

## **Introduction**

Although a large body of work has documented the appearance of social network influences on migration decisions, the empirical evidence supporting such claims has been limited. Concepts of social networks and social support have been crucial to advances in migration theory and research (Brown 2002; Curran and Saguay 2001; Grasmuck and Pessar 1991; Hondagneu-Sotelo 1994; Massey et al. 1987; Palloni et al. 2001; Pessar 1999; Stark 1991; Hugo 1991). Social ties within and between origins and destinations are all potentially relevant to migration behavior but not all possibilities have received equal emphasis in the empirical literature. Rather, the literature focuses almost solely on social contacts at the place of destination and their implications for sponsorship, assimilation, and recruitment (MacDonald and MacDonald 1964; Tilly and Brown 1967; Graves and Graves 1980; Fuller, Kamnaunsilpa and Lightfoot 1990). Previous researchers have been guided by what we refer to as a destination perspective, which makes tests of several important network hypotheses elusive and introduces methodological uncertainty into those which have been conducted. Such shortcomings have been pointed out in recent scholarship which has been highly critical of the network approach to the study of migration (e.g., Krissman 2005; Ali 2007; Hellerman 2006). In an effort to overcome these shortcomings, this article reconsiders the relationship between social networks and migration from what we call an origin perspective.

In this article we use measures of social networks at origin to predict patterns of out- and return-migration amongst rural villagers in Nang Rong, Thailand. Drawing on the unique, prospective longitudinal dataset of the Nang Rong projects (<http://www.cpc.unc.edu/nangrong>), we address several fundamental questions about the relationship between social networks and migration. First, we prospectively assess whether connections to migrants through origin village networks increase the likelihood that an individual will migrate. The prospective nature of our data – with measures of social networks taken prior to measurements of the dependent variable – increases the validity of this test over those previously conducted. Second, because our data is composed of saturated (as opposed to ego-based) network measures (Rindfuss et al. 2004), we test the effects that indirect ties to migrants have on migration. Previous work has been unable to perform such fine-grained analyses and has limited itself to measures of direct ties to migrants. Third, again because our social network data concerns more than just ties to migrants, we test the power of obligational ties to retain individuals in the origin village or to induce their return after a period migration. To the best of our knowledge, such a test has not been performed. This article's principal contribution is the introduction of an origin perspective on the relationship between social networks and migration. Such a perspective yields more than novel tests, it allows for theoretical and methodological advances that better synthesize the literatures on migration and social networks. This synthesis has the potential to further our understanding of how the complex interplay between social networks and other elements of community context influences demographic decision making, specifically migration.

## **Background and Significance**

Migrations do not occur in a social vacuum. Socially embedded links within and between origin and destination communities are important to the behavior of would-be migrants, affecting whether they leave, where they go, and their likelihood of return.

Before they leave, potential out-migrants are enmeshed in a set of social relations in places of origin based in the household, kinship group and community. Such relations may exert positive or negative influences on an individual's decision to migrate. An individual's positions in broader social structures are vital in creating the motivations and securing the permissions needed to move as well as in providing access to the material and immaterial resources that make migration possible. When would-be migrants move, they become involved in social relations at their destinations while retaining connections with parts of their networks at origin (Portes and Sensenbrenner 1993). Thus, migration bridges origin and destination communities and increases the numbers of links between them.

Social influences on the act of migration have primarily been studied from what we call a destination perspective. A destination perspective views migration primarily from the destination, after the act has taken place, and is concerned with who came, how they came, and what they have done since coming. The importance of such questions is undeniable; they originate from early American work on assimilation and immigrant adaptation. Another historical reason that facilitated the destination perspective's rise to prominence is the severe data constraints that must be met to study migration in any other way. Collecting large-scale, longitudinal surveys is challenging and it has not been until recently that such surveys have attempted to follow migrants as they moved. As important as the questions generated by the destination perspective are to understand, we do not believe that they can offer an accurate explanation of migration.

Three features of the destination perspective undermine its ability to explain social network influences on migration. First, looking at migration from the destination leads to the use of retrospectively collected data which confounds the act of migration with ties to migrants, making it impossible to determine whether network structures influence migration or vice versa. Because the destination perspective focuses on destinations, researchers operating under it typically sample migrants after they have moved, at which time they collect information on the aspects of their social networks. Such a measure yields correlation, but it can never overcome the potential that migrants' memories may be faulty or that endogenous selection mechanisms are at work. This paper will contribute to the literature by paying attention to the temporal ordering of the hypothesized relationship between social networks and migration. Thus, we will use measures of social networks that occur prior to the act of migration.

