

Dual Economies or Dual Livelihoods? Short-Term Migration from Rural India and Non-Agricultural Employment

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Abstract

Economists have long conceived dual developing economies, linked by costly permanent migration from the rural sector to seek urban employment. However, permanent migration of men from rural Indian villages remains uncommon. Moreover, existing data have limited opportunities to study the details of how households leave agricultural work for non-agricultural work or, as we find, how they use short-term migration to combine these livelihoods.

This paper analyzes new data about 705 households from 70 villages in rural Rajasthan, Gujarat, and Madhya Pradesh. Data collection emphasized detailed migration histories, and included interviews with 2,224 adults. Short-term migration was common and frequent. Over half of the adults in our sample, belonging to 80 percent of households, left the village for work at least once from summer 2009 through summer 2010. The median trip lasted 30 days; very few exceeded four months. Such migration is sharply seasonal, and rarely becomes a permanent move.

These data address unresolved questions and suggest limits of existing accounts of Indian labor migration. Short-term migration allows non-agricultural work to be a large component of the livelihood of otherwise agricultural households. In this way, short-term migration creates channels for economic spillovers among rural and urban growth, poverty, and policies.

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1 Introduction

Economists have long conceived dual developing economies: one rural and agricultural, and one urban and non-agricultural (Harris and Todaro, 1970). In this widely adopted framework, development entails the permanent movement of households out of the agricultural sector into the non-agricultural sector. However, partially due to limitations of existing data, little attention has been paid to the particular ways in which households shift from agricultural to non-agricultural employment (Foster and Rosenzweig, 2008). Moreover, the details of how some households leave agricultural work for non-agricultural work — or, as we find, how they use short-term migration to combine them — are economically important. Households’ dual livelihoods link rural and urban, agricultural and non-agricultural labor markets, shaping the distribution of economic growth and the incidence of ostensibly local policies.

In this paper, we present results from newly collected survey data which help illuminate how rural, agricultural households in India take advantage of urban, non-agricultural employment opportunities through short-term migration, anywhere from a few days to a few months. Our sample comprises 705 households based in 70 villages in rural Rajasthan, Gujarat, and Madhya Pradesh. Additionally, we did in-depth interviews with 2,224 adults about their migration experiences. Among the households that we studied, short-term migration was both common and frequent.

This paper is not the first to document short-term migration. There is considerable evidence outside of economics (Haberfeld et al., 1999; Mosse et al., 2002; Deshingkar, 2006; Rogaly, 1998) and an increasing number of studies within economics (Banerjee and Duflo, 2007; Badiani and Safir, 2009; Chowdhury et al., 2009) suggesting that labor migration from South Asian villages is common, and that an important fraction of this migration is for short lengths of time. Indeed, an estimated 80 percent of migrants in India who leave rural areas for work each year spend less than six months away from the village.¹

¹NSS Employment and Unemployment Survey, Round 64.

As Foster and Rosenzweig (2008) explain, research on short-term migration and the shift from agricultural to non-agricultural work is limited by the nature of existing data sets (p. 3052). Data collection is hindered by the practical difficulty of finding migrants, by the complications migration poses to defining sampling frames and households, by survey respondents forgetting or overlooking short trips, and by questionnaires that simply do not ask about short-term migration. Moreover, because in general even specialized migration surveys are surveys of migrants at destination (Foster and Rosenzweig, 2008, p. 3058), much of the data that speak to labor migration can only say little about its effects on sending economies.

The principal contribution of this paper is analysis of a new data set designed around these issues. To our knowledge, no previous study in rural India has surveyed a comparable range of households about short-term migration in such depth. With a survey instrument targeted at understanding short-term migration, we found that over two-fifths of the adults who completed our adult survey lived outside of their village to work at some point in the summer of 2010. Over half left the village for work at least once from summer 2009 through summer 2010. Because these averages include all adults aged 14 to 69, they imply nearly universal migration among working young men. They also imply that a very large fraction of households, approximately 80 percent, sent at least one migrant. Trips are frequent and short: the median trip in our sample lasted 30 days, and 99 percent were less than four months.

These data allow us to address questions that, given the limits of existing data, have not been fully answered. Some of the questions we look at are: Who participates in short-term migration? How frequently does one person participate over time? What are the important costs involved? How is migration financed?

Our data also help us understand why these households chose short term migration. Here, migration is seasonal, driven by the annual cycle of agricultural productivity. Repeated short-term migration during agriculturally unproductive times of year is part of households' long term economic strategy. At first pass, the data suggest that few short-

term migrants become long-term migrants. Indeed, only 3% of households said that someone had left permanently in the last 5 years for reasons other than marriage. Even though people rarely break away from households to live permanently in a city, some migrants do spend long stretches of the year outside the village. That 10% of the adults in the sample spend nine months a year outside of the village suggests that definitions of “permanent migration” should be carefully considered.

The next sections illustrate the analysis permitted by the detailed migration data. Section 2 describes the data and its collection. Section 3 presents stylized facts and summary statistics of the data, with a focus on short-term labor migration. Section 4 discusses implications of our findings in the context of the migration and development literatures. We conclude that, in this context, short-term migration allows non-agricultural work to be a large component of the livelihood strategy of otherwise agricultural households. In this way, short-term migration creates channels for economic spillovers among rural and urban growth, poverty, and policies.

2 Context

Our primary data source is a survey conducted during summer 2010 in a high migration area straddling the borders of three states in India (Rajasthan, Gujarat, and Madhya Pradesh). We collected data from about 5067 individuals in 705 households. These 705 households lived in 70 villages, in five districts - Banswara and Dangarpur in Rajasthan, Jhabua and Ratlam in Madhya Pradesh, and Dahod in Gujarat.

The average household in the sample has 7.2 people, and the median household has 7. The mean household has 2.8 children under the age of 14, and the median has 3. Thirty nine percent of the individuals the sample is under 14.

In approximately 63% of households, the head self-identifies as Scheduled Tribe (ST). The fraction of households belonging to a group that the central government recognizes as ST may actually be much higher than this; many households said they did not know

what category they belonged to. For this question, and for the question about religion, surveyors were specifically instructed not to record their own opinions of the respondents' groups on the survey form, but rather to simply record the respondents' answers. 85% of household heads self-identified as Hindu.

