Extended Abstract – PAA 2015

Modeling the Impact of Migrant and Community Social Capitals on Rural to Urban Migration

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Abstract

The concept of social networks is often invoked in migration research, frequently as a mechanism through which 'migrant social capital' (i.e. information and resources needed to migrate) can be transmitted from past migrants to potential migrants. Thus, high density social networks in sending communities imply a greater likelihood of cumulative migratory processes whereby outmigration becomes self-sustaining as migrant social capital is distributed ever more evenly through the population. We propose a new pathway through which social networks can impact migration decision making: 'community social capital.' An individual's greater connectedness to their place of origin may make them less likely to out-migrate, since they have more social capital to lose by leaving compared to someone who is more socially peripheral. We use longitudinal migration and network data from 22 rural Thai villages to test the relative impact of these two social network processes on migration behavior.

Introduction / Motivation

There are two potential paths through which social networks can influence migration behavior. The first path – cumulative causation – relies upon the transmission of 'migrant social capital' (i.e. the information and resources needed to migrate) through existing social networks. Studies have affirmed Doug Massey's claim (1990) that the accumulation and transmission of migration experience within a community can lead to a process of 'cumulative causation' whereby migration becomes self-sustaining as migrant social capital is distributed ever more evenly throughout the origin population (Dunlevy 1991; Massey, Goldring, and Durand 1994; Massey and Espinosa 1997). Digging down a level, other recent research has suggested that the nature of community social networks can play an important role in determining how efficiently and evenly this 'migrant social capital' is distributed (Kanaiaupuni 2000; Fussell and Massey 2004; Garip 2008; Garip and Curran 2009). This prior research into the role of social networks in bringing about the conditions of 'cumulative causation,' however, has largely relied upon proxy measures for network density and heterogeneity – assuming network effects rather than observing and measuring them directly. Thus, the role of social networks in the process of cumulative causation has been heavily theorized, but rarely tested due to the relative absence of good network and migration data in combination.

Another potential path by which migration behavior can be impacted by social networks is what we call 'community social capital.' Cumulative causation theory is based on the idea that an individual's greater connectedness within a village will likely increase their propensity to migrate. Obversely, the notion of 'community social capital' is that an individual's greater connectedness to their place of origin will make them less likely to out-migrate, since they have more social capital to lose by going abroad relative to someone who is more socially peripheral within their home community. As far as we know, this theory has not been elaborated or tested within the current literature on migration, most likely due to the near-absence of complete social data for multiple neighborhood, village, or community contexts from which out-migration might take place (see Entwisle et al. 2007: 1503).

With these two potential pathways in mind, we make use of a series of models that can measure and tease apart the relative impact of each of these processes in determining the migration behavior of rural Thai villagers.

Data

We have spent several years working with a novel data set that has the potential to help explore both of these pathways through which social networks influence migration decisions. These data were gathered from surveys conducted in the Nang Rong district of Thailand in three waves – 1984, 1994, and 2000 – by the University of North Carolina and Mahidol University in Thailand. Of the 51 original villages from which data was collected in 1984, we make use of a subset of 22 of these villages that have complete follow-up data from the subsequent 1994 and 2000 waves. Each of the three survey waves includes information on individual demographics, household assets, and village characteristics, with census-like coverage for each village. In follow-up waves, all original interview subjects were re-

interviewed, along with all new village members. To the extent possible, all village members who had migrated out of the village during the time follow-up interviews were conducted were tracked down and re-interviewed in their migrant destinations. A remarkable 44% of village members were found and re-interviewed in this manner.

These data provide several advantages for the study of migration. For one, almost every person who has lived in any of the 22 study villages between 1984 and 2000 is included in the dataset, so we do not have to rely upon a random sample for their analysis.

Furthermore, in the 1994 and 2000 survey waves, each respondent was asked to provide a complete, retrospective migration history of everywhere they had lived since 1984. Thus, not only do we have demographic information on almost every member of every village, they also have a complete life history record of everywhere each villager has lived between 1984 and 2000. When these records are collated together, they constitute 138,319 person-years of observations for 8,580 individuals in 1,748 households in 22 villages over a 16 year period.

A final major advantage of these data lies in the direct measures of network ties that can be used to construct complete social networks for our 22 study villages. Specifically, survey data on sibling relationships and agricultural practices (e.g. help with the harvest, sharing of equipment) can be used to construct household-to-household networks that can reveal the development of these networks over time and the impact they have upon individual migration behavior.

Methods and Models

a. Modeling the impact of community social capital, using siblings

Our first series of models involve estimating the impact of an individual's community social capital within their village's sibling-based social network on their propensity to migrate abroad. For these models, we use a piecewise logistic regression model with random effects to span the range of migration data from 1984 to 2000. The dependent variable is a binary measure of whether an individual respondent migrated out of the Nang Rong district at time *t*, dependent upon their being present in the district at *t-1*. Control variables include the standard factors that have been established to have an effect upon migration behavior (e.g. sex, age, marital status, education, wealth, prior experience). Measures of 'community social capital' are used to capture the connectedness of an individual's household to other households within the village. Such measures include a household's centrality within a network, measured in terms of connections to other households (degree centrality) or in terms of how much it is situated at a social position important for the flow of information (betweenness centrality).

