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IDE DISCUSSION PAPER No. 334

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A Preliminary Analysis of a Village Survey
in an Underdeveloped State in India**

Yuko Tsujita* and Hisaya Oda**

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This paper explores migration from Bihar, one of the most underdeveloped states in India, by paying particular attention to social class (caste) and landholdings. After describing details of individual migrants, we present our preliminary findings on the determinants of migration, based on our field survey of 200 households in four villages in 2011. In terms of social class, Muslims are more likely to migrate, but Scheduled Castes do not show a high propensity to migrate as is stated in some of the existing literature where the underclass is said to be more mobile. In terms of landholdings, the probability that someone will migrate is high among the landless and smaller landholders but it decreases as the size of the landholding increases. However, as the size of the landholding increases still further, a reverse effect of landholding on decisions regarding migration moves in, with the decline in probability becoming less and less. This result confirms a non-linear relationship between landholdings and the decision to migrate. Some further research questions are raised in the paper.

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Keywords: migration, caste, land, India, Bihar

JEL classification: O15, R23, Q15

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CHIBA 261-8545, JAPAN

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Abstract

This paper explores migration from Bihar, one of the most underdeveloped states in India, by paying particular attention to social class (caste) and landholdings. After describing details of individual migrants, we present our preliminary findings on the determinants of migration, based on our field survey of 200 households in four villages in 2011. In terms of social class, Muslims are more likely to migrate, but Scheduled Castes do not show a high propensity to migrate as is stated in some of the existing literature where the underclass is said to be more mobile. In terms of landholdings, the probability that someone will migrate is high among the landless and smaller landholders but it decreases as the size of the landholding increases. However, as the size of the landholding increases still further, a reverse effect of landholding on decisions regarding migration moves in, with the decline in probability becoming less and less. This result confirms a non-linear relationship between landholdings and the decision to migrate. Some further research questions are raised in the paper.

1. Introduction

Labour migration from rural to urban areas is a pervasive feature of developing countries. For poor villagers, it is a routine part of life and one of the limited options to keep them and their family above subsistence level. However, looking at the results of village surveys, not every poor household engages in migration activities. It seems that migration opportunities are not evenly distributed and some households have no access to such opportunities. This is a critical issue as these households are then confined to the village where employment opportunities are scarce and they might not have enough agricultural land to feed the members of their household. They have to survive by

utilizing whatever means are available in the village economy. Thus, it is important to examine the factors that keep poor villagers in the village.

In the traditional Harris-Todaro model of migration, the focus, when explaining rural to urban migration, is placed on individual characteristics, such as the age and educational level of potential migrants. However, the New Economics of Labor Migration (NELM), originally proposed by Stark and Bloom (1985) and Stark (1991), considers that migration is one household strategy used not only to maximize income but also to overcome constraints and risks facing a household. The theory gives a lot of importance to household characteristics as being the determinants of migration.

This paper analyzes labour out-migration from a household perspective, based on data from a village survey in one of the major migrant-sending areas in Bihar, India. Through comparative studies of migrant and non-migrant households, the paper aims to identify the household characteristics that influence migration decisions. It pays particular attention to two types of household characteristics: landholdings and social class, i.e. caste. Since household characteristics dictate most of the individual characteristics, focusing on household characteristics is relevant in the Indian context.

Land is the most important source of income in the rural society. Land is considered an economic asset that influences various household decisions, including migration. There are two views on how the possession of land affects the household on whether or not to decide whether any of its members should migrate¹.

First, regarding the relationship between landholding and income from agriculture (Nabi 1984, Van Wey 2005), land indicates an ability to earn income. Income from agriculture is not sufficient for marginal and small landholders. This is particularly so for the landless. As a result, they have a strong incentive to engage in migration activities, sending one or more of their household members for work outside the village. However, as the size of the landholding increases, agricultural income usually tends to increase and the advantage of migration as a source of income diminishes. For large landholders, migration does not seem to be an attractive option. As they need to take care of their land, which requires human power, sending their

¹ Another view that needs attention but has not been granted enough theoretical or empirical analysis is the social impact of landholding on the decision to migrate. Land is the dominant economic asset in a rural society. At the same time, it is also a symbol of power. It is often associated with the caste hierarchy. Large landholders or *Zamindars*, in the local language of our research villages, are considered men of power and are granted a higher status in the village. For them, migration means the loss of their entitlements. Furthermore, it might be a source of shame if their household members engage in manual labor or petty jobs in urban areas. If this type of social factor is taken into account, the decision to migrate becomes more complicated.

household members away to migrate results in a loss of manpower (Bilsborrow et al. 1987). The demand for human power for large landlords also makes migration an economically unattractive option for them.

Second, regarding the relationship between a landholding and the cost of migration (Bilsborrow et al. 1987, Winters et al. 2001), land indicates an ability to finance migration. For the landless and marginal landholders, it is not easy to finance the cost of migration, regardless of the destination involved. The cost of overseas migration is usually high and requires a considerable amount of money upfront such as the fees that need to be paid to recruitment agents. It is not difficult to see how these costs might be beyond the reach of many people. One might think that domestic migration does not cost much, but there are several costs. These include the price of the trip, accommodation and daily expenses at the destination for a certain length of time, fees for recruitment agents, and so on. This is a small amount in comparison to the cost of overseas migration, but it is surely burdensome to the landless, and marginal and small landholders. As the size of a landholding increases (and agriculture income with it), the burden of financing migration becomes less and less. Certainly it may not be an issue for large landholders. The cost of migration constrains the decision to migrate for the landless, and marginal and small landholders, but it tends not to be an influencing factor as the size of a landholding increases.

Thus the impact of landholdings on decisions regarding migration moves in the opposite direction. If the former factor dominates the latter, there is less migration as the size of a landholding increases, and vice versa. Therefore, it can be said that the relationship between landholdings and decisions on migration are not linear, but non-linear.

The relationship between landholdings and the decision to migrate has been analyzed in several studies. Based on an Indian dataset, Oberai and Singh (1983) find a U-shaped relationship. So does Van Wey (2005) using data from Mexico and Thailand. On the other hand, Bilsborrow et al. (1987) find an inverted U-shaped relationship from Ecuadorian data. Winters et al. (2001) find the same in Mexico-to-the-US migration. Oda (2007) reports an inverse U-shaped relationship for overseas migration but not a clear tendency for domestic migration in Pakistan. In general, the findings seem to be case-dependent and they are often ambiguous because of the conflicting effects of landholdings on decisions regarding migration.

As for the relationship between social class and migration, the existing literature in India suggests that landless agricultural laborers in some parts of India, often belonging to the lower social classes, particularly the Scheduled Castes (SCs) and

Scheduled Tribes (STs), tend to migrate seasonally (Breman, 1994; Deshingkar and Farrington, 2009). Against this background, this paper intends to report a preliminary analysis of our recent village survey in Bihar, an underdeveloped state in India.

The structure of the paper is as follows. Firstly, we will provide basic information on the surveyed state, our sampling framework and the characteristics of the villages in the sample. Secondly, profiles of the migrants will be discussed in comparison with those who have never migrated and those who have migrated at some point in their lives but currently work in the villages. Thirdly, determinants of migration at the household level will be analyzed. Finally, our preliminary findings will be summarized.