Second, the destination perspective cannot test whether social networks have the power to retain individuals in the origin community or to induce their return after a period of migration. The idea that social ties may contain obligational elements is prominent in the literature on social capital (Portes 1991), and has a long standing in theories of exchange (cf. Emerson 1976). Because it focuses on social structural dynamics located (at least partially) in the destination, the destination perspective cannot test the power of obligational ties in social networks; in other words, it cannot see if individuals are less likely to migrate or more likely to return home when they have obligations to members of their origin communities.

Third, the focus on ties to the destination perpetuates an exclusively dyadic understanding of networks at the micro-level and a correlative and black-boxed understanding of networks at the macro-level, while other potentially relevant network effects linger unexplored. In other words, it fails to account for indirect ties to migrants.

Within the destination perspective, the effects of higher-order or latent ties to migrants – those that occur through a third or more distant party – that exist within origin communities cannot be explored. A recommendation for such research can also be found in the social networks literature, where strong and weak ties are often differentiated. There is a general hypothesis in that literature that “weak” ties are more likely to provide non-redundant information than “strong” ties (Granovetter 1973; Friedkin 1982). Other appellations of a similar concept can be found in discussions of bonding vs. bridging capital (Putnam 2000).

Testing such hypotheses in regards to migration cannot be achieved using a destination perspective; for instance, it remains unknown whether having a cousin in the destination makes an individual more, as, or less likely to migrate as having a brother there. Owing to the nature of social network data collection, tests of the “strength of weak ties” hypothesis have tended to focus on local social networks, ignoring the possibility that spatial distance may mediate this relationship. Considering that this hypothesis hinges on the redundancy of information, it may be that strong ties are more important than weak ties when considering ties between migrants and members of their origin villages (Lindstrom and Munoz-Franco 2005). In this situation, spatial distance (rather than socio-metric distance) may produce non-redundant information, and the trust that exists between strong ties may allow it to pass and be accepted more smoothly. This is a hypothesis which we will test.

In a related vein, the prominence that macro-structural features hold in the social networks literature highlights an additional reason for studying migration from the origin perspective. Concepts of individual-level and community-averaged centrality, connectivity and isolation have been shown to be important in a diversity of settings. Yet, the important theoretical and qualitative results regarding the importance of macro-structural features have not been explored in quantitative empirical work; instead most research on migrant networks has focused on connections to immediate kin in places of destination (e.g., Curran and Rivero-Fuentes 2003; Kanaiapuni 2000). Such use of ego-based network methods precludes the identification of individual positions within broader structures as well as prevents the derivation of community averages, and failing to study the importance of such variables does not make full use of the hypotheses of social network theory.

Neglecting social networks at origin is unfortunate given that characteristics of the origin set the conditions within which migration decisions are made, affecting whether potential migrants leave and whether they return. The main reason why there has been limited research on social networks at origin relative to destination is that the data demands are severe and suitable datasets have not been available. A significant contribution of the current research is a focus on places of origin, and on the social ties that might encourage or discourage migrants from leaving, and if they leave, from returning.

Our data come from a unique, prospective, longitudinal dataset with complete social network information at origin measured in 1994 for 51 villages in Nang Rong district, Northeast Thailand. This dataset then follows both migrants and non-migrants over time (to the year 2000) in both destinations and origins, making it possible to study migration from an origin perspective. By looking at social ties within the origin community, including both direct and indirect ties to migrants, we believe that our

research has the ability to answer theoretically relevant but previously untested questions, and to put time-worn theories to a new and exacting test. Thus, we are concerned with two principal questions: how do aspects of social networks at origin influence the likelihood of someone who was resident in the village in 1994 being a migrant in 2000, and how social networks at origin in 1994 affect the probability that migrants in 1994 return by 2000.