Households in the sample are very poor. Ninety-three percent have a dirt floor, 29.7% have electricity and only 1.4% have a television set. While almost all of the households in the survey own land, there are very few large landowners. Output is low; almost half of households have no irrigation.

There are three main agricultural seasons: monsoon (July-October), winter (November-February) and summer (March-June). Agriculture is predominantly rain-fed with the main growing season during monsoon. Corn is planted during the monsoon for home consumption, and the fodder from the corn is saved for feeding animals. In the few areas with irrigation, crops, mainly wheat, are also grown during the winter. Crops are rarely grown during the summer.

Banswara, the district capital of Banswara district, is within 300 kilometers of the major migration destinations of Ahmedabad and Baroda, and 400 kilometers of Surat, also a major Gujarati city and migration destination. The study area has a high concentration of tribal people, and households are mainly patrilocal. For more detailed descriptions of the area and populations studied here, please see Mosse et al. (2002) and Haberfeld et al. (1999).

3 Data

As mentioned above, detailed survey data about the nature of short term labor migration is limited. The major employment survey in India, the National Sample Survey of India's Employment and Unemployment survey asks respondents about the total time spent outside the village for work in the past year. Those who have spent a total of between 30 and 180 days in the past year working outside the village are counted as short term

migrants. Additional information about the type of usual employment, location of usual employment, and wages in the past seven days are recorded. Those who spend more than 180 days outside the village are considered to be long term migrants.

Due to the short length of many trips, such a strategy would not be appropriate for our sample. The median length of a trip in the last four seasons was 30 days, and 13% of migrants worked for less than 30 days outside the village in the last year. Since these people would not have been classified as short term migrants by the NSS, we define short term migration as spending 2 or more days outside of the village for work.

To our knowledge, there have been two other migration surveys done in the region that we studied. One is documented in Mosse et al. (2002) and the other in Haberfeld et al. (1999). In Mosse et al. (2002), 2,588 households from 42 villages in the three states were interviewed. The villages visited were part of a DFID funded development program that lasted four years, and targeted families who earned their livelihoods from rain-fed agriculture. In the Haberfeld et al. (1999) study, 645 households from 8 villages of Dungarpur district of Rajasthan were interviewed. Our survey builds on these studies, not only because of the 10 year gap between the surveys, but also because we visited a larger number of villages. In addition, our detailed adult questionnaires allow for in-depth analysis of which migrants households send and individual migrants' experiences.

The use of a short time frame to define migration, an expansive definition of a household, a large number of villages, and individual interviews with each adult migrant are only a few of the unique features of our survey. Notably, we began and ended the survey in the monsoon season, so as to maximize the number of short term migrants who would be present in the village at the time of the survey. We asked about migration for the last five years, and then collected detailed information about trips in the last four seasons. We believe that having this more general conversation with adult respondents about the previous migration helped them to start thinking about their trips, so that they could report them more accurately when we asked those questions.

Recall problems were nonetheless an important challenge in this survey. Reporting

on events occurring frequently in the past presents recall problems among most groups, but here these problems were exacerbated by our respondents' lack of schooling and thus disfluency in numbers and calendar time. In order to help our respondents recall migration trips, we often posed questions in terms of seasons, rather than, for example, calendar months. Despite these efforts, we still see quite a bit of evidence of underreporting of past migration. Though we asked each respondent to tell us about her migration for the previous five years, few people could remember any details of trips beyond three years back. Interestingly, though, people often remember the first time they migrated, or even the first two or three years of migration.

Our survey allows us to look very closely at the details of trips in the past four seasons. We collected information on location, employment type, wages, living and traveling conditions for each trip. We asked migrants which household members accompanied them on each trip, how work was found, and whether employers provided in-kind payment. For this information, our strategy of interviewing the individual migrant, as opposed to asking a household head about members' migration was very useful. Wage information, in particular, can be sensitive, especially if migrants bring home what they save out of their wages to contribute to household expenses.

Finally, in response to an important lack of data about childrens' migration, we asked migrating adults to tell us about the children who migrated with them, and what they did on the most recent trip. We find substantial migration among children, particularly among infants. This information should permit an analysis of the migration experience of children, and help us understand more clearly the welfare implications of short term migration.

3.1 Sample Selection

The survey location was selected for two reasons. First, previous studies in this area (Mosse et al., 2002; Haberfeld et al., 1999) reported high rates of out-migration assuring us that a survey here would pick up a large number of short-term migrants. Second the

area marks the intersection of three states. By surveying along the border of the three states, it was possible to survey villages with access to the same migration destinations but with varying state-level policies.

The specific villages surveyed were selected based on pair-wise matching using proximity to each other, land composition (irrigated land, cultivable non-irrigated land, cultivable waste²), population density, and caste composition. Data for all of these characteristics was taken from the 2001 census.

More detail on village and household selection is provided in the appendix. For the purposes of the survey, a household was defined as a group of persons living under the same roof for at least *thirty* days in the past year, sharing food from a common source when together, and contributing to or sharing a common resource pool. Many surveys (such as the NSS’s Employment and Unemployment Survey used in the sequel) use a more stringent requirement that a person spend at least 180 days living under the same roof. However, because our focus is on migrants, we adopted the thirty day requirement.

3.2 Response Rates

For each sampled household, a household survey answered by the household head or most knowledgeable person as well as individual adult surveys for each person aged 14 to 69 were attempted. From here on, we define “adult” as any person between the ages of 14 and 69. Figure 1 shows the response rate at the household level. Out of 753 attempted household surveys, 705 were completed for a completion rate of 93.6%.

An adult was considered a member of the household if she had spent at least 30 days living with the household in the past year. Adult household members who were visitors from another household, had married into another household, or were 70 years or older were not attempted. After removing these adults, the total sample of adults in the 705 households was 2,722. Out of these adults, complete adult surveys were completed for 2,224 or 81.6%. The full adult survey contained detailed questions about migration trips

²Culturable waste includes lands available for cultivation but not cultivated in the past five years.

over the past year and a migration history as far back as memory allowed.

