Commuting between rural and urban areas: evidence from India

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ABSTRACT

This paper is an attempt to extend the dialogue on nature of commuting between rural and urban areas and its implications for labour market outcomes in rural and urban India. We show that over the period 2004-05 to 2011-12, the magnitude of commuting workers has not changed but the composition has changed with reduction in rural-no fixed place workers and increase in urban-no fixed place workers. We further highlight that rural-urban commuting can be termed as mobility for better opportunities on account of diversification of livelihood strategy and underemployment in rural areas.

1. INTRODUCTION

Labour mobility is one of the crucial channels in the process of rural-urban linkages, structural transformation in rural areas and in affecting the socio-economic outcomes of households involved. Of the two facets of labour mobility, migration has received its due attention but commuting, especially between rural and urban areas in developing countries, has largely been ignored in the process.

The main objective of this paper is to synthesize the findings from literature on commuting between rural and urban areas in developing countries and highlight the role of commuting in understanding the rural-urban linkages and its implications for households, especially in rural areas. Though, we would discuss the selected findings from a handful of developing countries, the key focus would remain on India. Commuting by workers between rural and urban areas can be analyzed from various perspectives. We would touch a few of them and highlight the need for more attention on this channel in the process of development in both academics as well as policy making. In addition, we would also extend the understanding on commuting in India by providing new analysis on the same.

The first strand of the literature discusses rural-urban commuting and its relation to changing nature of rural-urban continuum, spatial nature of economic activities and local labour market outcomes. The second strand talks about the role of rural-urban commuting as a diversification of livelihood and workplace to mitigate the seasonal shocks and smoothen the consumption pattern of the rural households (FAO, 1998). This strand considers the importance of commuting choice in rural income generating activities (RIGA) and how structural transformation in rural non-farm employment can be understood from the perspective of changing commuting patterns between rural and urban areas. The third strand discusses how commuting can be considered complementary to migration in the process of development at the region level and for welfare outcomes at the household level.

Along with these strands, based on the new analysis, we argue that along with unemployment and wage gap between rural and urban areas, underemployment remains a key determinant explaining the nature of commuting between rural and urban areas in India. This is important especially in the context of countries where structural transformation is increasing the importance of alternative income generating activities. This aspect has remained largely unexplored which would be clear from section 2 when we will discuss the existing literature.

The rest of the paper is organized as follows. Section 2 discusses the literature on commuting and regional development with a focus on rural areas. Section 3 discusses the data available and used for additional analysis. Section 4 focuses on distribution of commuters, their key characteristics and regional patterns of commuting. Section 5 provides evidence on the labour market outcomes of commuting workers. Section 6 concludes.

2. LITERATURE ON RURAL-URBAN COMMUTING

Commuting by workers between rural and urban areas remains a largely under researched issue, especially in developing countries. There are a few studies that provide some insights on commuting patterns and their effect on rural development through rural-urban linkages in developing countries. Before going to those studies, it is important to mention that the scope of this study and review provided is only limited to commuters who travel between rural and urban areas.

In the context of south-eastern Nigeria, Bah et al. (2007) point out that better public transportation facilities are one of the key factors that encourage individuals to commute from rural to urban areas for work. The government has taken the initiative to provide subsidized transport facilities, which has led to commuting and improved linkages between the rural and urban economy.

Baker (2007), in the context of North-West Tanzania, shows that individuals commute to work from rural to urban areas rather than migrate, because of higher cost of living in urban areas. In the peri-urban areas of the large urban agglomeration of Dar-es-salaam, there has been a constant flow of commuters across urban and peri-urban areas (Lanjouw et al., 2001). The authors show that due to better employment opportunities in the non-farm sector of urban agglomerations, individuals are able to diversify their place of work. This remains one of the important channels though which rural households in the periphery are able to diversify their source of income and reduce the fluctuations in livelihood opportunities and their vulnerability to food security and income shortfall.

Highlighting the inter-linkages between commuting and migration in the context of Indonesia, Douglass (2007) finds the existence of a trade off between migration and commuting at the intersection of rural and urban areas. He finds that within the 60 kilometers periphery of urban areas, commuting remains the primary choice of mobility for work but is replaced by migration beyond that. Moreover, in the plains, longer distance commuting by workers is more likely to be observed, whereas in hilly areas, migration is preferred over commuting, due to the longer duration of travelling time and nature of the roads.

In the context of India, focusing on rural-urban employment linkages, Basu and Kashyap (1992) argue that in rural regions, commuting by workers is one of the mechanisms to access employment in the non-farm sector. Due to spatial variations in the socio-economic environment in rural India, this mobility can be attributed to distress related income diversification strategy; a seasonal insurance; a vibrant and growing non-farm sector and other push or pull factors. Based on primary surveys carried out at multiple locations in rural India, they document that commuting is very common among workers living in the vicinity of urban areas up to a distance of 30 kilometers. Chandrasekhar (2011) documents that more than two-thirds of commuting workers are engaged in manufacturing, construction and other retail or

wholesale activities. Under the assumption that commuting by workers from rural to urban areas is predominant in peri-urban areas, the author estimates that around 32 million individuals or 4.3 % of the rural population lives in peri-urban areas. To understand factors affecting the choice of commuting by workers, Sharma and Chandrasekhar (2014) document that regional labour market conditions-unemployment rate (rural and urban), rural-urban wage differential, spatial distribution of economic activities, level of urbanisation and the existence of peri-urban areas are key determinants of commuting patterns. Analyzing the role of commuting in the household income generating activities, Sharma and Chandrasekhar (2016) explored the impact of commuting by workers on household consumption and dietary diversity in rural India. They document that rural households with commuters are better off in terms of total consumption expenditure as compared to non-commuting households. Also, households with footloose workers are worse off than both commuter and non-commuter households. Further, they find that among the commuter households along with higher consumption expenditure there is higher dietary diversity in food consumption indicating that these households are healthy and consume more nutritious diet also.