### **Theoretical Overview**

It is well recognized in the theoretical literature that returning and visiting migrants bearing accounts of their successes may alter perceptions of local conditions, create feelings of relative deprivation, and initiate migration streams that further increase community members' propensities to migrate (Alarcón 1992; Hugo 1981; Massey 1990; Massey 1999; Massey and Espinosa 1997; Massey et al. 1994). Additionally, qualitative scholars have found that such processes institutionalize migration as a ladder to higher status in the local culture, causing young men and women to view it as a right of passage (Ali 2007; Fitzgerald 2008), or otherwise create what some have called a "culture of migration", wherein non-migrants are devalued as ineffective or uninteresting.

Tracking the development of such perceptual shifts and cultural norms cannot be achieved by studying migration with a focus on the destination. For one thing, information about places of destination may diffuse beyond the destination-connected household and affect the entire community of origin, a process that would be missed if only destination-connected households were sampled. Furthermore, ties to others in the origin village are sources of information about opportunities in a variety of potential destinations, and they may shape perceptions of such information as well as provide the material resources needed to facilitate movement.

In general, we expect that more ties to migrants will result in greater access to information, although clearly there may be decreasing marginal returns as the number gets large. Further, not all ties are equal. There is a general hypothesis in the literature that "weak" ties are more likely to provide non-redundant information than "strong" ties (Granovetter 1973; Friedkin 1982). People connected by strong ties probably share many of the same associates, making news received from them redundant. However, weak ties link people to different corners of the social world and thus to potentially novel information. The kinship paths through which individuals know migrants, which we call higher-order connections, are one way to think about the strength of ties.

With respect to origin-based kin networks, we expect that ties to more distant kin (e.g., spouse of a cousin) may be especially important in spreading the word about new opportunities in the destination, and thus potential migrants with more of these ties will be more likely to leave the village than those with fewer of these ties. Further, the work opportunities particularly relevant to migrants are likely to be gender-specific, and information may spread more quickly among men and among women than between men and women. Analyses of social networks among Mexicans (Curran and Rivero-Fuentes 2003; Kanaiaupuni 2000; Massey et al. 1987), Dominicans (Grasmuck and Pessar 1991), and other migrant movements (e.g. Menjivar 1997) demonstrate that social network ties facilitate the movements of both men and women but that they do not operate in a gender neutral fashion. Thus, we expect that the number of ties to female kin, especially more distant female kin, will increase the likelihood that a young woman leaves the village

more than a young man; likewise, the number of ties to male kin will increase the likelihood that a young man leaves the village more than a young woman. The greater the fraction of the village population that has migrated, the greater will be all of these effects.

By directing the flow in information and resources to and within places of origin, and by providing access to information and other resources in places of destination (Hagan 1998), social ties and networks may affect the costs, risks, and benefits of migration (Massey et al. 1993). Social ties to migrants are specially imbued with social capital or “migration capital” that provides support, facilitates settlement, channels information, and eases the risks associated with migration (Bastida 2001; Coleman 1988, 1990; Curran et al. forthcoming; Massey et al. 1994; Palloni et al. 2001). Temporary visits home and the permanent return of former migrants are particularly important for would-be migrants as those who have migrated possess first-hand knowledge of specific opportunities and difficulties that may be encountered in potential destinations.

Information about potential opportunities in destinations is an important resource. Social ties in the village may also provide access to financial resources that can facilitate a migration (examples could include money for a bus ticket, funds to cover the first month’s living expenses, or a relative with a car willing to drive the migrant to the bus station in the district town). We expect that potential migrants living in well-off households, or connected to well-off households, will be more likely to migrate than those without access to such resources, other things equal. If a person lives in a household that is comparatively less well-off, connections to well-off households may also create feelings of relative deprivation, which may lead the person to out-migrate to earn money that can improve their situation if they plan to move back to Nang Rong. Remember that there are few ways to earn substantial amounts of cash in Nang Rong. This is a variation of the “keeping up with the Jones” syndrome. There are thus two reasons to expect the number of connections to well-off households to have a positive effect on out-migration. The difference is whether this effect holds for all households (access to resources) or only for comparatively less well-off households). We investigate this in the proposed empirical analyses.

Yet, the same social ties that represent potential conduits of information and other resources facilitating migration may also involve obligations for help and support that are relevant. In the rural areas of developing countries, kin are potential assets to family security, their labor and income diversifying household risk in the face of crises, and providing social and economic support and insurance to parents in old age (Cain 1983, 1978). However, migration of household members is an important strategy for diversifying risks in developing country contexts (Massey et al. 1993; Stark and Lucas 1988), and perceptions of obligation may create a situation that induces migrants to leave temporarily to make extra money to help their families (de Jong 2000; de Jong et al. 1996). Studying migration from the destination perspective precludes testing whether obligational ties are important.

