

Migrant Remittances and Household Division: the Case of Nang Rong, Thailand

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Abstract

This work examines the effect of migrant remittances on household splits in Nang Rong, Thailand, an agrarian district of a developing country that has seen tremendous economic, demographic, and social transformations in recent decades. Remittances sent from migrants to their origin households are a form of income used to alleviate credit constraints, making it possible to foster household change. The evidence is consistent with a household allocation model, whereby a household head distributes remittance money to finance the movement of daughters into a new independent household following a stage of living with her husband in her family's natal household. Remittances are a significant determinant of household nucleation, especially in the latter stages of the Thai household life-cycle.

Key Words: Household Splitting; Household Life Cycle, Migrant Remittances; Thailand;

Introduction

For many decades social scientists have investigated changes in family and household structures associated with the shift from an agrarian to an industrial economy (Calhoun [1919] 1960, Hajnal 1982, Goode 1963, Kertzer 1991, Laslett 1965, Le Play [1872] 1982). A prominent argument is that industrialization brings about the nucleation of the extended household. Historically, extended households were the locus of the majority of familial social activities and to this day they continue to play a significant role in production, distribution, consumption, socialization, and transmission of property in several world regions (Bongaarts 2001, Caldwell 1982, Morgan and Rindfuss 1984, Thornton and Fricke 1987).

Eventually all households go through changes in their composition by way of demographic and life course processes, and these changes have profound impacts on the lives of individuals. Household splits result when individual household members decide to change their household affiliation. For instance, households divide when adult children marry and depart their parental home to start their own independent lives or when parents move into a new dwelling unit.

The decline of intergenerational co-residence of parents and their adult children has been linked to changes brought about by a general process of economic development, which is associated with the rise of wage labor, mass education, and the decline of household production (Ruggles 2007). Throughout the world, as countries experience industrialization and development, young people leave their natal households to pursue work opportunities, many of which are centralized in urban areas located at a distance from origin communities. Acquiring wage positions allows migrating young adults to

earn money, a portion of which is frequently repatriated to their rural origin households in the form of remittances.

Remittances are an invaluable source of financial capital used by households to alleviate poverty and to overcome severe credit constraints in contexts where local wage employment opportunities are limited or absent (Durand et al. 1996, Kapur and McHale 2003, Skeldon 1997). In many rural agrarian settings remittances are one of the few sources of income, and their infusion into communities can have a dramatic effect on a number of features of social life, including patterns of household formation. However, few studies have considered the connection between remittances and the demographic process of household change.

Despite their importance throughout the world, serious gaps remain in our understanding of the internal dynamics of household formation processes and the mechanisms that perpetuate household splits in industrializing contexts. Many existing studies of household division are outdated or use aggregate-level analysis (see for example Calhoun [1919] 1960, Hajnal 1982, Kertzer 1991, Laslett 1965, Le Play [1872] 1982, Rosenfeld 2006). In this study, I examine the effect of remittances on household division using contemporary data from Nang Rong, Thailand. I focus on the structure and tempo of household formation by examining individual life course transitions resulting in new household arrangements.

Nang Rong is an interesting setting for studying this phenomenon because it is a rural district in a developing country that has been undergoing rapid economic development in the last several decades. Household change is prevalent in the region and

migrant remittances represent an important source of income flow into the region's economy.

Theories of Household Change

Early theories of household change were formulated from historical studies of present-day developed countries. Explanations for household splitting stress either the rise in real income which made it affordable for people to forgo economies of scale represented by large households (Burch and Matthews 1987, Ermisch 1981, Goldscheider and Lawton 1996, Kuznets 1978, Michael et al. 1980), ideational factors which led to a shift in social norms favoring separate living (Goldscheider and Lawton 1998, Lesthaeghe 1983, Lesthaeghe and Surkyn 1988, Levy 1965), or demographic factors affecting the number of kin available for co-residence (Kobrin 1976, Ruggles 1994, Soldo 1981, Wister and Burch 1983).

Demographic analysis suggests that population dynamics (such as fertility decline) accounted for little of the change in intergenerational co-residence in the United States during the era of industrialization (Kramarow 1995, Ruggles 1994). Furthermore, since family norms are most likely a result of changes in residential behavior, it may be difficult to distinguish the change in attitudes that favor separate living from the economic conditions that brought about these norms. As such, in this paper I focus on the rise of real income as an explanation for household splitting.

Historical studies show that intergenerational co-residence declined during the industrial era because young people departed their natal households to take advantage of new employment and educational opportunities (Ruggles 2007), a change associated with a decline of parental authority (Rosenfeld 2006). Studies of contemporary transitions out

of the parental household likewise suggest that co-residence between parents and children depends more on the needs and situations of the children's generation rather than the needs of parents (Aquilino 1990, Choi 2003, Ward et al. 1992). However, parents often use their resources to help their children leave home (Goldscheider and DaVanzo 1989, Goldscheider and Goldscheider 1993). For instance, the cost of higher education, which corresponds to the initial stage in the life course when children first move out of their parents' home, is commonly borne by parents.

In many developing countries, young people gain non-familial employment through migration, especially when local wage labor positions are lacking (McDonald and Kippen 2001, Roberts 1997). By gaining access to these opportunities, migrants have the means to send remittances, which can be beneficial to household members left behind, who may face serious challenges in meeting their basic needs or in responding to rising consumer expectations that accompany the shift from subsistence to monetized economy.

Being a form of income, remittances raise standards of living as well as tastes and preferences, which could impact household formation processes. In order to understand how remittances affect household change, I use insights from household migration models, and I consider how they can be extended to explain the role of remittances in perpetuating household change.

The New Economics of Migration, a prominent migration theory, suggests that migration and remittances are associated with a household decision-making process aimed at alleviating risk and credit constraints and stimulating investment (Lucas and Stark 1985, Stark and Lucas 1988, Taylor 1999). Stark (1991) explains that migrants act

as financial intermediaries that enable households to overcome absent or imperfect capital, insurance, or futures markets (also see Massey et al. 1993).

Household splits resulting from the receipt of remittances can be understood in the broader framework of models which view families and households as corporate entities (Becker 1974, 1991; Lee et al. 1994). Becker's (1974, 1991) model of household decision-making posits a family headed by a patriarch (or his widow) who controls family resources and allocates them across family members. Resource allocation follows a pattern intended to optimize the welfare of every household member in such a way that does not substantially jeopardize the welfare of any given member. Consistent with this view, many historical studies document continued parental control over young adult children's paychecks during a period of early industrial employment (Burton 1985, Early 1982, Tilly and Scott 1978).

Perhaps some portion of remittances sent by migrants is allocated by a household head to finance the start a new independent household of one of the migrant's family members, such as a sibling. Some of that money may be used to offset the costs of home building, such as the cost of building material or labor. The building of new dwelling units allows household members to live away from their family of orientation, although they may still choose to live nearby. Alternatively, the household head may allocate money toward his or her own housing project, and leave the old dwelling unit to a sibling of the migrant. Another possibility is that a migrant simply sends money for housing in the hope of one day returning to the origin community and taking over the property. Household members at the origin community (e.g. siblings) may move into and safeguard

housing in the meantime, or they may contribute labor for building projects in exchange for remittances.

While housing developments are certainly an important prerequisite for household splitting, it should be noted that the fungible nature of household income makes it difficult to observe the direct allocation of remittance funds, particularly if the household has other sources of income (Airola 2007) such as from cash crops or cottage industries. Nonetheless, many studies find that remittances are associated with housing purchases, improvements, or constructions (Airola 2007, Mooney 2003, Osili 2004). Housing investments offer unique advantages in developing regions where individuals face few savings opportunities and productive assets (such as land or farm assets) are associated with high risks or low rates of return (Besley 1995). Dwelling units or houses are durable, highly visible, and are associated with low risk and monitoring requirements (Osili 2004)¹.