In the context of developed countries[i], there have been a few studies that have emphasized the importance of commuting by workers between rural and urban areas. In the context of Canada, Green and Meyer (1997) show that due to lower job opportunities in Canada's rural areas, individuals opt to commute to urban areas for work. Based on the 1991 census data, they argue that even though the size of the rural population has remained almost constant, there has been a decline in agricultural activities. This has led to the growth of 'dormitory towns' in rural areas, whose residents are employed in metro and urban areas. They also find that with the increase in the industries established in rural areas (25 percent of industrial employment opportunities were located in rural Canada in 1971), there has been an increase in the urban to rural commuting of workers. Similar evidence has been documented by Beale (1980) in the context of

rural USA, where rural workers were employed in non-farm activities (23 percent in manufacturing and 20 percent in wholesale and retail activities).

Renkow and Hoover (2000), show that in North Carolina (United States), the decision to commute is dependent on the choice of the housing site, wages, the nature of migration and the distance between the location of the workplace and the residence. The authors find that there has been a constant rise in the number of commuters from rural to urban areas (5.3 percent to 15 percent between 1960 and 1990). Moreover, the commuting rate from the adjacent rural counties to urban areas (20 percent of the workforce in 1990) is very high as is urban to rural commuting. Similar evidence has been documented by So et al. (2001) in the context of the USA, with regard to commuting between non-metro and metro locations.

These studies highlight the importance of rural-urban commuting in the process of livelihood diversification strategies for rural household. Further, in the context of local labour markets, workplace and residential location choice are dominated by the feasibility of rural-urban mobility.

In the coming sections, we will complement these studies, especially in developing countries (India, in this case), by focusing on the role of spatial distribution of economic activities, labour market conditions, nature of urban periphery in understanding the flows of commuters between rural and urban areas.

3. DATA USED

The main source of information on commuting by workers in India is the nationally representative sample survey on employment and unemployment conducted by the National Sample Survey Organization (NSSO), which asks the question of the workplace location of a worker, provided that he/she is engaged in non-agricultural activities[ii]. Here, the implicit assumption is that workers employed in agricultural activities do not commute. In this survey,

the residential location can be categorized as rural and urban areas. The information on workplace location is collected and can be categorized as rural, urban and no fixed place. Using this information, we can distinguish between workers who work within rural or urban areasand the workers who commute between rural and urban areas. The workers who have different residence and workplace location are characterized daily commuters and others being non-commuters. Apart from that, we also have workers in rural and urban areas who have no fixed workplace location and are termed as footloose workers, a specific type of daily commuters with mobile workplace location. But there are two main issues that need to be understood clearly. The first is that we are not able to capture the daily mobility of workers within rural (intra rural) and within urban (intra urban) areas. The second issue pertains to non availability of information on the distance travelled, time spent and mode of transport used in the process of daily commuting by individuals. Despite these two limitations of the survey data, it is very useful for estimating the magnitude of daily commuting by workers across the rural-urban boundary.

Another salient feature of this survey is to provide estimates of the proportions of the non-agricultural workforce that does not have a fixed workplace location. These workers do not have any fixed workplace premises and are not restricted to one location for commuting purposes. This means that they can work in either rural or urban areas depending on the nature of their work or the availability of work. Some examples of these workers include street hawkers, vendors, workers in transport related activities etc. Construction workers, working on a site in rural or urban areas are not counted among the non fixed place workforce.

We must note here that, in the survey, we have no information regarding the state or district of the workplace location, apart from whether it is a rural or urban region, but the survey provides information regarding the state and district of the residence location. The implication of this limited information provided by the survey is that we can only identify the flow of commuters based on their residence location. This means that for a specific state, we can estimate the

proportion of residents who are commuters between rural and urban areas based on the state or district of residence, but we cannot deduce whether his/her workplace location is situated in the same state or the same district or in another state or district.Based on the residence and workplace location of non-agricultural workers, we can identify the following workers' residence-workplace commuting patterns: rural-urban, urban-rural, rural-no fixed place of work and urban-no fixed place of work. Apart from this, we have workers who both live and work in rural or urban areas.

4. NATURE OF COMMUTING IN INDIA

The total number of commuters which includes only rural to urban, urban to rural, urban no fixed place and rural no fixed place workers engaged in non-agricultural pursuits was 25.1 million in 2004-05 which decreased to 24.6 million in 2009-10 and further to 23.7 million in 2011-12 (see Table 1). As share of non-agricultural workforce, the commuting workers have decreased from 14.6 percent to 11.2 percent between 2004-05 and 2011-12.

A further break up indicates that though mobility between rural and urban areas has remained stagnated around 12.5 million in 2004-05 to 12.4 million (in both 2009-10 and 2011-12), there has been a decrease in footloose (no fixed place) workers from 12.6 million (in 2004-05) to 12.2 million (in 2009-10) and down to 11.3 million in 2011-12. Interestingly, the size of rural to no fixed place workers decreased from 9.5 million to 3.9 million between 2004-05 and 2011-12, whereas the magnitude of urban to no fixed place workers has increased from 3.2 million in 2004-05 to 7.5 million in 2011-12.

Table 1: Nature of commuting by type

	Year		
Type of Workers	**2004-05**	**2009-10**	**2011-12**
Rural-urban	8,920,733	8,050,036	8,736,641
%	5.19	4.3	4.13

Urban-rural	3,614,038	4,370,678	3,645,044
%	2.1	2.34	1.72
Rural-no fixed place	9,453,413	5,035,493	3,871,138
%	5.5	2.69	1.83
Urban-no fixed place	3,157,638	7,177,731	7,458,149
%	1.84	3.84	3.52
Rural-rural	73,866,838	85,556,220	97,137,582
%	43	45.72	45.9
Urban-urban	72,779,654	76,947,337	90,761,799
%	42.36	41.12	42.89
Total	171,792,314	187,137,495	211,610,353
%	100	100	100
Source: Author's calculation using micro data from NSSO surveys			

An important feature of commuting for work between rural and urban regions is that the size of both side flows is quite significant. This is an unusual empirical observation when it is generally argued that in rural labour markets are stagnant and non-agricultural employment is considered synonymous with urban areas. One possible explanation can be that there has been a shift in formal manufacturing activities from urban to rural environments in the past decade, along with a shift of the informal service sector to urban areas (Ghani et al., 2012).

