive	0.030 (0.169)	0.010 (0.098)	0.022 (0.145)
Father's Occupation: Clerk	0.108 (0.311)	0.036 (0.186)	0.079 (0.270)
Father's Occupation: Sales	0.132 (0.338)	0.189 (0.392)	0.155 (0.362)
Father's Occupation: Service	0.113 (0.316)	0.085 (0.279)	0.102 (0.302)
Father's Occupation: Agro	0.352 (0.478)	0.341 (0.474)	0.347 (0.476)
Father's Occupation: Labourer	0.155 (0.362)	0.284 (0.451)	0.207 (0.405)
Father's Education: Primary	0.222 (0.416)	0.226 (0.418)	0.224 (0.417)
Father's Education: Secondary	0.236 (0.425)	0.140 (0.347)	0.196 (0.397)
Father's Education: Tertiary	0.050 (0.218)	0.014 (0.119)	0.035 (0.184)
Father's Education: Graduation	0.063 (0.243)	0.013 (0.115)	0.042 (0.201)
<i>N</i>	6962	5094	12056