2. Background of the Survey State and Data Collection

2.1. Overview of Bihar

Bihar, with a population of 103.8 million in the Census of India 2011, is considered to be an underdeveloped state in India. Per capita Net State Domestic Product (NSDP) is the lowest among Indian states, only one third of the national average. The incidence of poverty, defined as the percentage of the population below the poverty line in terms of monthly per capita expenditure in 2004/05, is 55.7% in rural Bihar, which is far higher than the 41.8% in rural India as a whole (Government of India, 2009). The state has also lagged behind in social development. For example, the adult literacy rate (63.8%) in the Census of India 2011 is the lowest among all states. The under five mortality rate per 1,000 births in Bihar (84.8) in the National Family Health Survey 2005-06 is worse than the national average (74.3).

Bihar has had a long tradition of out-migration ever since the British colonial period (De Haan 2002). It is pointed out from longitudinal surveys that the volume of out-migration has increased and the length of migration has increased in recent years (Sharma, 2005; Rodgers and Rodgers, 2011). Keshri and Bhagat (2012) reported, using National Sample Survey 2007-08 data, that the incidence in Bihar of temporary and seasonal migration in the working age population (15-64 groups) is the highest (approximately 50 out of 1,000 persons) of all the major states. The Census of India shows that not only the outflow of internal migration has increased, but also the domestic destinations of Bihari migrants have changed from the east (i.e. West Bengal) to the north-west (such as Delhi) (Table 1)². Traditionally, Bengal (including the area which is now Bangladesh) has been the main destination, while Delhi has emerged as the main destination in the 1990s. Table 1 also indicates that the overall proportion of

² It is noted that the census is likely to underestimate seasonal migration.

migrants to the main destinations has gradually declined. Destinations might have further diversified in recent years.

Table 1. Prominent States of Destination of Male Out-Migrants from Bihar

1971-1981			1981-1991			1991-2001		
State	No. of Migrants	Share (%)	State	No. of Migrants	Share (%)	State	No. of Migrants	Share (%)
West Bengal	256,695	42.01	West Bengal	182,264	26.03	Delhi	335,638	15.38
Uttar Pradesh	71,201	11.65	Delhi	121,398	17.33	West Bengal	227,573	10.43
Delhi	53,296	8.72	Uttar Pradesh	81,684	11.66	Maharashtra	208,768	9.57
Punjab	32,751	5.36	Punjab	44,278	6.32	Uttar Pradesh	150,883	6.91
Maharashtra	26,491	4.34	Assam	41,390	5.91	Punjab	124,085	5.69
Haryana	19,927	3.26	Maharashtra	40,730	5.82	Haryana	112,977	5.18
Gujarat	8,030	1.31	Haryana	28,850	4.12	Gujarat	93,294	4.27
Assam	-	-	Gujarat	17,180	2.45	Assam	23,927	1.10
All India	610,988	100	All India	700,317	100	All India	2,182,328	100

Note: For the years between 1991 and 2001, Bihar and Uttar Pradesh include Jharkhand and Uttaranchal (now renamed Uttarakhand), respectively. Migrants are defined as those whose last place of residence is Bihar and who reached their destinations during the last nine years before the Census. The purpose of migration is not necessarily for employment. The Census in 1981 was not conducted in Assam due to the disturbed conditions.

Source: Census of India 1981; 1991; 2001 Tables D-2.

2.2. Sampling Framework

We carried out village-level and household-level surveys in 2011-12. This paper is based on a much larger survey in rural Bihar. The sampling technique was as follows. Based on the three-tiered rural self-government system in Bihar (*Panchayat* system) of district, block and village (*gram*), we selected the surveyed villages as follows. First, we selected five districts, one each from five groupings of districts, in accordance with their ranking in the livelihood potential index. This index is composed on the basis of the availability of land per rural household, cropping intensity, agricultural productivity, bovines per thousand per capita, and the percentage of the urban population (for details see ADRI, undated). Since approximately 90% of the state's population resides in rural areas, and nearly 80% of the state's rural workforce is engaged in the agricultural sector, the indicators related to agriculture and the rural areas are regarded as important criteria for measuring people's livelihoods. East Champaran district is one of five selected districts from a group of those that are much below the average in the livelihood potential index. Secondly, we randomly selected four blocks in each district, then four *gram panchayats* (GP) in each block. Thirdly, we selected one village during our field visit after reaching the GP, based on two criteria: (1) the caste composition and (2) the population size that best represented the particular GP. A village-level survey was carried out in all the selected villages. Finally, we randomly selected one village in each block for a household survey.

For household surveys, we have listed all households in our door-to-door survey in each village. This information includes the name of the household head, the number of household members, religion, caste, size of agriculture landholding, and whether any household member has migrated to work for more than one month consecutively during the last one year. The definition of household members not only includes those who normally eat from the common *chulha* or kitchen, but also those who are away for education or work but who come back at least once a year or have sent any remittances in the last one year. This is to get a comprehensive picture of the migrant members of the household. In other words, unmarried persons who stay away or married persons who stay away and whose spouse and/or child(ren) live(s) in the surveyed village are regarded as household members, if they come back at least once a year and/or send a remittance. However, married persons who stay away but come back at least once a year and/or send any money are not regarded as household members, because their spouse and/or child(ren) live(s) elsewhere. In the household survey, we obtained a history of household members' migration.

Based on the list of all the village households, all the households are categorized into five groups by size of agricultural landholding: (1) landless, (2) marginal landholders with less than one acre of land ($0 < \text{land} \leq 1$), (3) small landholders with more than one acre but less than two acres of land ($1 < \text{land} \leq 2$), (4) middle landholders with more than two acres but less than five acres of land ($2 < \text{land} \leq 5$), and (5) large landholders with more than five acres of land. The proportion of the number of households in each of the landholding groups to the total number of households was used as a weight in the distribution of 50 sample households. In each landholding group, the proportion of households with migrants during the last one year is also used as a weight in the selection of households. Finally, households were randomly selected from each landholding category and migrant status. The total number of households in this analysis is 200 in the four villages.

It is noted that households in which all members have migrated somewhere are not included in the list of households. The total number of such households is only five in the four sampling villages. This implies that a definitive departure from the villages still remains low. There is a low possibility of a sampling bias, which can be caused by excluding some households that had already left the villages.

2.3. Characteristics of Surveyed Villages

The District of East Champaran is located in the north-western part of Bihar. Bordering on Nepal in the north, the district is flood-prone (Government of Bihar, 2009).

Economic and social indicators are worse than the state average (Table 2). For example, the Net District Domestic Product (NDDP) in 2007-08 is only around 58% that of the state. This is probably one of the reasons why the incidence of migration in North Bihar, where East Champaran is located, tends to be higher than that in South Bihar (Datta and Mishra, 2011).

Table 2. Socio-economic Indicators for East Champaran and Bihar

	East Champaran	Bihar
Per capita Net District Domestic Product (Rs.) in 2004/05 prices in 2007/08 (Rs.)	5575	9616
Literacy rate (%) in 2001	37.5	47.5
Infant mortality rate (per 1,000 births)	80.7	61
Proportion of Scheduled Castes (%)	13	15.7
Proportion of Muslims (%)	19.2	16.5
Availability of land per rural household (ha)	0.47	0.45
Cropping intensity	1.12	1.38
Agricultural productivity (yield of paddy in ton per ha)	1.39	1.58
Bovines per 1000 population	132	196
Percentage of urban population	6.4	10.5

Source: ADRI (undated); Government of Bihar (2012); Singh and Tiwary (undated).