Work in Nang Rong by Rindfuss et al. (2007) has found that receipt of migrant remittances is positively associated with housing quality, which may suggest that remittances help finance housing improvements and construction projects. To better understand how remittances help to perpetuate households splits in the study setting, I discuss trends in household formation, postnuptial residence customs, migration patterns, and uses of remittances in Nang Rong. This is followed by a description of the data, basic approach, analytical method, dependent and independent variables, results, and conclusions.

¹ Of course there are drawbacks. Such investments may be illiquid and irreversible in areas where resale and rental markets for houses are lacking (Osili 2004).

Setting

[Figure 1 about here]

Nang Rong is a small, poor, predominantly rural, district located in Buriram province in Northeast Thailand (see Figure 1). It is about the size of an eastern U.S. county and is located near the Cambodian border. The district was a frontier region during the first six decades of the twentieth century. People in Nang Rong live in nucleated villages arranged into clusters of dwelling units that include an average of about 100 households (Rindfuss et al. 2003).

Over the past few decades, the number of households in Nang Rong has outstripped population growth, and mean household size has been decreasing, which reflects a trend toward nucleation. In 1984, 32,342 individuals lived in 5,863 households, with an average household size of over five people (5.52). Ten years later, the number of individuals living in the district *decreased* by 3.75 percent (perhaps partially due to migration), but the number of households *increased* by 25 percent, with an average household size of just over four people (4.43). In 2000, the number of individuals increased by about ten percent, while the number of households increased by nearly twice that amount (18 percent), with an average household size of just under four people (3.97).

Historically, household change was related to the Thai household lifecycle, which has a characteristic pattern (see Limanonda 1995, Limanonda and Kowantanakul 2002, Knodel et al. 1995, Tan 2002). Given the “loosely structured” nature of Thai society (see Embree 1950), newly married couples may live anywhere, but they are expected to live with the bride’s parents. This is a temporary arrangement that lasts until either the couple’s first child is born, or the next daughter marries and her husband moves into the

household (Limanonda 1995, Limanonda and Kowantanakul 2002). This process continues until a stem family including the elderly parents, the youngest daughter, her husband, and their children are the only ones left living in the household.

This pattern is still found today, especially in rural areas (Curran et al. 2000, Tan 2002), although the pattern may be changing. One potential effect of remittances on household formation is an alteration in the tempo of household splitting. That is, instead of following traditional cultural prescriptions, individuals who gain access to remittance money may skip the initial phase of living with extended relatives, and move directly into an independent nuclear household. I consider this possibility in subsequent analysis.

Being a rural area, farming is the main occupation of most Nang Rong villagers, which tends to yield little remuneration. Although some households engage in cottage industries (such as silk weaving, silk worm raising, cloth weaving, and charcoal making), economic returns from these activities are likely to be minimal. Some households grow Cassava as an upland cash crop, which is exported to European markets for use as animal feed (Curran 2005).

Most Nang Rong villagers depend on paddy rice farming for their livelihood. Rice growing is rain-fed and relies on an annual monsoon that varies greatly from year to year in its timing and amount. Risk associated with rice farming is a fact of life, as floods and droughts can have a substantial impact on crop yield (Entwisle and Tong 2005). The agricultural cycle has a pronounced seasonality, characterized by a dry season of inactivity. The long dry season, in combination with the risks involved in agriculture, and limited opportunities for wage employment, encourage villagers to migrate in search of work.

Migrants from the study area and other parts of the Northeast migrate to both rural and urban destinations (Chamrathirong et al. 1995, VanWey 2004). Migration to rural areas is thought to be associated with marriage while urban migration is for labor. Migrants flock to urban destinations such as Bangkok, the Eastern Seaboard, and regional cities like Korat². Much of migration in Nang Rong is seasonal or circular, and is linked to labor demand fluctuations related to the agricultural cycle (Chamrathirong et al. 1995, Richter et al. 1997).

Since the level of non-agricultural employment in the district is low, remittances represent an important source of income. Past research by Piotrowski (2006) shows that approximately half of migrants age 13-45 send remittances back to their origin households. Further research in other parts of the Northeast by Richter et al. (1997) found that almost three-fourths of households in their sample received some form of cash remittances. Agricultural households in particular substantially supplement household earnings with remittances. Remittances contributed significantly towards improving household income (Guest 1998). Remittance income tended to be used for household necessities (such as food, clothing, household goods, and medical expenses) although in some households it was used for housing projects, purchase of agricultural inputs, paying off debt, and investments in education (Richter et al. 1997, Guest 1998).

Data

Nang Rong has been the site of an on-going research project since 1984, and data on various aspects of social and demographic processes in the district were collected over

² Korat (formally known as Nakhon Ratchasima) is a nearby provincial city, the largest city in the Northeast. The Eastern Seaboard Development Project was a major public-private joint venture carried out in three provinces in Thailand (Chonburi, Rayong, and Chacheongsao) during the late 1980s. The project sought to stimulate regional economic development, and to decentralize economic activity away from Bangkok (Shatkin 2004).

three successive waves spanning 16 years³. A full census of all households was collected in a sample of 51 villages in 1984, which was repeated again in subsequent data panels in 1994 and 2000. All households in the original sample villages were enumerated, as were any new households that came into being between data panels. Information was obtained on all household members, including permanent residents and proxy reports for migrants.

Data were collected on migration, remittances, changes in household affiliation within villages, household composition, household assets, debt, cottage industries, land ownership, and social networks. In addition, life history data were collected for anyone age 18-35 who was located in the village in 1994. Life history data include information on individual migration histories since age 13. The data details the frequency and duration of migration episodes for anyone residing in the village.

Basic Approach

To understand the link between household splitting and the receipt of remittances, I use descriptive analysis and regression modeling. The unit of analysis for this study is individual members of a cohort of young people age 18-35 living in the village in 1994. I use the 18-35 age range because individuals are most likely to change their household affiliation in late adolescence or adulthood. I examine the association between changes in household affiliation of these young people and remittances sent by former household members (who are migrants in 1994) to their origin households. Remittance variables are measured at the household level, but in my design they become explanatory variables attached to characteristics of individuals.

[Figure 2 about here]

³ For more details on the Nang Rong data see <http://www.cpc.unc.edu/projects/nangrong/data>; also see Entwisle et al. 1996, Godley 2001, VanWey 2003.

I use a prospective design involving three panels of longitudinal data. Figure 2 depicts the sampling universe and research design used for this study. The first and second panels are used to define remittance behavior of former household members (migrants), while changes in household affiliation for young people age 18-35 are established between the second and third panel. Remittances are operationalized as money sent by migrants at any point within a year prior to the collection of 1994 household survey, where migrants are defined as individuals listed on the 1984 panel who were living away from the village in 1994 for two or more consecutive months. By design, only households listed on the 1984 panel are eligible to have migrants in 1994, so I restrict my sample to only individuals from these households.

One drawback to this research design is that it introduces sample selectivity. Not all households in 1984 which had household members aged 8-25 (who would be age 18-35 in 1994) are included in the 1994 sample since many young people migrated away from Nang Rong between 1984 and 1994. If baseline differences in household characteristics led to dissimilarities between households included in the sample and those that were not, then my sample may be unrepresentative of all households. I examine this possibility using descriptive analysis of characteristics such as household wealth (in 1984 and 1994), the number of remitters, the amount remitted, and the amount of land owned.