A focus on origin communities also directs attention to the sometimes obligational components of social ties. It is difficult to predict the effect of obligational ties on out-migration. As mentioned above, perceptions of obligation may induce would-be migrants to remain in the village to help care for their families. On the other hand, obligational support of parents, children and kin may induce some would-be migrants to leave the origin village in order to make money. In support of this idea, scholars have

found that obligational ties, specifically the presence of elderly individuals in the household, influenced intentions to move in Thailand (de Jong 2000; de Jong et al. 1996). The effects of such obligations were not gender neutral; ties to parents and other close kin had a greater impact on the intentions of young women than young men.

Although it is difficult to predict the effect of obligational ties on out-migration, their likely effects on return migration seem clear. According to Thai Buddhist tradition, giving life to and raising a child instills a sense of gratitude and debt in the child that starts when the child is old enough to provide meaningful help and is virtually impossible to repay completely (Knodel et al. 2000: 254, 255). Children provide this help daily, if they are nearby, or by visiting and sending remittances, if they move away. These obligations are felt by sons as well as daughters, but judging from the amount of help provided, more by daughters (Osaki 2003; VanWey 2004). On top of this, women in many societies are more likely than men to be kin-keepers, providing support to parents, children, and other family members (e.g., Rossi and Rossi 1990). Thus, we hypothesize that individuals with more obligational ties will be more likely to return to their origin village, particularly if they are a woman.

Attention to social networks at origin also highlights the temporal ordering of social ties to migrants and the act of migration. Because the decision to migrate is taken in the context of origin, social networks must be measured at origin – before an individual has migrated – to allow for the proper ordering of explanation. Much of the research on social networks and migration has used retrospective accounts, which is problematic for several reasons, not least because of the possible reconstruction of memories. It is also problematic because of the selectivity of the migration process itself and the role that social ties might play in this selectivity. The failure to properly order the measurement of social networks and migration introduces uncontrollable endogeneity into models seeking to explain their relationship. Such problems arise from a destination perspective, where migrants and their social support networks are measured at the destination.

With the three exceptions discussed below, no studies have yet employed an origin perspective. The first exception is a piece on return migration. Using a dataset based in Germany, Constant and Massey (2002, 2003) have found that those migrants with kin in the origin were less likely to remain in Germany. This study, while not specifically employing an origin perspective, certainly suggests the importance of it. A second exception is a historical study of how sibling effects shaped the migration of women from rural Belgium and the Netherlands between 1829-1940 (Bras and Neven 2007). Though this paper operates within the origin perspective, the dated nature of the data make it difficult to assess whether such forces continue to operate. In addition, the tests employed are based on very limited ego-centric measures and do not account for more macro-structural qualities. Finally, some qualitative research has been situated in origin countries and examined social network influences (e.g., Fitzgerald 2008; Ali 2007). Despite this, their attention has been directed to the ways that culture and attitudes operate in the context of networks, rather than on the networks themselves. Thus, to the best of our knowledge, no research has utilized an origin perspective to test how the structural properties of networks influence migration.

In sum, scholars' failure to analyze the influence of social networks on migration from an origin perspective has omitted theoretically and methodologically relevant

concepts. These problems stem largely from the process of collecting data, often retrospectively, at destinations. Though the ideal study of social networks and migration would include complete information on all potentially relevant networks, within and between origins and potential destinations, such data simply do not exist. Indeed, it is even difficult to imagine how they could be collected. Given the neglect of origin networks in the literature, we hold that a reasonable starting place is to document the impacts of social ties within places of origin on migration patterns, taking into account other social ties as best we can.

### **Data and Background**

The research in this article uses a unique, prospective, longitudinal dataset with complete social network information at origin measured in 1994 for 51 villages in Nang Rong district, Northeast Thailand. This dataset then follows both migrants and non-migrants over time (to the year 2000) in both destinations and origins, making it an ideal candidate to study social network influences on migration. The villages that make up Nang Rong district are relatively small, averaging about 100 households. Because of this, the collection of saturated as opposed to ego-based network data was feasible (Rindfuss et al. 2004). Dwelling units are organized in a dense, nucleated cluster, with agricultural lands outside of the village. The typical dwelling unit is a two-story structure with the bottom floor left open. The climate is hot in all seasons. Daily tasks and social integration occur largely outside the house, typically underneath.