The socio-economic characteristics of four selected villages are summarized in Table 3. In terms of religious and caste composition, Village C has a higher proportion of Muslims than other villages. Village A is dominated in terms of number of households by two Extremely Backward Classes (EBCs), namely Bind and Mallah, while 71.6% of the households in Village D are Yadav, one of the powerful Other Backward Classes (OBCs) in Bihar. Both villages B and C have a proportionately higher proportion of general castes and SCs than the other villages. However, land inequality is more acute in Village B than in Village C. In Village B, nearly 60% of the households are landless, while the largest landholding household has 227.3 acres of land. In Village C, no household has more than five acres of land and the proportion of landless households is about 40%. The landholding patterns are very different in the two villages.

Agriculture in all the villages is mainly rice in the *kharif* season and wheat in the *rabi* season³. Tube-well irrigation, run mainly on diesel oil, is available in all the

³ In the *kharif* season, rice is transplanted around mid-June to mid-August and harvested around November to December. In the *rabi* season, wheat is planted in the November to December and harvested in April to May. All accords closely with the

sample villages, although to what extent it is used depends upon the season, the village and the farmer. Canal irrigation is available in Villages A and C, which probably contributes to the relatively higher agricultural productivity in these villages. Except for Village B, crops in the villages are diversified, for instance, mustard, turmeric, pulses, and so on. In village C, sugar cane is also cultivated.

Since the majority of the households are landless, sharecropping is the prevailing practice, while fixed renting in kind is also observed⁴. Interestingly, inputs for rice and wheat cultivation are shared by the landlord and the sharecropper in village B, while this is not the case in Villages A and C⁵. Both types of input sharing arrangement are found in Village D. Notwithstanding the practice of input sharing, 50% of the major crops harvested are given to the landlord in all the villages⁶.

Village B seems to be more developed than other villages in terms of physical infrastructure, thanks to the late Member of the Legislative Assembly from the village. For example, Village B was the first to be electrified (in 1965), and there is a government school in the village until the 12th class. The main hamlet of the village has been accessible by road since 1980, which is also much earlier than the other villages. However, agricultural productivity is much lower than the other villages, and crops are not diversified, unlike the other villages in the sample. This is probably due to the severity of the recurrent floods in the *kharif* season, and the drought in the *rabi* season is more serious than in the other villages. At the same time, the total agriculture land is much larger in village B than the other villages, which means per household yield in village B turn out to be by far the largest, if all landholding households are presumed to be engaged in agriculture. Migration is lowest from Village B, even though the proportion of lower caste groups (SCs and EBCs) is higher.

Hindu calendar.

⁴ For example, it is reported that 30 kg of rice or wheat per *katta* land is the average arrangement for a fixed rent in Village C. One acre in village C is equivalent to approximately 13.5 *katta*.

⁵ The exception is turmeric and sugar cane in Village C, where a landlord has to contribute 50% of the seed.

⁶ It is reported in villages in this region that if landholders do not invest in inputs, a sharecropper takes out one of eight quintals of the harvested crops, and the remainder (7 quintals) is divided equally. The actual share, then, is not 50% for the landlords.

Table 3. Village Profiles

	Village A		Village B		Village C		Village D		Total	
	No. of HH	Share (%)	No. of HH	Share (%)	No. of HH	Share (%)	No. of HH	Share (%)	No. of HH	Share (%)
Total No. of households	514		521		531		544		1675	
Religion										
Hindu	509	95.50	525	100.00	234	76.22	270	87.10	1538	91.82
Muslim	24	4.50	0	0.00	73	23.78	40	14.81	137	8.18
Caste										
General castes	34	6.38	157	29.90	63	20.52	8	2.58	262	15.64
Other Backward Classes (OBCs)	78	14.63	41	7.81	35	11.40	236	76.13	390	23.28
Extremely Backward Classes (EBCs)	353	66.23	205	39.05	125	40.72	57	18.39	740	44.18
Scheduled Castes (SCs)	68	12.76	122	23.24	84	27.36	9	2.90	283	16.90
No. of HH										
More than 5 acres	15	2.81	42	8.00	0	0.00	13	4.19	70	4.18
2 < land ≤ 5	15	2.81	30	5.71	19	6.19	17	5.48	81	4.84
1 < land ≤ 2	14	2.63	25	4.76	14	4.56	23	7.42	76	4.54
0 < land ≤ 1	174	32.65	117	22.29	154	50.16	210	67.74	655	39.10
Landless	315	59.10	311	59.24	120	39.09	47	15.16	793	47.34
No. of households with migrant during the last one year	252	47.28	178	33.90	188	61.24	150	48.39	768	45.85
Landholding (acre)										
Mean (standard deviation)	0.50	(1.60)	2.87	(19.91)	0.47	(0.78)	1.00	(1.71)	1.32	
Max.	12.85		227.27		4.62		12.74		227.27	
Household size (members) (standard deviation)	6.04	(2.78)	5.64	(2.78)	5.31	(2.11)	5.78	(2.79)	5.73	(2.68)
Distance from district headquarters (km)	38		23		52		30			
Distance from the nearest bus stop (km)	3		1.5		3		6			
Distance from bank branch (km)	3		7		4		9			
Electrification	Electrified in 1995. Lower castes/SC hamlet is not electrified.		Electrified in 1965 but de-electrified in 2008		Not electrified		Electrified in 2010 but no household is electrified so far			
The year main hamlet was connected by road	2002		1980		1990		2006			
Available government school facility within village	up to 8th		up to 12th		up to 5th		up to 5th			
Distance from government health facilities (PHC, CHC, Sub-center) (km)	Within village		5		2		23			
Irrigation in Kharif	Tube-well (60%). A canal is also available except for last year when it was closed for cleaning		Tube-well (90%)		Canal (60%), tube-wells (40%). Last year the canal was cleaned and canal irrigation became available again after a 15-20 year gap.		Tube-wells (95%) and river (5%)			
Irrigation in Rabi	ditto		ditto		Canal (40%), tubewells (60%)		River (90%), tubewells (10%)			
Agricultural land in kharif 2011 (acre)	500		1400		120		275			
Agricultural land in rabi 2011(acre)	300		1000		100		250			
Percentage of irrigated land in total agricultural land	43		90		90		70			
No. of private functional tubewells	8		25		8		7			
Standard rice yield in kharif (quintal per acre)	11		7		12		11			
Standard wheat yield in rabi (quintal per acre)	10		6		11		6			

Source: IDE-ADRI Survey, 2011-12.

3. Profiles of Migrants

Migration results from a selective process that involves a number of factors. It is not the case that all villagers and households are able to migrate to work. Migrants and their households tend to have certain common characteristics. This section will provide some socio-economic profiles of migrants.

Migrants are defined as those who have worked outside their villages for more than one month consecutively, excluding commuting every day outside the village, during the last one year. Return migrants are defined as those who have migrated at one point in their lives but have not migrated for the last one year. In comparison with migrants and past migrants, those who have never migrated (called “never-migrated” hereafter) are listed in the table. “Never-migrated” are confined to those aged 14 to 61 who are currently not going to school. This is to make their statistics compatible with those for migrants. In the survey, migrants are exclusively male, with no women reporting having migrated in the sample. It is rare for women to migrate to work from this region. Therefore, the profile below is confined to males.