A comparison of sample households to those excluded from the analysis shows that sample households are slightly wealthier, and have more remitting migrants who send higher amounts of remittances, on average (see Appendix Table 1). Differences between sample and non-sample households may put a downward bias on the remittance

effect, assuming that wealthier households need less remittance money to precipitate a household change.

Dependent Variable

Turning to the measurement of changes in household affiliation, these changes are determined by examining individual shifts in household membership between 1994 and 2000. I operationalize household change, the dependent variable, by distinguishing the following types: 1) individual did not move, 2) individual moved into a new household within the village, 3) individual moved into an existing household within the village, that is, a local move, and 4) individual moved outside of the village (either alone or with an entire household), that is, a migration.

[Table 1 about here]

Table 1 shows that a little over half (52%) of the sample experienced no change in household affiliation, while 14 percent moved into a new household. A minority, about 1 percent, moved into an existing household⁴. Despite the low incidence of these moves, I keep them separate from local moves into new households because they likely represent different stages in the Thai household lifecycle, a view that is supported by my subsequent analysis. The rest of the sample (32%) migrated outside of the village, hence experiencing a change in household affiliation.

Migrants are not necessarily migrating to start a new household. Some migrations may be temporary seasonal or cyclical moves, which could end in a return to the origin household. Perhaps these migrants are working as construction workers during the agricultural off-season. As comparatively less can be inferred about the household

⁴ Because this category only contains 67 cases, some caution should be used in making inferences about these individuals.

formation of migrants' households, I will focus more attention on local movers, although those who migrated between 1994 and 2000 will remain in the analysis to avoid sample selection bias.

Method

Since the dependent variable is a four-category nominal variable, I use a multinomial probit model. The unit of analysis is the individual (i.e. young adults residing in Nang Rong households existing in both the 1984 and the 1994 data). Multiple individuals can live in each household and numerous households can be located in each village. Thus, the data are clustered, and this violates the independence assumption of regression. I use a heteroskedastically robust standard error correction (see White 1980 for details) to adjust for the clustering of individual records within household records.

Independent Variables

All independent variables are measured in 1994. I use a lag between independent and dependent variables to avoid using post-change characteristics to predict changes in household affiliation. Indications of remittances (such as the amount of money received) are the key independent variables of interest. Since remittance data were collected for the year prior to 1994, one problem is that remittances received between 1994 and 2000 are ignored. If receipt of such remittances led to household change, then my measure of remittances has a slight downward bias.

Remittance data on both migrant-to-household and household-to-migrant transfers were collected in the 1994 household survey. I am mainly interested in the amount of remittances and the number of migrants sending remittances (or the number of migrants being sent remittances). Information about the amount of remittances was collected in

broad categories to reduce recall error. The categories are: 1-1,000 baht⁵, 1,001-3,000 baht, 3,001-5,000 baht, 5,001-10,000 baht, 10,000-20,000 baht, and over 20,000 baht.

Following earlier work in Nang Rong (Entwisle and Tong 2005, Hull 2005) I develop an estimate of the amount of money remitted by using the midpoint of each category, except for the highest category, for which I use the lower bound. The overall estimate was obtained by weighting the number of remitters sending each amount by the midpoint of the category. Top-coding the highest category produces error because the true value of this category is underestimated. To test the robustness of this measure, I also include other measures of remittances, including the number of migrant-to-household remitters (and the number of household-to-migrant remittance occasions).

Greater amounts of migrant-to-household remittances as well as larger numbers of remitting migrants are expected to alleviate credit constraints which make it possible for families to afford housing units, permitting household splitting. Household-to-migrant remittances are included mainly as a control variable measuring the households' cash flow. I also include separate counts by gender of the number of migrant-to-household remitters since women in Thailand are thought to be more reliable remitters compared to men (Curran 1995, Osaki 1999, VanWey 2004).

[Table 2 about here]

Table 2 contains descriptive statistics on all independent variables. The table shows that the amount of migrant-to-household remittance had a mean of over 4,000 baht (about 160 USD). The amount of household-to-migrant remittance was considerably lower, which is consistent with work by VanWey (2004) who shows that this money is rarely sent (and is mainly sent to students). The amount of household-to-migrant

⁵ The baht is the Thai unit of currency; in 1994 one US dollar was approximately equal to 25 baht.

remittance averaged over 600 baht. Also, the average number of remitters to the household was higher than the average number of migrants receiving remittances from the household (0.79 versus 0.19). Interestingly, of the number of migrants sending remittance to the household, nearly an equivalent number of women and men sent remittances, on average.

The remaining variables in the model include individual-level measures of demographic characteristics, household economy variables, and measures of household/family demographic characteristics. Demographic variables include the relationship to household head, migration history, age, gender, an indicator of new household membership in 1994, education, occupation, marital status and spouse location, co-residence with parents or parents in-law, and number of children. I also include controls for the household economy, such as the amount of household debt, participation in cottage industries, charcoal production, cassava planting, an index of household wealth⁶, and the amount of land owned. Measures of household composition include the number of unmarried household members age 13-60, and the number of subfamilies. I also control for the household's number of village-level sibling social network connections.

⁶ Following work by Filmer and Pritchett (2001) I create a household wealth index, based on the presence of various consumer durables. The procedure uses principal components analysis. This index includes data on the number of black and white televisions, color televisions, VCRs, refrigerators, Itans (agricultural trucks), cars/trucks/pickups, motorcycles, and sewing machines. In addition, I include dummy variables for whether a household cooks with electricity or gas, and has windows with wood shutters, glass panes, or bug screens. Each household is grouped into one of three categories, based on its overall household wealth index score. Since wealth often tends to be clustered at the top of a wealth distribution, I include relatively fewer households in the top of the distribution than at the bottom. Specifically, households in the lowest third will be considered to be at the "bottom," those in the 34th to 79th percentiles will be considered "middle," and the highest fifth will be considered to be at the "top". A disproportionate share of households in the various wealth categories results, due to differences in the population of households used in the construction of the index and the sample used for the present analysis. In calculating household wealth, I used all households from all sample villages, while my sampling strategy only selected households containing someone in the 18 – 35 age range.

Results

Before describing results of the regression analysis, I discuss descriptive statistics for local movers that describe the structure of households (i.e. extended vs. nuclear) and the life cycle pattern of moves.

[Table 3 about here]

Table 3 shows a bivariate table of co-residence with elder parents (including in-laws) for local movers in 1994 by co-residence status in 2000. The general pattern is clear: regardless of whether an individual lived with both parents, only their father, or only their mother in 1994 (before household change), overwhelmingly the individual was not in the same household with either parent in 2000 (after the household change). This suggests that local movers are moving from extended households that include parents (or in-laws) to nuclear households.

Descriptive results also support the notion that a local move ending in an existing household corresponds to a different stage of the Thai household life cycle as compared to a move into a new household. A move into an existing household may correspond with the initial co-residence between a couple and the bride's household just following marriage. A move into a new household may correspond with a couple's decision to move into an independent nuclear household, which is the next stage of the Thai household life cycle.

[Table 4 about here]

Table 4 shows descriptive statistics for select independent variables presented separately for local movers who moved into a new household and for those who moved into an existing household. Several differences across these two groups are worth noting.

First, individuals moving into new households were far more likely to be new household members in the 1994 survey (compare 34 versus 7 percent). This suggests that before their household change, individuals who eventually moved into a new household were more likely to have made a prior move into an existing household sometime between 1984 and 1994. This is consistent with the first stage of the Thai household life cycle.