Moreover, a considerable share of public sector, government and formal jobs are located in rural areas, and these require some level of skill and education. It is a well documented that rural workers are less skilled and less educated than their urban counterparts. This contributes to creating a spatial mismatch (in terms of location of workers and nature of jobs) in the labour market of rural and urban areas, if we assume that individuals are more reluctant to change their residence than their workplace. Therefore, we observe that individuals living in urban areas commute to work in rural areas and vice versa.

A gender wise distribution of commuting workers indicates that around 90 percent of commuters are males and just 10 percent being females.

Table 2: Share of commuters by gender

	Year		
Gender	**2004-05**	**2009-10**	**2011-12**

Male	22,387,545	22,411,884	21,559,498
%	89.03	90.98	90.93
Female	2,758,277	2,222,054	2,151,474
%	10.97	9.02	9.07
Total	25,145,822	24,633,938	23,710,972
%	100	100	100

Source: Author's calculation using micro data from NSSO surveys

Coming to the size of workers without any fixed location of work which is as large as the number of rural-urban and urban-rural commuters combined, they largely work in the informal sector. Among male workers in the informal sector, about 5 per cent in rural areas and 1 per cent in urban areas had no fixed place of work. For females, the corresponding proportion was about 11 per cent in rural areas and 4 per cent in urban areas. One reason can be the predominance of seasonal livelihood activities among these workers, which change continually based on the nature of job opportunities available on the labour market. Moreover, these workers are largely low skilled and very little educated, which makes it hard for them to find employment in the formal sector (Sharma, 2017).

Table 3: Share of commuters by age group

	Year		
Age group (in years)	**2004-05**	**2009-10**	**2011-12**
Less than 15	1.47	0.52	0.35
15-24	21.63	18.3	17.03
25-34	28.8	28.51	30.49
35-44	26.22	27.57	26.76
45-59	18.69	21.2	21.26
Above 59	3.19	3.9	4.1
Total	100	100	100

Source: Author's calculation using micro data from NSSO surveys

Next, commuting workers are mostly concentrated in age-group 25-34 followed by 35-49. Relatively lesser share of workers comes from age-group 15-24 years (see Table 3). Also, around three-fourth of the commuters are married whereas around one-fifth being unmarried. A social group wise distribution indicates that Other Backward Classes (OBC) account for two fifth of total commuters followed by others category (29 percent) and Scheduled Castes (23 percent).

Also, there is no change in this composition between 2004-05 and 2011-12. The social group composition across the nature of commuting also remains same.

[Insert Figure 1-4 Here]

In figure 1-4, we document the regional variations in intensity of commuting in India. A few notable regional patterns of commuting highlight that in surrounding regions of National Capital Delhi (also called National capital region (NCR)), there is very high incidence of rural-urban commuting[iii]. In the eastern Haryana region, that surrounds Delhi from three sides, the proportion of rural-urban commuters is 27 percent of the non-agricultural workforce in this region (as compared to the national average of 8.2 percent) (Sharma, 2017). This region alone comprises six percent of the total number of rural-urban commuters in India, the prime reason being the proximity of India's largest urban agglomeration i.e. Delhi, combined with efficient road connectivity (National Highway 1 or the Grand Trunk Road, passes through these districts).

In the south east region of Gujarat, we see higher levels of commuting from rural to urban areas (23 percent of the rural non-agricultural workforce), while in the Saurashtra region urban to rural commuting of workers (10 percent of the urban non-agricultural workforce) is more prevalent, due to concentration of industrial activities. In the coastal Maharashtra, which includes Mumbai, we see both large numbers of rural-urban and urban-rural workers commuting (21 and 5 percent of the rural and urban non-agricultural workforce respectively).

Another worth mentioning region is Kerala which is considered as an excellent example of desakota, a mix of rural (desa) and urban (kota) characteristics (Pauchet and Oliveau, 2008[iv]). In this type of region, both rural-urban and urban-rural commuting is observed. Both rural-urban and urban-rural commuting is around 11 percent of non-agricultural workforce in Kerala.

5. RURAL-URBAN COMMUTING AND LABOUR MARKET OUTCOMES

One important question to ask in the context of commuters for work between rural and urban areas is that, what makes them move? Is it the local labour market conditions in terms of unemployment rate, rural-urban wage differentials or the concentration of population in the peripheral rural areas surrounding urban areas? Does concentration of specific type of economic activities affect the nature of worker mobility? Do individuals commute from rural to urban areas for diversification of economic activities or to find better opportunities? We will attempt to answer a few of these questions, while discussing others in some detail to understand the interaction between labour market and commuting behaviour of workers.

5.1 What makes an individual to commute?

Sharma and Chandrasekhar (2014) discuss a whole range of factors that can contribute or hinder the daily mobility of workers between residence and workplace location across rural-urban areas.

First, discussing the commuters between rural and urban areas, they argue that rural labour market conditions play a vital role in the decision to commute. Higher unemployment rate in rural areas encourages workers to commute from rural to urban areas as well as higher incidence of rural workers being no fixed place workers. Further, if urban areas offer higher wages then individual are more likely to commute from rural to urban areas, to opt for better opportunities. Second, the larger share of peri-urban population leads to higher incidence of rural-urban as well as urban rural commuting. Given their proximity to cities, individuals living in the peri-urban areas are more likely to have better access to the urban job market. The higher the share of urban population in a region the higher is the likelihood of the individual commuting from rural to urban areas and lesser chance of urban-rural commuting. A higher share of rural population living farther from a city (beyond 7 km) leads to lesser probability of

rural–urban commuting. Third, understanding the implication of spatial distribution of activity, it is observed that in districts with a higher level of clustering of secondary sector activity, workers are more likely to commute from urban to rural areas as well as rural to urban areas. One can also say that concentration of secondary sector leads to both way commuting which may be termed as "wasteful commuting". These findings also corroborate with the results of Ghani et al. (2012). On contrary to secondary sector, the service sector is concentrated more in urban areas (Ghani et al., 2012; Holmes and Stevens, 2004). Therefore, not so surprisingly a higher concentration of service sector leads to higher probability of observing rural–urban commuting and lower probability of observing urban–rural commuting.