Table 4 shows a basic profile for the migrants compared to the “never-migrated” and the return migrants. In terms of religion, more Muslims migrate for work. Extremely Backward Classes (EBCs) are more likely to migrate, partly because all Muslims happen to be categorized as EBCs in the sample villages. The distribution of marital status is similar for both migrants and the “never-migrated”. In comparison with studies on migration from Bihar in the early 1980s (Oberoi *et al.*, 1989) and that in the 1980s and 1990s (Sharma, 2005), it seems that the probability that Muslims and married persons will migrate is much higher in our survey in 2011.

Table 4. Profile of Migrants

	Migrants		Never-migrated		Return migrants	
	No.	Share (%)	No.	Share (%)	No.	Share (%)
Total no. of observations	127		133		32	
Village						
Village A	33	25.98	37	27.82	13	40.63
Village B	23	18.11	33	24.81	6	18.75
Village C	34	26.77	25	18.80	7	21.88
Village D	37	29.13	38	28.57	6	18.75
Religion						
Hindu	105	82.68	122	91.73	29	90.63
Muslim	22	17.32	11	8.27	3	9.38
Caste						
General Castes	16	12.60	21	15.79	3	9.38
OBCs	34	26.77	52	39.10	9	28.13
EBCs	58	45.67	46	34.59	11	34.38
SCs	19	14.96	14	10.53	9	28.13
Marital status						
Married	100	78.74	100	75.19	27	84.38
Never-married	27	21.26	30	22.56	1	3.13
Widower	0	0.00	3	2.26	4	12.50

Note: Never migrated persons are confined to males aged 14 to 61 who are currently not going to school.

Source: Same as Table 3.

3.1. Age

Existing studies indicate that the probability of migration tends to be higher among the young than the old because the young are more mobile and can expect higher returns over a longer period of time (Sjaastad, 1962). The average age of the migrants is 30.5 years old (Table 5). As expected, migrants tend to be younger than the return migrants. The minimum and maximum ages of migrants are 14 years old and 61 years old, respectively. 14 years old is the highest age for compulsory education, which implies that some children migrated to work before completing their compulsory education. The distribution of the migrants' age shows that migrants in their 20s account for 37.9% of all migrants, followed by those who are in their 30s. In comparison with Oberoi *et al.* (1988) who studied migration from Bihar in the 1980s, the proportion of those who are in their teens is smaller and those in their 30s larger. The educational level has gradually increased over time in the villages, which probably delays the decision to migrate till a later age.

Table 5. Distribution of Age

Age	Migrants		Never-migrated		Return migrants	
	No.	Share (%)	No.	Share (%)	No.	Share (%)
Up to 19	18	14.17	25	18.80	1	3.13
20-29	48	37.80	25	18.80	3	9.38
30-39	35	27.56	30	22.56	13	40.63
40-49	14	11.02	27	20.30	5	15.63
50-59	10	7.87	18	13.53	3	9.38
More than 60	2	1.57	8	6.02	7	21.88
Mean	30.45		34.8		43.16	
Standard Deviation	10.94		13.77		15.41	
Minimum	14		14		78	
Maximum	61		60		16	
No. of observations	127		133		32	

Note: Never-migrated are confined to males aged 14 to 61 who are currently not going to school
Source: Same as Table 3.

3.2. Duration of Migration

Evidence from the National Sample Survey in 2007-08 suggests that the proportion of the population engaged in short-term migration is highest in Bihar (Keshri and Bhagat, 2012). In our survey, detailed data of people's migration records were collected, including the period of migration. However, separating short-term from long-term migration is not easy. One of the main reasons is that migrants often come back to the village. Harvesting is still completely manual work in the sample villages and in many other parts of Bihar. For this reason, out-migrants, especially those who have agricultural land, tend to return to their village, particularly in the peak weeks of harvesting in the *kharif* and *rabi* seasons. This makes the measuring of the duration of their migration quite complicated. Therefore, the definition of this duration has been simplified, as follows. The duration of migration among migrants is calculated based on the difference between the first migrated year and 2011, when the survey was conducted. Similarly, the duration of migration among return migrants is based on the difference between the first migrated year and the year when they finally came back.

Table 6 shows the duration of migration among migrants and return migrants. In both cases, the average years of migration are a little more than five years. It is worth mentioning that the incidence of first migration both among migrants and return migrants has dramatically increased since the late 2000s. There is a possibility that return migrants may migrate again since more than half of the return migrants are in their 30s.

Some longitudinal surveys in Bihar (Rodgers and Rodgers, 2011; Sharma, 2008) indicated that the period of migration has lengthened over the years. Since our survey was only carried out once, it is not possible to say anything about trends in duration. However, 40.6% of the return migrants migrated to work for less than one year. This compares with 17.3% of those who migrated during the last year. This may be indirect evidence that migration can be prolonged over certain periods.

Table 6. Duration of Migration

	Migrants		Return migrants	
	No.	Share (%)	No.	Share (%)
Below 1 year	22	17.32	13	40.63
1-4 years	52	40.94	12	37.50
5-9 years	25	19.69	1	3.13
10-14 years	17	13.39	1	3.13
15-19 years	5	3.94	2	6.25
Above 20 years	6	4.72	3	9.38
Mean year	5.37		5.66	
SD	6.05		10.96	
Max	36		40	
No. of Observations	127		32	

Note: The definitions of duration for the migrants is years between the first migrated year and 2011. Definitions of duration for the return migrants are years between the first migrated year and the completed year.

Source: Same as Table 3.

3.3. Educational level

A person's educational level plays an important role in making decisions on migration. There are two different arguments. One is that migrants tend to be better educated or skilled than non-migrants because they can expect higher wages and they also have higher chances of receiving employment (Levy and Wadychi, 1974). The other argument is the counter-evidence that migrants are less likely to be educated and skilled (for example, Beals et al., 1975).

Table 7 shows the distribution of educational level by migration category⁷. It is clear that migrants are less likely to be literate than "never-migrated". A little more than

⁷ The current education system in Bihar is 5-year-primary, 3-year-upper-primary, 2 year-secondary, 2-year higher secondary (so called intermediate), and university. The education system in India has evolved over time, so the year of education can be different at different times in different states.

half the migrants are either illiterate or can only sign their name. On the other hand, educated people tend to have never migrated. For example, approximately one fifth of the “never-migrated” males were educated at university or above. At the same time, 30.1% of the illiterates has never migrated. It seems that the “never-migrated” group consists of those who do not have to migrate for work and those who cannot migrate, even if they need a livelihood.

Table 7. Education Level

	Migrants		Never-migrated		Return migrant	
	No.	Share (%)	No.	Share (%)	No.	Share (%)
Illiterate	44	34.65	37	30.14	7	21.88
Sign only	22	17.32	18	8.22	7	21.88
Literate	61	48.03	77	61.64	18	56.25
Educational level (if literate)						
Never-attended	0	0	1		0	0
Below primary	13	10.24	15	20.55	4	12.50
Primary completed	11	8.66	13	17.81	7	21.88
Upper primary	7	5.51	3	4.11	4	12.50
Non-Matric	9	7.09	10	13.70	1	3.13
Matric	14	11.02	14	19.18	1	3.13
Intermediate (12th)	5	3.94	6	8.22	1	3.13
Graduate and above	2	1.57	14	19.18	0	0.00
Total	127	100	132	100	32	100

Note: The educational level of one person who has never migrated is missing.