Second, the effect of marital status indicates that of those who moved into an existing household, 91 percent were not married before their move, compared to only 21 percent of those who moved into a new household. Those who moved into an existing household probably got married and moved in with the bride's household. Indeed, moving into the bride's family (*results not shown in table*) was a considerably more popular choice than moving in with the husband's family: the former arrangement was found in about 70 percent of cases, while the latter in only 13 percent of cases. Many of those who move into a new household are already married, and probably will start a new independent household upon moving. This is again consistent with the stages of the Thai household life cycle.

Those who are moving into a new household have a higher mean number of children than those who are moving into an existing household. This suggests that the former are in a more advanced stage of family-building than the latter. Those moving into existing households are more likely to be male. This is also consistent with matrilocal postnuptial residence customs in Thailand in which men move in with the bride's family. These findings suggest that, in Nang Rong, individuals are not skipping the initial stage of the Thai household life cycle pattern.

[Table 5 about here]

Turning to the results of the regression analysis, there is broad support for a remittance effect, and evidence for the continued persistence of the traditional Thai postnuptial residence pattern. I estimate three separate models each containing different remittance variables. The first model (see Table 5) shows that the amount of migrant-to-household remittance is positively and significantly associated with a move into a new household. Results are consistent with the idea that remittances alleviate capital constraints, which may make it easier for households to finance residential moves.

It is noteworthy that the remittance effect is not significant for moves into existing households. This suggests that remittance money is particularly vital for couples moving into new independent households rather than for newlyweds initially moving in with the bride's family. This is reasonable, given that couples starting their own household most likely need money for housing, while those moving in with the bride's family do not.

[Table 6 & 7 about here]

The second model (see Table 6) shows that results are robust to different remittance variable specifications. The number of remitting migrants is also positively associated with moves into new households. The third model (see Table 7) adds information on gender specific migrant-to-household remittances. Results show that moves into new households are associated with remittances from females, but not from males. As the number of female remitters increases, so does the likelihood of moving into a new household. Given that females are thought to be more reliable remitters than males in Thailand (Curran 1995, Osaki 1999, VanWey 2004) and elsewhere (Chiang Huang 1984, Radcliffe 1990) this finding is not surprising.

Interestingly, the amount of household-to-migrant remittances is also positively related to residential moves into new households (see first contrast in Table 5). This may suggest that households with sufficient cash flow can afford to finance household splits and still send money to migrants. It is also noteworthy that the effect of ever being a migrant is significant for moves into new households. Those who have ever migrated may have done so for a short time period to work in the paid labor force. They may have earned enough money to finance their own residential move. Unfortunately, direct data on wages and remittances during previous migrations are not available⁷.

Results of the remaining variables agree with descriptive statistics and support a household life cycle interpretation. Variables predicting moves into existing households, which represent the initial stage of the household life cycle in which couples reside with the bride's parents, include the effects of gender and marital status. Moves into a new household, which likely correspond to the second stage of the household life cycle in which a couple moves into an independent nuclear household, are significantly associated with the relationship to household head, marital status, and number of children.

Consistent with matrilineal postnuptial residence customs, males are more likely to move into an existing household compared to females. Marital status differences show that married individuals whose spouse lives in the household or village are less likely to move into an existing household (see second contrast) compared to those who are not currently married. Those who are married probably have already gone through the initial stage of extended family living, and hence are less likely to do so again. Married individuals, regardless of spouse location, are also more likely to move into a new

⁷ Past research in Nang Rong by Tong and Piotrowski (2006) found that returning migrants rarely return to another household in the same village from which they left. This may suggest that migrants do not frequently migrate to finance their own eventual local move within the village.

household (see first contrast). This finding is consistent with the idea that moving into a new household corresponds to the second stage of the household life cycle following marriage.

Respondents who are children (or children in-law) of the household head are more likely to move into a new household than are household heads or their spouses. It is noteworthy that this effect is not significant for moves into existing households. Taken together, results are consistent with both stages of the household life cycle: children of the household head already living in their parents' household do not move into an existing household, but are more likely to move into a new household following the initial stage of the household life cycle.

The effect of the number of children is also consistent with expectations: it is negatively related to moves into new households. Those with a larger number of children have probably already started their own independent nuclear household, while those with a few children are just on the verge of the family-building stage of the life course.

Turning to the remaining measures in the model, household economy variables have no effect on movement, although household demographics show significant effects. The number of unmarried household members and the number of subfamilies both have positive effects on movement into new households. For movement into an existing household, the number of unmarried household members is the only significant effect. This is consistent with the literature on household crowding in Thailand (Edwards et al. 1994), which argues that single individuals take up more space than married couples. The effect of the number of subfamilies on movement into new households is also consistent with the Thai household life cycle, which suggests that the movement of the next

daughter and her husband prompts the move of any couples that are already living with the bride's household.

[Figure 3 about here]

Some further descriptive statistics may also help elucidate the nature of the relationship between remittances and household splitting. In a final set of analyses I compare the kin and gender relationships between local movers and any remitting migrants from their 1994 household (see flow chart in Figure 3). Since multiple remitting migrants can be attributed to each household, the unit of analysis is the migrant-local mover pair ($N = 1,082$). Because multiple migrants come from each household, this number exceeds the total number of local movers ($N = 757$). Results show that in almost a third (33%) of the cases local movers came from households with no remitting migrants. Just under half of the cases (45%), the remitting migrant was a sibling of the local mover. In another 17 percent of cases the migrant was a sibling in-law. The remaining cases had some other relationship to the local mover (spouse, parent, child, or miscellaneous).

Of the local movers who had a sibling relationship with remitting migrants, in about 40 percent of cases the migrant and local mover were sisters. In nearly a third of the cases, the local mover was a sister and the migrant was a brother. Therefore, nearly three fourths of these local movers are women. Results for in-law sibling relations reveal a parallel trend: most local movers tend to be a brother in-law. Most commonly the migrant is his sister in-law. This probably indicates that married couples moving out of the wife's household are the recipients of remittance money used to finance a move into a

new nuclear residence. Most likely the money from their sibling (or sibling-in law) is being allocated to them by a household head.

Conclusions

In this paper I examine the effects of remittances on individual life-course pathways into new households in Thailand, a developing country experiencing the shift to an urban industrial economy. I go beyond earlier work by linking the process of change in household affiliation to the receipt of migrant remittances and I consider how remittances affect the traditional pattern of household formation. Remittances sent from migrants to households are found to be a significant determinant of household splits, especially in the latter stages of the Thai household life-cycle.

Results suggest that remittances from migrant siblings (especially sisters) are used to finance the movement of daughters and their husbands into a new independent household following a stage of living with her family's natal household. These results are consistent with an intra-generational household process related to allocation of remitted income, perhaps resulting from the efforts of a household head. Remittances help alleviate credit constraints related to necessary preconditions for household changes, which may include the cost of house building. Much of the analysis is consistent with the traditional Thai household life cycle, in which couples move in with the bride's household in the initial stage of the cycle. As there is no evidence that the characteristic life cycle pattern has disappeared, thus remittances may not be accelerating the tempo of household change.

Receipt of remittances may be related to rising standards of living within Nang Rong. Given that data are only available at three time points, it is difficult to separate the

effects of life course processes from social change more generally. It should also be noted that some of the results are affected by the exclusion of poorer households from the sample. This may understate the remittance effect. Further research could focus more attention on the relationship between remittances and housing improvements. For further analysis, more detailed data are needed to link the intervening mechanism between remittance transfers, housing projects, and household formation processes.

