

# Migration, Remittances, and Changing Patterns of Livelihood: Evidence from Western Odisha Villages

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# Migration, Remittances, and Changing Patterns of Livelihood: Evidence from Western Odisha Villages

## ABSTRACT

There is a tendency of labour shifting to better jobs after migration, though it is not a widely prevalent phenomenon. The most interesting point lies in the fact that population mobility has been accompanied by upward income mobility. Households engaged in relatively low-productivity activities are seen to be sending out migrants. However, there is also evidence that the probability to migrate out increases for household members engaged in better-paying activities. Remittances contribute significantly to the consumption requirements of those left behind. A large majority of the households which receive remittances are endowed with less land holding, and this pattern is evident for both seasons. This paper makes an attempt to identify the possible factors which cause migration and, secondly, to assess whether if migration leads to a sizeable amount of remittances, causing and to improvement in the levels of living of the households at the place of origin. Employment and income support measures can enable households to utilise remittances productively instead of spending on mere consumption for survival. Joint investment programmes—which involve mobilisation of household surplus resources and state reciprocity in terms of credit support—can be an effective way of creating income-augmenting activities in backward areas.

JEL classification: J61, J46, R23

Keywords: migration, occupation, income, mobility



## INTRODUCTION

For low-income households in search of better livelihood opportunities, the decision of rural-to-urban migration is a rational one. Instances are there to suggest migration in search of even a low-productivity job in the urban informal sector, to escape the severity of poverty at the place of rural origin. But, at the same time, and as Banerjee (1986) points out, population mobility in many poor households is sluggish primarily because they cannot afford the cost of migration (monetary and non-monetary). On the whole, migration is a response to diverse economic opportunities across space (Lall, Selodan, and Shalizi 2006); and diversity in such response across households is obvious, as income and many other wellbeing-cum-demographic-specific factors tend to vary across households.

Attempts have been made to explain rapid city growth in developing countries primarily by two major hypotheses (Williamson 1988):

1. unusually rapid rates of population growth press on limited farm acreage and push landless labour into cities, and
2. migrants are pulled into cities by economic forces, such as domestic terms of trade squeezing agriculture; technology diffusion from the developed world favouring modern, large-scale, urban industries; foreign capital flow into urban infrastructure; housing; power; transportation; and large-scale manufacturing.

In explaining migration across space, income differentials are taken as the motivating factor for people moving from low-income areas to relatively high-income areas (Harris and Todaro 1970).<sup>1</sup> In rural areas, sluggish agricultural growth and limited development of the rural non-farm sector raise the incidence of rural poverty, unemployment, and underemployment. Given that most high-productivity activities are located in urban areas, the rural–urban income differentials are enormous, particularly for the poor and unemployed. Thus, many of them are believed to migrate to urban areas in search of jobs. However, this is not empirically true, as the cost of migration may be sizably large, particularly in relation to poor living conditions in rural areas (Banerjee 1986).

Besides, jobs in high-productivity activities in urban areas are limited in number relative to the labour supply; and, often, these are not accessible by low-income households due to information asymmetry (Mitra 2004). But this does not completely rule out the possibility that some of the poor may still move to urban areas in search of opportunities. And, surprisingly enough, population mobility takes place even in response to activities within the so-called

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<sup>1</sup>Stark (1984), however, argues that migration is influenced by relative deprivation, which is some function of income statistics other than a person's own current income. Hence, attempts must be made to generate data to assess the effect on migration of relative deprivation, rather than of income differential.

urban informal sector, which is generally taken to be characterised by low productivity. The severity of hardship in the rural scenario often makes the urban informal sector a better avenue for livelihood which, in turn, prompts migration.

The paper by Lall, Selodan and Shalizi (2006) summarises the findings related to how internal migrants behave at different stages of the migration process, how they prepare for migration, how they migrate, the difficulties they face on arriving in urban areas, and the links they maintain with rural areas. In an excellent study by de Haan (2011), migration issues in the Indian context are discussed extensively. Specifically for labour migration, while economic opportunities play a key role, motivations include not only conditions at the place of origin and destination but also the patterns of recruitment and migration networks (de Haan 1994).

The forced nature of migration has also been brought out in the context of western India (Bremner 1985). Forced migration refers to displacement of individuals and/or households due to conflicts, destitution, and impoverishment; natural, environmental, chemical, or nuclear disasters; famine; or development projects—a complex, wide-ranging, and pervasive set of phenomena. Though internal migration from poorer areas signifies a form of safety valve, there are many costs of migration that the data on remittances tends to neglect (de Haan 2011). Costs of migration include not only the costs of transport and resettlement at the place of destination but also several social costs, such as social exclusion, deprivation from familial bonding and benefits associated with it, and a variety of harassment that low-income migrants face from labour contractors, slum lords, and city residents (Mitra 2013).

De Haan (2007) reviews the literature on migration; remittances; and its effects on poverty, inequality, and development. He argues that population mobility is mostly underrated, and is actually a great deal more than what it is assumed to be. De Haan says that although migration does not always create equilibrium, it is a sign of economic development. Development, as such, cannot stop migration. Policies restricting migration are costly and harmful for the poor. It is concluded that there are diverse opinions on the effect of migration on development indicators, but—rather than migration itself—the forms migration takes, and the conditions under which it takes place, determine the effects. Remittances are hard to measure and are not always utilised in the best ways possible. An important effect of migration is its effect on inequality.

Deshingkar, Kumar, Chobey, and Kumar (2006) study the role of migration and remittances in enhancing livelihoods in six districts in Bihar, and find that (with the exception of the very poor and the very rich) all classes seem to be migrating in search of increasing opportunities elsewhere. Discrimination based on caste is still prevalent in these areas. Also, better-off young people tend to migrate to urban areas, and social connections determine the choice of destination. Wages depend on skill and education. It is observed that migration and

remittances improve the standards of living by smoothening out consumption and spreading risk. On the flip side, increase in child migration can lead to exploitation. The report recognises the need for investment channels for remittances—so that these lead to manifold benefits rather than consumption only—and for comprehensive records of and databases for migration and remittances.

