

Understanding the social process of migration in Bangladesh

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I. Introduction

Rural-urban migration in Bangladesh, as in many developing areas, is a process that can lend security both to sending households and to migrants themselves. In the absence of formal or fair markets for credit, insurance or commodity exchange, family units exploit their size and diversity (in terms of age, skills, life-stage, etc.) to spread their economic activities to multiple economic sectors and spatial regions. Families maintain trust and cooperation over long distances through a combination of familial loyalty, patriarchal authority, exchange, and asset pooling. In times of economic constraint or contraction, however, the success of a far-flung support network may be tested by emerging competition or perceived inequity in the flow of exchange.

Concurrent arrangements of inter-regional resource sharing, like the systems of local resource sharing that precede them, are typically confined to the space of no more than a few conjugal families, but their success may also depend on linkage to larger networks of support and exchange at the level of community, ethnicity or identity. While these broad networks rarely exchange money or goods, they frequently exchange knowledge, economic opportunity, protection, and market preference (Kohler et al. 2001; Munshi and Myaux 1998). In the case of migration, access to job information, job opportunities, and temporary housing opportunities are acquired as part of a broader package of exchange that may function in the origin area and destination area. Just as economic exchange theory can pinpoint scenarios in which familial exchange breaks down (Chakrabarti 1999; Stark 1996), so too can it pinpoint scenarios in which community exchange networks break down or exclude families that cannot contribute to shared community goals (Finley 1987).

This paper studies the social process of migration from rural Matlab to Bangladeshi cities. Two separate modes of migration, which have already been found to occur for different reasons and with different outcomes (Kuhn 2000), co-exist in space but exist in separate social universes. Individual migration represents an investment that enables a rural household to economically diversify and expand rural production, bringing significant investment capital into the village. Family migration typically represents the separation of one conjugal family unit from a larger extended family, causing a potential reduction in economic security for both

movers and stayers.

Qualitative analysis outlines how the nature of two very different migration streams condition migrants' incorporation into urban-rural exchange networks as well as their role in creating social capital for subsequent migrants. Quantitative analysis demonstrates the strength and implications of complex qualitative conclusions by addressing the connection between past and future migration activity in the context of a village, largely a spatial unit, and the *bari*, a compound that forms a locus of social interaction and exchange. Primarily, these results seek to demonstrate that: 1) past practice of individual migration in a social group leads to subsequent practice of individual migration through a mechanisms of social inclusion; 2) past individual migration may lead to subsequent family migration through a mechanism of social exclusion; and 3) family migration episodes may affect the same communities over time due to continuing exposure to ecological and social constraints. Qualitative and quantitative analysis results will be presented interactively, in order to allow these complementary forms of evidence to address each other directly.

II. Background

Individual and Family Migration in Bangladesh

Individual migration and the ensuing urban-rural relationships act as a medium of household risk management, coping and economic expansion, fitting neatly within the literature on intra-household resource allocation (Ellis 1998; Stark 1991; Evans and Ngau 1991; Hazell and Ramaswamy 1991). Even after marriage, many migrants maintain their childrearing, investment, social interaction, and long-term security arrangements in the rural area in anticipation of a future return to the origin area (Rempel and Lobdel 1975; Kuhn 2000; 2001a; 2001b). A conjugal family's primary production activities may have shifted from the rural to the urban area, but the site of primary consumption remains in the village.

In the case of individual migration, livelihood diversity comes from the siting of economic activities in areas having uncorrelated earnings functions. Urban areas offer the added benefit of being largely impervious to climatic or ecological shocks that account for much of the risk associated with rural life (Stark 1982; Rosenzweig and Stark 1989). Rural residents contribute to concurrent and life-course exchange relationships through the following channels:

past expenditures for migrant upbringing and education; procurement of information or assistance with urban employment and housing; providing a setting and assistance with childrearing; offering protection to dependent members of a migrant's family; and providing a refuge during periods of unemployment and retirement (Kuhn 2000; Bigsten 1996; Shaw 1988). On the urban side, migrants provide old-age security and support, capital and insurance for agricultural enterprise, domestic labor and care from members of the migrant's conjugal family; and occasional agricultural labor (Lillard and Willis 1994; Hoddinott 1994; Connell et al. 1976; Frankenberg and Kuhn 2001 for Bangladesh). In addition to smoothing consumption and managing risk, individual migration by married men minimizes the costs of child rearing vis-à-vis permanent urban settlement (Wolpe 1975; de Janvry and Garammon 197x).