As Nang Rong and other rural areas in developing countries experience a rise in standard of living, it will be interesting to witness the effects of continuing advances in economic development on demographic processes. Persistent household nucleation will certainly affect the consumption behavior of households who at one time relied on economies of scale to meet their consumption needs. Nucleation may also have implications for the rural elderly who no longer co-reside with their adult children, although having their children living nearby may be sufficient to ensure their continued care into old age.

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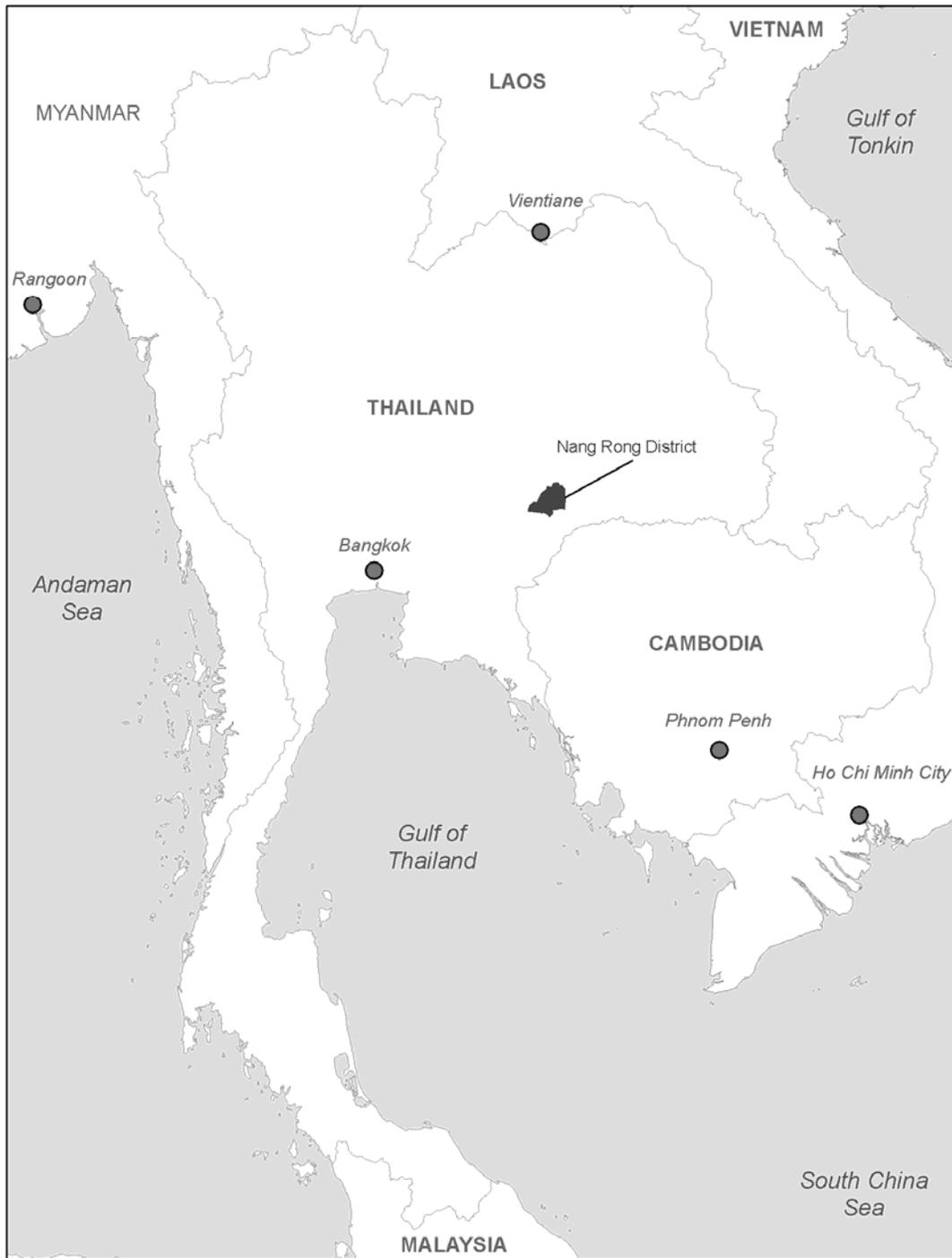
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Figure 1. Map of Thailand and the Nang Rong District



Note: Bangkok is not drawn to scale

Figure 2. Conceptual Design of Research Design

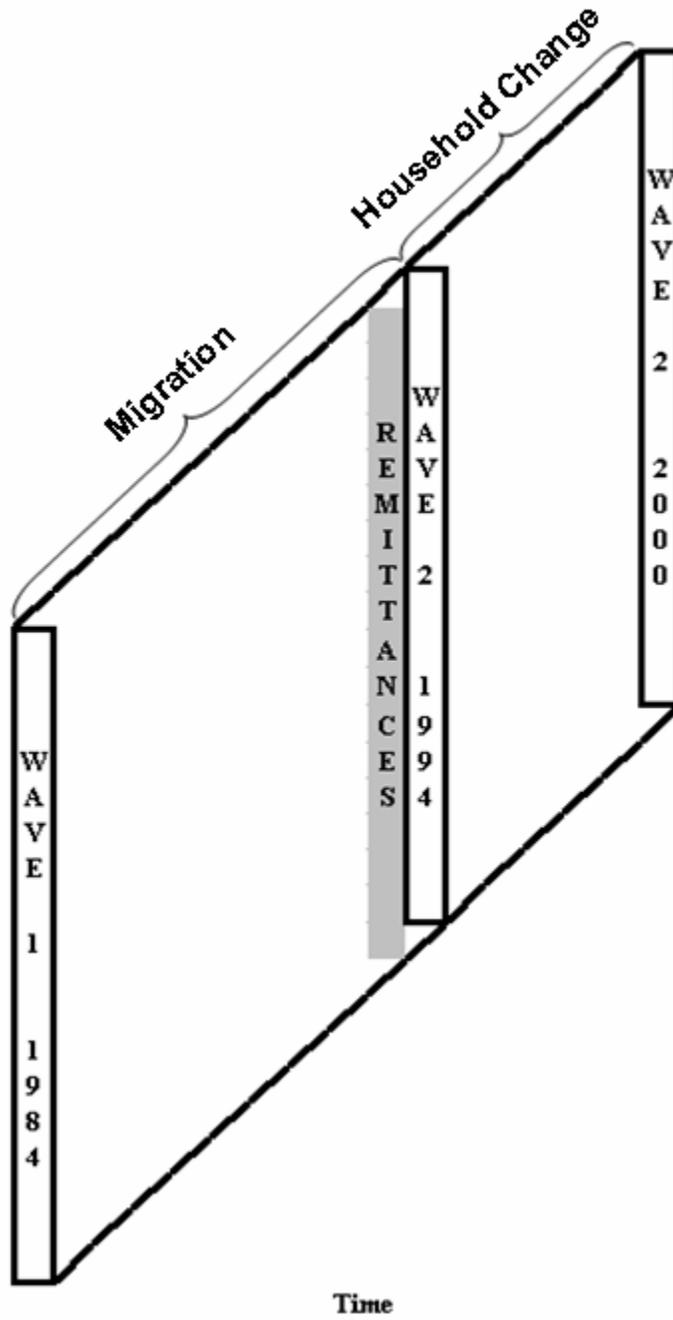


Figure 3. Flow Chart Showing Kinship and Gender Relationship between Remitting Migrant and Local Movers

