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Processes of Internal and International Migration from Chitwan, Nepal

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Abstract

In this study we examine which factors predict internal and international migration from Chitwan, a flat valley located in the South-Central region of Nepal, seeking to measure the effect of theoretically specified variables such as human capital, social capital, physical capital, and neighborhood socioeconomic conditions while controlling for demographic variables. We use data from the Chitwan Valley Family Study (CVFS) to estimate a series of discrete time event history models of first and repeat migration to three competing destinations: other locations within Chitwan, other districts within Nepal, and places outside of Nepal. Results support hypotheses derived from neoclassical economics, the theory of new economics of migration, social capital theory, and cumulative causation theory. Our results underscore the need for a synthetic theoretical model that incorporates factors operating at the individual, household, and community levels. The use of multiple explanatory models yields a clearer picture of the forces driving internal and international migration from rural districts in developing nations such as Nepal.

As Nepal has urbanized and transitioned economically as well as politically in recent years, it has experienced a rising volume of both internal and international migration. Based on the 2001 census, most internal moves are rural-to-rural (68.2%), although a substantial fraction is from rural to urban areas (25.5%). Very few people (3.5%) move from urban to rural and even fewer (2.8%) are urban-to-urban migrants (KC 2003). These facts support Skeldon's claim that instead of the mythical belief that rural-to-urban movements are the dominant type of migration in developing countries, rural-to-urban flows are smaller than the flows within the rural sector (Skeldon 1997). Migration within Nepal is generally attributed to poverty, an unequal distribution of income, geographic variation in labor demand, and food insecurity, with the relative importance of these factors varying by age, sex, education, and occupational skill (KC 2003).

Among rural families, labor migration has long been an important source of economic support. According to the 1995/96 Nepal Living Standards Survey (NLSS), based on the number, remittances sent from within Nepal exceed those from foreign locations by a considerable margin, with 57% of all funds coming from internal migrants and 43% from international migrants with only 3 percent from countries other than India (Seddon et al. 2002). Such a high number of remittances from within the country points to the importance of internal migration, especially to the capital Kathmandu as a destination since more than half of remittances from urban areas within the country come from Kathmandu (Graner et al. 2004). However, if we consider the importance of the sources in terms of the value of remittances, internal remittances make up only 44 percent of remittances, whereas India alone makes up 33 percent with the foreign locations other than India making up 22 percent of the total remittance (Seddon et al. 2002).

Remittances through international migration are claimed to have been a source of survival, poverty alleviation and improvement in living standards for migrant households in Nepal. Based on the remittance figures from the Nepal Rastra Bank, the money remitted via formal

banking channels alone increased from Re. 36.8 billion (\$.55M) in 1999-2000 to Re. 65.5 billion (\$1B) in 2004-2005, which as a percentage of GDP is equivalent to 11.7 and 15.3 percent for the two years respectively (Migration Year Book 2007). Estimates by Seddon et al. (2002) indicate that over one million Nepalese worked abroad in 1997 and that their annual remittances to Nepal for 1997 and 1998 were equivalent to about 13 to 25 percent of GDP.

It is widely accepted that Nepal's economy has been kept afloat because of the critical role played by foreign remittances, with the NLSS data documenting an increase in the percentage of households receiving foreign remittance from 23.4 percent to 32 percent between 1995-96 and 2003-04 (Migration Year Book 2007). Yet a sample survey undertaken by Nepal Rastra Bank in ten districts of the four development regions revealed that only about 20 percent of migrant workers sent their earnings through formal banking channels, indicating severe underestimation of remittance figures (Shrestha 2004). Nevertheless, remittances from countries other than India have increased from 22 percent in 1995-96 to 53 percent in 2003-04, reflecting an increase in foreign destinations over time (Migration Year Book 2007).

International migration has a long history in Nepal, dating back to the early nineteenth century when men from the hill region of Gorkha were recruited into the army of the Sikh ruler Ranjit Singh in Lahore, then a part of India. This service followed by a war in Gorkha with the British East India Company, earned the soldiers a reputation for bravery. The Anglo-Nepal Treaty of Peace and Friendship signed in 1816 after the war recruited 3,000 Nepalese soldiers in British Gorkha Regiment and inaugurated a culture of labor migration from Nepal, which continues to the present (Seddon 2005). International migration increased sharply after the people's revolution for democracy in 1951. Around the same time, with the control of malaria in the Terai Valleys, there was a sharp rise in internal migration to the country's Inner Terai Valleys.

Then the 1980s brought an augmented labor demand both from the booming East Asian economies as well as the Gulf countries, which were undergoing a construction boom. The higher demand for labor in the international market coupled with the Foreign Employment Act of 1985, which licensed non-governmental institutions to export Nepalese workers abroad and legitimized certain labor contracting organizations, further facilitated migration.

International migration increased even more after restoration of multi-party democracy and liberalization in 1990. As the country was opening up to the rest of the world, the internal conflict led by the Maoist insurgency that began in 1996, along with a decline in Nepal's carpet industry, mobilized more to migrate to foreign locations. The decade-long civil war between the Government and the guerillas of the Communist Party of Nepal (Maoists) displaced many, both internally as well as to foreign destinations including India. Migration to other regions of Nepal especially to Kathmandu rose dramatically, with Kathmandu alone estimated to have hosted up to 100,000 internally displaced people (Migration Year Book 2007). Although researchers claim the official figures to be a gross underestimation of reality, even the underestimated figures show a huge surge in migration, with the total migrant workers abroad (excluding those to India) increasing from 1,926 in 1992/93 to over a million by the end of 2007 (Shrestha 2008). Following the end of the civil war in 2006, Nepal experienced a series of dramatic political transitions - the abolition of monarchy, conversion of Nepal into a Federal Democratic Republic State with an elected head of state, and the ongoing movement towards the formation of a new coalition government. Nonetheless, uncertain political and economic situation has continued to allure Nepalese migrants to foreign destinations.

Although Nepalese have traditionally favored international destinations such as India, Japan, Hong Kong, Bhutan, Sikkim, Myanmar, and other destinations throughout Asia, the most common foreign destinations in 2006 were India, followed by Malaysia (39.07%), Qatar (27.14%), Saudi Arabia (19.32%) and the United Arab Emirates (10.65%---see Migration Year Book 2007; and Shrestha 2008). There was a huge shift in the destination for Nepalese migrants from 1995/96 to 2003/04, with a decrease in the share of internal migration as well as migration to India and a corresponding increase in the share of overseas migration. Nevertheless, among the international destinations, India has been the major destination for Nepalese labor migrants since the signing of Peace and Friendship Treaty between India and Nepal in July 1950 (Shrestha 2004). Given the low costs of migrating due to open borders and free movement, along with common culture and proximity, Nepalese migrants in India are estimated to be one million by some and even as high as three million by others, although the current population census states that less than 600,000 Nepalese reside in India (Graner et al. 2004).

After India, the Gulf region has emerged as a major destination since the mid 1990s; and many Nepalese from urban areas and relatively wealthy backgrounds are increasingly migrating to the United States, Australia, Canada, and nations in the European Union. Nevertheless, there is an absence of reliable figures on Nepalese migrants overseas as Government data and Census reports seem to grossly underestimate the actual figures compared to the numbers suggested by research studies (Migration Year Book 2007).