Given the small size of the villages, their nucleated structure, and the location of social life within them, it is not surprising that most village residents know one another. To the extent that information is important to migration, relatives with migration experience who have returned to the origin community are likely to be a valuable source of information whether they live in the origin household or not, as outlined above this is one of the principal hypotheses of the origin perspective. But even though village residents tend to know one another, there may be differentiation in the flow of information within villages. There may also be variation between villages in the effects of information flow related to the degree of village cohesiveness such that potential migrants living in more cohesive villages are more likely to leave, again another hypothesis of the origin perspective. Earlier research on Nang Rong has shown that there is substantial variation from one village to the next in the patterning of economic and kin ties and that this correlates with flows of information (Entwisle, Faust et al. 2007).

For the analysis of out-migration, our sample is drawn from all respondents between the ages of 9 and 30 in the Nang Rong projects' 1994 household surveys<sup>1</sup>. Thus, in the study of out-migration we have a sample size of 9,372 individuals. Our sample for the analysis of return migration is drawn from the individuals denominated in 1994 who were migrants at that time. Again, we exclude migrants under the age of 9 and over the

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<sup>1</sup> We excluded from analysis individuals below the age of 9 and above the age of 30 in the 1994 survey as the former are unlikely to be the prime decision makers in a move and the latter are atypically migrants. With the exception of a small group being younger or older due to the schedule of birthdays and survey dates, the vast majority of these individuals will be between the ages of 15 and 35 in the 2000 survey, which corresponds more closely to what most think of as the ages of migration. In addition, missing kinship data is a substantial problem that may significantly affect our results. Fortunately, accurate information pointing to the father is available for an average of 86.03% of individuals in our sample while the corresponding figure for mothers is 91.31%.

age of 30 from our analyses. These restrictions leave 6,811 eligible individuals in the sample. We will test the sensitivity of our results to sample selection.

### **Measures and Preliminary Results**

We have two dependent variables, both measured at the individual level. In our analysis of out-migration, we construct a dichotomous variable with a value of zero if the village resident in 1994 is not a migrant in 2000 and a value of one if the village resident is a migrant in 2000. In our analysis of return migration, we score the dependent variable as zero if a migrant in 1994 has not returned to the village in 2000 and as one if he or she has returned. All of our independent variables are measured in 1994, prior to our measures of the dependent variable. Tables 1 and 2 (attached) present descriptive statistics of these variables for each of the samples.

Social network measures are key to our proposed analyses. We use first-degree kinship ties defined around the events of reproduction - birth and marriage (a useful proxy in Nang Rong) - to generate our social networks. This is common practice in sociometric studies of kinship (see Keyfitz 1969; White and Moody 2003). From these first-degree ties we construct measures of each individual's broader kinship system. Such data is generated through matrix manipulation to compute the number of kin in reachable in a shortest path of a desired length.

Formally, let the matrix E record spousal ties and the matrix C record child to parent ties as registered in the Nang Rong surveys. We transpose C to generate the matrix P that records parent to child ties. The adjacency matrix A is obtained by summing C, P and E and records all first-degree kin ties, or all the connections generated through marriages or births that are reachable in a path length of one. Squaring this matrix ( $A^2$ ) then equals all individuals reachable in a path length of two, while cubing it ( $A^3$ ) records those reachable in three steps, and so on. At each step in this multiplication procedure we convert non-zero values to one, set the diagonal to zero (such that individuals cannot reach themselves) and subtract the results of the previous step (after conversion) to ascertain which individuals are linked by a shortest path of that degree. Of interest are total and combined counts of kin reachable in shortest paths of one, two, three and four degrees.

Preliminary results are shown in Table 3 (attached). Models 1-4 on both sides of the table progress from direct kinship ties to migrants (when the dependent variable is out-migration) or non-migrants (when the dependent variable is return migration) to increasingly indirect kinship ties to such people. These nested progressions, and the stability of their estimates demonstrate the lack of correlation between different degrees of kinship ties to migrants. Given that, we focus on models 4.