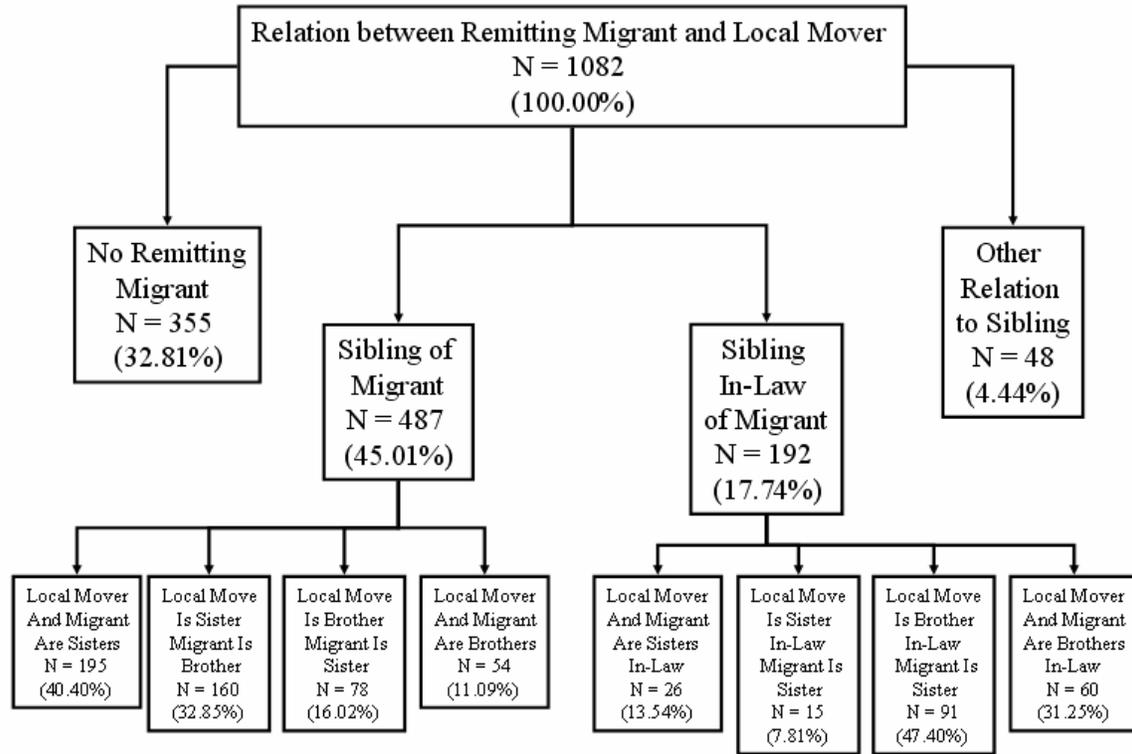


Table 1. Percentage Distribution for
Change in Household Status

Category	Percent
Did Not Move	52.08
Moved into New Household	14.09
Moved into Existing Household	1.37
Migrated Out of Village	32.46
Total	100.00
N	4898

Table 2. Descriptive Statistics for Independent Variables

Variable	Mean	StdDev
Household Remittances		
Amount of Migrant-to-Household Monetary Remittances (in 1,000 Baht)	4.12	7.77
Amount of Household-to-Migrant Monetary Remittances (in 1,000 Baht)	0.61	2.98
Number Migrants Remitting to Household	0.79	1.11
Number Male Migrants Remitting to Household	0.40	0.71
Number of Female Migrants Remitting to Household	0.39	0.73
Number of Migrants Receiving Remittance From Household	0.19	0.56
Respondent's Demographic Characteristics		
<i>Relationship to Head</i>		
Head (or Spouse of Head) of Household	0.12	0.33
Child (or Child In-Law) of Head	0.83	0.38
Other Relation to Head	0.05	0.21
Ever Migrated	0.41	0.49
Age	25.49	5.11
Gender (Male)	0.47	0.50
New Household Member in 1994	0.23	0.42
<i>Education</i>		
Less than Primary Education	0.37	0.48
Greater than Primary Education	0.13	0.34
Only Primary School Education	0.50	0.50
<i>Occupation</i>		
Agricultural Occupation	0.84	0.37
Student or is Unemployed	0.05	0.21
Non-Agricultural Occupation	0.11	0.32
<i>Marital Status / Spouse Location</i>		
Married, Spouse Lives in the Household or Village	0.48	0.50
Married, Spouse lives Outside of Village	0.07	0.26
Post-Married or Spouse Location is Unknown	0.04	0.19
Not Currently Married	0.41	0.49
<i>Parent (or In-Law) Location</i>		
Both Parents Live in Household	0.59	0.49
Only Mother Lives in Household	0.18	0.38
Only Father Lives in Household	0.05	0.22
Neither Parent Lives in Household	0.18	0.39
<i>Respondent's Children</i>		
Number of Children Living in the Home Household	0.76	0.99
Household Economy		
Amount of Debt Owed by Household (in 1,000 Baht)	17.24	45.74
Household Involved in Cottage Industry	0.22	0.41
Household Involved in Charcoal Production	0.63	0.48
Household Grows Cassava	0.16	0.37
<i>Household Wealth</i>		
Top Fifth of Wealth Distribution	0.22	0.41
Middle 34 - 79th Percentile of Wealth Distribution	0.39	0.49
Bottom Third of Wealth Distribution	0.39	0.49
Amount of Land Owned (in 1,000 Wa ²)	10.63	10.35
Household/Family Demographics		
Number of Unmarried Household Members Aged 13 - 60	1.49	1.33
Number of Sub-Families	0.27	0.49
Number of Village Sibling Social Network Connections	1.57	1.82
N	4898	

Table 3. Cross-Tabulation of Co-residence with Parents for Adult Child Local Movers

Co-Residence with Parents in 2000	Co-Residence with Parents in 1994				Total
	Both Parents	Only Father	Only Mother	Neither Parent	
Both Parents	0.37	2.94	0.00	4.11	0.79
Only Father	0.00	0.00	0.00	0.00	0.00
Only Mother	1.30	0.00	1.82	0.00	1.19
Neither Parent	98.33	97.06	98.18	95.89	98.02
Total					
N					757

Table 4. Descriptive Statistics on Select Variables for Local Movers, Suggests Different Stages of Thai Household Life Cycle

Variable	Existing Household		New Household	
	Mean	StdDev	Mean	StdDev
Respondent's Demographic Characteristics				
Age	22.67	4.47	25.61	4.41
Gender (Male)	0.78	0.42	0.43	0.50
New Household Member in 1994	0.07	0.26	0.34	0.47
<i>Marital Status / Spouse Location</i>				
Married, Spouse Lives in the Household or Village	0.04	0.21	0.66	0.47
Married, Spouse is a Migrant	0.03	0.17	0.09	0.28
Post-Married or Spouse Location is Unknown	0.01	0.12	0.05	0.21
Not Currently Married	0.91	0.29	0.21	0.40
Number of Children Living in Household	0.12	0.48	0.75	0.77
N	67		690	

Table 5. Multinomial Probit Estimates for Change in Residence Between 1994-2000, Effect of Amount Remittances Sent