The literature on social capital, network formation, and accessing sources of livelihood through these networks is rich. The two key elements of social capital include the resource endowments of one's associates and the social relationship through which associates' resources can be accessed (Ioannides and Loury 2004; Portes 1998). Job search through informal channels, such as friends, relatives, and members of the same caste group, is generally said to be widely prevalent and productive (Ioannides and Loury 2004). Elliot (1999) notes that workers from high-poverty neighbourhoods are substantially more likely to use informal job search methods than those from low-poverty neighbourhoods, and mutual benefits are ensured through informal networks (Stark 1995). However, a number of studies highlights the negative aspect of informal networks as well: for less educated workers, the use of informal contacts results in significantly lower wages (Elliott 1999);<sup>2</sup> rather, a diversification of networks can raise their payoffs (Kono 2006), indicating that a shift from informal networks to formal networks may result in gains.

While job prospects are definitely better in large cities than in small towns, and rural-to-urban migration for employment is indeed a major tool of poverty alleviation, opportunities are shrinking gradually for unskilled and illiterate males, particularly in large, metropolitan cities, because newly emerging activities, including those in the informal sector, are skill-intensive, which unskilled rural immigrants cannot perform (Kundu and Mohanan 2009). Pradhan and Mahesh (2016), using macro-level data for 25 developing countries, show that the poverty ratio reduces with increase in remittances.

De Haan, Brock, and Caulibaly (2002) study the patterns of labour migration in Mali, where populations have been on the move for the past few centuries. Migration is widespread and acceptable, and its factors complex. Demand for labour is important, but also important are local institutions and the availability of opportunities. Migrants are often thought of as victims of weather conditions and economic crisis, but the authors go on to show that people have successfully used migration as a risk management strategy, and that migration for work (both domestic and cross-border) is an integral part of households in Mali.

It has been widely observed that the propensity to migrate increases with education (Connell et al. 1976; Banerjee 1986). The importance of social networks in migration has

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<sup>2</sup> For details, see Kono (2006), Luke and Munshi (2006), Montgomery (1991), and Munshi and Rosenzweig (2006).



been widely acknowledged, as also mentioned above. Caste–kinship bonds and other kinds of village networks help rural job seekers arrange urban-based jobs (Banerjee 1986). The large concentration of migrants from the scheduled caste (SC) and scheduled tribe (ST) social categories, especially in the informal sector (Basu, Basu, and Ray 1987; Kasturi 1990; Neetha 2004), suggests the positive effect of the presence of SC/STs in urban destinations on further rural-to-urban migration. However, with social networks, the probability of experiencing upward mobility also declines, as an 'excess-supplies-limited-demand' situation emerges in the context of a geographically segmented labour market.

De Haan (2000) discusses the factors influencing migration, like gender, economic status, and rural-urban dynamics, and stresses that although migration has been underrated throughout history, it must be viewed as a strategy employed by households to improve their livelihoods and economic conditions, and as a legitimate means of enhancing livelihoods and spreading risk. Poverty may or may not be the leading cause of migration, and migration may or may not lead to inequality and economic decline in recipient areas; there is empirical evidence for both cases. The paper recognises the need for a policy framework that focuses on ways to support and increase migration, rather on trying to curb it.

Adger, Kelly, Winkels, Huy and Locke (2002) argue that all kinds of demographic changes affect the social resilience of individuals as well as communities as a whole. Migration is one such change they study in coastal Vietnam. They find that remittances as a result of migration can increase human and physical capital and, thereby, spread risk and increase opportunities which, in turn, enhances resilience. On the flip side, migration and remittances may result in increasing inequality and, thus, in reducing social resilience. There is also a risk that the remittance income may be used for unsustainable development practices. Hence, they conclude that the effects can be positive or negative.

McDowell and de Haan (1997) critically review the literature on sustainable livelihoods and the strategies of rural households in Bangladesh, Ethiopia, and Mali with respect to migration. They point out that migration is viewed as an exception or a departure from the normal patterns of society, and that it needs to be accepted completely and treated as the rule rather than the exception, and as a livelihood strategy of households. Finally, as migration can differ in cause and in purpose, an institutional approach is necessary to gauge its full extent and effects.

This paper attempts to identify the factors of migration and, secondly, to assess if migration leads to a sizable amount of remittance, and to improvement in the levels of living of the households at the place of origin. The rest of the paper is structured as follows. Section 2 examines some broad patterns of migration, cross-classified by certain important attributes, and the changes in livelihood sources at the place of destination compared to the place of origin. Section 3 pursues an econometric analysis to identify the determinants of migration. Section 4 focuses on remittances. Finally, the major findings with their policy implications are brought out in Section 5.

## 2 MIGRATION PATTERNS

The cross-classification of migration and the education level of household heads shows a higher incidence of migration among households with illiterate heads (Tables 1a and 1b). This pattern is quite consistent with what the Harris-Todaro model predicted: the disadvantaged and the poor with no resource endowment are likelier to migrate out in search of job opportunities than the non-poor, who do not have that compulsion.

However, several alternative frameworks, such as that of Banerjee (1986), argue in favour of a positive association between education level and rural-to-urban migration, as the educated are likelier to move to cities to pursue higher studies and/or look for better work opportunities. Our data set, however, pertains to all migrants, i.e., those who moved from rural areas to both other rural areas and urban areas. It has also been observed, from the population census data (2001), that the rural-to-rural stream dominates the rural-to-urban stream substantially at both the state level and the all-India level. Since rural-to-rural migration involves mostly those who are illiterate or lack higher levels of education, Banerjee's (1986) observation is unlikely to be valid in a general context (other than in that of rural-to-urban migration).