The remaining 18.4% of adults were either unavailable or declined the survey. For these adults, the household head or other knowledgeable household member was asked to respond to a much smaller set of questions about his/her family member's migration and local work. Figure 2 shows the response rates at the adult level.

We use the larger group of adults for which we have at least some migration information to make general comparisons between migrants and non-migrants and to judge how pervasive migration is in the population. We use the group that answered the full adult survey to explore more detailed questions about the nature of migration. We turn next to describing how these two samples compare to one another, and how they compare with short-term migrants throughout India.

3.3 Comparison of Sub-Samples

The first two columns of Table 1 present descriptive statistics for the two main sub-samples used throughout the paper. The first column includes the 2,722 adults for the adult survey was attempted. The second column includes the 2,224 adults who answered the full adult module. To explore the possible problem of selection, the third column includes adults who did not answer the adult survey.

Based on age, gender, marital status and education, the full sample of adults and those who completed the adult survey appear similar. However, comparing the sample of adults completing the adult survey directly with those who did not complete it, we find many statistically significant differences. Adults who did not complete the adult survey are more likely to be male and unmarried. They are also younger, and slightly better educated than those who completed the adult survey. This is almost certainly because many of those who were not interviewed were away for work at the time surveyors visited their household. Indeed, those who did not complete the adult survey were 21.6 percentage points more likely to have spent 2 - 330 days outside the village for work in the last year, and 29.1 percentage points more likely to have migrated for work in all

three seasons than those who completed the adult survey. Both of these differences are statistically significant.

The final column in Table 1 presents basic summary statistics from Round 64 of the NSS Employment and Unemployment Survey (from here on, “NSS Survey”). Round 64 was conducted between July 2007 and June 2008 and includes detailed demographic and migration information for a nationally representative sample of rural households in India. There is no reason that our sample should match the characteristics of the rural of population of India as a whole. However, it is worth considering any significant discrepancies between the two. Age, marital status, and gender are similar across the samples. As expected given that our survey region was selected based on high poverty rates, our simple is significantly less educated.

To quantify short-term migration, the NSS asks whether a household member spent between 30 and 180 days living outside of the village for work. By this definition, 2.5% of Indian adults were short term migrants. As mentioned above, permanent migration, in the sense of people leaving and setting up new households (for reasons other than marriage) is rare in rural India. In our sample, only 3% of households reported that someone had migrated out of the household permanently in the last five years. However, we found that 16% of adults in our sample spent more than 6 months or more away from the household, 10% spent 9 months or more, and 4% spent 11 months or more. This migration would not be considered “short term” by the NSS, but nor can it really be considered “permanent.” When migrants return to the village, a very large fraction of them return to work. Over 97% of those who had been away six months or more did work upon returning to the village, and about 93% of those who had been away for 11 months worked when they returned to the village. We take this work as a sign that even migrants who live outside the villages for many months a year have important economic ties to the villages. Next, we will turn to a comparison of migrants and non-migrants.

3.4 Migrants and Non-Migrants

The first two columns of Table 2 split our sample into those who spent between 30 and 180 total days outside the village as migrant workers in the past year and those who did not. The third and fourth columns perform the same exercise for the NSS Sample. In both our sample and the NSS sample, short-term migrants are more likely to migrate to urban than rural areas. They mainly work in construction, followed by agriculture. Migrants tend to be younger than the average adult.

There are a few differences between short-term migrants in our sample and those in the NSS sample. In our sample, a higher fraction of short term migrants are women. The average short term migrant in our sample is less educated than the average short term migrant from the NSS sample. However, in both samples, short-term migrants tend to be less educated than adults who do not engage in short-term migration. Finally, manufacturing seems to be a common industry for short-term migrants from all of India, while in our sample only 3.5% of short-term migrants worked in manufacturing.

4 Analysis: Characterizing Short-term Migration

Turning from a comparison of short term migrants in our sample and in the rural population of India as a whole, we will now present a more detailed analysis of the migration data in our own sample.

In Section 4, some of the analysis will be based on questions we asked migrants about trips taken outside the village for work during the last four seasons. Due to space constraints and to avoid survey fatigue, only the four most recent trips in the last four seasons were recorded. This way of collecting the data may under-represent the experiences of those who took more than four trips, since not all of their trips were recorded. Unless otherwise stated, all of the trip data collected is used for the analysis, but the results are very similar if we look only at the last trip taken.

4.1 Migration by Age and Gender

Figure 3 presents the fraction of people of each age in our sample who migrated for work, or accompanied someone who migrated for work, in the past year. These data come from various sources within the survey. For most adults, their migration data is taken from the adult survey that they answered. Information on some adults, who were away from the village for work at the time of the survey, was reported by another household member. Similarly, children's migration was recorded along with the migration record of the adult with whom they traveled — either in that adult's own adult survey, or as reported by another household member if the adult was away during the survey.

Figure 3 uses data from these sources to plot the prevalence of migration at each age, separately for males and females. Nearly 90% of males in their early 20s and over 60% of females in this age category migrated in the past year. About half of men between the ages of 18 and 45 had left the village for work in the past year. Approximately half of infants migrated with an adult in our sample.

The fraction of adults who migrated in the last year falls off at older ages; the bumps in the distribution are likely due to age heaping. The median age of adults (in this survey, people over 14) who migrated for work during the year prior to the survey was 30, the mean was 33.

Our retrospective data also allow us to estimate age at first migration. The adult survey was administered to people 14 to 69, and asked those who had ever migrated their age at first migration for work. Among those who had ever migrated, the median age at first migration was 17, and the mean was 19. The tenth percentile of the distribution was 13 years, and the 90th was 29 years.

4.2 Migration is a seasonal, short-term and repeated income strategy

For the people interviewed by this survey, timing of migration is strongly associated with the seasons. For 81.6% of those who migrated in the last four seasons, their most recent trip was initiated in summer 2010. Data about the seasons in which migration occurred were collected for the five years prior to the survey.

Table 3 indicates that 35.0% of the 2224 adults who completed the adult survey were living outside of their village for work at some point during the summer season of 2010. Twenty-nine percent spent time outside the village during winter 2009-2010, and 10% spent time outside the village during the monsoon of 2009. There are statistically significant differences between all of these means. When we look at the subsample of people who stayed in the village for at least one season, we see the same pattern. Migration is most common in summer, followed by winter and then the monsoon.