In the context of no fixed place workers, Sharma and Chandrasekhar (2014) highlight that incidence of no fixed place workers in both rural and urban areas arises due to lack of job opportunities. A higher unemployment rate induces workers to become footloose and work without any fixed location. A higher concentration of secondary sector jobs (manufacturing) is negatively related to no fixed place workers. On the other hand, higher concentration of service sector jobs goes hand in hand with the probability of a rural worker having no fixed place of work. However, the higher the concentration of service sector jobs the lower is the probability of an urban worker having no fixed place of work. This is because service sector jobs are likely to be in the cities rather than in the rural areas. Most workers with no fixed place of work are likely to be in the service sector engaged in activities including hawkers or artisans like carpenters, cobblers, knife-grinders, own-account carpenters, etc., who move from place to place and go to customers.

5.2 Is commuting related to finding just employment or better opportunities: underemployment and commuting

In the literature on labour mobility, unemployment is considered as an important indicator of local labour market conditions and acts as push or pull factor for migration as well as

commuting (Pissarides and Wadsworth 1989). To answer whether commuting is meant for better opportunity or finding employment, we need to analyze the relationship between measures of unemployment and decision to commute. The findings on unemployment have already been discussed by Sharma and Chandrasekhar (2014), we complement these findings by discussing the impact of underemployment on decision to commute between rural and urban areas. The reason underemployment rate is considered as an indicator is as follows. First, underemployment rate is a proxy for disguised employment, suggesting that workers are not engaged in economic activity as per their potential and they are looking for better employment opportunities. Second, in developing countries, especially in rural areas, underemployment indicates excess labour in agricultural sector which is seeking for better work opportunities. This argument comes from the seminal work of Lewis (1954), which suggested that due to workers being underemployed, there would be a constant flow of workers from rural to urban areas in search of non agricultural activities. Interestingly, Lewis (1954) in his Nobel memorial prize winning work never explicitly talked about just migration but mobility in general, but his work is generally referred and interpreted in the context of migration, while commuting as labour mobility is largely ignored.

Now, coming back to underemployment, we use the data from National Sample Survey Office (NSSO) on employment and unemployment 2009-10 (66^{th} round) to measure unemployment rate at the regional level. We have calculated the underemployment rate using the usual principal and subsidiary status, and current weekly status of employment. An individual who is employed as per principal and subsidiary status (i.e. more than six months in a year) but is unemployed as per the reference week criterion (i.e. in past seven days) is considered as underemployed. We estimate separate underemployment rate for rural and urban area at the NSS region level. In the rural and urban multinomial logit model of commuting decision of individuals (see Table 4 and 5), we include underemployment rate instead of unemployment rate.

A priori, we can hypothesize that higher underemployment in rural areas will lead to higher rural-urban commuting. We find that higher rural underemployment leads to higher rural-urban commuting, while higher urban underemployment rate negatively affects rural-urban commuting. For the urban model, we find higher rural underemployment will lead to lower urban-rural commuting; and for the urban underemployment we do not get the expected positive sign. One plausible reason for such finding in urban areas is that alternative and better job opportunities are likely to be available more in urban as compared to rural areas, and thus lower incidence of urban-rural commuting. The detailed results are provided in table 4 and 5, but for the sake of brevity, we avoid discussing other results.

Table 4: Relative risk ratio from multinomial model for workplace location choice of rural residents
(Base category: Rural workplace)

	Urban Workplace		No fixed place of work	
Explanatory Variables	Relative risk ratio	S.E.	Relative risk ratio	S.E.
Share of peri-urban population	1.007***	0.000034	0.999***	0.000043
Share of urban population	1.018***	0.000040	0.995***	0.000056
Underemployment rate: rural	1.024***	0.000441	0.939***	0.000530
Underemployment rate: urban	0.926***	0.000529	1.005***	0.000619
Location quotient: manufacturing	1.619***	0.002940	1.266***	0.002840
Location quotient: services	1.284***	0.002810	1.269***	0.003470
Wage Differential: Urban minus Rural (in Rs.)	1.002***	0.000005	1.001***	0.000006
Share of rural population (0-7 km from town)				
8--15 km from town	0.400***	0.002740	0.164***	0.001490
16-30 km from town	0.518***	0.002380	1.516***	0.008860
30+ km from town	0.238***	0.001060	0.170***	0.001050
Education Level (uneducated)				
Below Primary	0.877***	0.001510	0.985***	0.001750
Primary	1.054***	0.001490	0.928***	0.001470
Middle	1.053***	0.001460	0.885***	0.001390
Secondary	1.306***	0.002010	0.959***	0.001750
Higher Secondary	1.604***	0.002810	0.443***	0.001290
Graduation or above	1.863***	0.003640	0.236***	0.000959
Skill Level (I)				
Level II	0.825***	0.000829	0.609***	0.000733
Level III	0.633***	0.001410	1.034***	0.003320
Level IV	0.891***	0.001870	0.861***	0.002330
Age group (15-24 yrs.)				
25-34	0.907***	0.00127	0.984***	0.00184

Table 4: Relative risk ratio from multinomial model for workplace location choice of rural residents
(Base category: Rural workplace)

	Urban Workplace		No fixed place of work	
Explanatory Variables	Relative risk ratio	S.E.	Relative risk ratio	S.E.
35-44	0.820***	0.00129	1.028***	0.00205
45-59	0.826***	0.00138	0.876***	0.00185
Marital status*Gender (unmarried*male)				
Female	0.707***	0.001850	0.451***	0.002110
Married	0.940***	0.001310	1.231***	0.002340
Other	0.713***	0.002860	1.216***	0.005170
Married female	0.642***	0.001970	0.511***	0.002710
Other female	0.724***	0.004220	0.417***	0.003610
Household type (self-employed in non-agriculture)				
Agriculture labour	1.368***	0.002930	0.786***	0.002000
Other labour	1.848***	0.002220	0.684***	0.000898
Self-employed in agriculture	1.141***	0.002060	0.764***	0.001660
Others	2.293***	0.003130	0.672***	0.001340
Social group (Others)				
Scheduled Tribe	1.683***	0.002990	1.466***	0.003390
Scheduled Caste	1.188***	0.001550	1.199***	0.002030
Other Backward Class	1.115***	0.001260	1.176***	0.001740
Religion (Muslim)				
Hindu	0.795***	0.001080	0.789***	0.001250
Christian	0.782***	0.002230	1.584***	0.005380
Others	2.135***	0.004810	0.699***	0.002690
Constant	0.0495***	0.000395	0.103***	0.001330
Observations (N)	38378			

The reference group for the categorical variables mentioned within parenthesis.
Level of significance : *** p<0.01, ** p<0.05, * p<0.1
We also control for land holding size, household size and seasonality.
Weights are used in the estimation of multinomial logit model.