**Table 1a** Migration and Education level of Household head in Rabi Season (in absolute numbers)

Education of Household head in 2013	Number of Individuals migrated from Household					
	No Migration	1	2	3	4	Total
Illiterate	55	24	5	3	2	89
Upto Primary	83	28	7	3	0	121
Above Primary	48	13	3	0	0	64
Total	186	65	15	6	2	274

**Table 1b** Migration and Education level of Household head in Khariff Season (in absolute numbers)

Education of Household head in 2013	Number of Individuals migrated from Household			
	No Migration	1	2	Total
Illiterate	69	19	1	89
Upto Primary	105	13	3	121
Above Primary	55	8	1	64
Total	229	40	5	274

There is a tendency of labour shifting to better jobs after migration, though it is not a widely prevalent phenomenon. Particularly in terms of secondary occupations, the changes after migration are not perceptible. As the category of non-agricultural labour (which includes construction and factory jobs) is likely to offer higher remuneration, migration seems to result in better outcomes, as some individuals were unemployed before migration (Tables 2 and 5). However, the lack of upward mobility is also evident in some cases (Tables 3 and 4). Besides, we do not have information on both pre- and post-migration job status for many migrants; hence, a meaningful comparison could not be made to derive any generalised conclusion.

**Table 2** Change in primary occupation before and after migration in Rabi season

Primary Occupation in 2009	Primary Occupation in 2013					
	Agriculture Labor	Cattle Rearing	Forest Produce Collection and own Cultivation	Non-Agricultural Labour	Services	Total
Agricultural Labour	0	0	0	1	0	1
Cattle Rearing	0	0	0	2	0	2
Forest Produce Collection and own Cultivation	0	0	0	2	0	2
Non-Agriculture Labor	1	0	0	44	1	46
Not Working	0	0	1	17	4	22
Services	0	1	0	2	5	8
Total	1	1	1	68	10	81

*Note:* Non-agriculture labor includes construction labor and factory labor. Occupation category “Not working” includes non workers, pensioners and students. Services include trade, and transport and services.

**Table 3** Change in Secondary occupation before and after migration in Rabi season

Secondary Occupation in 2009	Secondary Occupation in 2013					
	Agricultural Labor	Cattle Rearing	Forest Produce Collection and own Cultivation	Non-Agriculture Labor	Not Working	Total
Agriculture Labor	1	0	0	0	1	2
Cattle Rearing	0	1	0	0	1	2
Forest Produce Collection and own Cultivation	0	0	4	2	0	6
Non-Agriculture Labor	0	1	2	1	0	4
Not Working	0	0	1	1	10	12
Services	0	0	0	1	0	1
Total	1	2	7	5	12	27

*Note:* Occupation category “Not working” includes non workers, pensioners and students. Services include trade, and transport and services.

**Table 4** Change in primary occupation before and after migration in Kharif season

Primary Occupation in 2009	Primary Occupation in 2013		
	Non-Agriculture Labor	Services	Total
Forest Produce Collection and own Cultivation	0	1	1
Non-Agriculture Labor	10	0	10
Not Working	5	2	7
Services	1	3	4
Total	16	6	22

**Table 5** Change in Secondary occupation before and after migration in Kharif season

Secondary Occupation in 2009	Secondary Occupation in 2013					
	Agriculture Labor	Forest Produce Collection and own Cultivation	Non-Agriculture Labor	Not Working	Services	Total
Agriculture Labor	2	1	2	0	0	5
Cattle Rearing	0	0	1	0	0	1
Forest Produce Collection and own Cultivation	1	8	5	0	1	15
Non-Agriculture Labor	0	0	1	0	0	1
Not Working	0	0	0	5	0	5
Total	3	9	9	5	1	27

The most interesting point lies in that population mobility has been accompanied by upward income mobility (Tables 6 and 7). The real incomes have been calculated after correcting for price changes between 2009 and 2013. Though there is no strong evidence in favour of a rise in the number of days of work after migration compared to the pre-migration status, the rise in income after migration is an outcome of graduation to better-off jobs (Tables 8 and 9).

**Table 6** Change in Total Real Income before and after Migration in Rabi season (absolute numbers)

Real Income in 2009	Real Income in 2013					Total
	Less than Rs.5000	Rs.5001 to 20000	Rs.20001 to 35000	Rs.35001 to 50000	Above Rs. 50000	
Less than Rs.5000	0	2	6	1	0	9
Rs.5001 to 20000	2	25	7	7	0	41
Rs.20001 to 35000	0	4	15	6	1	26
Rs.35001 to 50000	0	1	3	2	0	6
Total	2	32	31	16	1	82

**Table 7** Change in Total Real Income before and after Migration in Khariff season (absolute numbers)

Real Income in 2009	Real Income in 2013			
	Rs.5001 to 20000	Rs.20001 to 35000	Rs.35001 to 50000	Total
Less than Rs.5000	2	6	1	9
Rs.5001 to 20000	11	3	1	15
Rs.20001 to 35000	1	6	3	10
Rs.35001 to 50000	0	2	1	3
Above Rs. 50001	1	0	0	1
Total	15	17	6	38

**Table 8** Number of days worked per week by individuals before and after migration in Rabi season (absolute numbers)

Days worked per week in 2009	Days worked per week in 2013			
	1-2	2-4	Above 4	Total
1-2	7	14	1	22
2-4	7	37	9	53
Total	14	51	10	75

**Table 9** Number of days worked per week by individuals before and after migration in Khariff season (absolute numbers)

Days worked per week in 2009	Days worked per week in 2013			
	1-2	2-4	Above 4	Total
1-2	2	4	0	6
2-4	3	9	3	15
Total	5	13	3	21

Turning to the question of which types of household are more likely to migrate, Tables 10–13 are generated on the following consideration. The type of household is determined by considering the household head's primary occupation. In both seasons, households engaged in relatively low-productivity activities are seen to be sending out migrants. However, there is also evidence that members of relatively better-off households (like non-agricultural labour households) are migrating out. Hence, it is difficult to uphold the view that only those from relatively worse-off households are more likely to migrate. The individual's work status seems to be a more important determinant of migration than the household head's employment status.