Table 3 suggests that the seasonality of migration is tightly linked to the seasonality of agriculture. The monsoon is the time when the most rain falls, making it possible to grow crops without irrigation. The average adult respondent spent 78 days cultivating his own land in the monsoon season of 2009.

Using data from the sample that completed the adult survey, we find that while the absolute fraction of adults outside the village for work declines in all three seasons in earlier years, probably due to recall problems, there remains a statistically significant difference between the fraction of adults outside the village by season, with more adults being away in summer than winter, and more away in winter than during the monsoon.

The mean length of a trip is 48 days, and the median is 30 days. As mentioned above, 99% of recorded trips were less than 4 months long.

4.3 Household Migrant Supply

By aggregating data from the adult surveys and relatives who reported on adult family members who were out of the village for work at the time of the survey, we found that 78% of households in the sample sent at least once migrant in the past year. 64% of households reported sending at least one person for both of the past two years and 45% of households reported sending someone for each of the past 3 years. Fifty percent of households sent someone this year and two years ago. Since we have no evidence for a secular time trend of increasing migration, it may be somewhat surprising that 64% sent a migrant for each of the last two years, but only 50% sent someone this year, and two years ago. Thus, we suspect that the 50%, and by extension the 45% of households sending someone for each of three years, is probably an underestimate of the extent of repeated migration due to recall problems.

This survey's respondents rarely migrate alone. Migrants lived alone for only 15% of all of the trips recorded in the last four seasons. Though people sometimes migrate with friends or distant relatives, 73% of trips reported were taken by two or more people from the same household.

The mean number of rupees brought back from a trip out of the village was 2750, and the median 2000. People rarely sent money back to the village; the median number of rupees sent back per trip is 0, and the mean is 328. 51% of migrants say that family members earn money during their absence.

Of those who migrated in the last 4 seasons, 46% said they had borrowed to pay for the cost of migrating. Of those who borrowed, 45% said they borrowed from money lenders. About 10% of earnings are sent back and 53% are brought back to the village.

4.4 Getting There and Costs of Migration

Our survey will not be able to speak to all of the costs of migration; we did not for instance, look at the impact of migration on migrants' health, or social standing in the

village. However, we did collect data on several indicators.

Migrants typically pay for the travel to their place of work themselves. Respondents' last trips were on average 304 km away from their villages; the median last trip was 275 km away. It is important to note that some of the data for these calculations were imputed, since about half of migrants could not tell us the distance. Almost all knew how much they had paid to travel to their destinations, however. Therefore, missing values of distance were imputed using the relationship between transport costs and distance for the values we had collected.

On average, it cost migrants on average 126 rupees to travel to their destinations, which is more than the typical daily wage. As Table 3 notes, the median transport cost was 1.03 times the average daily wage. Most travel by bus or jeep, approximately 14% take a train for at least some part of the journey.

Another important cost of migration is its discomfort. One of the authors spoke with several of the respondents about how they felt about the experience of migrating. Among other difficulties, such as high fuel and food prices, many talked about the lack of shelter. Indeed, 85% of those who answered the adult survey had no formal shelter while away from the village. Some cooked and slept at the construction site where they were working, but 58% simply did these things out in the open in public places.

4.5 Labor Markets

The migration in our sample is largely a rural to urban phenomenon. 83% of trips in the last four seasons were reportedly to an urban destination. Surat, a city in Gujarat, is the most common urban destination for migrants in the sample. Ahmedabad and Baroda, also Gujarati cities, are the second and third most popular urban destinations. It would be misleading to say that trips are concentrated in these three cities, though. The "other-urban" category was assigned to 27% of trips in the last four seasons, and included 137 distinct urban locations.

The two most common types of work were construction work, done on 61% of all

recorded trips, and agricultural labor, done on 17% of all recorded trips. 14% of jobs fell into the diverse “other” category; jobs commonly listed in this category involved filling vehicles or digging for infrastructure projects.

That 17% of trips were devoted to agricultural labor suggests that the figure of 83% of trips to urban areas might be a bit high. This is because of the 475 trips for which agricultural labor was reported, 205 (43%) were reportedly to urban locations. Thus, it is possible that when asked where they went, some people reported the name of the nearest big city to the place where they’d worked. If we were to count all trips in which the respondent reported agricultural labor as having been to rural locations, the fraction of trips to urban destinations would decrease from 83% to 76%, which still suggests a largely rural to urban movement.

Table 4 describes characteristics of migrants’ employment situation having to do with jobs and employers for the most recent trip. On the most recent trip 84% were doing non-agricultural work, and about half worked for the same employer for the whole trip. Only about 7% worked for the same employer they’d worked for on their previous trip, and only about 5% arranged employment before leaving the village. 8% reported finding work through a labor contractor they knew from a previous trip. For only one third trips involving a labor contractor did the contractor to village to recruit.

The most common way of finding work was to go to a naka, or meet-up point for spot market labor. 45% of workers looked for work in a naka on their last trips. The two next most common ways of finding a job on a trip were through a friend or relative (25% of trips) or through a labor contractor/mukkadam (15% of trips). Our results about how migrants find work contrasts with previous research on seasonal migration, undertaken in the 1990s. Mosse et al. (2002) and Breman (1996), both anthropologists whose studies of the population strongly influenced our survey, find a strong presence of labor contractors, or mukkadams, in arranging jobs for migrants. While it is possible that different methods of study led to different results, we believe that the importance of labor contractors in arranging migrant work may have diminished in the last 15 years. This

would almost certainly be good news for the well being of migrants, as both Mosse et al. (2002) and Breman (1996) describe migrant-mukkadam relationships as exploitative and impoverishing of migrants.

Looking at most recent trips only, 74% of migrants were paid daily. Computing equivalent daily wages for those who weren't paid daily, the mean daily wage was 123 rupees and the median was 116 rupees. On most trips, migrants worked 6 days a week. Taking a longer trip is correlated with earning a higher wage.

Migrant workers were typically not provided additional goods or services by their employers. 30% reported being given tea on the job, and 5% reported getting lodging. Only 2% reported receiving meals, and 3% reported receiving bidis.