Table 5: Relative risk ratio from multinomial model for workplace location choice of urban residents
(Base category: Urban workplace)

	Rural Workplace		No fixed place of work	
Explanatory Variables	Relative risk ratio	S.E.	Relative risk ratio	S.E.
Share of peri-urban population	1.006***	0.000052	1.003***	0.000042
Share of urban population	0.980***	0.000049	1.001***	0.000036
Underemployment rate: rural	**0.957*** **	**0.000565**	**0.914*** **	**0.000441**
Underemployment rate: urban	**0.950*** **	**0.000640**	**1.021*** **	**0.000535**
Location quotient: manufacturing	1.587***	0.003770	0.855***	0.001650
Location quotient: services	0.423***	0.001350	1.220***	0.002820
Wage Differential: Urban minus Rural (in Rs.)	1.000***	0.000007	1.000***	0.000006
Education Level (uneducated)				
Below Primary	1.078***	0.002880	0.783***	0.001410

Table 5: Relative risk ratio from multinomial model for workplace location choice of urban residents
(Base category: Urban workplace)

	Rural Workplace		No fixed place of work	
Explanatory Variables	Relative risk ratio	S.E.	Relative risk ratio	S.E.
Primary	0.929***	0.002240	0.788***	0.001220
Middle	1.129***	0.002400	0.786***	0.001130
Secondary	1.137***	0.002550	0.537***	0.000900
Higher Secondary	1.021***	0.002530	0.417***	0.000845
Graduation or above	0.834***	0.002110	0.200***	0.000494
Skill Level (I)				
Level II	0.932***	0.001520	0.494***	0.000532
Level III	1.029***	0.002790	0.689***	0.001670
Level IV	0.916***	0.002350	0.268***	0.000641
Age group (15-24 yrs.)				
25-34	0.941***	0.002060	1.450***	0.002490
35-44	1.128***	0.002660	1.509***	0.002870
45-59	0.826***	0.002070	1.435***	0.002800
Marital status*Gender (unmarried*male)				
Female	0.855***	0.003360	0.111***	0.000780
Married	1.401***	0.002980	1.002	0.001600
Other	1.126***	0.006990	0.705***	0.003290
Married female	0.821***	0.003630	1.899***	0.014100
Other female	0.891***	0.007230	3.167***	0.028900
Household type (Self-employed)				
Regular wage/salary earning	0.653***	0.000895	0.207***	0.000260
Casual labour	0.827***	0.001460	0.422***	0.000518
Others	1.129***	0.004360	0.707***	0.002330
Social group (Others)	-		-	
Scheduled Tribe	1.310***	0.004220	1.595***	0.004240
Scheduled Caste	0.863***	0.001650	1.249***	0.001800
Other Backward Class	0.940***	0.001270	1.110***	0.001250
Religion (Muslim)				
Hindu	0.885***	0.001470	1.012***	0.001310
Christian	0.976***	0.003740	1.181***	0.003620
Others	0.896***	0.003400	0.727***	0.002280
Constant	0.186***	0.000834	0.401***	0.001360
Observations (N)	40964			

The reference group for the categorical variables mentioned within parenthesis.
Level of significance : *** p<0.01, ** p<0.05, * p<0.1
We also control for household size and seasonality.
Weights are used in the estimation of multinomial logit model.

Another way to answer the question on whether it is push or pull factors that decide the decision to commute between rural and urban areas, is by analyzing the difference in wages for commuters versus non-commuters.

Table 6: Mean wages (in Rs.) across the type of workers			
Type	**2004-05**	**2009-10**	**2011-12**
Rural-urban	129	194	251
Urban-rural	183	251	440
Rural-rural (non-commuters)	97	161	219
Urban-urban (non-commuters)	164	312	392
Rural-no fixed place	67	123	179
Urban-no fixed place	87	156	218
Over all	132	233	304

Source: Author's calculation using micro data from NSSO surveys

As is clear from table 6, commuting workers earn higher daily wages than their non-commuting counterparts[v]. This indicates that higher wage differential would attract workers to commute for work. Thus, we can say this is a case for finding better opportunities. On the other hand, no fixed place workers earn lower wages than commuters between rural and urban areas as well as non-commuters in either rural or urban area.

6. CONCLUSION

This study is an attempt to extend the dialogue on commuting between rural and urban areas with a focus on labour market outcomes.

We show that though there is not much change in the magnitude of commuters as per the estimates from NSSO sample surveys from 2004-05 to 2011-12, but there has been a churn in the composition of commuters. The number of no fixed place workers from rural areas has more than halved from 2004-05 to 2011-12 whereas urban-no fixed place workers has more than doubled during the same period. The magnitude of female commuters has reduced over time.