Source of Data

Internal and especially international migration from Nepal have been little studied over the years, and despite recent changes we generally lack baseline statistical analyses for earlier periods. In order to remedy this situation we make use of unusually rich and detailed data from a 1996 survey of individuals, households, and neighborhoods conducted in Nepal's Chitwan Valley, which is located in the south-central part of the country. The Chitwan District, one of 75 local districts, falls in the Narayani Zone, one of 14 national zones in Nepal. Until the early 1950s, the Valley was covered by dense forest and inhabited by wild animals such as the one-horned rhinoceros and the Bengal tiger. In the mid 1950s, however, the Nepalese government, with aid from the United States, cleared the forest to make land available for settlers, leaving intact one third of the original terrain as the Chitwan National Park. The favorable climate, flat terrain, and fertile soil made the Valley very attractive to residents of nearby hills and mountains, who migrated to the newly cleared area in large numbers in search of land and opportunity.

Despite its clearing, however, the Valley remained isolated and undeveloped until the late 1970s when Narayanghat, Chitwan's largest town, was connected by road to the eastern portion of Nepal's East-West highway, and through it to cities elsewhere in the country and to India. This transportation advance was followed by the construction of other roads linking Narayanghat to the western portion of the East-West highway and to the capital city of Kathmandu (Shivakoti et al. 1999). In the wake of all this highway construction, Narayanghat became a transportation hub for the entire country and began to attract government services, business investments, and jobs. The effects of this development were felt throughout the Chitwan Valley, with the degree of influence generally falling with distance from Narayanghat. Over time regular bus service arose to connect the Valley residents to schools, police stations, health centers, employment, and other public and private resources.

Chitwan thus offers a unique opportunity for studying the real-time migratory response to ongoing development during a period of rapid economic change. The Chitwan Valley

Family Study (CVFS) used a combination of ethnographic and survey methods to construct a detailed multi-level database on social, economic, and demographic processes. To construct the sample, the western Chitwan Valley was divided into a set of mutually exclusive neighborhoods of 5-15 households each and 171 neighborhoods were selected on an equal probability basis using a multi-stage cluster design (Barber et al. 1997). The 171 neighborhoods contained 1,773 households and 5,271 individuals between the ages of 15 and 59, surveyed with a response rate of 98%. Life history calendars were compiled to yield accurate annual data on place of residence, military service, schooling, age, ethnicity, employment, and marital status. The individual life histories were paired with corresponding neighborhood histories and matched to baseline data for 1996, thereby creating a longitudinal data file that connects individual migratory behavior to fixed and time-varying variables defined at the individual, household, and neighborhood levels.

We used these data to construct a series of person-year files that followed respondents from age 16, or the end of schooling, whichever was greater, up to the point of migration or the survey date, whichever came first. The person-year files used in the analyses capture the period from 1955 to 1996 for initial migration and from 1956 to 1996 for repeat migration. Since the analyses used independent variables defined in year t to predict mobility in year $t+1$, 1954 and 1955 observations were excluded from the sample for initial and repeat migration respectively.

These person-year files were then used to estimate a series of multinomial logit models that predicted the probability of migration to one of three mutually exclusive locations: other locations within Chitwan, other districts within Nepal, and outside of Nepal. The first model followed respondents from age 16 or the end of schooling, whichever was greater, up to the date of the first trip or the survey date and used variables defined in year t to predict mobility in year $t+1$. The second model followed migrants from the year after they return from their first trip to the date of the survey or second trip and again used data for year t to predict the probability of taking an additional trip to the same three destinations in year $t+1$, controlling for characteristics of the prior trip.

One caveat in these analyses arises because the person-year files only include data on respondents who were present at the time of the survey. However, data were gathered from all the households in selected neighborhoods even if one or more members of some households were away during the time of the survey. The missing member of the household was simply reported as having migrated. Thus we have accurate and complete data unless the entire household left Chitwan. According to the household survey data, about 29% of the 1,773 surveyed households reported at least one member away from the household during the previous 6 months --- 6.5% to locations within Chitwan, 10.8% to other districts within Nepal, and 10.7% outside Nepal. Similarly, 3.2% of households reported two or more members away from the household --- 0.7% within Chitwan, 1.5% to other districts within Nepal, and 1.0% outside Nepal. A negligible 0.5% of households reported three or more members being away at the time of the survey.

Although our analyses are based on relatively old datasets, they are extremely rich and have not been studied with respect to migration. Thus, they not only allow us to test a variety of theories about migration but also enable us to establish a baseline for future studies on migration within and from Nepal. It will be interesting, for example, to extend this analysis to test the significance of the different theories of migration as they relate to migration from Chitwan within the last decade, which has been marked by significant changes in the economic structure and political situation of Nepal, and by aggregate shifts in patterns of international and internal migration.

Predictors of Migration

Measures of migration used in the analyses are defined in the top panel of Table 1. For any respondent, if residence in years t and $t+1$ were within the same neighborhood in Chitwan, the outcome was coded as 0. If residence in year $t+1$ was in a different neighborhood within Chitwan, the outcome was coded as 1, indicating a local move; if it was outside of Chitwan but within Nepal it was coded as 2, indicating internal migration; if it was located outside of Nepal, it was coded 3, indicating an international move. We repeated this coding separately for first and second trips. Although international migration is a heterogeneous category including trips to India, the Gulf, East Asia, Oceania, Europe, and the Americas, in our period of observation external migration was overwhelmingly dominated by moves to India and the number going to other locations is insufficient to sustain separate analysis.

In order to study the processes of migration to contrasting destinations, we carefully selected variables corresponding to six conceptual categories derived from leading theoretical models, as shown in the lower panels of Table 1. Of course, the availability of theoretically relevant indicators was constrained by the data at hand. The leading economic models of migration are those of neoclassical economics and the new economics of labor migration (Massey et al. 1998). According to the former, internal and international migration both stem from geographic differences in labor supply and demand, which yield wage differentials that are hypothesized to promote population mobility. Workers choose to migrate between locations where the expected returns exceed the expected costs of movement. Migrants generally maximize utility by moving to wherever the expected gains from their labor are greatest (Todaro and Maruszko 1987). In the context of Nepal, Shrestha (2004,2008) claims the major factors responsible for out-migration from Nepal are increasing unemployment due to a growing labor force with limited employment opportunities outside agriculture; and low salary structure in the economy. Thus migration to both internal as well as to foreign locations is possibly motivated by lack of employment and difference in wages.

Within Nepal, there is considerable variation in prevailing wages across regions as well as between the agricultural and non-agricultural sector (Graner 2001). Migration to foreign locations including India often guarantees a higher wage but not without costs. Nepalese labor migrants abroad are often exploited and underpaid by foreign companies who as posited by Bolaria (1997) use these migrants as a source of cheap and vulnerable labor to lower their overall production costs. Our data on migration allows us to differentiate between local, other districts, and foreign migration, but does not contain information on specific destinations of migration. Thus we are unable to generate data on wages at international or internal destinations, which makes it impossible to measure wage differentials between origin and destination directly. We must therefore rely on personal characteristics that are known to affect wages. In migrating from low to high-wage areas, workers are hypothesized to maximize the returns to human capital (Sjaastad 1962), suggesting a direct connection between measures of education, occupational skill, and experience and the relative probability of out-migration.