Source: Same as Table 3.

3.4. Destination of Migration

Table 8 shows the destination of the migrants in the last one year. Migration is overwhelmingly dominated by internal migration. Our village level survey found only two incidences of international migration, apart from to Nepal. One works in construction in Saudi Arabia and the other is employed at a petrol station in Qatar⁸. In the sample, there are two migrants who work in Nepal. Indian residents in Nepal have the same rights as Nepalese, including travel and employment across the border. It is understandable that lower costs accrue when migrating the short distance to Nepal and no employment restrictions makes it easier for villagers to migrate to work in Nepal.

As far as domestic destinations are concerned, it is evident that the north-western part of the country is the main destination. 28.4% of migrants worked in

⁸ The village level survey in 16 villages in this district confirms that international migration is a minor phenomenon. Except for Nepal, only a few cases, including Saudi Arabia, Malaysia, Qatar and the United States are reported as international destinations.

the National Capital Territory of Delhi, which includes Delhi, Gurgaon (Haryana), Faridabad (Hararyana), Noida (Uttar Pradesh) and Ghaziabad (Uttar Pradesh). This is followed by Punjab (18.1%). As the census shows (Table 1), Delhi seems to have emerged as a destination in recent years. Previously, the destinations where return migrants from the sample villages were employed were mainly Punjab and Assam. It is also clear that the destinations differ between migrants and return migrants. It seems that the destinations are diversified in recent years. This is consistent with other longitudinal surveys in Bihar (Rodgers and Rodgers, 2011). Villagers migrate even to the southern part of the country where the languages are completely different.

Table 8. Destination of Migrants

		Migrants		Return migrants	
		No.	Share (%)	No.	Share (%)
North West	Jammu & Kashmir	7	5.51	1	3.13
	Himachal Pradesh	11	8.66	1	3.13
	Uttarakhand	4	3.15	5	15.63
	Chandigarh	3	2.36	1	3.13
	Punjab	23	18.11	7	21.88
	Haryana	1	0.79	1	3.13
Delhi	NCT Delhi	36	28.35	2	6.25
North	Uttar Pradesh	4	3.15	0	0.00
	Rajasthan	1	0.79	0	0.00
	Madhya Pradesh	0	0.00	1	3.13
	Chhattisgarh	1	0.79	2	6.25
	Bihar	5	3.94	3	9.38
	Jharkhand	2	1.57	0	0.00
East	West Bengal	3	2.36	0	0.00
North-East	Assam	3	2.36	4	12.50
	Nagaland	3	2.36	2	6.25
West	Gujarat	4	3.15	1	3.13
	Maharashtra	4	3.15	0	0.00
South	Andhra Pradesh	4	3.15	0	0.00
	Karnataka	4	3.15	0	0.00
	Kerala	1	0.79	1	3.13
	Tamil Nadu	1	0.79	0	0.00
Abroad	Nepal	2	1.57	0	0.00
Total		127	100	32	100

Source: Same as Table 3.

3.5. Occupations and Earnings at their Destination

The educational level of migrants tends to be lower, therefore it is expected that they are more likely to be engaged in unskilled work. Table 9 shows migrants' occupations and wages at their destination during the last one year. It is often believed that migrants from Bihar are engaged in agriculture in agriculturally advanced areas such as Punjab and Haryana. However, Table 9 suggests that nearly half the migrants are engaged in construction work. It is also clear that, except for tailoring and stitching, which is almost the exclusive preserve of Muslims, only 4% of migrants are engaged in the manufacturing sector. This implies that laborers from the rural areas are not necessarily absorbed in manufacturing sectors in the urban areas. Although agriculture is not a major occupation at their destinations, one tenth of the migrants are engaged in agriculture.

The mean monthly income at the destination is Rs. 4,589. As expected, earnings from public service, such as the army, the police, the railway, or some department in the Government of Bihar (see the list in the appendix for details), are much higher than in other occupations. Slightly skilled work, such as tailoring and stitching, or as a mechanic, can also earn more than unskilled work. Agricultural work is often done for a daily rate, but workers' average monthly earnings (Rs. 4,090 per month) are quite similar to those for construction workers. What is more, housing is provided for all agricultural workers, and meals are provided more than twice a day for half of them. However, the agricultural work is seasonal, between three to six months a year. Therefore, total annual earnings are probably less than for the non-agricultural work in which most of the migrants work for a longer term. Since almost all of the agricultural workers at the destination are SCs, they are also more likely to be agricultural laborers at their place of origin. In the sample villages, the daily wages for transplanting paddy and harvesting paddy/wheat are Rs. 100-120 and Rs. 100-150, respectively (See Appendix Table 3). This means that even if they work for 20 days a month, which is the average number of working days for migrant workers engaged in agriculture, their monthly earnings would be Rs. 2000 to Rs. 3000 in their villages. The figures are much less than the mean monthly agriculture income at the destination. It is therefore understandable that a few migrants are engaged in agriculture in outside states so that they can earn more.

It is worth mentioning that only 35.3% of migrants have arranged their jobs before migration. It is more likely, as the existing literature suggests, that migrants often reach their destinations through kinship networks (for example, Boyd, 1989). Among those whose job was arranged before their arrival at their destination, one third were

helped through arrangements with contractors. The existing literature suggests that the number of middlemen or contractors in the migration process in Bihar has fallen (Rodgers and Rodgers, 2011). Our results indicate that contractors still play a role.

Table 9. Migrants' Occupations and Wages

Occupation	Migrants		Monthly income (Rs.)		Working days per month	
	No.	Share (%)	Mean	Std. Dev.	Mean	Std. Dev.
Agriculture	12	9.45	4090.00	2697.82	20.60	7.35
Construction	63	49.61	4108.57	1388.64	23.20	4.35
Transportation	4	3.15	3750.00	957.43	30.00	0
Coolie	8	6.30	3062.50	831.84	22.29	3.59
Manufacturing (except for tailoring)	5	3.94	4700.00	1565.25	27.00	2.74
Tailoring & stitching	12	9.45	6620.00	9083.75	24.55	1.86
Sales & trade	6	4.72	4250.00	2018.66	23.83	4.88
Security	2	1.57	3750.00	3181.98	27.50	3.54
Hotels, restaurants	1	0.79	3500.00	-	28.00	-
Mechanic	1	0.79	5000.00	-	30.00	-
Public service	4	3.15	13750.00	6701.99	30.00	0.00
Cleaner	1	0.79	3000.00	-	30.00	-
Domestic servant	1	0.79	2000.00	-	-	-
Unspecified/Unknown	7	5.51	-	-	-	-
No. of observations	127	100	120		118	
Total (mean)			4589.39	3602.49	23.94	4.72

Note: See the list of occupations in the appendix.

Source: Same as Table 3.

4. Determinants of Household Migration

This section will analyze migration at the household level. In particular, we will compare and contrast “migrant households”, which are defined as households that have had a migrant during the last one year, with “non-migrant households”, who are defined as households in which none of the household members has ever migrated. The total number of migrants and non-migrants households is 105 and 62, respectively. The remaining households (33 households), consisting of only returned migrant(s), are not included in this analysis.