We also show that regional labour market factors and spatial distribution of economic activities play an important role in the decision to commute for both rural and urban residents. We show

that along with unemployment, underemployment as a push factor remains an important determinant of commuting decision of individuals in rural areas. In terms of wages, commuting workers earn higher wages then their non-commuting counterparts. Here, a key finding remains that no fixed place mobility is sort of distressed in nature due to lack of enough opportunities at the place of residence and this seems clear from the wages earned by them. With these findings in place, we can argue that commuting by workers can act as important bridge between rural and urban areas, without significantly adding burden on cities, in terms of housing, access to public services and ensuring balanced growth in rural economy with backward and forward linkages. In the 11th and 12th five year plans and other government policies, with the focus on inclusive growth, daily labour mobility to urban areas can be the key in the following context:

3,682 urban local bodies in the country, spread across 593 districts, should act as economic growth engines at the local and regional level, through access to markets, infrastructure, formal credit, availing job opportunities in non-agricultural sector and linkages to the global economy" (Government of India, 2006)

The main impediments to extend the dialogue on labour mobility, especially commuting and its importance in percolating the growth effect of cities in the surrounding rural areas, is the lack of availability of national level datasets for informed and evidence based policymaking. A welcome step in this context is the inclusion of questions on commuting in Census of India 2011. But this information remains limited to regional stocks and not much micro level analysis can be done. Another issue is that its available only once in a decade.

Lastly, some of the key question, that need to be answered to extend our understanding on the role of commuting to improve rural-urban linkages and in turn ensure balanced growth through interdependence can be as follows. First, what are the pecuniary and social returns to commuting? This would help in advocacy for improving the conditions for ease of commuting. Second, what is the relationship between commuting and migration? Are they complements or

substitutes to each other? This would help us in understanding the nature of transition that is likely to happen in a developing economy. Lastly, what is more beneficial, mobility of firms to the workers or mobility of workers to the firms?

NOTES

[ii] In the developing countries, a distinction has been made in the nature of commuting from rural to urban and metropolitan areas vis-à-vis from suburban to urban. In this chapter, the focus remains on the commuting by workers across rural-urban boundaries. We have limited our discussion to rural-urban commuting in the context of developed countries.

[ii] This information is available in last three quinquennial rounds of the survey i.e. 61st round (2004-05), 66th round (2009-10) and 68th round (2011-12). The latest round of survey was conducted in 2016-17 but is not available in public domain to be used for the analysis.

[iii] The discussion on regional patterns of commuting is based on the 2009-10 survey of NSSO only.
[iv]http://sebastien.oliveau.fr/publi/Pauchet%20Oliveau%20EPC%202008%20A4.pdf
[v] A key thing to understand in this table is that we cannot compare the wages over the years because of the inflationary factors and wage being in nominal terms. But we can compare it across the type of workers.

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FIGURES

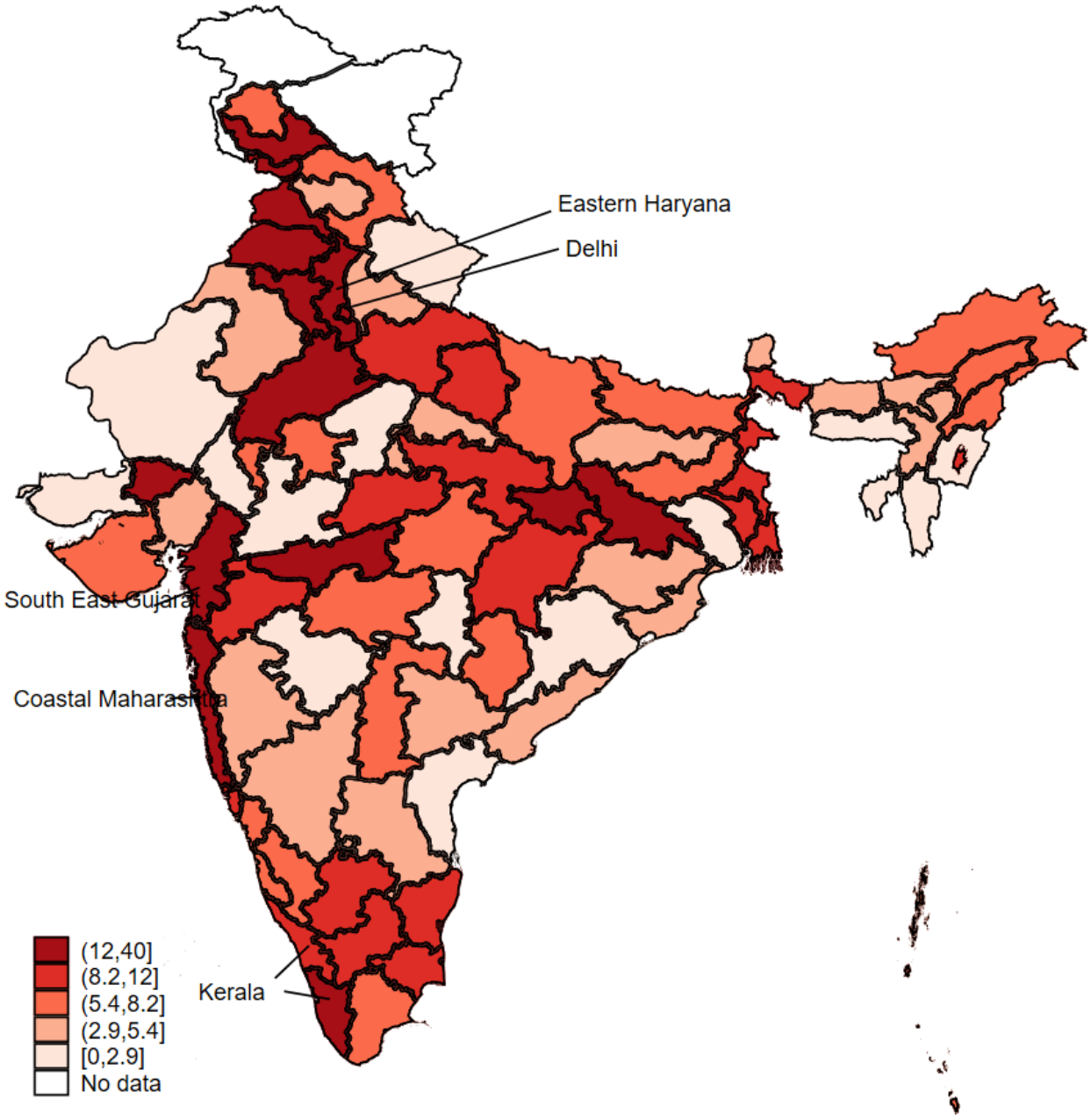

Figure 1: Regional variation in rural-urban commuting as share of rural non-agricultural workforce