Variable	Moved into New Household / Did Not Move		Moved into Existing Household / Did Not Move		Migrated Out of Village / Did Not Move	
	Coeff	StdErr ^a	Coeff	StdErr ^a	Coeff	StdErr ^a
Intercept	-2.69 ***	0.40	-1.89 **	0.69	1.08 ***	0.29
Household Remittances						
Amount of Migrant-to-Household Monetary Remittances (in 1,000 Baht)	0.02 ***	0.01	0.001	0.01	0.02 ***	0.004
Amount of Household-to-Migrant Monetary Remittances (in 1,000 Baht)	0.03 *	0.01	0.01	0.02	0.01	0.01
Respondent's Demographic Characteristics						
<i>Relationship to Head^b</i>						
Child (or Child In-Law) of Head	0.69 **	0.23	0.40	0.46	0.29	0.17
Other Relation to Head	0.43	0.28	0.54	0.47	0.27	0.19
Ever Migrated	0.16 *	0.07	-0.04	0.14	0.43 ***	0.06
Age	-0.03 *	0.01	-0.05 *	0.02	-0.08 ***	0.01
Gender (Male)	0.01	0.06	0.75 ***	0.16	0.49 ***	0.06
New Household Member in 1994	-0.06	0.09	0.07	0.25	0.04	0.08
<i>Education^b</i>						
Less than Primary	0.05	0.10	0.12	0.20	0.07	0.08
Greater than Primary	-0.03	0.13	-0.20	0.25	0.28 **	0.10
<i>Occupation^b</i>						
Agricultural Occupation	0.02	0.13	-0.11	0.22	-0.27 **	0.10
Student or Unemployed	-0.34	0.26	-0.27	0.40	-0.08	0.16
<i>Marital Status / Spouse Location^b</i>						
Married, Spouse Lives in Household or Village ^c	1.53 ***	0.13	-1.14 *	0.49	0.11	0.11
Married, Spouse lives Outside of Village	1.48 ***	0.16	-0.06	0.25	0.63 ***	0.14
Post-Married or Spouse Location is Unknown	1.25 ***	0.20	-0.30	0.47	0.59 ***	0.17
<i>Parent (or In-Law) Location^b</i>						
Both Parents Live in Household	0.23	0.17	-0.14	0.30	-0.17	0.14
Only Mother Lives in Household	-0.22	0.18	-0.29	0.35	-0.26	0.14
Only Father Lives in Household	-0.23	0.24	0.04	0.35	-0.51 **	0.19
<i>Respondent's Children</i>						
Number of Children Living in Household	-0.22 ***	0.06	0.06	0.17	-0.07	0.06
Household Economy						
Amount of Debt Owed by Household (in 1,000 Baht, logged)	-0.04	0.03	-0.03	0.05	-0.01	0.02
Household Involved in Cottage Industry	-0.09	0.10	-0.07	0.17	-0.09	0.08
Household Involved in Charcoal Production	0.08	0.09	-0.04	0.14	-0.14 *	0.07
Household Plants Cassava	0.06	0.11	-0.15	0.20	-0.04	0.09
<i>Household Wealth^b</i>						
Top Fifth of Wealth Distribution	-0.04	0.09	0.20	0.15	0.09	0.07
Bottom Third of Wealth Distribution	0.08	0.11	0.004	0.18	-0.07	0.09
Amount of Land Owned (in 1,000 Wa ² , logged)	-0.01	0.05	0.05	0.08	-0.06	0.04
Household/Family Demographics						
Number of Unmarried Household Members (Aged 13 - 60)	0.35 ***	0.04	0.18 **	0.06	0.18 ***	0.03
Number of Sub-Families	0.49 ***	0.08	0.28	0.14	0.45 ***	0.07
Number of Village Sibling Social Network Connections	0.001	0.03	-0.02	0.05	-0.07 ***	0.02
N	4898					
-2LL	8765.98					
* p < .05 ** p < .01 *** p < .001 (Two-Tailed Test)						

Notes:

^a Standard errors corrected for household-level clustering using Heteroskedastically Robust Standard Errors^b Reference categories, in order, include: Household Head (or Spouse of Head), Only Primary School, Non-Agricultural Occupation, Not Currently Married, Neither Parent Lives in Household, Middle 34 - 79th Percentile of Wealth Distribution^c Spouses living in another household in the same village are rare, and are therefore combined with individuals having a spouse living in the origin household.

Table 6. Multinomial Probit Estimates for Change in Residence Between 1994-2000, Effect of Number of Remitting Migrants

Variable	Moved into New Household / Did Not Move		Moved into Existing Household / Did Not Move		Migrated Out of Village / Did Not Move		
	Coeff	StdErr ^a	Coeff	StdErr ^a	Coeff	StdErr ^a	
Intercept	-2.79 ***	0.40	-1.92 **	0.69	1.00 ***	0.29	
Household Remittances							
Number Migrants Remitting to Household	0.18 ***	0.04	0.10	0.06	0.14 ***	0.03	
Number of Migrants Receiving Remittance From Household	-0.0002	0.08	-0.08	0.12	0.06	0.06	
Respondent's Demographic Characteristics							
<i>Relationship to Head^b</i>							
Child (or Child In-Law) of Head	0.65 **	0.23	0.37	0.46	0.26	0.17	
Other Relation to Head	0.41	0.28	0.54	0.47	0.25	0.19	
Ever Migrated	0.16 *	0.07	-0.04	0.14	0.43 ***	0.06	
Age	-0.02 *	0.01	-0.05 *	0.02	-0.08 ***	0.01	
Gender (Male)	0.01	0.06	0.76 ***	0.16	0.49 ***	0.06	
New Household Member in 1994	-0.07	0.09	0.05	0.25	0.03	0.08	
<i>Education^b</i>							
Less than Primary	0.02	0.10	0.12	0.19	0.05	0.08	
Greater than Primary	0.01	0.13	-0.18	0.25	0.31 **	0.10	
<i>Occupation^b</i>							
Agricultural Occupation	0.02	0.13	-0.12	0.22	-0.27 **	0.10	
Student or Unemployed	-0.32	0.26	-0.26	0.40	-0.07	0.16	
<i>Marital Status / Spouse Location^b</i>							
Married, Spouse Lives in Household or Village ^c	1.55 ***	0.13	-1.08 *	0.48	0.12	0.11	
Married, Spouse lives Outside of Village	1.48 ***	0.16	-0.05	0.25	0.64 ***	0.14	
Post-Married or Spouse Location is Unknown	1.25 ***	0.20	-0.29	0.47	0.59 ***	0.17	
<i>Parent (or In-Law) Location^b</i>							
Both Parents Live in Household	0.24	0.17	-0.14	0.30	-0.16	0.14	
Only Mother Lives in Household	-0.23	0.18	-0.30	0.35	-0.26	0.14	
Only Father Lives in Household	-0.23	0.24	0.02	0.35	-0.52 **	0.19	
<i>Respondent's Children</i>							
Number of Children Living in Household	-0.23 ***	0.06	0.05	0.17	-0.06	0.06	
Household Economy							
Amount of Debt Owed by Household (in 1,000 Baht, logged)	-0.03	0.03	-0.03	0.05	0.00	0.02	
Household Involved in Cottage Industry	-0.10	0.10	-0.08	0.17	-0.09	0.08	
Household Involved in Charcoal Production	0.08	0.09	-0.04	0.14	-0.14 *	0.07	
Household Plants Cassava	0.05	0.11	-0.15	0.20	-0.04	0.09	
<i>Household Wealth^b</i>							
Top Fifth of Wealth Distribution	-0.04	0.09	0.21	0.15	0.09	0.07	
Bottom Third of Wealth Distribution	0.08	0.11	0.01	0.18	-0.06	0.09	
Amount of Land Owned (in 1,000 Wa ² , logged)	0.01	0.05	0.06	0.08	-0.05	0.04	
Household/Family Demographics							
Number of Unmarried Household Members (Aged 13 - 60)	0.35 ***	0.04	0.19 **	0.06	0.19 ***	0.03	
Number of Sub-Families	0.49 ***	0.08	0.29 *	0.14	0.46 ***	0.07	
Number of Village Sibling Social Network Connections	0.01	0.03	-0.02	0.05	-0.06 **	0.02	
N						4898	
-2LL						8766.30	

* p < .05 ** p < .01 *** p < .001 (Two-Tailed Test)

Notes:

^a Standard errors corrected for household-level clustering using Heteroskedastically Robust Standard Errors^b Reference categories, in order, include: Household Head (or Spouse of Head), Only Primary School, Non-Agricultural Occupation, Currently Married, Neither Parent Lives in Household, Middle 34 - 79th Percentile of Wealth Distribution^c Spouses living in another household in the same village are rare, and are therefore combined with individuals having a spouse living in the origin household.