Table 10 shows that more Muslim households tend to migrate than Hindu households. This resulted in a higher share of EBC migrant households in terms of caste. The size of the migrants’ households (6.03 members) tends to be larger than that for non-migrant households (5.11 members). Land distribution is extremely skewed toward the upper castes in the sample villages (Table 3). In the sample households, it is shown that migrant households tend to be landless and that the average size of their agricultural

landholding is smaller than that of non-migrant households.

Table 10. Profiles of Households

	Migrant households		Non-migrant households		Total households	
	No.	Share (%)	No.	Share (%)	No.	Share (%)
No. of Households	105	100	62	100	200	100
Village						
Village A	27	25.71	11	17.74	50	25.00
Village B	20	19.05	24	38.71	50	25.00
Village C	30	28.57	12	19.35	50	25.00
Village D	28	26.67	15	24.19	50	25.00
Religion						
Hindu	88	83.81	60	96.77	178	89.00
Muslim	17	16.19	2	3.23	22	11.00
Caste						
General Castes	14	13.33	14	22.58	31	15.50
OBCs	28	26.67	23	37.10	61	30.50
EBCs	48	45.71	15	24.19	73	36.50
SCs	15	14.29	10	16.13	35	17.50
Household Size (no. of household members)	6.03	(2.78)	5.11	(2.74)	5.6	(2.67)
Land holdings						
No. of landless households	46	43.81	24	38.71	86	43.00
Mean Owned agricultural land (acre)	0.69	(1.98)	0.97	(1.58)	0.78	(1.76)
Mean operated land	0.78	(1.43)	0.94	(1.35)	0.82	(1.34)
No. of households which have no operational land	39	37.14	19	18.1	66	62.86

Note: Parentheses show standard deviations. Total includes households with past migrants.

Source: Same as Table 3.

By taking these characteristics into account, we present our preliminary findings on the determinants of migration, on the basis of our field survey data. For an estimation, we employ a Probit estimation technique. The dependent variable is a binary variable indicating whether or not the household has at least one migrant at the time of the survey. The value of the dependent variable is 1 if the household has at least one migrant and 0 otherwise. The explanatory variables are the characteristics of the households, consisting of the number of household members, social class, and the size of their landholding. Our interests lie in how the differences in household characteristics influence a household's decision on whether or not any of its members is to migrate.

The number of household members is included in order to see if larger households can afford to send one or more members to work outside the village. Social class is classified by caste into five categories: general caste Hindu, OBCs, EBCs excluding Muslims, SCs, and Muslims. Dummy variables are used as usual. The category of general caste Hindus is set as a reference variable. Landholding variables are included to test if this matters in the household's decision. The size of a landholding here means the size of land under ownership, not the size of operated land. Along with

the landholding size variable, the square of the size of the landholding is employed in order to account for a possible non-linear relationship between landholdings and decisions on migration. A summary of the statistics on the variables is given in Table 11.

Table 11. A summary of the descriptive statistics of the sample

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Household size	167	5.69	2.79	1	17
Landholding size	167	0.80	1.84	0	16.36
Landholding size squared	167	4.00	22.35	0	267.65

Note: A summary of the dependent variables and dummy variables is not displayed.

The estimated results are presented in Table 12. The column under EQ(1) shows the estimated parameters when all the explanatory variables are included. The statistically significant variables are the number of household members, the Muslim dummy, the size of the landholding, and the square of the landholding size. The coefficient on the number of members in the household is positive and significant. This is consistent with findings in the existing literature. The chances of having migrant members are higher for larger households because the migration of household members does not result in a reduction in domestic production (Connell et al., 1976; Hampshire 2002). Although not examined in this paper, this tendency is particularly the case for the households that have more adult male members. The work that would have been done by the migrants can easily be shared by the remaining male members.

Among the social class dummies, only the Muslim dummy is positively significant. The socio-economic backwardness of the Muslims has been documented in the existing literature (for example, Government of India, 2006). It is not the only factor involved here, but this backwardness might provide a strong push for Muslims to migrate. An interesting observation here is that the probability that SCs will migrate is not as high as is usually thought. This result shows that there is no statistically significant difference between general Hindu and SC villagers when it comes to their propensity to migrate. This observation provokes an interesting research question which should be examined in more detail. Like Muslims, SCs also suffer from backwardness and marginalization. We should explore what factors makes the SCs less mobile.

The estimated coefficient on the size of a landholding is negatively significant, while the estimated coefficient on its square is positively significant. This means that the probability of migration is high for the landless and for smaller landholders but decreases as the size of a landholding increases. However, as the size increases further, a

reverse effect of landholding on decisions regarding migration moves in, with the decline in probability becoming less and less. Thus, the result confirms that there is a non-linear relationship between landholdings and the decision on whether or not to migrate.

Since income from agricultural activities is limited for the landless and smaller landholders, they feel a strong incentive to migrate and therefore have one or more migrants in their household so that they can provide additional income, even though they might find the cost of migration expensive. However, as the size of a landholding increases, the income from the agricultural land increases, making migration less attractive, so the probability of migrating falls. This tendency, however, is reversed with a still larger landholding, probably because the educational level of these household members and the size of the landholding are correlated. For the educated, the tendency to migrate is usually high as they can find higher paying jobs in urban areas due to their higher human capital and their ability to earn more (Sjaastad 1962). It is easy to imagine that the household members of a large landlord receive a better education than others. Due to this educational advantage, the probability that they will migrate is thought to increase as the size of their household's landholding increases.

Since there may exist a collinearity between the size of a landholding and social class⁹, we estimated landholding variables and social class dummies separately. The estimated coefficients are presented in the columns under EQ(2) and EQ(3). The result remains the same, confirming the statistical significance of the variable noted above on the decisions of a household regarding migration.

Though the results and findings obtained from the exercise above are preliminary and need more elaboration, they are sufficient to suggest some of the factors that might influence a household's decision on migration.

⁹ In our earlier survey, landholdings are closely associated with caste in Bihar (Tsujita *et al.* 2010)

Table 12. Probit regression of the determinants of migration

Variable	EQ(1)	EQ(2)	EQ(3)
Household size	0.135 ***	0.0978 **	0.129 ***
	0.045	0.0396	0.043
OBCs	-0.193	-0.0188	
	0.313	0.3012	
EBCs	0.128	0.5274 *	
	0.353	0.3107	
SCs	-0.141	0.2817	
	0.396	0.3521	
Muslim	0.862 *	1.2404 ***	
	0.500	0.4734	
Landholding size	-0.498 **		-0.588 ***
	0.227		0.203
Landholding size squared	0.054 *		0.065 **
	0.033		0.032
Constant	-0.231	-0.500	-0.139
	0.334	0.313	0.240
Obs.	167	167	167
Pseudo R-square	0.106	0.076	0.076
Log likelihood	-97.64	-101.33	-100.96

* indicates significance at 10% level.

** indicates significance at 5% level.

*** indicates significance at 1% level; standard errors appear in parentheses.

5. Conclusions

This paper explores migration from Bihar, one of the most underdeveloped states in India, by paying particular attention to social class (caste) and landholdings. After describing some details about individual migrants, we presented our preliminary findings on the determinants concerning migration on the basis of our field survey of 200 households in four villages in November, 2011. In terms of social classes, Muslims are more likely to migrate. However, it is not highly probable that Scheduled Castes will migrate. This finding stands in contrast to the discussion in some of the existing literature where it is stated that the underclass is more mobile. In terms of landholdings, the probability of migration is high for the landless and for smaller landholders, but the probability decreases as the size of the landholding increases. However, as the size of the landholding increases still further, a reverse effect of landholding on decisions regarding migration moves in, with the decline in probability becoming less and less. This result confirms a non-linear relationship between landholdings and the decision on migration.