**Table 10** Migration and Primary Occupation of Household Head in 2013 in Rabi Season (absolute numbers)

Primary Occupation of Household head in 2013	Number of Individuals migrated from Household					
	No Migration	1	2	3	4	Total
Agriculture Labor	1	1	0	0	0	2
Cattle Rearing	8	3	1	0	0	12
Forest Produce Collection and own Cultivation	12	2	0	0	0	14
NREGA	2	0	0	0	0	2
Non-Agriculture Labor	24	18	7	4	2	55
Not Working	11	7	1	0	0	19
Services	9	10	0	0	0	19
Total	67	41	9	4	2	123

**Table 11** Migration and Secondary Occupation of Household Head in 2013 in Rabi Season (absolute numbers)

Secondary Occupation of Household head in 2013	Number of Individuals migrated from Household				
	No Migration	1	2	3	Total
Agriculture Labor	3	2	0	0	5
Cattle Rearing	30	7	1	1	39
Forest Produce Collection and own Cultivation	59	13	5	0	77
NREGA	15	4	0	0	19
Non-Agriculture Labor	27	8	0	0	35
Not Working	28	6	2	1	37
Services	11	1	1	0	13
Total	173	41	9	2	225

**Table 12** Migration and Primary Occupation of Household Head in 2013 in Khariff Season (absolute numbers)

Primary Occupation of Household head in 2013	Number of Individuals migrated from Household			
	No Migration	1	2	Total
Agriculture Labor	5	0	0	5
Cattle Rearing	9	2	0	11
Forest Produce Collection and own Cultivation	26	4	0	30
Non-Agriculture Labor	7	4	1	12
Not Working	15	1	0	16
Services	14	3	0	17
Total	76	14	1	91

**Table 13** Migration and Secondary Occupation of Household Head in 2013 in Khariff Season (absolute numbers)

Secondary Occupation of Household head in 2013	Number of Individuals migrated from Household			
	No Migration	1	2	Total
Agriculture Labor	42	7	0	49
Cattle Rearing	35	6	0	41
Forest Produce Collection and own Cultivation	106	17	3	126
NREGA	1	0	0	1
Non-Agriculture Labor	9	3	2	14
Not Working	23	4	0	27
Services	7	1	0	8
Total	223	38	5	266

### 3 MIGRATION FUNCTION

First, we have tried to explain in a logit framework what induces or discourages the probability to migrate. The dependent variable is migrants versus non-migrants characterised in terms of 1 and 0, respectively. The variables tried in the equation include nature of job, gender, age, education, household size, income, and asset index. The Harris-Todaro (1970) model considered the income differential between the place of origin and destination, and suggested that migration is higher if the income at the place of destination is higher than the income at the place of origin. From the individual's point of view, per capita income has been included in our regression, suggesting that higher the income, higher the probability that the individual is a migrant.

Another important determinant of migration is education. Individuals migrating for higher education and also those with higher education are likely to have a higher probability to migrate. The agrarian contract is an important determinant of migration. Households with outstanding loans and/or with land mortgages are more likely to experience migration, as remittance income helps them settle their debts and attain self-sufficiency. Similarly, as land is the most important asset in rural areas, households with less land holding are more likely to send out migrants.

Again, it has been observed in the literature that since regular wage employment offers stable income, it raises the probability to migrate, compared to self-employment or casual wage employment. Hence, jobs with better employment attributes may be associated with a higher probability to migrate. Household size is also a determinant of migration, as larger households can afford to send out members for augmenting the household income.

Turning to gender, males are more likely to migrate in search of jobs, though female migration for social reasons, such as marriage, is strongly evident in the Indian context (Mitra and Murayama 2008). Not all age groups are expected to reveal a similar probability to migrate; those who belong to economically active age groups are more likely to experience mobility. Beyond a certain age, as the probability of finding employment at the place of destination declines, the probability to migrate may also decline.

After collapsing the detailed information collected on the educational status of individuals, three education categories have been considered: illiterate, up to primary, and above primary (which includes secondary, graduation, technical education, etc.) Two dummies are included; illiterates are taken as the comparison group. The gender dummy represents 0 for females and 1 for males.

Various job categories include the following:

- 0 for agriculture labour,
- 1 for cattle rearing,
- 2 for forest product collection and own cultivation,
- 3 for National Rural Employment Guarantee Act (NREGA) workers,
- 4 for non-agriculture labour,
- 5 for those not working, and
- 6 for services.

Further, instead of considering both the primary and secondary occupations of an individual, only the primary occupation is considered in the regression equation. The variable per capita income includes income from all sources, and is taken in real terms for 2013 and 2009.

As per our definition of migration (location of primary occupation being outside the place of home), we are able to consider both temporary and permanent migrants. Further, migration of individuals due to marriage, etc., is excluded. Though, strictly speaking, per capita income or the job dummies are not to be included in the migration function, as they represent the post-migration decision, we have considered them to represent the job market situation at the place of destination.