In contrast, family migrants form independent urban economic units, surrendering many of their urban-rural security linkages for strictly urban ones. Past research suggests that men are less likely to undertake the preferred pattern of individual migration when rural exchange partners offer little financial security or protection. Without sufficient rural resources, the financial costs of dual residence and the physical risks of spousal separation are unjustified (Kuhn 1999). The more drastic act of family migration is likely to occur when a substantial threat to physical resources and livelihood affects a family already exposed to insufficient social support mechanisms (Kuhn 2000). If migration represents the only likely source of income, regardless of the risks, and rural social support opportunities are limited, the best solution may lie in a permanent shift of both production and consumption to the destination area. The family migration process results in the movement or partition of one strictly-rural unit, resulting in the formation of one strictly-urban unit while diminishing the overall security of any strictly-rural units who were once connected to the migrant family. Individual migration, on the other hand, merely expands the scope of an existing economic unit over a larger space. While individual migrants and their origin families manage risk through spatial and sectoral diversification, family migrants and any rural family must each manage risk through strictly local mechanisms.

Migration Chains

In an economy where most insurance functions through social and familial networks rather than through government or market mechanisms, migration takes on a particularly social

role. The success of cooperation between a migrant and his/her origin household depends on the maintenance of social ties in spite of physical separation as well as on the mutual success of both rural and urban economic activities. To achieve these goals, broad networks of social reciprocity that had once operated within a fixed physical space begin to operate over an expanded physical distance (Heyer 1996; Banerjee and Munshi 2000; Winters et al. 2000). These broad networks gain particular salience in the context of a spatial expansion. They allow future migrants to manage the uncertainty associated with migration. They allow rural exchange partners to enforce the rules of reciprocity from a distance. They allow established migrants to secure and entrench an identity-based group that had no prior reason to maintain an identity or compete with other identity groups. While urban economic may offer migrants some leverage to escape pre-existing social constraints, the risks associated with migration may also create strong incentives for linking urban-rural social and economic structures to the pre-existing rural ones.

Recent research strongly emphasizes the role of social contacts, social networks, and social capital in perpetuating the flow of migration within spatial settings, social groupings, or identity groups (Massey et al. 1987, Boyd 1989, Portes and Bach 1985; Shah 1998). Evidence suggests that social contacts provide information, assistance and specific opportunities for housing and employment that both increase the returns to migration and lower the risks associated with a move (Taylor 1986). Social contacts enhance the expediency of a job search for a short-term migrant with a specific earnings goal while offering the tools of assimilation and socialization for prospective long-term migrants (Banerjee 1991).

Those currently living in the city also derive utility and reduce risk by encouraging migration from their area of origin. New migrants can contribute to the pool of people sharing social contact, cultural identity, economic support, physical protection, and political affiliation (Portes 1999). Assistance provided to a new migrant can often act as repayment for past assistance tradeoffs, such as cases in which a migrant brother offers urban employment to a nephew whose father remained in the origin area. The benefits of chain migration are even more explicit for business or factory owners. A shared identity or locality allows employers to recruit workers who are willing to make concessions regarding salary and benefits that facilitate the operation of a small-scale urban business (de Janvry and Garammon 1977; Gereffi and

Korzeniewicz 1994). In return, migrants may receive long-term opportunities for human capital accumulation in the form of returns to experience, promotions, and assistance in forming a new business (Portes and Bach 1985). Such relationships can generate significant opportunity for economic advancement in unfavorable environments as long as the community neither exhausts the migration chain nor the opportunities of an isolated economic niche.