Comparing the results of model 4 for out- and return migration is instructive. In both cases we find a significant positive association for kin ties of the first degree. For residents of Nang Rong district between the ages of 10 and 30 in 1994, each additional tie to a migrant in 1994 is associated with a 29.6% increase in the likelihood that they will have out-migrated by the year 2000. For those who were born in Nang Rong district, were between the ages of 10 and 30 and lived outside of the district in 1994, each additional kinship tie to a non-migrant (that is, someone who remained in the village) in 1994 is associated with a 46.9% increase in the likelihood that they will have returned to



the village by the year 2000. These preliminary results speak to the importance of considering strong ties in distant places.

To measure the extent of obligational kinship ties, we construct dependency ratios within each individual's immediate kinship system. To do this, we calculate the number of kin reachable within two path lengths that are above the age of 60 or below the age of 10, whom we assume to be dependents, and divide it by the number of total kin reachable in two path lengths, whom we assume may diffuse some of an individual's obligation. Because the obligation to parents may be greater than to children, and because children can more easily move with the migrant, we also construct a categorical variable measuring whether both, one or none of an individual's parents are alive, over the age of 60, and resident in Nang Rong district.

Model 5 tests the bivariate association between the dependency ratio in one's immediate family – our operationalization of obligational kinship ties – and the likelihood of out or return migration. Comparing the results between the dependent variables of model 5, we see that an increase in the kinship dependency ratio is associated with a decrease in the likelihood that someone will out-migrate and an increase in the likelihood that someone who has will return. Quantitatively, going from a dependency ratio of zero to a dependency ratio of one is associated with a 70.5% decrease in the likelihood of emigration and a 263.1% increase in the likelihood of return migration, dividing these numbers by 100 yields the expected values for a 1% change in the dependency ratio. These preliminary results strongly suggest the importance of considering the effects of obligational kinship ties on individual migration decisions.

**Table 1. Summary Statistics of Variables To Be Used in Analysis of Out Migration (N=9372)**

Variable	Mean	Std. Dev.	Min	Max
Out-Migrated (DV)	0.38	0.49	0	1
Migration Prevalence	42.61	6.26	30.08	60.64
% Grow Cassava	14.07	16.47	0	51.94
% Own Water Pump	7.87	7.11	0	29.52
% Own TV	68.08	7.64	49.37	84.21
% Own Vehicle	32.35	10.23	13.97	56.06
Mean HH Reachable in Kin Path=1	1.16	0.27	0.62	1.8
Mean HH Reachable in Kin Path=2	2.27	0.82	0.82	4.12
Mean HH Reachable in Kin Path=3	2.55	1.00	0.82	4.77
Mean HH Reachable in Kin Path=4	2.84	1.22	0.85	5.7
# HH Isolates in Village	46.11	15.44	17	99
Log Village Population	6.77	0.27	5.99	7.29
Accepted Remittances	0.40	0.49	0	1
Log Household Wealth	8.54	1.37	1.39	11.51
# Wealthy HHs Reachable in Kin Path=1	0.11	0.33	0	3
# Wealthy HHs Reachable in Kin Path=2	0.18	0.49	0	5
# Wealthy HHs Reachable in Kin Path=3	0.20	0.55	0	5
# Wealthy HHs Reachable in Kin Path=4	0.23	0.62	0	6
Married	0.25	0.43	0	1
Widowed	0.00	0.04	0	1
Divorced/Separated	0.01	0.08	0	1
Female	0.51	0.50	0	1
Age in 1994	17.96	5.82	10	29
1 P. Alive >60 & in Vil.	0.08	0.28	0	1
2 Ps. Alive >60 & in Vil.	0.20	0.40	0	1
# Same Gender Kin Reachable in Kin Path=1	1.00	0.45	0	4
# Same Gender Kin Reachable in Kin Path=2	1.96	1.54	0	13
# Same Gender Kin Reachable in Kin Path=3	2.69	2.30	0	29
# Same Gender Kin Reachable in Kin Path=4	4.30	4.06	0	39
# Migrant Kin Reachable in Kin Path=1	0.07	0.30	0	2
# Migrant Kin Reachable in Kin Path=2	1.07	1.46	0	10
# Migrant Kin Reachable in Kin Path=3	0.75	1.46	0	15
# Migrant Kin Reachable in Kin Path=4	2.11	2.65	0	23
# Kin Reachable in Kin Path=1	2.01	0.71	0	6
# Kin Reachable in Kin Path=2	4.09	2.37	0	23
# Kin Reachable in Kin Path=3	5.37	4.13	0	45
# Kin Reachable in Kin Path=4	8.79	7.62	0	61
Dependency Ratio in Kin Path<=2	0.21	0.16	0	0.8