As far as all migrants (temporary and permanent) are concerned, in the equation for the rabi season, age is seen to reduce the probability to migrate (Table 14). This indicates a higher degree of mobility among the younger ones. The probability to migrate is raised by some job dummies (agricultural labour, cattle rearing, non-agricultural labour and services). For the kharif season, again, age reduces the probability to migrate, while some job dummies (non-agricultural labour, services) raise it.



With the exclusion of the variables like job dummies and income land holding, gender and household size turn out to be significant in the equation for rabi season, while the effect of age on the probability to migrate becomes insignificant (Table 15). In the equation, males are more likely to migrate because migration due to marriage, etc., has been excluded. Greater land holding is likely to reduce the probability to migrate, as household labour would be required for farming. On the other hand, as the household size goes up, given the size of land holding, the surplus labour is required to migrate out to explore alternative economic opportunities. In the kharif season, the land holding is again seen to have a negative effect on migration, while males revealed a higher propensity to migrate. On the whole, the results are indicative of two important patterns:

1. household endowment engages the available labour supply productively and, hence, the need to migrate is less; and
2. a lack of opportunities at the place of origin induces migration as the mismatch in skill grows.

#### **4 REMITTANCES**

The literature on migration and remittances is significant. Households which send out migrants are keen to receive remittances, and the survey data confirms this view. The number of remitters is more in the rabi season compared to the kharif season (2013) but, in both seasons, a large majority of the remitters are located in the lower size classes formed by the magnitude of remittances (Table 16). This shows that remittances contribute significantly to the consumption requirements of those who are left behind, and that migration is an effective strategy cultivated for survival. It is also noted that nearly 30 per cent of the remitters, particularly in the rabi season, have been remitting a significant amount.

However, the most striking part is that the remitters of greater amount are mostly literate and educated (Table 17), though not so much in the kharif season (Table 18). This supports the view that educated individuals migrate out in search of better jobs and are thus able to remit more. However, the other side of the story is that migration of educated individuals from the place of origin implies a drain of resources. The unavailability of opportunities at the place of origin forces many of the educated ones to migrate out; and, despite the amount they remit, the net losses in terms of human capital of this mobility process are significant (Banerjee 1986). Further, though part of the remittance might be spent on paying off debts or mortgages, most of it is spent on consumption; thus, long-term investment or asset formation is negligible.

The differences between the rabi and kharif periods can possibly be explained by the fact that kharif crops comprise staple foods, essential for consumption round the year. Also, as these crops are more labour-intensive, the family labour is utilised maximally, thus reducing the mobility of temporary migrants. Rabi crops are less labour-intensive, and are not only staple foods, thus releasing the labour to migrate out and remit more.

**Table 14** Regression Results: Migration

Dependent Variable: A binary variable which is 1 if an individual is migrant, otherwise 0.				
Variables	Rabi Session		Khariff Season	
	Without Asset Index	All Variables	Without Asset Index	All Variables
Land Holding	-0.34 (0.71)	0.007 (0.11)	-0.079 (0.18)	-0.190 (0.45)
Dummy for Gender	0.077 (0.50)	1.259 (0.84)	1.765 (1.22)	-
Age	-0.040*** (0.13)	-0.041* (0.02)	-0.068** (0.03)	-0.372* (0.20)
Primary Education Dummy	0.052 (0.45)	0.390 (0.83)	.925 (0.96)	25.271 (21.91)
Secondary Education Dummy	-0.221 (0.49)	0.736 (0.97)	-0.418 (0.94)	19.502 (21.6)
Household Size	0.057 (0.06)	0.126 (.12)	-0.013 (0.12)	-0.831 (6.2)
Job dummy: Agriculture Labor	20.135*** (1.44)	-	-	-
Job Dummy: Cattle Rearing	17.761*** (1.48)	-	-	-
Job Dummy: Forest Produce and Own Cultivation	-	-	-	-
Job Dummy: Non-Agriculture labor	20.828*** (1.06)	21.835*** (1.27)	20.680*** (5.7)	31.684*** (3.75)
Job Dummy: Services	19.200*** (1.10)	19.562*** (1.37)	19.654*** (5.81)	-
Variables	Rabi Session		Khariff Season	
	Without Asset Index	All Variables	Without Asset Index	All Variables
Dummy for Agriculture Contract	0.038 (0.354)	-0.322 (0.74)	0.474 (0.66)	2.426 (4.22)
Log (Per Capita Income)	0.000 (0.00)	0.000 (0.00)	0.095 (0.58)	0.475 (2.40)
Asset Index	-	0.162 (0.59)	-	0.370 (0.61)
Number of Observation	704	266	606	84
LR Chi2	246.29	130.27	133.74	43.57
Prob>Chi2	0.000	0.00	0.00	0
Pseudo R2	0.594	0.617	0.606	0.762

Note: Standard error is in parenthesis. Significance level at 10% is denoted by \*, 5% \*\*, and 1% \*\*\*.

The remittance function shows that some of the job categories have a positive and significant effect on the probability of remittance (Tables 19, 20, 20a, and 20b). In other words, earners engaged in certain specific activities are more likely to remit than the others. Similarly, male

migrants are more likely to remit than female migrants. However, the results are not uniform across seasons. Agricultural contracts raise the magnitude of remittance (Table 20). However, the other variables (age, education dummies) do not turn out to be statistically significant.

**Table 15** Regression Results: Migration after dropping Jobs and per capita income

Dependent Variable: A binary variable which is 1 if an individual is migrant, otherwise 0.