As the qualitative portions of the paper will outline in greater detail, it is the cooperative nature of individual migration that lends itself well to active participation in broader community networks of urban-rural exchange. Parental involvement and stake in children's migration outcomes encourage them to expend social capital and engage in rural-side economic and political exchange in order to ensure children's success. Continued exploitation of an economic niche may depend not only on a buoyant urban economy, but also on strong group solidarity and commitment to shared goals. Urban-rural exchange ensures this solidarity by creating an extensive, multi-generation tradeoff of strong social relationships between employer and employee, supplementary exchange between rural families, and private rural-urban subsidies (i.e. return migration, rural child-rearing) that lower urban wage bills, increase economic competitiveness, and generate growth.

As the cooperative aspects of individual migration are facilitated by inclusion in a larger network of social exchange, so too are the largely fractious aspects of family migration encouraged by exclusion from exchange. While almost all households in rural Bangladesh have an extensive network of social contacts, qualitative analysis will demonstrate the social isolation of the communities that send family migrants. On the rural side, limited social and physical resources limit access to and ability to execute broader network exchanges; expectations that migrants will not maintain economic ties also reduce incentives to do so. On the urban side, the nature of family migration limits the ability to accept low salaries for future gains or for informal housing, limiting family migrants' salience to the larger network. While family migrants may be active in social exchange networks, these interactions are likely to be rooted in an urban setting such as a slum, not in the rural community. While exclusion from a community-based network of exchange creates a shared history, it does not by definition imply a shared identity, nor is it sufficient condition for formation of an alternate network.

III. Qualitative Data

Qualitative analysis of the process and determinants of migration emerges from qualitative interviews conducted in Dhaka and Matlab in 1998. Using location data from the out-migrant survey of the Matlab Health and Socioeconomic Survey (MHSS), a team of six interviewers approached a small sample of out-migrants from the Matlab Demographic Surveillance Area.¹ This began a three-month process of interviews, focus groups, informal and group conversations that took the author and the interview team from Dhaka to Matlab and back to Dhaka in forming a purposive, socially-guided sample. Sampling included interviews with the initial migrants, members of their origin households in Matlab, members of rural migrant- and non-migrant households in spatial and social proximity, and a subsequent follow-up of out-migrants from the second group of households. The research focused on relationships of economic and social exchange that spanned the urban-rural divide, on the social context of migration, and on the management and formation of economic risk and power in the area.

Texts from semi-structured interviews and focus groups gain context from author- and interviewer field notes logged during the process of respondent tracking and purposive sampling during the rural phase of the project. This process was marred initially by difficulty in tracking family migrants and the communities that they had left behind, thus exacerbating the original sample's inherent bias towards wealthier, more residentially stable migrants. While several interviews and informal conversations took place in the communities of past family migrants, the difficulties posed by tracking them may have been as informative as the responses to their interviews. In much the same way, the questions they could not answer may have been as informative as those that they could answer. While these interviews provided some insight into the processes of social inclusion, exclusion and marginalization, respondents were largely unable to discuss social relationships with past migrants from the area because these migrants had only occasionally maintained social contact. This also precluded tracking of past family migrants through information provided by Matlab-based informants.

Given the failure to track family migrants of Matlab origin, a supplementary survey

¹ The MHSS is the first round of a panel survey of family economics and adult health, funded by the National Institute of Aging, and collected in the Matlab Demographic Surveillance Area in 1996 by a team from RAND,

module included interviews with 17 migrants from living in slums near the Buriganga River in Dhaka. Previous project experience had demonstrated that slum residence was often a function not of urban income but of the absence of urban-rural social support mechanisms that could in part be replaced by within-slum social networks and informal economic activity. The inclusion of a slum-based sample not only better represented this segment of the urban population, but it also better represented migrants from landless households; from areas of weak migrant-specific social capital; and from more distant regions of the country.

Semi-structured interview texts from each project were administered in Bangla (the national language), taped, translated into English, and entered as text into a computer. Textual analysis utilized manual coding mechanisms and text searches in the NUDIST qualitative analysis software package. In order to summarize the large number of qualitative interviews, pseudo-quantitative data were entered into the STATA statistical package and tabulated for strictly illustrative purposes.