The CVFS includes three measures that we group together under the rubric of human capital: education, occupational skill, and prior military service. Education is measured as years of schooling completed, which is top coded at 18 years for those with a Ph.D. Occupational skill is measured by dummy variables indicating whether a person holds a salary or a wage job (versus no job). A salaried job implies a higher skill level than a wage job. Wage jobs include those in both the agricultural and non-agricultural sectors. Wage jobs in the non-agricultural sector usually involve daily wage labor arrangements similar to day laborers in the US. However, wage jobs in agriculture can be considered slightly more stable

although often seasonal. Another dummy variable indicates whether the migrant had served in the armed forces by 1996, which suggests prior mobility in the military. Education and military service are measured as fixed effects whereas the indicators of occupational skill are time-varying.

Although we include it in the category of demographic variables, age necessarily captures labor force experience and thus also serves as a proxy for human capital. In addition to this time-varying variable, we also included its square. In general, the returns to age and experience are expected to rise steeply early on and then decline as they accumulate, yielding a curvilinear effect that is widely observed in studies of migration. Since Nepal is a patriarchal society in which males and females are assigned different social and economic roles, we include an indicator of gender as well. Finally, although the data do not allow us to identify the reason for migration, we introduce a control that captures marital status of respondents in order to control for the effect of marriage on migration mainly because in Nepalese society, women after marriage migrate to their husband's house from their parents' house.

In contrast to the neoclassical view, the new economics of labor migration claims that migration is driven by imperfect markets for capital, futures and insurance instead of geographic differences in wages (Stark 1991). Households act collectively, sending out migrants to minimize risks, accumulate capital, and overcome credit constraints. In the absence of insurance markets or government protections, households allocate workers to different labor markets to diversify risks to income; and in the absence of markets for capital and credit, they send out workers to high wage areas to generate savings or dependable remittance flows to enable investment and consumption.

The propensity to migrate is also affected by a household's physical capital. According to conventional economic theory, having assets helps to mitigate the costs of migration and thus raises the probability of out-migration (Massey et al. 1998). Access to a business enterprise, for example, offers a means of financing a trip by providing income and a source of collateral for loans, thus increasing the probability of movement. The new economic model, however, argues that households move to self-finance the acquisition of assets, so that ownership of a business reduces the probability of departure (see Massey and Espinosa, 1997). We measure ownership of two kinds of businesses—one operated from within the home and the other operated from outside the home. Businesses operated from outside the home are generally expected to be larger and better capitalized. Although variables such as assets owned, livestock owned, land ownership, home ownership and quality of home would have been good measures of household physical capital, data on these variables are available only for 1996 and thus we do not include them.

If migrants are motivated by geographic differences in expected wages, then more developed communities with better infrastructure and facilities should provide an economically more attractive environment that will deter people from leaving. If migrants are motivated by incomplete or missing markets, in contrast, development as could be an inducement to migration—the more opportunity there is locally, the greater the demand for capital and credit, causing households to send out workers to other labor markets to generate savings or remittances to finance production and consumption. We assess the level of development using two time-varying measures. The first one indicates whether or not electricity was available in the neighborhood during the person year in question and the other captures the average travel time to the nearest clinic, bus stop, school, market, bank, police station, and employment. As the Valley has developed, travel times to access these services have steadily fallen.

Finally, the leading sociological approach to the study of migration is that of social capital theory (Massey et al. 1998). The term was coined by the economist Glenn Loury (1977) and expanded by Bourdieu (1986) to refer to resources available to people as a result of their membership in social networks and organizations. A social tie to a current or former migrant constitutes a potential source of social capital because someone with migratory experience can provide information, resources, and assistance to lower the costs of movement. Migrant networks connect non-migrants in places of origin to current migrants at places of destination and former migrants in home communities, thereby reducing the costs and increasing the expected benefits of migration to make departure more likely (Massey 1991).

In our analysis, we measure social capital at two levels. At the individual level, two dummy variables indicate whether or not a respondent's mother and father had ever traveled outside Nepal before the respondent was 12 years of age, yielding a measure of person-specific social capital that equals 1 if the parent had migrated internationally and 0 otherwise. Since movement abroad is generally costlier and riskier than movement within Nepal (Poveda 2007), we expect ties to international migrants to be particularly important in predicting movement outside the country. Unfortunately, the CVFS lacks the information to define corresponding indicators of prior parental migration within Chitwan or elsewhere in Nepal. At the neighborhood level, however, we are able to derive three measures of general social capital relevant to each kind of trip.

Following Massey, Goldring, and Durand (1994) we divide the number of neighborhood residents who ever migrated within Chitwan, within Nepal, and outside of Nepal in person-year t by the number of people aged 16+ in that same year. These indices measure social capital that is "general" in the sense that it is potentially accessible to all neighborhood residents and not accessible only to people with a personal tie to a migrant. We expect that the greater the prevalence of migratory experience in a neighborhood, the higher the likelihood of out-migration. We also expect that the effects of general social capital will be destination-specific, so that international prevalence predicts international migration more strongly than migration within Chitwan or elsewhere in Nepal.

The creation of social capital over time has been shown to yield a process of cumulative causation (Massey and Zenteno 2000). When someone decides to migrate by drawing upon the social capital at their disposal, it increases the amount of social capital accessible to other people in the place of origin, which further raises the probability that these people migrate, in turn prompting them to migrate to yield more social capital, and so on. In this way, migration becomes self-perpetuating over time, with each move creating additional social capital to promote even more migration.

Migration also perpetuates itself over time through a self-reinforcing process of migration-specific human capital accumulation (Massey and Espinosa 1997). Once people move to a new destination and return, they are not the same as when they first left: they now have valuable experience and skills at the point of destination. Labor market experience yields higher wages; housing market experience yields greater efficiency in finding lodging; and living experience yields knowledge about how to navigate the local social setting, making an additional trip more rewarding, less costly, and thus more likely. Therefore, we would expect migration-specific human capital to be the strongest predictors of repeat migration. We measure migration-specific human capital by defining fixed indicators of whether an individual's first trip was within Chitwan, elsewhere in Nepal, or outside of Nepal, again hypothesizing strong destination-specific effects. Thus we expect a first trip within Chitwan most strongly predicts a trip within Chitwan, a first trip to other districts outside Chitwan most strongly predicts a trip to other districts, and a first trip abroad most strongly predicts a trip outside the country.

In general, we expect to observe a trade-off in migration-specific human capital and social capital as the number of trips increases. Whereas first-time migrants are critically dependent on social capital to increase rewards and lower costs, experienced migrants can rely on their own knowledge, skills, and experience to advance their interests at the destination. As a result, migration-specific human capital tends to act as a substitute for social capital on subsequent trips. Furthermore, once indicators of migration-specific human capital are introduced, we would also expect other variables that were significant in determining first trip to become less important in explaining repeat migration.