Some people in our sample report doing casual labor close enough to village to sleep at their homes at night. We call this "local" casual labor. While it is not as common as migrant casual labor, but it is not uncommon. Roughly 17% of adults report working as local casual laborers in the last four seasons. 71% of local casual labor was done in the respondents' own village, rather than a neighboring one.

5 Discussion: Short-term migration, a long-term strategy

Recent empirical papers often describe rural Indians as an immobile population, especially as compared to similarly developing societies. This reflects low rates of *permanent* migration found in existing data. For example, Munshi and Rosenzweig (2009) develop a theory of caste networks to explain low levels of permanent out-migration of males from their home villages. Deshingkar and Anderson (2004) — who also call attention to temporary migration — compute that urbanization in India is advancing at a rate one percentage point slower than an international trend predicts for countries with similar levels of urbanization.

Despite infrequent permanent migration of rural males, labor migration is very com-

mon among members of our sample. Our data suggest that, in this society, short-term labor migration is an ongoing part of long-term economic strategies. Year after year, people migrate for work, typically in the summer, when agricultural work is unproductive, if not unavailable. Migrants frequently, but not always, go to the same destination or type of work. Among those who answered the adult survey and had ever migrated more than two days for work, 73% recalled migrating in at least 2 different years. Due to memory problems and survey fatigue, we believe this is probably an underestimate of repeat migration across years. Thus, labor migration offers a productive option that households and individuals regularly take, while maintaining otherwise seemingly permanent residence in agricultural villages.

The data permit a characterization of labor migration to which certain customary analytical frameworks do not readily apply. For example, in this population, Rosenzweig and Stark (1989)'s suggestion that migration in India is predominately a marital phenomenon (906) is an overstatement; such short-duration labor migration is not the result of patrilocal exogamy. Nor does migration appear to be motivated mainly by diversification, reducing the variance of household income in response to risk; migration from these villages predominately occurs during times of low agricultural productivity. Despite some fears of exploitative forced migration (Mosse et al., 2002, 2006), there was little evidence that migration is typically a response to emergency, and most migrants did not find work through labor-tying contracts with middlemen, but rather in urban spot markets. Finally, most short-term migration appears to be distinct from failed long-term migration due to its repeated and seasonal nature.

Importantly, the high mobility of our survey's respondents suggests that – while there are costs of migration, and while quality of life while migrating is low – the costs of moving between rural and urban labor markets is not prohibitively high. The median cost of transportation was 1.5 times the daily wage. This implies that dual-economy models in which high transportation costs mean that workers can get “stuck” in a rural or urban setting (for example, in urban unemployment after migrating to the city) will

not describe these migrants' options. This paper is not the first to point beyond dual models of developing economies (*c.f.* Ranis, 2004).³ Yet, many papers continue to assume static, segmented rural economies – either as an assumption for empirical identification or as a theoretical axiom.⁴ In the context of the migrants in our survey, this strategy may not be appropriate.

5.1 Non-agricultural work within rural livelihoods

In the process of economic development, countries transition from agricultural to non-agricultural production. These data contribute to a growing literature that documents the mechanisms and consequences of this transformation at a microeconomic level.

Implicitly or explicitly, agricultural and non-agricultural work have been analyzed as competing either/or alternatives. Thus, Foster and Rosenzweig (2008) present a theoretical model in which migrants give up claims on agricultural profits in the event that they leave (3068). Having made this assumption, however, they admit that migrants may nevertheless sometimes be able to claim the proceeds from their agricultural land; they ultimately call for further investigation of when this might be the case.

Indeed, the migrants in our data better resemble those described by Lanjouw and Shariff (2004): rural households can have highly varied (and often multiple) sources of incomes. In this data, the same households combine agricultural and non-agricultural production. Because trips are typically short, migrants do not forfeit permanent village residence. Moreover, because this migration is sharply seasonal, when workers do leave they are often forgoing little potential agricultural profit.

In their anthropological study of Bhil tribal Indians, in approximately the same setting as our survey, Mosse et al. (2002) reach a similar conclusion: “Successful migrants invest in the forms of social and symbolic capital which ensure continued access to urban labour

³For example, Rosenzweig's (1988) demonstration of dispersion in wages for agricultural labor in rural India suggested that workers were not trapped as unemployed surplus labor in a sealed rural economy.

⁴Banerjee et al. (2007) assume that rural Indians do not move to places with better public services. Zenou (2011) explores policies in a model of rural agents electing to move permanently to a crowded city, where they may be stuck in unemployment.

markets. But they prioritise investment in land and agriculture, assuring the continuity of peasant identities, even though the demands of cultivation often weaken their bargaining power with urban employers. In short, a perspective on migration is needed which goes beyond dichotomous models of push or pull, structure or agency, urban or rural, and allows labour migration to be seen as part of local and diverse livelihood strategies” (60).

5.2 Poverty, policy, and spillovers

Much has been written on whether Indian economic growth is reducing poverty, and in particular on the effects that urban development might have – or not have – on the rural poor. Recently, Datt and Ravallion (2009) have argued that, in India, the post-reform process of urban economic growth has brought significant gains to the rural poor as well as to the urban poor. Short-term migration may be one channel conveying some benefits of urban growth to rural villages, long before the villages may someday transition out of agriculture.

Some research has attempted to explain heterogeneity in who finds non-agricultural work. For example, Lanjouw and Murgai (2008), while studying rural non-agricultural employment generally, rather than migration in particular, document that participation is associated with education levels and social status that are rare among the poor. However, the migrants in our data are poor, and supply unskilled, casual labor. Moreover, Foster and Rosenzweig (2002) anticipate that a thick market for migrant labor could raise wages for poor village residents, even if they did not themselves migrate. Our data suggest that exactly such a large market exists in this society.

More broadly, thick flows of temporary rural-urban labor migration could facilitate complex spillovers. For example, Badiani (2009) finds that where manufacturing growth increased demand for unskilled labor in rural India, it decreased the returns to education; nevertheless even in these cases investment in boys education increased, because the demand for unskilled labor increased the incomes of the poor. Therefore, with such spillovers, urban economic conditions and policies could matter even for households ap-

parently living permanently in rural villages.