Variables	Rabi Session		Khariff Season	
	Without Asset Index	All Variables	Without Asset Index	All Variables
Land Holding	-0.098** (0.05)	-0.135 (0.08)	-02.262** (0.94)	-0.285* (1.16)
Dummy for Gender	1.630*** (0.25)	2.053*** (0.51)	2.485*** (0.53)	-
Age	-0.005 (0.005)	-0.005 (0.01)	-0.010 (0.01)	-0.026 (0.02)
Primary Education Dummy	0.049 (0.29)	0.335 (0.59)	-0.060 (0.48)	0.481 (1.18)
Secondary Education Dummy	0.125 (0.30)	0.945 (0.59)	0.631 (0.46)	1.500 (1.11)
Household size	0.109*** (0.04)	0.256*** (0.08)	0.018 (0.61)	0.068 (0.18)
Dummy for Agriculture Contact	0.273 (0.21)	0.222 (0.42)	0.385 (0.32)	0.942 (0.69)
Asset Index	-	0.208 (0.17)	-	0.373 (0.27)
Number of Observation	1203	487	1208	251
LR Chi2	71.49	48.44	61.31	15.89
Prob>Chi2	0.000	0.00	0.00	0.026
Pseudo R2	0.092	0.175	0.147	0.128

Note: Standard error is in parenthesis. Significance level at 10% is denoted by \*, 5% \*\*, and 1% \*\*\*.

**Table 16** Number of Individuals in different categories of Remittances in Rabi and Khariff Season in 2013 (absolute numbers)

Category of Remittances	Rabi Season	Khariff Season
Less than Rs. 5000	28	25
Rs. 5001 to Rs. 10000	37	23
Rs. 10001 to Rs. 20000	18	4
Above Rs. 20001	6	1
Total	89	53

Note: Remittances are deflated by Average CPI of agriculture (with base 2013 = 100) workers in Odisha.

A large majority of the households that received remittances are endowed with little land holding (less than 3 acres or so). This pattern is evident for both seasons (Tables 21 and 22). Further, as we cross-classify households in terms of the magnitude of remittances and land

holding, it is noticed that remittances are low or moderate for most households; very few households correspond to the top size class of remittances (Tables 23 and 24). More interestingly, in a large majority of cases, the remittances constitute almost 50 per cent of the total household income (Tables 25 and 26).

**Table 17** Education Categories and Remittance categories in Rabi Season in 2013 (in absolute numbers)

Education Categories	Remittance Category				
	Less than Rs. 5000	Rs. 5001 to Rs. 10000	Rs. 10001 to Rs. 20000	Above Rs. 20001	Total
Illiterate	5	9	2	0	16
Upto Primary	9	9	9	1	28
Above Primary	14	18	7	5	44
Total	28	36	18	6	88

*Note:* Remittances are deflated by Average CPI of agriculture (with base 2013 = 100) workers in Odisha.

**Table 18** Education Categories and Remittance categories in Khariff Season in 2013 (in absolute numbers)

Education Categories	Remittance Category				
	Less than Rs. 5000	Rs. 5001 to Rs. 10000	Rs. 10001 to Rs. 20000	Above Rs. 20001	Total
Illiterate	4	2	0	1	7
Upto Primary	4	7	3	0	14
Above Primary	16	13	1	0	30
Total	24	22	4	1	51

*Note:* Remittances are deflated by Average CPI of agriculture (with base 2013 = 100) workers in Odisha.

How remittances are spent is an important question. Whether remittances contribute to the overall wellbeing of the households and if so what are the channels through which the benefits accrue are some of the pertinent issues. Possibly remittances are utilised directly for consumption purposes as the households with less land holding are seen to be receiving remittances more, relatively speaking. However, households for which remittances do not account for a large percentage of the total income, implying better-off households, or those able to maximise income at the place of origin itself, seem to be spending remittances on health problems (Tables 27 to 30). In low-income households, usually, the consumption requirement takes priority, and health expenditure follows. Hence, our findings may be interpreted to mean that relatively better-off households do not depend much on remittances for consumption; instead, they use it to spend on health.

**Table 19** Regression Results: Remittance Function

Dependent variable: A binary variable with 1 if a migrant transfer the amount to household, otherwise 0.

Variable	Rabi Season	Khariff Season
Land Holding	0.064 (0.11)	0.346 (0.40)
Dummy for Gender	1.456** (0.62)	-
Age	-0.022 (0.20)	0.032 (0.05)
Primary Education Dummy	-0.470 (0.58)	-0.557 (1.51)
Secondary Education Dummy	-0.112 (0.65)	-0.358 (1.32)
Job Dummy: Non-Agriculture labor	-20.774*** (1.55)	-
Job Dummy: Services	-20.633*** (1.65)	-
Dummy for Agriculture Contract	0.418 (0.47)	-0.817 (0.98)
Number of Observations	115	32
LR Chi2	12.81	2.15
Prob>Chi2	0.171	0.83
Pseudo R2	0.087	0.06

Note: Standard error is in parenthesis. Significance level at 10% is denoted by \*, 5% \*\*, and 1% \*\*\*. Regressions with asset index are dropped due to limited number of observations.

**Table 20** Regression Results: Remittances (Tobit Model)

Variable	Rabi Season	Kharif Season
Land Holding	618.8887 (454.22)	922.4332* (538.91)
Dummy for Gender	7997.65** (3225.44)	-57.32 (4637.13)
Age	-11.2195 (95.27)	80.511 (59.51)
Primary Education Dummy	-131.512 (2885.95)	1238.076 (2350.65)
Secondary Education Dummy	3106.547 (3095.54)	67.24119 (2161.92)
Job Dummy: Agriculture labor	-17152.3 (10690.05)	- -
Job Dummy: Forest Produce and Collection	-	5457.008 (5676.26)

**Table 20** Regression Results: Remittances (Tobit Model) (cond.)

Variable	Rabi Season	Kharif Season
Job Dummy: Non-Agriculture labor	-7864.48 (6727.31)	2016.367 (4370.44)
Job Dummy: Services	-10353.4 (7190.1)	3380.326 (4592.53)
Dummy for Agriculture Contract	4021.49* (2337.11)	-754.128 (1319.43)
Number of Observations	117	45
LR Chi2	20.9	8.6
Prob>Chi2	0.03	0.47
Log Likelihood	-839.56	-367.56

Note: Standard error is in parenthesis. Significance level at 10% is denoted by \*, 5% \*\*, and 1% \*\*\*.  
Regression with asset index are dropped due to limited number of observations.