In estimating the influence of the foregoing factors on the likelihood of out-migration to different destinations, we hold constant the effect of ethnicity. Prior work using the CVFS has revealed significant ethnic differences in decision-making with respect to demographic outcomes (Axinn and Barber 2001; Ghimire et al. 2006; Pearce 2000; Thapa 1989, 1997; Yabiku 2006) and for this reason we control for ethnicity by including a set of dummy variables corresponding to five broad categories that have been shown to reflect meaningful distinctions in Nepalese society: high caste Hindus, low caste Hindus, Hill Tibeto-Burmese, Newar and other, with the Terai Tibeto-Burmese serving as the reference category (Axinn & Yabiku 2001; Blaikie et al. 1980). The latter are the local indigenous people of the Chitwan Valley, and if prior migratory experience yields migration-related human and social capital, then the other groups are more likely to possess these resources than the Terai Tibeto-Burmese.

Descriptive Statistics

Table 2 presents means, standard deviations, and ranges for the foregoing variables, computed separately for person years leading up to the first trip and for person years between the first and second trip. In terms of human capital, education and skill levels are generally quite low. In the average person year before either the first or second trip, respondents averaged only 2.0-2.4 years of schooling; only 6%-7% reported holding a salaried job; just 3%-4% reported prior service in the military; while 31 to 39 percent reported holding a wage job which is usually a low-skilled position. In terms of physical capital, very few reported owning any kind of business, either within or outside of the home—just 5%-7% in the case of the former and only 1% in the latter. Likewise, in the typical person year only 18%-19% had access to electricity and the average travel time to services was 0.79 hours (47 minutes) before the first trip and 0.63 hours (38 minutes) before the second trip, on a scale from 0.024 hours (1.4 minutes) to 18.64 hours (1118 minutes).

Although residents of Chitwan may be relatively impoverished with respect to human and physical capital, they have comparatively greater access to social capital. In the average person year leading up to the first trip, the average respondent lived in a neighborhood where 28% had migrated within Chitwan, 10.5% had migrated elsewhere in Nepal, and 7% had migrated outside Nepal. At the same time, 29% reported having a father with international migratory experience, and 9% had a mother who had been abroad before respondents were 12 years old. In the years leading up to the second trip, the average person lived in a neighborhood where 41.4% had migrated within Chitwan, 13% had migrated elsewhere in Nepal, and 8.5% had moved internationally. Likewise, 28% reported having a father with international experience compared to 9% having emigrant mothers. Among those respondents who reported a first trip, 79% moved within Chitwan, 12% moved elsewhere in Nepal, and 9.2% moved internationally.

In the years leading up to the first trip, the average person was around 29.4 years old and about half were female, compared with an average age of around 33.2 before the second trip, with around 58% being female. Up to the first trip, an extremely high proportion i.e. 84

percent of respondents were married at least once, and in years up to the second trip an even higher, 96 percent were married at least once. In keeping with the rough composition of the Valley, in person years leading up to the first trip the largest share of respondents were upper caste Hindus (44.4%), followed by Terai Tibeto-Burmese -- the original inhabitants of the Valley (20.9%), Hill Tibeto-Burmese (15.8%), Lower Caste Hindus (11.5%), and Newar and other caste (7.5%). Thus most residents of Chitwan either migrated in from outside the Valley or are descendent from someone who did. In person years leading up to the second trip, however, the percentage of upper caste Hindus drops (from 44.4% to 38.4%), and Newar and other caste drops (from 7.5% to 5.8%) while the percentage of Terai Tibeto-Burmese goes up (from 20.9% to 24.2%) along with the percentage of Hill Tibeto-Burmese (from 15.8% to 19.1%) and Hindu lower caste (from 11.5% to 12.5%). The change in these proportions reflects the selective entry of different ethnic groups into population mobility.

Departure on A First Trip

As discussed above, we analyze the process of first migration by following respondents year-by-year from the time they turn 16 or finish schooling up to the point of their initial migratory trip or the survey date. All person years before age 16 as well as before the completion of schooling (if respondents went to school), along with all person years after the first trip or survey date are excluded, yielding a total of 40,771 person years when respondents have the possibility of taking a first trip. Independent variables include time-varying variables defined in year t as well as those that are fixed at the beginning of the observation period. These are used to predict a dependent variable defined in year $t+1$, which takes on one of four values: no trip taken coded as 0 while a trip taken within Chitwan, to other districts in Nepal, or to other countries are coded as 1, 2 and 3 respectively.

We regressed the outcome variable on the independent variables using multinomial logistic regression to yield a discrete time model predicting movement to one of three mutually exclusive destinations versus staying at home. The results of this exercise are summarized in Table 3. As can be seen, human capital is generally more important in predicting internal and international migration than local migration. Each year of schooling raises the probability of migration within Chitwan by around 51.2% ($e^{0.05} / (1 + e^{0.05}) = .512$) and increases the probability of migration to other districts by around 52.5% ($e^{0.1} / (1 + e^{0.1}) = .525$), whereas education has a less significant effect on the likelihood of taking a first trip outside of Nepal with a marginal effect of only 50.7% ($e^{0.03} / (1 + e^{0.03}) = .507$). Likewise, occupational skill (as measured by holding a salaried job) significantly increases the probability of migration within Chitwan and to other locations in Nepal, but it decreases the probability of international movement. Holding a salaried job raises the probability of migration within Chitwan by 62.3% ($e^{0.504} / (1 + e^{0.504}) = .623$) and to elsewhere in Nepal by 59.1% ($e^{0.369} / (1 + e^{0.369}) = .591$) while lowers the probability of international migration by 23.7% ($(1 - e^{-0.372}) / (2 - e^{-0.372}) = .237$). Those holding less-skilled wage jobs are relatively less likely to migrate to other districts in Nepal or to foreign destinations.

Among indicators of human capital, in addition to education, prior military service predicts mobility outside of the country. The probability of international migration is 77.1% higher for those with military service ($e^{1.214} / (1 + e^{1.214}) = .771$) compared to those without any military service. Likewise, having military service experience increases the likelihood of leaving Chitwan for other districts in Nepal by 84.6% ($e^{1.707} / (1 + e^{1.707}) = .846$), whereas mobility within Chitwan itself is unaffected by military experience. Thus prior service in the armed forces rather dramatically increases the probability of internal migration outside the Valley and international migration outside the country, presumably because ex-soldiers have more experience with geographic mobility given their postings on different bases as soldiers.

Turning to demographic variables, the probability of migration within Chitwan and outside of Nepal are both negatively related to age, whereas the likelihood of movement to other destinations in Nepal does not change significantly as people grow older. In general, as a person gets a year older, the probability of migration within Chitwan and outside of Nepal decreases by around 12.9% $((1 - e^{-0.16}) / (2 - e^{-0.16}) = .129)$ and 13.6% $((1 - e^{-0.172}) / (2 - e^{-0.172}) = .136)$ respectively. In terms of gender, males and females display very different patterns of selectivity into migration depending on destination. Females are significantly more likely than males to migrate within Chitwan, whereas males are more likely to migrate elsewhere in Nepal and much more likely to become international migrants. According to the equation estimates, males have 83.2 percent higher probability than females of leaving Nepal $(e^{1.599} / (1 + e^{1.599}) = .832)$ and are 67.2 percent more likely to leave Chitwan for other districts in Nepal $(e^{0.718} / (1 + e^{0.718}) = .672)$. In contrast, women have 63.5 percent higher probability than men of migrating within the Valley $(e^{0.553} / (1 + e^{0.553}) = .635)$.