Finally, as Deshingkar and Anderson (2004) and others also warn, a vision of a static and separate agricultural economy can undermine the effectiveness of policy when services are attached to assumed “permanent” residences. In rural India, public services such as the Public Distribution System of food and primary education are typically organized around fixed rural residences. While short-term migrants in our sample may not be forfeiting agricultural profit while migrating, such policies mean that they likely are forfeiting the benefits of these programs.

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A Village Selection and Household Sampling

Initially, 100 villages were selected, but due to time and budget constraints, 30 villages were dropped. The villages that were dropped were the 30 villages located furthest to the west, as this made surveying of the remaining villages logistically easier. Voting lists were used to randomly sample 10 households in each village.

Voting lists are used by the state and local village governments for elections and are meant to include every adult aged 18 and older in the village. In practice, this may not be true as voting lists are updated irregularly. However, during piloting, complete household listings in three villages were completed to compare with the voting lists, one in each state. In all cases, each household enumerated in the full census had at least one adult member listed in the voting list. During the household listing, we defined a household as a group of persons living under the same roof for at least thirty days in the past year, sharing food from a common source when together, and contributing or sharing in a common resource pool was used. In some cases, the definition of household in the voter list did not correspond to our definition. In particular, the voter list definition was more expansive often including for example three brothers who lived separately as one household. During surveying, in cases in which the voter list and our household definitions differed, only one economic household was chosen. We chose the household with the eldest head of household. For this reason, more established, older households are likely to be over-represented in the final sample.

B Key Variable Construction

Equivalent daily wages were computed for weekly, bi-weekly and monthly payment schedules, and for payments received at the end of work. Since migrants also reported the number of days they worked in a week, we divided weekly, biweekly, monthly, or lump sum payments by the number of days that a migrant worked for the pay period.

Figure 1: Household Surveys Attempted and Completed

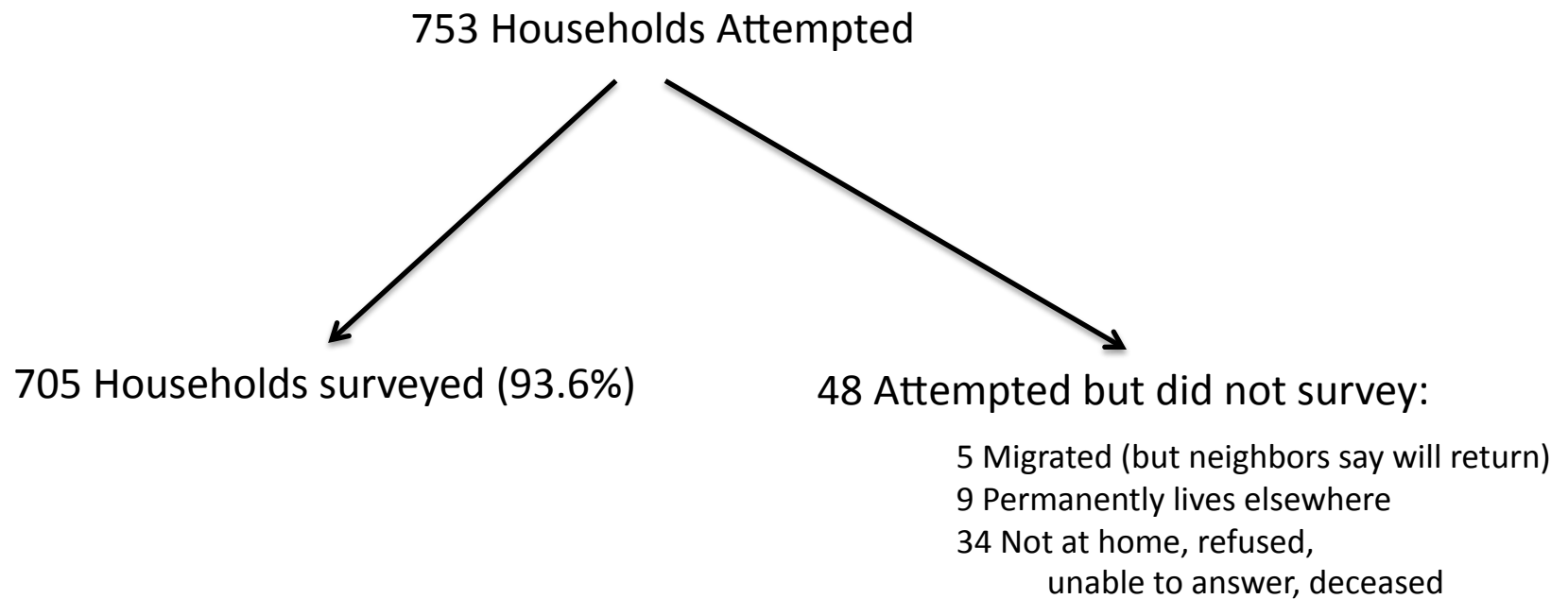
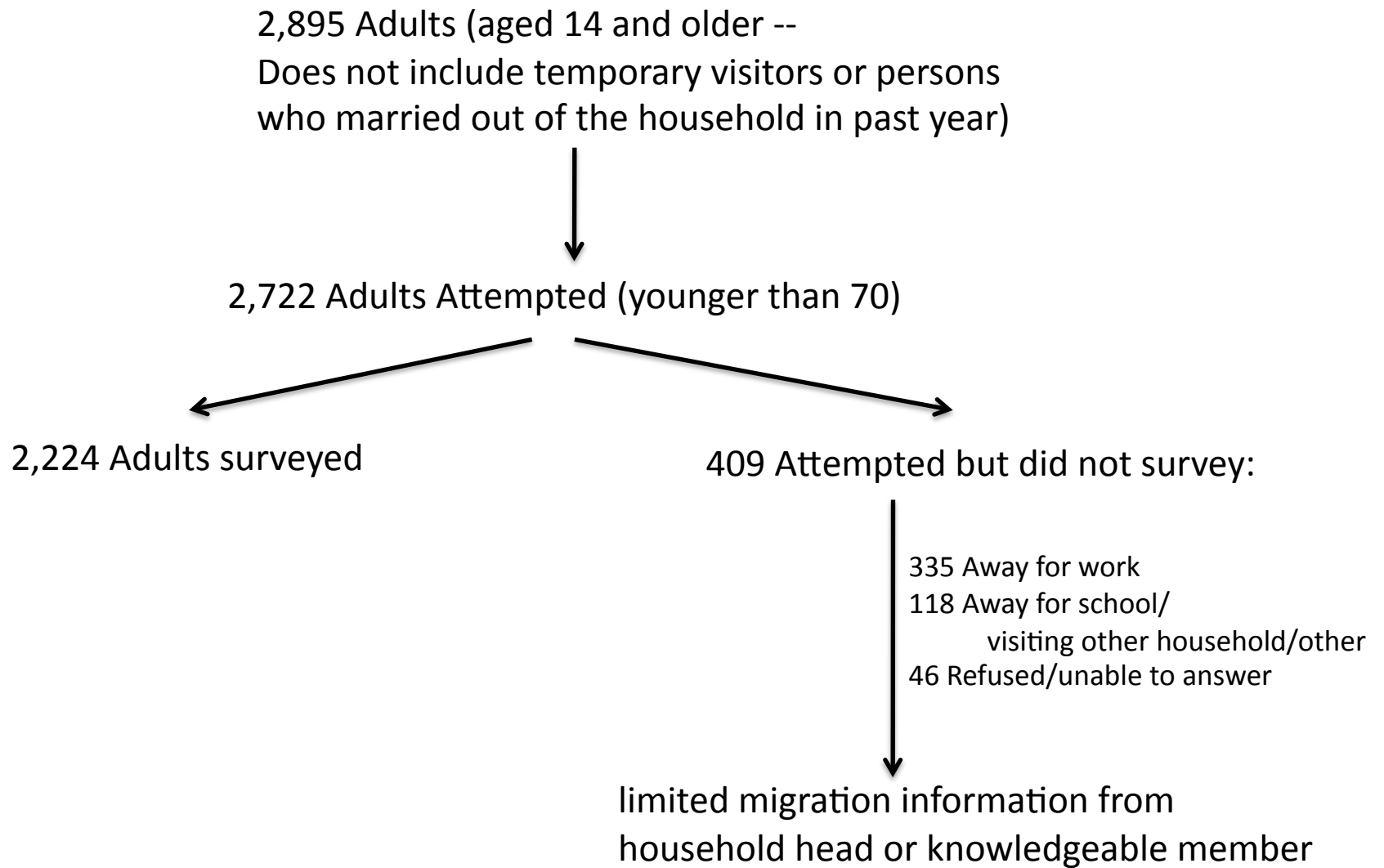