**Table 20a:** Marginal Effects: Rabi Season

Variable	Unconditional Expected value dF/dx	Conditional on being Uncensored dF/dx	Probability Uncensored
Land Holding	386.0232 (283.32)	270.91 (198.83)	0.023 (0.017)
Dummy for Gender	4269.91* (2011.82)	3085.67* (1411.88)	0.308*** (0.12)
Age	-6.99 (59.4)	-4.91 (41.7)	-0.0004 (0.003)
Primary Education Dummy	-81.93 (1800.07)	-57.50 (1263.27)	-0.005 (0.11)
Secondary Education Dummy	1959.41 (1930.8)	1376.76 (1355.02)	0.116 (0.11)
Job Dummy: Agriculture labor	-5573.36 (6667.77)	-4789.42 (4679.40)	-0.548 (0.404)
Job Dummy: Forest Produce and Collection	-	-	-
Job Dummy: Non-Agriculture labor	-5580.46 (4196.06)	-3981.94 (2944.77)	-0.261 (0.25)
Job Dummy: Services	-4838.72 (4484.79)	-3625.18 (3147.40)	-0.392 (0.27)
Dummy for Agriculture Contract	2397.623* (1457.73)	1692.89* (1023.03)	0.154* (0.08)

Note: Standard error is in parenthesis. Significance level at 10% is denoted by \*, 5% is \*\*, and 1% is \*\*\*.

**Table 20b** Marginal Effects: Kharif Season

Variable	Unconditional Expected value dF/dx	Conditional on being Uncensored dF/dx	Probability Uncensored
Land Holding	796.10* (465.10)	606.49* (354.32)	0.050* (0.029)
Dummy for Gender	-49.56 (4002.07)	-37.81 (3048.86)	-0.003 (0.25)
Age	69.48 (51.35)	52.93 (39.12)	0.004 (0.003)
Primary Education Dummy	1084.44 (2028.73)	837.58 (1545.53)	0.063 (0.13)
Secondary Education Dummy	58.013 (1865.85)	44.18 (1421.44)	0.003 (0.11)
Job Dummy: Agriculture labor	-	-	-
Job Dummy: Forest Produce and Collection	5172.03 (4898.8)	4482.27 (3732.08)	0.136 (0.310)
Job Dummy: Non-Agriculture labor	1679.81 (3771.90)	1255.86 (2873.52)	0.124 (0.24)
Job Dummy: Services	3047.60 (3963.58)	2444.32 (3019.54)	0.142 (0.25)
Dummy for Agriculture Contract	-655.014 (1138.73)	-501.84 (867.51)	-0.04 (0.07)

Note: Standard error is in parenthesis. Significance level at 10% is denoted by \*, 5% is \*\*, and 1% is \*\*\*.

**Table 21** Households Cross-Classified by Land Holdings and Remittances in Rabi Season

Land Holding Category (in acres)	Households with no Remittances	Households with Remittances
Less than 1	25	8
1-3	88	31
3-5	28	6
5-7	9	2
7-9	4	-
More than 9	4	3
Total	158	50

**Table 22** Households Cross-Classified by Land Holdings and Remittances in Kharif Season

Land Holding Category (in acres)	Households with no Remittances	Households with Remittances
Less than 1	23	8
1-3	99	22
3-5	28	7
5-7	12	-
7-9	6	-
More than 9	6	-
Total	174	37

**Table 23** Total Remittances received by Households and Land Holding in Rabi Season (in absolute numbers)

Remittance Category (in Rs.)	Land Holding Category (in acres)					Total
	Less than 1	1-3	3-5	5-7	More than 9	
Less than Rs. 5000	2	6	0	0	1	9
5001 to 10000	2	13	2	1	0	18
10001 to 20000	2	8	3	1	2	16
More than 2000	2	4	1	0	0	7
Total	8	31	6	2	3	50

Note: Remittances are deflated by CPI for Agriculture Labor in Odisha in 2013.

**Table 24** Total Remittances received by Households and Land Holding in Khariff Season (in absolute numbers)

Remittance Category (in Rs.)	Land Holding Category (in acres)				Total
	Less than 1	1-3	3-5	More than 9	
Less than Rs. 5000	3	8	3		14
5001 to 10000	3	11	1		15
10001 to 20000	2	3	3		8
Total	8	22	7		37

Note: Remittances are deflated by CPI for Agriculture Labor in Odisha in 2013.

**Table 25** Share of remittances in household total Income and Land Holding in Rabi Season (in absolute numbers)

Share of Remittances in Household total Income (%)	Landholding by Households (in acre)					
	Less than 1	1-3	3-5	5-7	More than 9	Total
less than 10%	2	5	0	0	0	7
10-30	2	7	2	0	1	12



**Table 25** Share of remittances in household total Income and Land Holding in Rabi Season (in absolute numbers) (contd.)