Thus women appear to specialize in local mobility whereas men are more involved in long-distance migration regardless of their marital status. According to Lee (1985), sex-selectivity in migration in developing countries depends on the cultural context (Bhandari, 2004). Thus, the lower probability of female migration to far off destinations points to the patriarchal nature of Nepalese society, where females are expected to stay at home and take care of children while males move about to fulfill their role as bread-earners. Furthermore as noted by Graner (2001), the migration of Nepalese women to far-off destinations is discouraged because of concerns for their security such as in 1998, the Nepalese government imposed a ban on migration of women workers to the Gulf region. According to the Migration Year Book (2007), out of 178,072 Nepalais recorded to go overseas for foreign employment, only 627 were females in 2006.

Consistent with expectations derived from the New Economics of Labor Migration, ownership of a business generally reduces the probability of out-migration, though the effect is confined to ownership of a home-based business and only operates on trips outside of the Valley, either within Nepal or to a foreign country. Ownership of a home-based business lowers the probability of migrating elsewhere in Nepal by 34.6 percent $((1 - e^{-0.751}) / (2 - e^{-0.751}) = .346)$ and outside of Nepal by 38 percent $((1 - e^{-0.958}) / (2 - e^{-0.958}) = 0.38)$. Thus, business owners are less likely to migrate either internally or internationally because they do not need to earn funds to capitalize a business, which they already possess.

Neighborhood economic development has no apparent effect on the relative likelihood of mobility within the Chitwan Valley, but seems to have opposite effects on internal and international migration outside the Valley. Consistent with neoclassical precepts, access to electricity within a neighborhood (indicating greater development) reduces the probability of leaving for another district in Nepal by around 21% $((1 - e^{-0.31}) / (2 - e^{-0.31}) = .21)$. In contrast, each additional hour of travel time to services (indicating less development) reduces the probability of migrating outside Nepal by 26% $((1 - e^{-0.432}) / (2 - e^{-0.432}) = .26)$. Put another way, every hour of reduction in travel times achieved through development increases the probability of international migration by 26 percent, consistent with expectations from the New Economics of Labor Migration (see Massey and Espinosa 1997; Lindstrom et al. 2001).

Our indicators of general social capital significantly predict mobility within the Chitwan Valley. Each percentage point increase in the prevalence of within-Chitwan migration yields a 50.2% increase in the probability of moving within Chitwan $(e^{0.007} / (1 + e^{0.007}) = .502)$. In terms of local mobility, however, the effects of general social capital are not place specific. Each percentage increase in the prevalence of international migration raises the probability of movement within Chitwan by exactly the same amount, 50.2%, and the effect

of prevalence of migration to other districts is also around 50.2% ($e^{0.009} / (1+e^{0.009}) = .502$).

We do find destination-specific effects of general social capital on movement to destinations outside the Chitwan Valley, however. In general, coming from a neighborhood with a high frequency of migrants to other districts in Nepal increases the probability of such other district migration in Nepal by 50.5% ($e^{.022} / (1+e^{.022}) = .505$) for each percentage point increase in neighborhood prevalence of other district migrants. A high neighborhood prevalence of within Chitwan migrants or international migrants however, has no significant effect on the probability of migration to other districts. Similarly, coming from a neighborhood with a high frequency of international migrants raises the probability of foreign migration by 51.1 percent ($e^{.045} / (1+e^{.045}) = .511$) for each percentage point increase in neighborhood prevalence of international migrants. A high neighborhood prevalence of within Chitwan migrants or migrants to other districts however, has no significant effect on the probability of migration to foreign destinations. The local prevalence of within Chitwan migrants is not significantly related to either internal or international migration.

We also observe clear patterns of migrant selectivity with respect to ethnicity. Compared with respondents who are Terai Tibeto-Burmese, the Valley's original inhabitants, both upper caste Hindus and the Newars are significantly less likely to migrate within the Chitwan Valley. Both upper and lower caste Hindus however, are more likely to migrate to other districts in Nepal such that they have 58.6 percent and 71 percent higher probability of migrating to other districts respectively in comparison to the original inhabitants of the Valley. Similarly, all groups except Newar and others are more likely than the Terai Tibeto-Burmese to migrate internationally, with lower caste Hindus displaying the greatest propensity for movement outside of Nepal, followed by the Hill Tibeto-Burmese and then upper caste Hindus. In quantitative terms, compared with the Terai Tibeto-Burmese, the probability of taking an international trip is 75.7% higher for lower caste Hindus ($e^{1.138} / (1+e^{1.138}) = .757$), around 67 percent greater for both upper caste Hindus ($e^{0.688} / (1+e^{0.688}) = .666$) and the Hill Tibeto-Burmese ($e^{0.745} / (1+e^{0.745}) = .678$). It is also worth noting that in Nepal, the Hill Tibeto-Burmese people in general have a long history of working for the British and Indian Armies, which might give them greater international exposure and help to establish a culture of international migration within this ethnic group (Yamanaka, 2000).

Departure on second Trip

Table 4 continues our analysis by considering the process of repeat migration—the taking of an additional trip after the first. Here we follow people year-by-year from the point of return from the initial trip and predict the probability of departure on a second trip to one of the three mutually exclusive destinations. All person years before the respondent is back from their first trip and after the second trip or the survey date are excluded from our analysis. Similarly, all time spent abroad or in another district in Nepal is excluded from the analysis, resulting in a total of 15,351 person years. During each year, if the respondent does not migrate for a second time, the outcome variable is coded as 0. If the respondent migrates within Chitwan, to other districts, or to other countries, the outcome variable is coded as 1, 2 and 3 respectively. As before, independent variables are measured either as fixed effects or as time varying effects in year t and the outcome variable is measured in year $t+1$, with the equation estimated as a multinomial logistic regression.

In general, variables that explain initial migration are also expected to explain repeat migration. As noted earlier, however, once respondents migrate they accumulate migration-

specific human capital, which they can use themselves to facilitate subsequent trips (Massey et al. 1994). Our analysis therefore controls for whether the first trip was taken outside of Chitwan but within Nepal or outside the country entirely, which we take as indicators of migration-specific human capital linked to other districts and countries. Initial migration within Chitwan serves as the reference category.

With one exception, these two indicators are highly significant in predicting additional trips. Having left Chitwan once earlier, those with prior experience in other districts or countries are much more likely to move again -- either within Chitwan, to other destinations in Nepal, or to locations outside Nepal compared to those who have simply only migrated within Chitwan. Earlier migration outside the Valley predicts later mobility within Chitwan equally well whether the initial move was within Nepal or to another country. Compared to having a prior local experience, having prior experience in other districts raises the probability of migrating within Chitwan by 67.6 percent ($e^{0.735} / (1 + e^{0.735}) = .676$) whereas having prior experience in another country raises the probability by around 71 percent ($e^{0.906} / (1 + e^{0.906}) = .712$).