IV. Quantitative Data and Model

Data and Statistical Model

Quantitative analysis employs data from the Demographic Surveillance System (DSS) of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), which has collected monthly information on every birth, death, marriage, divorce, and migration for each household in the 149 village ICDDR,B study area in Matlab since 1966. Migration files include basic information on the migrant, date of migration, and episode-specific data such as destination and cause of a move. The data define migration only if the respondent has been living away from the household for six months, as reported by those living in the household (in cases of individual migration) or neighboring households (in some cases of family migration).

The model focuses on all rural-urban migration episodes by married adult males in the sample. Migrants to areas other than cities within Bangladesh are excluded in order to emphasize the importance of social networks in the context of the risk associated with urban employment and housing acquisition. A great deal of migration from Matlab involves moves to

another rural area, primarily episodes involving woman's marriage into another household. While such moves can clearly play a role in intra-household diversification (Rosenzweig and Stark 1989), they largely represent a system of balanced movement between areas of equivalent economic prospects and modes of production. Rural-urban migration, on the other hand, entails movement to an area of higher productivity; an area not subject to a set of symmetric climatic and ecological risks; and an area in which human capital returns generate extensive investment and competition. In short, rural-urban migration within Bangladesh functions as a coherent economic system in a manner similar to an international migration system (i.e. Migration from Mexico to the United States).²

The analysis focuses on married men in order to create a relevant basis for comparison of individual and family migration episodes. Women are excluded because most of their migration episodes involve rural-rural movements for marriage. While women also practice rural-urban migration, this includes a mixture of labor migration and moves with parents before marriage, marital migration, and moves with a husband after marriage. Labor migration following marriage is still uncommon. As a practical consideration, unmarried men are excluded because they cannot by definition practice family migration until they are married, making it difficult to model their behavior in the same model as that of married men.³

Observational panels are constructed from DSS data using a combination of data from periodic censuses combined with updates from monthly surveillance of vital events. Household rosters from the 1982 census are updated to reflect migration in, migration out, birth, death, and marital status changes between the census and the beginning of the observation year, generating a file for every person-year lived by currently married males from 1983 to 1995. Aggregate household-, bari- and village-level measures of overall membership and age structure are constructed as statistical controls.

² Matlab, like many other regions of Bangladesh, sends a significant number of migrants to other nations. While this topic has been researched extensively and some evidence suggests that social capital is applicable between nations, the lack of data on specific destination rendered these data infertile ground for this analysis.

³ The absence of unmarried men poses a problem of representation, because a majority of men's individual migration episodes are actually undertaken before marriage. Past research on migration in Bangladesh, however, suggests that unmarried migrants have more to gain from inter-sectoral cooperation and human capital investment tradeoffs because of longer horizons for risk and human capital investment. Therefore, the findings regarding the conversion of individual migration networks into further individual migration should if anything be stronger for

The primary analysis predicts the likelihood of family and individual migration by married men in the sample for the year 1995, employing a multinomial logistic regression model. The model functions as a competing risk, multinomial hazard model, except that the current analysis employs only one of the twelve years of observations in order to maximize years of migration history data and to generate simulations based on migration events starting from a single observation year. The model predicts the odds of individual migration ($j = 1$) or family migration ($j = 2$) relative to the odds of experiencing no event ($j = 0$). Using the “mlogit” feature of the STATA package (STATA Corporation 1997), a maximum likelihood procedure estimates a vector of coefficients β'_j according to the following equation:

$$\Pr(Y_i = j) = \frac{e^{\beta'_j x_i}}{\sum_{k=0}^2 e^{\beta'_k x_i}}$$

where Y is the outcome, x is the vector of dependent variables, and j references a specific outcome. Since this estimation can result in any number of solutions, a reference category is chosen for which all values of β are set to 0 (outcome $j = 0$).