Due to limitations of space, we could not discuss the impact of migration on migrant households. We have, though, collected data on how the remittances have been

used. We listed certain items in our questionnaires and asked whether or not remittances were used for specific items. The number of households in Appendix Table 1 indicates the number of households who replied. Similarly, in the columns titled primary, secondary and tertiary use, results are given for how many households responded when asked on which items they spent most of their remittances.

It is notable that those who left their village during the last one year tended not to send any remittances. However, we still have more than 90% of households where remittances have been used for certain purposes. This implies that there is a strong linkage between migrants and their families of origin. This supports the argument of the New Economics of Labour Migration (NELM) that migration is a household strategy in which there exists an implicit contract in the form of remittances between the migrants and their households.

Appendix Table 1 shows how the migrant households have used their remittances. It is indicated that, with only a few exceptions, remittances were used for daily consumption, such as food and clothing. Quite a large number of households used their remittances primarily for daily consumption. The proportion of households that used the money for health care is also higher. In the sample areas, people tend to approach private medical facilities for medical treatment rather than public sector facilities, which often do not function in the sample villages. This means that villagers pay higher health and medical costs. Approximately 30% of the households used their remittances to invest in working capital in agriculture. However, this was only third on the list at best. Only two households were able to purchase land by using their remittances and even mortgage-in-land is reported in only two cases. It seems remittances are generally not large enough to improve their landholding status or to change their position in the village hierarchy.

We have also asked households whether or not households possess consumer durables or other goods. The first column in Appendix Table 2 shows the situation for migrant households, and the third column the situation for non-migrant households. The second column denotes migrant households who obtained the listed items before the year of the first migration. It is notable that households might have obtained certain items from other sources, such as a dowry. Therefore, the first column does not necessarily show households who were able to obtain goods through remittances. Nevertheless, some trends can be read from the gap between the figures in the first and second columns.

Migrant households in the sample villages possess mobile phones to a greater extent than was the case prior to migration (33.3%) or when compared to non-migrant

households (59.7%). Mobile phones are necessary for keeping in touch with the migrants at their destination. Except for mobile phones, however, migrant households are less likely to have consumer durables and other goods than either non-migrant households or the total sample of households.

When it comes to comparing migrant households before and after the first year of migration, more households have added to their possessions, and this applies to almost all the items listed. However, migrant households still cannot afford to purchase four-wheelers, and only eight households have obtained two wheelers. This confirms that the large majority of households spend their remittances on items of daily expenditure.

The socio-economic impact of migration should be analyzed more widely. For example, it is increasingly claimed that wages in the local labor market have increased because of migration and the Mahatma Gandhi National Employment Guarantee Act (MNREGA)¹⁰. It is true that wages in agriculture and non-agriculture increased between 2008 and 2011 in the sample villages (Appendix Table 3). However, our village level survey finds that employment opportunities in the local areas cannot absorb the increase in the labor force that results from the increase in the population. Since the MNREGA has not been actively implemented in the sample villages, wage increases might be attributable to inflation than migration or the MNREGA. Nevertheless, we do need to explore these issues more carefully in future research.

Acknowledgement

We would like to express our sincere appreciation to Shaibal Gupta, Prabhat. P. Ghosh, Sunita Lal and Sudip Pandey for their support and cooperation during our fieldwork. Our special thanks are extended to Shashiranjana Kumar, Mohanmad Tashnimul Haq, Rakesh Kumar, Shashi Mishra, Vijay Pandey, Kumar Rakesh Ranjan, Omkar Ranjan, Shrinivas, D. K. Singh and Narendra Tripathi for fieldwork in the villages. Any errors remain solely our responsibility.

References

- Asian Development Research Institute (ADRI) undated. *Poverty and Social Assessment: A District-Wise Study of Bihar*. Mimeo. Sponsored by Bihar Rural Livelihood Promotion Society, Patna.
- Beals, R.E., M.B. Levy and L. N. Moses 1967. "Rationality and Migration in Ghana,"

¹⁰ The MNREGA, introduced in 2005 (as NREGA), aims to improve the livelihoods of the adult rural population by providing unskilled manual work for 100 days a year.

- Review of Economics and Statistics*, 49 (9) pp. 480-486.
- Bilsborrow, R. E., T. Mcdevitt, S. A. Kossoudji, and R. Fuller. 1987. "The Impact of Origin Community Characteristics on Rural-Urban Migration in Developing Countries," *Demography*, 24 pp. 191-210.
- Boyd, M. 1989. "Family and Personal Networks in International Migration ? Recent Developments and New Agendas," *International Migration Review*, 23(3) pp. 638-670.
- Breman, J. 1994. *Wage Hunters and Gatherers: Search for Work in the Urban and Rural Economy of South Gujarat*, New Delhi: Oxford University Press.
- Connell, J., B. Dasugupta, R. Laishley and M. Lipton. 1976. *Migration from Rural Areas: The Evidence from Village Studies*, Delhi:Oxford University Press.
- Datta, A. and S. K. Mishra 2011. "Glimpses of Women's Lives in Rural Bihar: Impact of Male Migration," *Indian Journal of Labour Economics*, 54 (3) pp. 457- 477.
- De Haan, A. 2002. "Migration and Livelihoods in Historical Perspective: A Case Study of Bihar, India," *Journal of Development Studies*, 38 (5) pp. 115-142.
- Deshingkar, P. and J. Farrington 2009. *Circular Migration and Multilocal Livelihood Strategies in Rural India*, New Delhi: Oxford University Press.
- Government of India 2006. *Social, Economic and Educational Status of the Muslim Communities of India: A Report*, Prime Minister's High Level Committee Cabinet Secretariat.
- Government of Bihar 2009. *Economic Survey 2008-09*, Finance Department.
- Government of Bihar 2012. *Economic Survey 2011-12*, Finance Department.
- Government of India 2009. *Report of the Expert Group to Review the Methodology for the Estimation of Poverty*, Planning Commission.
- Hampshire, K, 2002. "Fulani on the Move: Seasonal Economic Migration in the Sahel as a Social Process," in A. De Hann and B. Rogaly eds. *Labor Mobility and Rural Society*, London, UK: Frank Cass,
- Keshri, K. and R. B. Bhagat 2012. "Temporary and Seasonal Migration: Regional Pattern, Characteristics and Associated Factors," *Economic and Political Weekly*, 47 (4) pp. 81- 88.
- Levy, M.B., and W. J. Wadycki 1974. "Education and the Decision to Migrate: An Econometric Analysis of Migration in Venezuela," *Econometrica*, 42 (2) pp. 388-88.
- Oberoi, A.S., P. H. Prasad and M.G. Sardana 1989. *Determinants and Consequences of Internal Migration in India: Studies in Bihar, Kerala and Uttar Pradesh*, New Delhi: Oxford University Press.
- Oberai, A. S. and H. K. M. Singh. 1983. *Causes and Consequences of Internal*