Once we consider second trips outside of Chitwan, however, we begin to observe the hypothesized location-specific effects. First, having prior experience in other districts around the country markedly raises the probability of taking a second trip elsewhere in Nepal by 63.4 percent ($e^{0.551} / (1 + e^{0.551}) = .634$), but having prior experience in other countries has no statistically significant effect on the probability of taking a second trip to other districts in Nepal. Likewise, having international experience on one's first trip raises the probability of taking a second trip outside Nepal, such that a first international trip essentially raises the probability of taking a second foreign trip by 75 percent ($e^{1.102} / (1 + e^{1.102}) = .751$) but a previous trip to other districts only raises the probability of a second international trip by 66.1% ($e^{0.666} / (1 + e^{0.666}) = .661$). In determining the destination of second trip, therefore, the location of the first trip is a key factor. Having traveled to a particular destination earlier yields capital that is specific to that location.

As expected, in the presence of migration-specific human capital, the importance of social capital generally declines in determining the second trip, with one notable exception. Whereas the relative prevalence of local, internal, and international migration in one's neighborhood were each significant in predicting the probability of a first trip within Chitwan, only prevalence of migration to other districts had a significant effect on probability of taking a second trip within the Valley. Likewise, although the prevalence of international migration is significant in predicting the likelihood of both first and second trips out of the country, the effect is weaker for the latter. Thus, each point increase in the prevalence of international migration raised the probability of a first trip out of the country by roughly 51.1% ($e^{0.045} / (1 + e^{0.045}) = .511$) but increased the probability of a second international trip by 50.87% ($e^{0.035} / (1 + e^{0.035}) = .5087$). Finally, the significant destination-specific effects of prevalence of migrants to other districts in the prior model persist for repeat migration.

The one exception to the declining significance of social capital between first and second trips is the importance of having a tie to a father with international experience, which had no significant effect in predicting a first trip out of the country but a rather strong effect in raising the probability of a second international trip by 66 percent ($e^{0.661} / (1 + e^{0.661}) = .66$). Aside from this effect of individual social capital in predicting a second international trip, indicators of general social capital generally were less important in determining second as opposed to first trips, whatever the destination, illustrating the tradeoff between social capital and migration-specific human capital as number of trips increases.

Similarly, other changes in the determination of second versus first trip have to do with neighborhood characteristics, physical capital, and gender and ethnicity. Access to electricity continues to reduce the probability of taking a second trip to another district, but now unlike before average travel time to services has no effect on the likelihood of migration to other countries. Once again, ownership of a home-based business reduces the probability of repeat migration to other districts but no longer has a significant effect on mobility outside Nepal.

As before, women are much less likely to take a second trip outside the Valley compared to men, whether to other districts in Nepal or to a foreign destination. However, the effect of gender on the probability of within-Chitwan mobility is reversed between first and second trip. Whereas women were more likely than men to take a first trip within the Valley, they were much less likely to take a second such trip, irrespective of their marital status. This once again confirms the patriarchal nature of Nepalese society.

Patterns of ethnic selectivity also shift somewhat between first and second trips. Those least likely to take a first trip within Chitwan were upper caste Hindus and Newars and others, compared with the Terai Tibeto-Burmese; but on second trips within the Valley ethnicity does not have any significant effect. Likewise, whereas upper caste and lower caste Hindus were more likely than the original inhabitants to take a first trip to another district in Nepal, the lower caste Hindus and the Newars were more likely to migrate to other districts on a second trip. Finally, only upper caste Hindus and Hill Tibeto-Burmese people display an elevated likelihood of migrating internationally on a second trip, whereas on the first trips all groups except the Newars had higher probability of migration compared to the original inhabitants of Chitwan. The strong significant effect of belonging to the Hill Tibeto-Burmese caste on decision to migrate for the first as well as the second time further provides the evidence of the established culture of international migration within the Hill Tibeto-Burmese group as mentioned earlier.

Other factors in the model generally retain their importance in predicting patterns of movement on second trips. As with first trips, education and occupational skill (holding a salaried job) are significant in promoting migration within Chitwan and to other districts in Nepal, but not to international destinations, whereas holding a lower skill wage job is associated with a lower likelihood of leaving Chitwan for other destinations; and once again service in the military is associated with much greater probability of moving both internally outside of Chitwan and internationally outside of Nepal. As before, migration to all three destinations is negatively influenced by age, and if anything the effects have grown somewhat stronger.

Summary and Conclusion

In this analysis we used data from the Chitwan Valley Family Study to estimate retrospective discrete time event history models predicting migration to three mutually-exclusive destinations on first and second trips. Independent variables were either fixed at the beginning of the observation period (education, gender, etc) or time varying in year t (age, neighborhood characteristics, etc.) and deployed to predict migratory outcomes in year $t+1$. Our statistical models were specified from hypotheses derived from neoclassical economics, the new economics of labor migration, social capital theory, and cumulative causation theory, with controls for demographic background and ethnicity. Our analyses yielded support for all four theoretical frameworks.

Consistent with expectations derived from neoclassical economics, migration was strongly related to indicators of human capital. Like other researchers (e.g. Taylor 1987; Massey and

Espinosa 1997), we find that education and occupational skill increase the probability of migration within the country but are unrelated or negatively related to migration out of the country. As in Mexico and other locales, residents of Chitwan appear to be more able to convert their skills and education into greater earnings by moving internally within Chitwan or to another district in Nepal than by moving internationally, a pattern that holds for both first and second trip. At the same time, lower occupational skill, as indicated by holding a wage rather than a salaried job, was clearly associated with a reduced likelihood of leaving the Valley on either a first or a second trip, whether the respondent departed to another district or another country.

Among indicators of human capital, only prior military experience positively predicted international movement, along with movement to other districts in Nepal but not within the Valley itself, a pattern that again held for both first and second trips although the effect was weaker for the latter. Such a pattern is to be expected given a long-standing tradition of foreign military service by the Gorkhas in Nepal and the obvious gain in migratory experience during the course of diverse postings within the country if serving in the Nepal Army. Also, to the extent that age captures experience it constitutes a measure of human capital and many studies in the past have found a curvilinear effect, with the probability of migration rising and then falling as individuals get older. The effect here was mostly negative, with the likelihood of taking a trip to any destination generally declining as age advanced, though in most cases at a decelerating rate. This negative effect may reflect the fact that we begin our life histories only after all schooling has been completed or once respondents reach 16 years, whichever is greater, thus beginning the period of observation at somewhat older ages. Finally, as posited by the neoclassical theory that people from more developed communities with better infrastructure are less likely to migrate, the probabilities of taking both first and second trips to other districts within Nepal were reduced by access to electricity, one of the development indicators.

However, at the same time consistent with precepts derived from the new economics of labor migration, which views development as an inducement to migration and that the motivation for international migration is overcoming market failures; we found that the probability of a first international trip was increased by economic development as indicated by a reduction in travel time to access urban services. Also in keeping with the new economics of labor migration, the probability of departure from Chitwan on a first or second trip to both internal and international destinations were consistently lowered by the ownership of a home-based business, although the effect for a second international trip was not statistically significant. Rather than providing assets to finance trips as suggested by the neoclassical view, business ownership appears to indicate the lack of a major motivation for leaving the Valley in order to finance business acquisition through temporary migration in the absence of accessible capital markets.