The table below contains some preliminary findings. These findings hint at there being some merit to the idea of 'community social capital.' In the first model, on the far left, we find that all of the traditional variables used to predict migration behavior are as expected. Specifically, young, unmarried, highly educated, moderately wealthy men with prior migration experience are comparatively more likely to migrate than others in their village. In the next three models, we introduced

covariates that measure degree centrality (an individual-level measure of household connectedness), betweenness centrality (an alternative measure of a household's connectedness), village density (a village-level measure of household connectedness), and village betweenness centralization (a village-level measure of how centralized, or 'unflat', the household sibling network is). Here, we find that the more connected an individual is, in terms of degree centrality, the less likely they are to migrate out of the district. Conversely, the more connected the village is, in terms of density, the more likely an individual is to migrate. Finally, the more centralized or 'unflat' a village is, in terms of village centralization, the less likely an individual is to migrate.

	Base Model	Degree + Density	Betweenness + Centralization	All Network Covariates
Sex	0.378***	0.396***	0.389***	0.395***
Age^2	-0.00138***	-0.00405***	-0.00398***	-0.00407***
Age	-0.140*	0.144***	0.136***	0.145***
Married	-0.442***	-0.514***	-0.542***	-0.519***
Secondary Education	-0.230***	-0.239***	-0.245***	-0.245***
Higher Education	0.723***	0.671***	0.682***	0.665***
Prior Months Away	0.00553***	0.00328*	0.00387**	0.00317*
Prior Trips	0.144***	0.134***	0.134***	0.133***
Prior Village Trips	0.00216***	0.00243***	0.00241***	0.00267***
Prior Village Months Away	-0.0000634***	-0.0000711***	-0.0000683***	-0.0000801***
No Land	-0.00568	-0.0218	-0.0204	-0.0241
Somewhat Landed	-0.1	-0.117	-0.124	-0.125
Landed	-0.195**	-0.209**	-0.234**	-0.212**
Degree Centrality		-0.101***		-0.106***
Village Density		19.73***		45.42***
Betweenness Centrality			-0.000538***	0.000296
Village Betw. Centralization			-2.049**	-5.089***

One possible conclusion to be drawn here is that individuals who are more connected to their place of origin through sibling ties have higher 'community social capital,' which in turn makes them less likely to migrate. Moreover, it seems that villages that are relatively more flat (i.e. less centralized) and comparably more connected (i.e. denser) do a better job of facilitating out-migration. Thus, it is possible that both of our proposed processes of social network influence on migration are at work here. While an individual's connectivity makes them less likely to leave, their embeddedness within a dense and flat village makes them more likely to come into contact with 'migration social capital' that is being circulated through the network. A further iteration of these models will use sharper measures for individual connectivity, and household-level migration experience will be included as a factor in the transmission of migrant social capital. That is, we will differentiate between an individual's connectedness to another household *with* substantial past migration experience versus connectedness to another household *without* such experience.

b. Modeling social capital diffusion, using siblings

Over the past many years, we have invested a non-trivial amount of time and effort into investigating the transmission of migrant social capital within a sending network using Nang Rong data (see e.g., Garip and Curran 2009; Curran et al. 2005).

To date, however, all previous research has suffered from a high degree of imprecision when it comes to measuring the transmission of migration experience from household to household. Generally, cumulative causation has been measured through a combination of previous individual and village-level migration, combined with some measure of village homogeneity used to predict how likely it was for this experience to spread through village social networks.

Using migration data in combination with the social network matrices that we have constructed based on sibling relationships, however, allows us to measure precisely how much prior migration experience an individual has had access to through that particular social network. In other words, for each respondent in the data, we can measure how much past migration experience has accrued within their ego-network (i.e. the network of other households to which the respondent's household is connected) and within their sub-network (i.e. the extended sub-graph to which the respondent's household is connected; the alters of the alters, etc..). These measures will be included as covariates in models similar to those shown in the table above, and this will directly and precisely measure the impact of an individual's access to migrant social capital on their propensity to out-migrate. Consistent with previous findings, we expect to find that individuals connected to households with high levels of past migration experience will be more likely to migrate.

c. Comparing the effects of work-share networks to sibling networks

As a follow-up to the aforementioned analyses, we will also model these same effects using a different type of social networks. Specifically, we will create sociomatrices that capture social connectivity data based on households that help each other with the rice harvest. Previous work indicates that, contrary to the expectations of some scholars, the social networks in rural Nang Rong villages are not uniformly dense, and they do not tightly overlap with one another (see Entwisle et al. 2007). That is, sibling and work-share based networks are distinct enough in the data that they will quite possibly yield interestingly disparate results.

In comparing the effect of network variables based upon each of these two social networks, we predict that community social capital will have a relatively stronger effect in sibling social networks, since ties to siblings would presumably matter more than ties to agricultural partners. We remain agnostic, however, regarding the transmission of migrant social capital through sibling and work share based networks.

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