Share of Remittances in Household total Income (%)	Landholding by Households (in acre)					Total
	Less than 1	1-3	3-5	5-7	More than 9	
31-50	2	12	2	2	1	19
51-70	1	2	2	0	0	5
71-100	1	4	0	0	1	6
Total	8	30	6	2	3	49

**Table 26** Share of remittances in household total Income and Land Holding in Kharif Season (in absolute numbers)

Share of Remittances in Household total Income (%)	Landholding by Households (in acre)			
	Less than 1	1-3	3-5	Total
less than 10%	2	8	2	12
10-30	4	10	3	17
31-50	2	3	2	7
51-70	0	1	0	1
Total	8	22	7	37

**Table 27** Total remittances of household and Household Expenditure on Medical Treatment in Rabi Season (in absolute numbers)

Total Remittances of Households (in Rs.)	Household Expenditure on Medical Treatment (in Rs.)						Total
	Less than Rs. 1000	1001-3000	3001-5000	5001-7000	7001-10000	More than 10000	
less Than 5000	2	3	1	0	2	0	8
5001-10000	1	3	0	1	0	3	8
10001-20000	3	2	3	0	0	4	12
More than 20000	1	3	0	1	1	1	7
Total	7	11	4	2	3	8	35

Note: Remittances and Household expenditure on Medical Treatment are deflated by CPI for Agriculture Labor in Odisha in 2013.

**Table 28** Total remittances of household and Household Expenditure on Medical Treatment in Khariff Season (in absolute numbers)

Total Remittances of Households (in Rs.)	Household Expenditure on Medical Treatment (in Rs.)					Total
	Less than Rs. 1000	1001-3000	5001-7000	7001-10000	More than 10000	
less Than 5000	4	8	1	2	0	15

**Table 28** Total remittances of household and Household Expenditure on Medical Treatment in Khariff Season (in absolute numbers) (contd.)

Total Remittances of Households (in Rs.)	Household Expenditure on Medical Treatment (in Rs.)					
	Less than Rs. 1000	1001-3000	5001-7000	7001-10000	More than 10000	Total
5001-10000	4	2	1	1	3	11
10001-20000	3	4	0	0	1	8
More than 20000	1	0	0	0	0	1
Total	12	14	2	3	4	35

Note: Remittances and Household expenditure on Medical Treatment are deflated by CPI for Agriculture Labor in Odisha in 2013.

**Table 29** Share of remittances in household Total Income and Household Expenditure on Medical Treatment in Rabi Season (in absolute numbers)

Share of Remittances in Household total Income (%)	Household Expenditure on Medical Treatment (in Rs)						
	Less than Rs. 1000	1001-3000	3001-5000	5001-7000	7001-10000	More than 10000	Total
less than 10	1	2	0	0	1	0	4
10-30	2	2	1	1	1	4	11
30-50	3	4	2	1	0	1	11
50-70	0	1	1	0	1	0	3
70-100	1	2	0	0	0	2	5
Total	7	11	4	2	3	7	34

**Table 30** Share of remittances in household Total Income and Household Expenditure on Medical Treatment in Khariff Season (in absolute numbers)

Share of Remittances in Household total Income (%)	Household Expenditure on Medical Treatment (in Rs)					
	Less than Rs. 1000	1001-3000	5001-7000	7001-10000	More than 10000	Total
less than 10	3	5	1	3	0	12
10-30	6	7	1	0	3	17
30-50	3	2	0	0	0	5
50-70	0	0	0	0	1	1
Total	12	14	2	3	4	35

## 5. CONCLUSIONS

Our analysis shows that households with illiterate heads show a relatively higher incidence of migration. There is a tendency of labour shifting to better jobs after migration, though it is not a widely prevalent phenomenon. Most interestingly, population mobility has been accompanied by upward income mobility. The real incomes have been calculated after correcting for price changes between 2009 and 2013. The rise in income after migration is an outcome of graduation to better-off jobs.

In both rabi and kharif seasons, households engaged in relatively low-productivity activities are seen to be sending out migrants. However, there is also evidence that the probability to migrate out goes up with the possibility of finding better jobs, such as in non-agricultural labour. As far as all migrants (temporary and permanent) are concerned, in the equation for the rabi season, age is seen to reduce the probability to migrate. This indicates a higher degree of mobility among the younger ones. Some of the job dummies (agricultural labour, cattle rearing, non-agricultural labour and services) raise the probability to migrate. For the kharif season again, age reduces the probability to migrate, while some of the job dummies (non-agricultural labour, services) raise the probability of migration.

One important policy implication is that greater investment must be made at the place of origin to create productive employment opportunities. Rural diversification can be an effective strategy. Rural non-farm sector activities can reduce the pace of migration and offer better sources of livelihood at the place of origin. Since agriculture in this region is not in a developed state, it does not hold the prospect of raising incomes sizably.

Remittances contribute significantly to the consumption requirements of those who are left behind. Most households which received remittances are endowed with less land holding, and this pattern is evident for both seasons. In a large majority of the cases, remittances constitute almost 50 per cent of the total household income. Thus, migration is an effective strategy cultivated for survival. It is also noted that nearly 30 per cent of remitters send a significant amount, particularly in the rabi season. The most striking part is that remitters of greater amounts are mostly literate and educated, though not so much in the kharif season. This supports the view that educated individuals migrate out in search of better jobs and are thus able to remit more. However, the other side of the story is that migration of educated individuals from the place of origin implies a drain of human resources.

Remittances are utilised directly for consumption purposes as, relatively speaking, households with less land holding are seen to be receiving more remittances. However, households for which remittances do not account for a large percentage of the total income—in other words, households which are better-off at the place of origin—seem to be spending remittances on health problems. In low-income households, usually, consumption

requirements take priority, which may be followed by health expenditure. Hence, our findings can be interpreted to suggest that relatively better-off households do not depend much on remittances for consumption; when they receive it, the amount contributes to their overall wellbeing.

These findings again have important policy implications. Employment and income support measures can enable households to utilise the remittances productively instead of spending on mere consumption for survival. Through credit assistance, households can be encouraged to develop long-term investment strategies. Joint investment programmes—which involve mobilisation of household surplus resources and state reciprocity in terms of credit support—can be an effective way of creating income-augmenting activities in backward areas.

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