Figure 2: Adult Surveys Attempted and Completed



Left Village for Work or with Worker

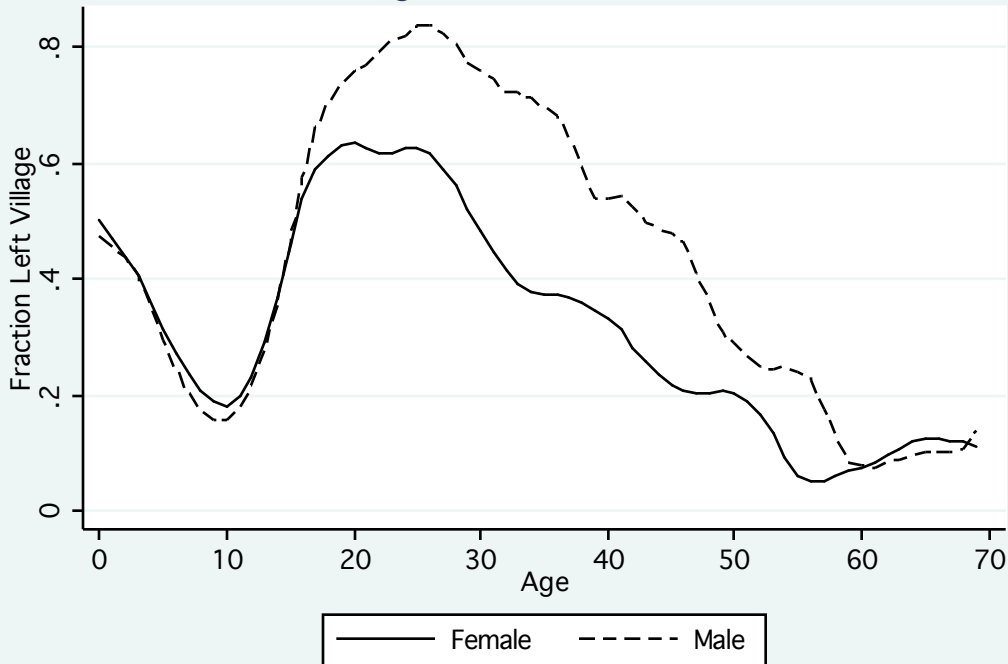


Table: Household Characteristics

	Own Survey (All Households)	India Survey (All Households)
Owns Cultivable Land	0.994	0.570
Cultivable Land (Acres)	2.9	1730
Has Irrigated Land	0.555	--
Produced Any Crop for Sale	0.596	--
Produced Cotton for Sale	0.423	--
Crops Cultivated		
Rice	0.591	--
Wheat	0.474	--
Maize	0.977	--
Dal	0.389	--
Demographics		
Children Aged 13 or Less	2.8	1.6
Adults	4.4	3.2
Household Size	7.2	4.8
Household Head		
Scheduled Tribe	0.626	0.107
Hindu	0.846	0.843
Adivasi	0.092	--
Permanent Migrant (outside district)		
All	0.091	0.112
Reason other than marriage	0.037	0.088
Observations	705	79,297

India Survey refers to the rural sample of round 61 of the NSS Employment survey conducted from July 2004 to June 2005. Estimates from this sample are computed using survey sampling weights. "--" denotes not available. For the NSS sample, permanent migrants are defined as persons who left the district between one and five years ago and have not returned. Permanent migrants in the own survey sample are defined as persons who "permanently" left the household within the last five years and are currently in another district.