Table 7. Multinomial Probit Estimates for Change in Residence Between 1994-2000, Effect of Number of Remitting Migrants, Disaggregated by Sex

Variable	Moved into New Household / Did Not Move		Moved into Existing Household / Did Not Move		Migrated Out of Village / Did Not Move	
	Coeff	StdErr ^a	Coeff	StdErr ^a	Coeff	StdErr ^a
Intercept	-2.77 ***	0.40	-1.91 **	0.69	1.01 ***	0.29
Household Remittances						
Number Male Migrants Remitting to Household	0.07	0.06	0.06	0.09	0.08	0.05
Number of Female Migrants Remitting to Household	0.28 ***	0.06	0.13	0.09	0.19 ***	0.05
Number of Migrants Receiving Remittance From Household	0.02	0.08	-0.08	0.12	0.07	0.06
Respondent's Demographic Characteristics						
<i>Relationship to Head^b</i>						
Child (or Child In-Law) of Head	0.65 **	0.23	0.37	0.46	0.27	0.17
Other Relation to Head	0.41	0.28	0.54	0.47	0.25	0.20
Ever Migrated	0.15 *	0.07	-0.04	0.14	0.43 ***	0.06
Age	-0.02 *	0.01	-0.05 *	0.02	-0.08 ***	0.01
Gender (Male)	0.01	0.06	0.76 ***	0.16	0.48 ***	0.06
New Household Member in 1994	-0.07	0.09	0.05	0.25	0.03	0.08
<i>Education^b</i>						
Less than Primary	0.03	0.10	0.12	0.19	0.05	0.08
Greater than Primary	0.002	0.13	-0.18	0.25	0.30 **	0.10
<i>Occupation^b</i>						
Agricultural Occupation	0.02	0.13	-0.11	0.22	-0.26 **	0.10
Student or Unemployed	-0.30	0.26	-0.25	0.40	-0.06	0.16
<i>Marital Status / Spouse Location^b</i>						
Married, Spouse Lives in Household or Village ^c	1.54 ***	0.14	-1.08 *	0.48	0.11	0.11
Married, Spouse lives Outside of Village	1.49 ***	0.16	-0.05	0.25	0.64 ***	0.14
Post-Married or Spouse Location is Unknown	1.25 ***	0.20	-0.29	0.46	0.59 ***	0.17
<i>Parent (or In-Law) Location^b</i>						
Both Parents Live in Household	0.23	0.17	-0.14	0.30	-0.17	0.14
Only Mother Lives in Household	-0.23	0.18	-0.30	0.35	-0.26	0.14
Only Father Lives in Household	-0.24	0.24	0.01	0.35	-0.52 **	0.19
<i>Respondent's Children</i>						
Number of Children Living in Household	-0.22 ***	0.06	0.05	0.17	-0.06	0.06
Household Economy						
Amount of Debt Owed by Household (in 1,000 Baht, logged)	-0.03	0.03	-0.02	0.05	0.00	0.02
Household Involved in Cottage Industry	-0.10	0.10	-0.08	0.17	-0.09	0.08
Household Involved in Charcoal Production	0.07	0.09	-0.05	0.14	-0.14 *	0.07
Household Plants Cassava	0.05	0.11	-0.15	0.20	-0.04	0.09
<i>Household Wealth^b</i>						
Top Fifth of Wealth Distribution	-0.04	0.09	0.20	0.15	0.08	0.07
Bottom Third of Wealth Distribution	0.08	0.11	0.01	0.18	-0.06	0.09
Amount of Land Owned (in 1,000 Wa ² , logged)	0.003	0.05	0.06	0.08	-0.05	0.04
Household/Family Demographics						
Number of Unmarried Household Members (Aged 13 - 60)	0.35 ***	0.04	0.19 **	0.06	0.19 ***	0.03
Number of Sub-Families	0.49 ***	0.08	0.29 *	0.14	0.45 ***	0.07
Number of Village Sibling Social Network Connections	0.01	0.03	-0.02	0.05	-0.06 **	0.02
N	4898					
-2LL	8756.58					

* p < .05 ** p < .01 *** p < .001 (Two-Tailed Test)

Notes:

^a Standard errors corrected for household-level clustering using Heteroskedastically Robust Standard Errors

^b Reference categories, in order, include: Household Head (or Spouse of Head), Only Primary School, Non-Agricultural Occupation, Currently Married, Neither Parent Lives in Household, Middle 34 - 79th Percentile of Wealth Distribution

^c Spouses living in another household in the same village are rare, and are therefore combined with individuals having a spouse living in the origin household.

Table A1. Descriptive Statistics Comparing Analytic Sample Households to Excluded Households

Variable	Non-Sample Households			Sample Households		
	Mean	StdDev	N ^a	Mean	StdDev	N
<i>1984 Characteristics</i>						
Top Fifth of Wealth Distribution ^b	0.19	0.40	(2476)	0.27	0.45	(2929)
Middle 34-79th Percentile of Wealth Distribution	0.44	0.50	(2476)	0.48	0.50	(2929)
Bottom Third of Wealth Distribution	0.36	0.48	(2476)	0.25	0.43	(2929)
<i>1994 Characteristics</i>						
Number of Migrants	2.44	1.81	(1918)	1.72	1.64	(2929)
Number Migrants Remitting to Household	1.36	1.37	(1918)	0.83	1.13	(2929)
Amount of Money Remitted to Household from Migrants (in 1,000 Baht)	7.37	10.80	(1918)	17.07	45.89	(2929)
Amount of Land Owned (in 1,000 Wa ²)	8.53	8.91	(1917)	9.95	9.91	(2929)
Top Fifth of Wealth Distribution ^c	0.16	0.37	(1907)	0.21	0.41	(2929)
Middle 34-79th Percentile of Wealth Distribution	0.38	0.49	(1907)	0.39	0.49	(2929)
Bottom Third of Wealth Distribution	0.46	0.50	(1907)	0.40	0.49	(2929)

Notes:

^a Sample sizes vary for 1994 due to sample attrition and missing data^b 1984 index constructed from following variables: number of consumer and productive assets owned by household (i.e. televisions, refrigerators, water pumps, *itans* (agricultural trucks), pick-ups/trucks, motorcycles); whether household cooks with electricity or gas versus some other form of energy; type of dwelling unit owned by household (i.e. hut, single-story dwelling, wood house on stilts with concrete foundation, brick house, two story house); amount of land owned by the household^c 1994 household wealth index uses following assets: number of black-and-white and color televisions, VCRs refrigerators, *itans*, cars/trucks/pickups, motorcycles, and sewing machines; dummy variables for whether household cooks with electricity or gas; dwelling unit has windows with wood shutters, glass panes, or bug screen