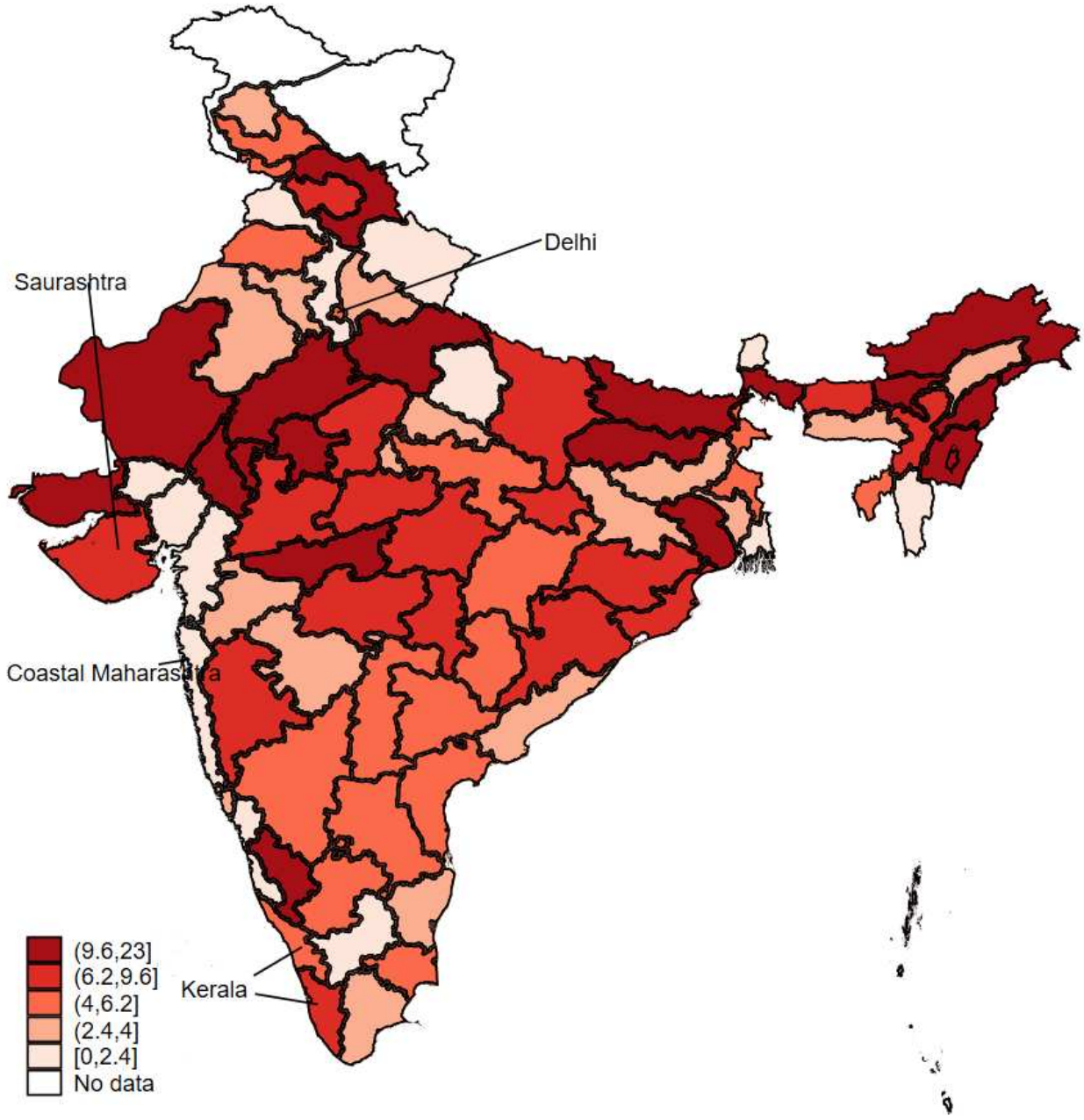

Figure 2: Regional variation in urban-rural commuting as share of urban non-agricultural workforce