Table 1: Summary Statistics and Comparison with National Rural Population

	Own Survey				India Survey
	All Adults	Full Adult Survey Completed	Adult Survey not Completed	Difference (3) - (2)	All Adults
	(1)	(2)	(3)	(4)	(5)
Female	0.511 (0.0056)	0.525 (0.0166)	0.448 (0.0067)	-0.077 (0.019)	0.497
Married	0.704 (0.0091)	0.729 (0.021)	0.594 (0.0105)	-0.134 (0.0233)	0.692
Illiterate	0.666 (0.0185)	0.683 (0.0325)	0.590 (0.0189)	-0.093 (0.0302)	0.385
Some School or Literate	0.392 (0.0181)	0.378 (0.0352)	0.456 (0.0178)	0.078 (0.0316)	0.439
Secondary	0.026 (0.0042)	0.022 (0.01)	0.040 (0.0042)	0.018 (0.01)	0.097
Tertiary	0.016 (0.0042)	0.016 (0.0061)	0.014 (0.0049)	-0.002 (0.0079)	0.080
Age	32.8 (0.248)	34.1 (0.484)	27.0 (0.301)	-7.1 (0.592)	34.4
Spent 2-330 days away for work	0.462 (0.0194)	0.422 (0.0388)	0.639 (0.0187)	0.216 (0.0389)	--
Migrated for Work all Three Seasons	0.133 (0.0134)	0.080 (0.0448)	0.371 (0.0101)	0.291 (0.0459)	--
Spent 30-180 days away for work	XX	XX	XX	XX	0.025
Observations	2,722	2,224	498		252,711

The sample is restricted to adults aged 14 to 69. Standard errors computed assuming correlation of errors at the village level in parentheses. "India Survey" refers to the rural sample of the NSS Employment and Unemployment survey Round 64 conducted between July 2007 and June 2008. "Own Survey" refers to the survey discussed in this paper. The first column includes the full sample of persons aged 14 to 69 for whom the adult survey was attempted. The second column includes all persons aged 14 to 69 for which the full adult survey was completed. The third column includes all persons aged 14 to 69 for which the full adult survey was not completed. Means from the NSS survey are constructed using sampling weights.

Table 2: Characteristics of Persons Who Did and Did Not Migrate Short-term

	Own Survey Migrated Short-term	Own Survey Did Not Migrate Short term	India Survey Migrated Short-term	India Survey Did Not Migrate Short- term
Female	0.403	0.589	0.145	0.506
Married	0.736	0.704	0.701	0.691
Age	28.6	38.5	30.4	34.5
Illiterate	0.659	0.687	0.388	0.385
Some School or Literate	0.427	0.354	0.494	0.437
Secondary	0.020	0.025	0.063	0.098
Tertiary	0.005	0.023	0.055	0.080
Industry (Migrants Only)				
Construction	0.619		0.419	
Agriculture	0.162		0.231	
Manufacturing	0.035		0.169	
Other	0.184		0.181	
Destination - Urban	0.832		0.677	
Observations	1,123	1,345	378,212	

The sample is restricted to adults aged 14 to 69. "India Survey" refers to the NSS Employment and Unemployment survey Round 64 conducted between July 2007 and June 2008. "Own Survey" refers to the survey discussed in this paper. Means from the NSS survey are constructed using sampling weights. Short-term migrant is defined as spending between 30 and 180 days away from the village for work in the past year. "Destination - Urban" is determined based on the most recent trip for persons in our sample and based on longest trip for persons in the NSS Sample.

Table 3: Agricultural Seasonality and Short-term Migration

Season	Left Village for Work				
	Full Sample	Stayed in village at least one season	Cultivated Own Land More than 2 Weeks	Days Spent Cultivating Own Land	Fraction of Total Rainfall
	(1)	(2)	(3)	(4)	(5)
Winter 2009-10	0.29 (0.016)	0.23 (0.014)	0.55 (0.022)	30.72 (1.76)	0.03
Monsoon 2009	0.10 (0.011)	0.02 (0.003)	0.86 (0.011)	77.57 (1.92)	0.91
Summer 2009	0.35 (0.019)	0.29 (0.019)	0.20 (0.015)	8.40 (0.48)	0.06
Observations	2,224	2,046	2,224	2,224	N/A

Standard errors corrected for correlation of errors at the village level in parentheses. See text for definition of seasons. The first column presents the fraction of adults who left the village for work during each season. The second column restricts the sample to individuals that spent at least one full season during the 2009-10 agricultural year in the village. The third column presents the fraction of individuals who spent at least two weeks cultivating their own land in the village. The fourth column presents the average days spent cultivating land across all adults in the sample. The fifth column presents the fraction of total rainfall occurring during each season. Fractions are based on averages of readings taken from meteorological stations throughout each of the five study districts. Raw data is available from IMD website.

Table: Job and Employer Characteristics

Worked for Same Employer Full Trip	0.488
Found Work at Spot Labor Market	0.449
Worked for Same Employer during Previous Trip	0.074
Arranged Job before Leaving	0.056
Job Through Labor Contractor from Previous Trip	0.084
Received Payment Daily	0.744
Salaried Work	0.006
Casual Work/Self-Employed	0.994
Did Not Find Work	0.001
Non-agricultural Work	0.838
Mean Earnings per Day Worked	121.8
Median Earnings per Day Worked	115.3
Mean Earnings per Day Out of Village	112.8
Median Earnings per Day Out of Village	100.0
Observations	1,116

The sample is restricted to adults aged 14 to 69 who completed the full adult survey and who stayed away from the village for work for two or more nights in the past year. Variables are computed based on the most recent trip for each adult.

Table: Migration Costs

Average Distance (Km)	304
Median Distance (Km)	275
Median Transportation Cost as Fraction of Wage	1.03
Shelter	
No Formal Shelter	0.846
Rented	0.020
Employer Provided, Other	0.134
Transportation	
Bus or Jeep	0.960
Train	0.139
Other	0.012
Diff Between Village/City Wage	
Observations	1,116

The sample is restricted to adults aged 14 to 69 who completed the full adult survey and who stayed away from the village for work for two or more nights in the past year. Variables are computed based on the most recent trip for each adult. Missing values of distance are imputed using relationship between transportation costs and distance for non-missing values of distance.