HOUSEHOLD LEVEL PREDICTORS, MIGRATION, AND MOBILITY: A MICRO-DEMOGRAPHIC STUDY OF KAREN VILLAGES ALONG THE THAI-MYANMAR BORDER

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Topic and theoretical focus. Demographic and anthropological theory has suggested that household composition, including household size and age structure, can be important in socio-economic and health outcomes for both households and individuals (Hadley et al. 2011; Katz 2000). For example, households with a large proportion of dependents (the very old or the very young) relative to producers (household members who add to household resources) may be resource-poor. Some studies have shown correlations between high household dependency ratios, childhood nutrition, and mortality (Hadley et al. 2011). However, few studies have considered the potential effects of dependency ratios on migration (Ullah 2010). Out-migration, for example, may sometimes be a household strategy for coping with low resources, which may in turn be related to a high household dependency ratio.

Furthermore, modern detailed longitudinal migration studies in agricultural societies have been relatively rare. Such studies are important not only for testing migration theory but also for development research and planning in the industrializing world. When faced with household shortages, agricultural households may have fewer defensive options when compared to urban households that exist in more complex and developed settings (Ellis 1998; Walsh & Ty 2011; Ullah 2010).

Data and Methods. In this study we investigate important individual, household, and village-level factors in out-migration among four ethnic Karen villages along the Thai-Myanmar border. The Karen are the largest ethnic minority in Thailand and are heavily dependent on rice

cultivation for their subsistence (Rajah 2008). The data reported here were collected as part of an NIH-funded longitudinal demographic survey that is a component of a malaria control initiative in Southeast Asia. Four study villages were chosen along the Thai-Myanmar border, in Tha Song Yang District, Tak Province, Northwestern Thailand. Each household and household member was given a unique identification code. The age and sex of household members have been recorded. Every two weeks a local health care team moves through the villages, going house to house, asking whether household members are present, if there are new household members, or if household members have left. Currently our data cover the time period between October 2011 and August 2012. Household members who are not expected to return within a month are counted as out-migrants. We are therefore unable to distinguish between individuals who do return versus those who do not return.

In order to analyze these data we used a piecewise, discrete time, random intercept logistic survival model to estimate the hazard of individual out-migration. We included the random intercept in order to address potential unexplained heterogeneity across households. In our model, each household has its own intercept. Covariates included individual sex and age, household size, household dependency ratio, and we included a fixed-effects term for study village. The dependency ratio was calculated as:

$$\frac{Number\ of\ people\ in\ a\ household\ aged\ 0-12\ and\ 70\ and\ over}{Number\ of\ people\ in\ a\ household\ aged\ 13-69}$$

Furthermore, we experimented with several different specifications for time in our model and found that a cubic specification provided the best fit (determined by comparing Akaike's information criterion across models).

Results. Our preliminary results (see Table 1) indicate that, in our study population, household dependency ratios have a negative influence on out-migration, the number of

individuals in a house has a positive influence on out-migration, and out-migrants are more likely to be male. The polynomial function of time is parsimonious with complex clustering patterns in out-migrations in our study villages. In agricultural societies migration can have a seasonal component, meaning that migrations will cluster during some periods and decrease in others. The negative effect of the household dependency ratio indicates that, after controlling for the other covariates, an increase in one unit of the dependency ratio is associated with a 13 % decrease in the hazard of out-migration. Conversely, the coefficient for the house size indicates that an increase of one extra household member is associated with a 19 % ($100(e^{0.1740} - 1)$) increase in the odds of an out-migration. Finally, the hazard of outmigration for females is approximately 32 % less than for males.

Our initial interpretation of these findings is that households with extra working-aged male members are most likely to experience outmigration. Conversely, households with high dependency ratios have a relative shortage of working-aged members. In this case, it is probably crucial that small households with a shortage of labor retain their major breadwinners and therefore working aged individuals in such households are less likely to move out.

Table 1: Model Results

Covariate	Coefficient	Standard Error	t-value	P-value
Survey Week	0.1506	0.0416	3.6200	0.0003
Survey Week^2	-0.0093	0.0028	-3.3200	0.0009
Survey Week^3	0.0001	0.0001	2.7600	0.0057
Dependency Ratio	-0.1252	0.0414	-3.0200	0.0025
House Size	0.1740	0.0199	8.7500	0.0000
Female	-0.3155	0.0626	-5.0400	0.0000
estimated variance of random household intercept: 1.1741, SE: 0.1478				
Observations	111476			
Events (out-migrations)	1110			

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