**Table 2. Summary Statistics of Variables To Be Used in Analysis of Return Migration (N=6811)**

Variable	Mean	Std. Dev.	Min	Max
Return Migrated (DV)	0.21	0.40	0	1
Migration Prevalence	44.38	6.47	30.08	60.64
% Grow Cassava	11.28	14.94	0	51.94
% Own Water Pump	7.34	7.05	0	29.52
% Own TV	68.69	7.48	49.37	84.21
% Own Vehicle	31.41	10.29	13.97	56.06
Mean HH Reachable in Kin Path=1	1.14	0.27	0.62	1.8
Mean HH Reachable in Kin Path=2	2.22	0.81	0.82	4.12
Mean HH Reachable in Kin Path=3	2.48	0.99	0.82	4.77
Mean HH Reachable in Kin Path=4	2.75	1.18	0.85	5.7
# HH Isolates in Village	45.45	15.23	17	99
Log Village Population	6.74	0.26	5.99	7.29
Accepted Remittances	0.83	0.38	0	1
Log Household Wealth	8.55	1.38	3.91	11.51
# Wealthy HHs Reachable in Kin Path=1	0.07	0.26	0	3
# Wealthy HHs Reachable in Kin Path=2	0.11	0.37	0	4
# Wealthy HHs Reachable in Kin Path=3	0.12	0.40	0	4
# Wealthy HHs Reachable in Kin Path=4	0.15	0.45	0	5
Married	0.39	0.49	0	1
Widowed	0.00	0.04	0	1
Divorced/Separated	0.01	0.10	0	1
Female	0.46	0.50	0	1
Age in 1994	21.98	4.29	10	29
1 P. Alive >60 & in Vil.	0.14	0.35	0	1
2 Ps. Alive >60 & in Vil.	0.20	0.40	0	1
# Same Gender Kin Reachable in Kin Path=1	0.95	0.33	0	4
# Same Gender Kin Reachable in Kin Path=2	2.40	1.58	0	13
# Same Gender Kin Reachable in Kin Path=3	2.46	2.07	0	24
# Same Gender Kin Reachable in Kin Path=4	4.21	3.82	0	31
# Non-Migrant Kin Reachable in Kin Path=1	1.78	0.66	0	5
# Non-Migrant Kin Reachable in Kin Path=2	2.64	1.82	0	17
# Non-Migrant Kin Reachable in Kin Path=3	4.36	3.17	0	28
# Non-Migrant Kin Reachable in Kin Path=4	5.30	5.31	0	41
# Kin Reachable in Kin Path=1	1.91	0.52	0	5
# Kin Reachable in Kin Path=2	4.76	2.32	0	23
# Kin Reachable in Kin Path=3	4.96	3.70	0	32
# Kin Reachable in Kin Path=4	8.33	7.06	0	50
Dependency Ratio in Kin Path<=2	0.15	0.13	0	0.67



**Table 3. Odds Ratios for Logistic Regressions of Key Independent Variables on Out and Return Migration**

	Out Migration					Return Migration				
	1	2	3	4	5	1	2	3	4	5
# Mig./~Mig. in Kin=1	1.271 [0.087]**	1.277 [0.088]**	1.288 [0.094]**	1.296 [0.095]**	1.456 [0.073]**	1.421 [0.074]**	1.43 [0.075]**	1.469 [0.077]**		
# Mig./~Mig. in Kin=2		1.081 [0.016]**	1.081 [0.016]**	1.064 [0.019]**		1.055 [0.017]**	1.065 [0.021]**	1.021 [0.024]		
# Mig./~Mig. in Kin=3			0.994 [0.015]	0.991 [0.015]			0.991 [0.012]	0.964 [0.014]*		
# Mig./~Mig. in Kin=4				1.015 [0.010]				1.033 [0.010]**		
Dep. Rat. in Kin=2					0.305 [0.041]**					2.631 [0.585]**
Observations	9372	9372	9372	9372	9372	6811	6811	6811	6811	6811

**Notes: Robust standard errors in brackets; \* significant at 5%; \*\* significant at 1%**