- Migration: A Study in the Indian Punjab*, Delhi: Oxford University Press..
- Oda, H. 2007. "Dynamics of International and Internal Migration in Rural Pakistan: Evidence of Development and Underdevelopment," *Asian Population Studies*, 3 (2) pp.169-179.
- Rodgers, G. and J. Rodgers 2011. "Inclusive Development? Migration, Governance and Social Change in Rural Bihar," *Economic and Political Weekly*, 46 (23) pp. 43-50.
- Sjaastad, L.A. 1962. "The Costs and Returns of Human Migration," *Journal of Political Economy*, 70 (5) (Part 2) pp. 80-93.
- Sharma, A. N. 2005. "Agrarian Relations and Socio-Economic Change in Bihar", *Economic and Political Weekly*, 40 (10) pp. 960- 972.
- Singh, J. P. and D. Tiwary undated. *Population and Health in Bihar (Figures at a Glance)*, Population Research Centre, Department of Statistics, Patna University.
- Stark, O. 1991. *The Migration of Labour*. Oxford and Cambridge, MA: Basil Blackwell.
- Stark, O.. and D. E. Bloom. 1985. "The New Economics of Labor Migration," *American Economic Review*, 75 (2) pp. 173-178.
- Tsujita, Y., H. Oda and P.P. Ghosh 2010. "Development and Intra-state Disparities in Bihar," *Economic and Political Weekly*, 45 (59) pp. 13-15.
- Van Wey, L. K. 2005 "Land Ownership as a Determinant of International and Internal Migration in Mexico and Internal Migration in Thailand," *International Migration Review*, 39 (1) pp.141-172.
- Winters, P., A. De Janvry, & E. Sadoulet. 2001."Family and Community Networks in Mexico-US Migration," *Journal of Human Resources*, 36 (1) pp.159-184.

Appendix 1: List of Occupations:

1. Agricultural labor: rice transplanting, rice harvesting, wheat harvesting, chana harvesting
2. Construction workers: construction worker, painter, *raj mistry (mason)*, *raj mistry's* helper, whitewashing, grill painting, boring, construction labor, gas pipeline construction, carpenter, carpenter's helper, carrying soil.
3. Transportation: driver, rickshaw puller
4. Coolie: carrying goods, loading/unloading from trucks, labor in a saw mill, labor in a rolling mill, loading/unloading
5. Manufacturing: factory work, labor in a private company, furniture making, labor in a steel factory, labor in a nickel factory
6. Tailoring: tailor, stitching bags
7. Sales and trade: fruit shop, vegetable seller, pearl business, selling glasses, salesman, waste paper collection
8. Security : security guard
9. Hotels and restaurants: waiter in a hotel
10. Mechanic: fitter (mechanic) in a private company
11. Public service: army, police, rural engineering organization, gangman (railway)
12. Cleaner: truck cleaner
13. Domestic servant: labor at home
14. Unknown/unspecified: daily labor, work in a company

Appendix Table1. Use of Remittances

	No. of HHs whose remittances are used for		Primary Use		Secondary Use		Tertiary Use	
	No.	Share (%)	No.	Share (%)	No.	Share (%)	No.	Share (%)
Helping family/relative's migration	11	11.46	4	4.26	2	1.90	5	6.41
Pay off debt	17	17.71	4	4.26	2	1.90	11	14.10
Construction/renovation of house	7	7.29	1	1.06	3	2.85	4	5.13
Mortgage-in land	2	2.08	0	0.00	0	0.00	2	2.56
Money lending (other than mortgage-in land)	13	13.54	9	9.57	2	1.90	2	2.56
Purchase land	2	2.08	1	1.06	0	0.00	0	0.00
Purchase big animals (bullock, cow, buffalo or horse)	2	2.08	0	0.00	0	0.00	1	1.28
Working capital for agriculture	29	30.21	4	4.26	1	0.95	14	17.95
Pay for schooling/training for household members	13	13.54	1	1.06	6	5.70	5	6.41
Purchase car	1	1.04	0	0.00	0	0.00	0	0.00
Finance marriage, ceremony	8	8.33	0	0.00	0	0.00	8	10.26
Medical expenditure	75	78.13	5	5.32	51	48.45	18	23.08
Help consumption	93	96.88	65	69.15	18	17.10	7	8.97
No. of observations	96	100	94	100	95		78	

Source: Same as Table 3.

Appendix Table 2. Possession of Consumer Durables and Other goods

	Migrant households		Migrant households that bought this item before the first year of migration		Non-migrant households		Total	
	No.	Share (%)	No.	Share (%)	No.	Share (%)	No.	Share (%)
Four-wheelers	1	0.95	0	0.00	0	0	3	1.50
Two-wheelers	8	7.62	4	3.81	10	16.13	20	10.00
Bicycle	64	60.95	29	27.62	40	64.52	128	64.00
TV (Black & White)	2	1.90	1	0.95	3	4.84	6	3.00
TV (Colour)	0	0.00	0	0.00	3	4.84	5	2.50
Radio	7	6.67	3	2.86	9	14.52	20	10.00
Pankha	4	3.81	0	0.00	8	12.90	14	7.00
Pressure Cooker	10	9.52	3	2.86	10	16.13	22	11.00
Sewing Machine	11	10.48	4	3.81	10	16.13	21	10.50
Handpump for drinking	65	61.90	33	31.43	47	75.81	131	65.50
Mobile phones	70	66.67	35	33.33	37	59.68	126	63.00
No. of observations	105	100	105	100	62	100	200	100

Source: Same as Table 3.

Appendix Table 3. Changes in Male Workers' Daily Wages (Current Prices)/in Kind and No. of Meals per Day

Village	Village A				Village B			
	2008		2011		2008		2011	
Year	Daily wage (Rs.) or in-kind	No. of meals/nashta per day	Daily wage (Rs.) or in-kind	No. of meals/nashta per day	Daily wage (Rs.) or in-kind	No. of meals/nashta per day	Daily wage (Rs.) or in-kind	No. of meals/nashta per day
General agricultural labor	60	2	3kg in kind	0	60	2	120	2
Transplanting paddy	60	2	80 per katta	0	60	2	120	1
Harvesting paddy	15	0	1/8 quintal	0	40	0	150	0
Harvesting wheat	15	0	1/8 quintal	0	40	0	150	0
<i>Raj Mistry</i> (Mason)	130	1	200	1	140	2	250	1
The latest year of a major increase in wages in agricultural labor for rice and wheat		2010/11			2008			
Village	Village C				Village D			
	2008		2011		2008		2011	
Year	Daily wage (Rs.) or in-kind	No. of meals/nashta per day	Daily wage (Rs.) or in-kind	No. of meals/nashta per day	Daily wage (Rs.) or in-kind	No. of meals/nashta per day	Daily wage (Rs.) or in-kind	No. of meals/nashta per day
General agricultural labor	60	1	100	1	5kg in kind	1	100	0
Transplanting paddy	60	1	100	2	5kg in kind	1	5kg in kind	2
Harvesting paddy	15kg	1	100	0	1/8 quintal	0	1/8 bundles	0
Harvesting wheat	15kg	1	50	0	1/8 quintal	0	1/8 bundles	0
<i>Raj Mistry</i> (Mason)	120	1	175	1	125	1	200	2
The latest year of a major increase in wages in agricultural labor for rice and wheat		2009			2006			

Note: One acre is equal to approximately 14 katta in Village A.

Source: Same as Table 3.