Finally, like most other studies we found strong support for social capital theory. As predicted, indicators of general social capital had strong effects in promoting individual mobility; the effects were generally greater on first than on second trips; and the effects were relatively location specific. Thus, being around neighbors with international experience strongly increased the probability of leaving for a foreign destination on a first or second trip, but had no effect or a lesser effect on the probability of migrating within Chitwan or to another district in Nepal. Likewise, being around neighbors with migratory experience to other districts in Nepal raised the probability of migrating to other locations in Nepal but had insignificant or reduced effects on the probability of migrating locally or internationally. Similarly, having neighbors with local migratory experience increased the probability of migrating locally only on a first trip but had no significant influence on migration to local destination in the second trip or any other destinations in both the trips.

As suggested by the theory of cumulative causation, in predicting second trips, the strongest predictor was the location of the first trip, generally confirming the place-specific nature of migration-specific human capital as we originally hypothesized. Compared to people who migrated locally, people who migrated internationally the first time were much more likely to migrate internationally again, although those who migrated to another district in Nepal initially were almost equally likely to migrate to all three destinations the second time. Once these strong effects were taken into account on second trips, the relative influence of general social capital declined compared with first trips, confirming the hypothesized tradeoff between human and social capital related to migration. Similarly, as predicted earlier, we observe a decline in the importance of variables such as neighborhood development indicator, physical capital variable (home business), and education, one of the indicators of human capital, which were all significant predictors of an initial trip to foreign locations but no longer remain significant in determining repeat international migration. Finally, many of the indicators of ethnicity which had significant influence on decisions to migrate for the first time become insignificant in determining repeat trips to all three locations.

Our findings also suggest the relevance of gender in predicting both first and second trips, with the effect of female status being what one might expect in a patriarchal society that defines a woman's domain as the family and household and the man's domain as work and earning. Thus the probability of migration are decisively lower for females in all but one instance, and in general the costlier and riskier the potential trip, the greater the negative effect. The negative effect of being female on the probability of out-migration is greater when the trip is international rather than internal. The one exception is migration on a first trip within the Chitwan Valley, where women have an advantage over men. Although the fact that women have a higher probability of making a first trip within Chitwan than men might reflect a pattern of patrilocal marriage mobility -- the custom that women move to join the husband's family upon marriage, our analysis controls for marital status and thus this explanation alone is not sufficient.

Furthermore, among the demographic variables, the effect of ethnicity on migration to other districts and other countries shows a pattern supporting our hypothesis that people belonging to ethnic groups with previous migratory experience are more likely to migrate than the indigenous people of the Valley.

In sum, our comprehensive analysis of population mobility in Nepal offers results that are consistent with the leading theories of international migration. In terms of human capital effects as well as economic development, results are consistent with neoclassical precepts. In terms of physical capital and economic development (in the case of international migration), results are consistent with the new economics of labor migration; and as always, we find strong effects of social capital and migration-specific human capital, confirming not only the social capital theory, but suggesting broader processes of cumulative causation, most notably with respect to international migration. Our results underscore the need for a synthetic theoretical model of migration that incorporates factors operating at the individual, household, and community levels.

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TABLE 1
Definition of Variables

Variable	Definition
<u>Outcome Variables</u>	
Migration	Whether respondent migrates for the first time to three locations in year t+1: within Chitwan=1, to other districts=2, to other countries=3, and 0 if doesn't migrate at all in year t+1
Repeat migration	Whether respondent migrates for the second time to three locations in year t+1: within Chitwan=1, to other districts=2, to other countries=3, and 0 if doesn't migrate at all in year t+1
<u>Physical Capital</u>	
Home business	1 if respondent has an in-home business, 0 otherwise, yearly event
Outside business	1 if respondent has business outside the home, 0 otherwise, yearly event
<u>Social Capital</u>	
Mother traveled internationally	1 if mother ever traveled outside Nepal before the respondent was age 12, 0 otherwise
Father traveled internationally	1 if father ever traveled outside Nepal before the respondent was age 12, 0 otherwise
Neighborhood prevalence ratio for within Chitwan migrants	Percentage of within Chitwan migrants in neighborhood given by the number of 16 or older people who had ever migrated within Chitwan by year t divided by the number of people aged 16 or older in year t, yearly event
Neighborhood prevalence ratio for migrants to other districts	Percentage of migrants to other districts in neighborhood given by the number of 16 or older people who had ever migrated to other districts by year t divided by the number of people aged 16 or older in year t, yearly event
Neighborhood prevalence ratio for international migrants	Percentage of international migrants in neighborhood given by the number of 16 or older people who had ever migrated internationally by year t divided by the number of people aged 16 or older in year t, yearly event
<u>Human Capital</u>	
Education	Number of years of schooling completed by the respondent before migrating
Salary job	1 if salaried job, 0 otherwise, yearly event
Wage job	1 if wage labor job, 0 otherwise, yearly event
Served in the military	1 if respondent ever served in the military as reported in the survey in 1996, 0 otherwise
<u>Migration-specific Human Capital</u>	
First migration within Chitwan	1 if respondent's first migration was within Chitwan, 0 otherwise
First migration to other districts	1 if respondent's first migration was to other districts outside Chitwan, 0 otherwise
First migration to other countries	1 if respondent's first migration was to other countries, 0 otherwise
<u>Neighborhood Characteristics</u>	
Electricity	1 if electricity was available in the neighborhood, 0 otherwise, yearly event
Indicator of neighborhood development	Average hours on foot to nearest resources such as health care, bus service, school, market, bank, employment and police station, yearly event
<u>Demographic Variables</u>	
Age	Respondent's age, yearly event
Age ²	Respondent's age square, yearly event
Gender	1 if respondent is a female, 0 otherwise
Marriage	1 if respondent was ever married, 0 otherwise, yearly event
<u>Ethnicity</u>	
Hindu upper caste	1 if hindu upper caste, 0 otherwise
Hindu lower caste	1 if hindu lower caste, 0 otherwise
Hill Tibetoburmese	1 if hill tibetoburmese caste, 0 otherwise

Variable	Definition
Newar and other	1 if newar or other caste, 0 otherwise
Terai Tibetoburmese	1 if terai tibetoburmese caste, 0 otherwise

TABLE 2

	Person-Years Up To First Migration			Person-Years Up To Second Migration		
	Mean	SD	Max	Mean	SD	Max
Outcome Variables						
Migration	0.080	0.386	0	3	-	-
Repeat migration	-	-	-	-	0.312	0
Physical Capital						
Home business	0.048	0.213	0	1	0.065	0
Outside business	0.012	0.108	0	1	0.013	0
Social Capital						
Mother traveled internationally	0.090	0.287	0	1	0.090	0
Father traveled internationally	0.292	0.455	0	1	0.278	0
Neighborhood prevalence ratio for within Chitwan migrants	28.051	19.296	0	100	41.395	0
Neighborhood prevalence ratio for migrants to other districts	10.500	9.804	0	100	12.794	0
Neighborhood prevalence ratio for international migrants	6.866	8.146	0	66.667	8.540	0
Human Capital						
Education	2.363	3.746	0	16	2.031	0
Salary job	0.059	0.236	0	1	0.071	0
Wage job	0.314	0.464	0	1	0.386	0
Served in the military	0.036	0.185	0	1	0.034	0
Migration-specific Human Capital						
First migration within Chitwan	-	-	-	-	0.789	0
First migration to other districts	-	-	-	-	0.118	0
First migration to other countries	-	-	-	-	0.092	0
Neighborhood Characteristics						
Electricity	0.175	0.380	0	1	0.189	0
Indicator of neighborhood development	0.791	1.118	0.024	18.643	0.634	0.556
Demographic Variables						
Age	29.376	10.729	16	66	33.241	17
Age ²	978.060	733.362	256	4356	1207.211	289
Gender	0.503	0.500	0	1	0.580	0