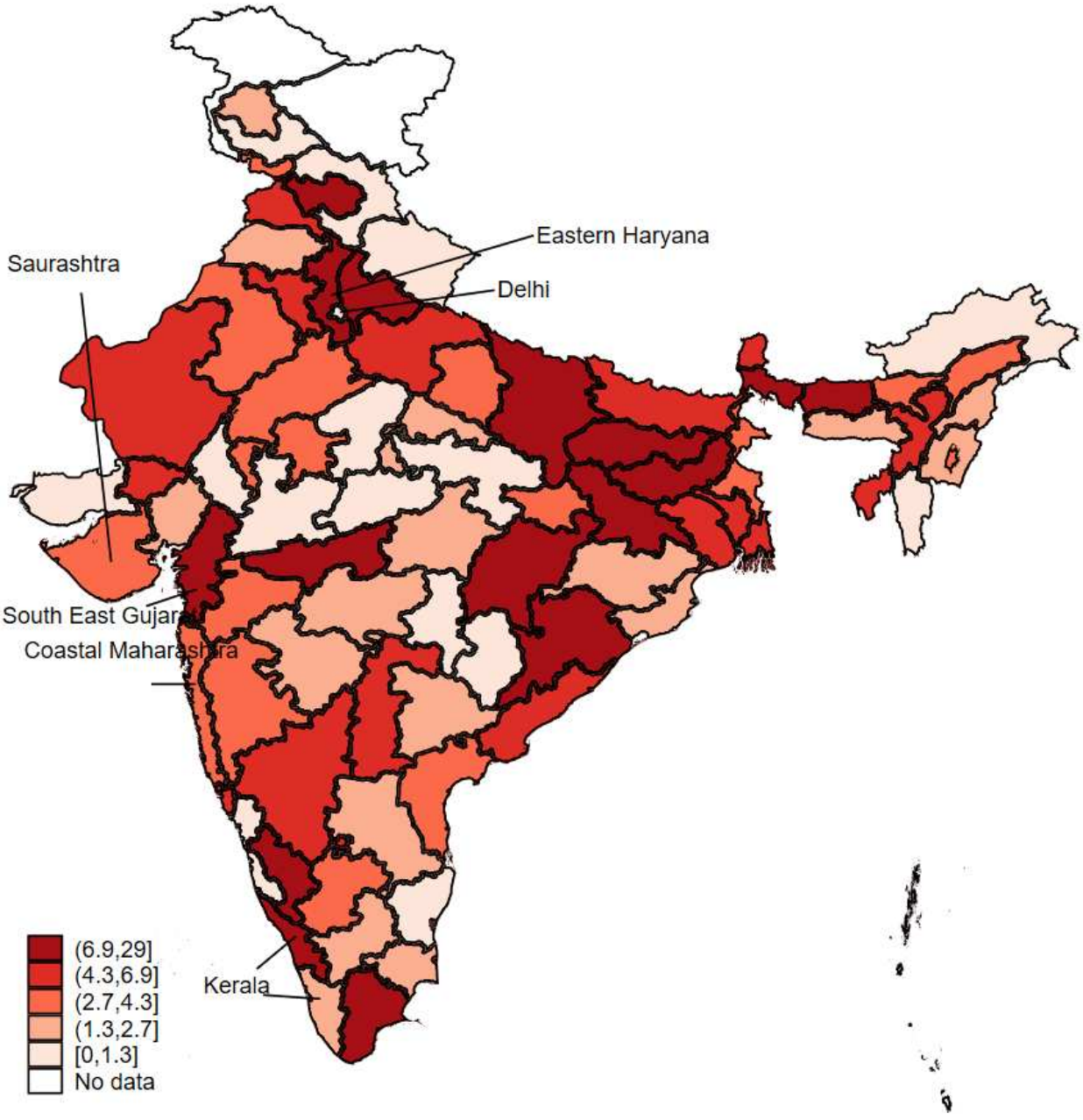

Figure 3: Regional variation in rural-no fixed place workers as share of rural non-agricultural workforce

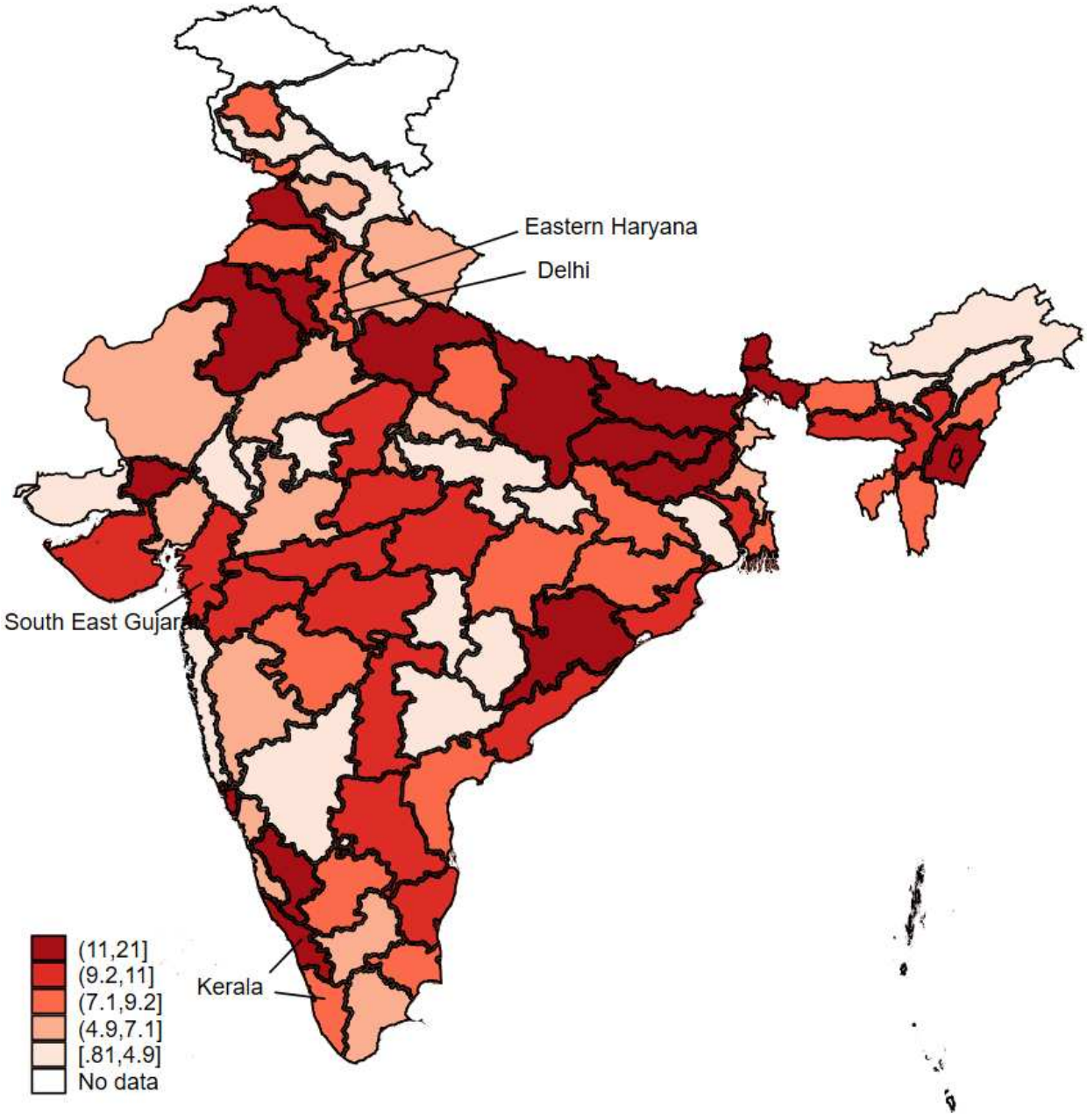

Figure 4: Regional variation in urban-no fixed place workers as share of urban non-agricultural workforce