	Person-Years Up To First Migration				Person-Years Up To Second Migration			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Marriage	0.840	0.366	0	1	0.957	0.203	0	1
Ethnicity								
Hindu upper caste	0.444	0.497	0	1	0.384	0.486	0	1
Hindu lower caste	0.115	0.318	0	1	0.125	0.331	0	1
Hill Tibetoburmese	0.158	0.365	0	1	0.191	0.393	0	1
Newar and other	0.075	0.263	0	1	0.058	0.234	0	1
Terai Tibetoburmese	0.209	0.406	0	1	0.242	0.428	0	1
Total no. of person-years		40771				15351		

TABLE 3
Multinomial Logistic Regression Output for Predicting the Competing Risks of Taking A First Trip to Three Locations in Year t + 1

INDEPENDENT VARIABLES IN YEAR t	Within Chitwan		To Other Districts		To Other Countries	
	B	SE	B	SE	B	SE
Physical Capital						
Home business	-0.186	0.155	-0.751 **	0.301	-0.958 ***	0.365
Outside business	-0.135	0.277	-0.897	0.588	-0.505	0.464
Social Capital						
Mother traveled internationally	-0.088	0.105	-0.07	0.177	-0.015	0.181
Father traveled internationally	0.104	0.071	0.058	0.121	0.099	0.124
Neighborhood prevalence ratio for within Chitwan migrants	0.007 ***	0.002	-0.001	0.003	0.00005	0.003
Neighborhood prevalence ratio for migrants to other districts	0.009 ***	0.003	0.022 ***	0.005	-0.007	0.006
Neighborhood prevalence ratio for international migrants	0.007 **	0.004	-0.003	0.007	0.045 ***	0.005
Human Capital						
Education	0.050 ***	0.009	0.100 ***	0.015	0.030 *	0.016
Salary job	0.504 ***	0.116	0.369 **	0.16	-0.372 *	0.221
Wage job	0.075	0.065	-0.265 **	0.135	-0.305 **	0.133
Served in the military	0.26	0.195	1.707 ***	0.179	1.214 ***	0.199
Neighborhood Characteristics						
Electricity	-0.055	0.079	-0.310 **	0.146	-0.058	0.145
Indicator of neighborhood development	-0.005	0.027	-0.135	0.082	-0.432 ***	0.144
Demographic Variables						
Age	-0.160 ***	0.017	-0.026	0.046	-0.172 ***	0.04
Age ²	0.002 ***	0	-0.001	0.001	0.001 *	0.001
Gender	0.553 ***	0.069	-0.718 ***	0.134	-1.599 ***	0.148
Marriage	0.029	0.079	-0.079	0.137	0.111	0.138
Ethnicity						
Hindu upper caste	-0.282 ***	0.084	0.346 *	0.178	0.688 ***	0.197

INDEPENDENT VARIABLES IN YEAR <i>t</i>	Within Chitwan		To Other Districts		To Other Countries	
	B	SE	B	SE	B	SE
Hindu lower caste	-0.102	0.106	0.897 ***	0.203	1.138 ***	0.211
Hill Tibeto-Burmese	-0.013	0.097	0.265	0.205	0.745 ***	0.215
Newar and other	-0.328 **	0.135	0.211	0.246	-0.278	0.335
Terai Tibeto-Burmese	-	-	-	-	-	-
Constant	-1.265 ***	0.261	-3.589 ***	0.632	-1.194 **	0.581
No. of person years	40771					

* significant at 10% ;

** significant at 5% ;

*** significant at 1%

TABLE 4
Multinomial Logistic Regression Output for Predicting the Competing Risks of Taking A Second Trip to Three Locations in Year t + 1

INDEPENDENT VARIABLES IN YEAR t	Within Chitwan		To Other Districts		To Other Countries	
	B	SE	B	SE	B	SE
Physical Capital						
Home business	-0.190	0.319	-1.580**	0.731	-0.993	0.610
Outside business	-1.612	1.016	-1.541	1.032	-1.505	1.037
Social Capital						
Mother traveled internationally	0.099	0.268	-0.313	0.348	-0.152	0.345
Father traveled internationally	-0.218	0.185	0.120	0.227	0.661***	0.244
Neighborhood prevalence ratio for within Chitwan migrants	-0.004	0.004	-0.005	0.006	0.003	0.006
Neighborhood prevalence ratio for migrants to other districts	0.015**	0.007	0.027***	0.009	0.001	0.012
Neighborhood prevalence ratio for international migrants	-0.011	0.009	-0.010	0.013	0.035***	0.011
Human Capital						
Education	0.046**	0.021	0.074***	0.026	-0.028	0.032
Salary job	0.732***	0.206	0.585**	0.241	-0.878**	0.419
Wage job	-0.020	0.173	-0.559**	0.283	-0.565**	0.277
Served in the military	0.019	0.351	1.236***	0.298	0.783**	0.399
Migration-specific Human Capital						
First migration to other districts	0.735***	0.193	0.551**	0.249	0.666**	0.335
First migration to other countries	0.906***	0.218	0.460	0.306	1.102***	0.293
First migration within Chitwan	-	-	-	-	-	-
Neighborhood Characteristics						
Electricity	-0.011	0.186	-0.668**	0.280	-0.423	0.301
Indicator of neighborhood development	0.00002	0.126	-0.176	0.262	-0.516	0.376
Demographic Variables						
Age	-0.163***	0.048	-0.248***	0.071	-0.296***	0.087
Age ²	0.002**	0.001	0.002**	0.001	0.002*	0.001
Gender	-0.411**	0.177	-1.282***	0.281	-2.207***	0.330

INDEPENDENT VARIABLES IN YEAR t	Within Chitwan		To Other Districts		To Other Countries	
	B	SE	B	SE	B	SE
Marriage	-0.084	0.251	-0.434	0.272	0.111	0.315
Ethnicity						
Hindu upper caste	-0.219	0.222	0.387	0.344	0.768*	0.419
Hindu lower caste	0.348	0.245	0.941**	0.389	0.672	0.457
Hill Tibeto-Burmese	0.202	0.235	0.521	0.366	0.878**	0.433
Newar and other	0.035	0.333	0.862*	0.443	0.649	0.655
Terai Tibeto-Burmese	-	-	-	-	-	-
Constant	-0.962	0.799	0.457	1.134	1.024	1.396
No. of person years			15351			

* significant at 10% ;

** significant at 5% ;

*** significant at 1% ;