Operationally, individual migration is defined as any rural-urban movement involving the respondent and any number of other migrants who are not his spouse (this can accommodate men who migrate with friends, with siblings, or in work gangs). Family migration is defined as any movement by the married male on the same day as his wife.⁴ The initial file data set applies these definitions to construct a trichotomous migration measure for each person-year from 1983 to 1995. Aggregated measures of the probability of individual or family migration in a specific year are used to generate the primary predictive variables, lags of past migration history at two concentric levels of contextual observation -- the village and the *bari*. The village represents a large spatial unit (mean 2,060 people in 328 households), often arbitrarily defined by geography, politics or identity. The *bari* is a compound of clustered households and dwellings (mean 48 people in 8 households) and a primary social unit in this part of Bangladesh (Aziz and Maloney

unmarried men than they are for the married men in the sample.

⁴ Migration episodes in which a husband and wife’s move were recorded on the same day but the wife’s cause of migration was reported as “to follow spouse” were ignored, since these episodes involved husbands who had moved

1985). The time series of villages runs consistently through every year of the analysis, allowing retention of all village-level data. To account for *baris* that did not exist throughout the observation period, *bari*-level migration measures are entered when available. If the respondent had changed *baris* within the same village, *bari*-level data are set to the village level mean for a *bari* of similar size for any years where data were missing. The *bari* was dropped, however, if the inhabitants of a *bari* had moved from another village or from outside the surveillance area.

Statistical Results and Simulation Methods

The statistical analysis focuses not on interpreting specification or construction of complex models, but on applying stochastic simulations to interpret the results of a very simple time-series model. The model predicts the likelihood of individual or family migration in terms of a 10 year time series of past migration experience, including village and *bari* level measures of both family and individual migration. Statistical controls measure household size in the respondent's own household, *bari*, and village; number of households living in the *bari* and village; respondent's age and square of age, and the mean age of members of the household, *bari* and village. Variables are described in Table 1.

Although surveillance data can update household structure and respondent age data to reflect changes occurring since the 1982 census, data on respondent's completed education, household resources, and community economic characteristics can only be drawn from the 1982 census. Given the chronological distance between these two observation periods, such socio-economic data cannot be appropriately included in the current analysis. The analysis tests observations from 1995, however, because the benefits gained from controlling for socio-economic status in an earlier period are outweighed by access to a more precise and lengthy migration time series that better represents the time period covered by the qualitative field studies. Prior to 1982, migration surveillance records did not clearly specify migrant destination, which is essential to an analysis of the social process of *rural-urban* migration.⁵

to the city for less than six months before coming back for their wives (less than 1% of family migration events).

⁵ Previous research has employed data from the 1984 to 1986 time period to model the role of household and community assets on individual and family migration behavior, but this sample only permitted analysis of migration history for one to three years prior to the study period. In order to gain some knowledge as to whether the absence of these socioeconomic controls is likely to allow measures of past migration experience to pick up spurious relationships, a model of migration in 1986, including lagged migration history data and household and

Table 2 presents results of the multinomial logistic model employed in the stochastic simulation analysis. These results show a number of statistically insignificant effects and a number of largely positive and significant coefficients, not surprising given the large number of coefficients. Chi-square tests of the joint significance of coefficient sets support a significant effect of individual migration at both the village and *bari* levels on subsequent individual migration, while past practice of family migration at either level has no impact on individual migration behavior. Past practice of both forms of migration at the *bari* level have a statistically significant association with subsequent family migration while neither village-level migration measure impacts family migration. These results indicate that controlling for village-level migration experience, *bari*-level migration experience may have more influence on subsequent migration, which is not surprising for its role as both a spatial and social unit. The results also indicate that both forms of migration are influenced by some form of past migration experience. While individual migration appears to have a stronger influence on the subsequent practice of migration, both have some predictive power.

While joint test statistics suggest that the model offers significant explanatory power in some of the anticipated directions, it is difficult to either interpret the impact of a substantial number of lags or to understand the impact of this coefficient on the likelihood of either form of migration. Because the true impact of a multinomial odds ratio depends on changes in the relative odds of other events as well, social statistics research often presents multinomial results in terms of a predicted probability (Retherford and Choe 1993). In such presentations, it is also useful to incorporate estimated random variation in the coefficient estimates in presenting the impact of each coefficient. For low-probability event history data, presentation of underlying probabilities over a longer time-period may also render the results more understandable. The analysis adapts these techniques, taking further advantage of the time series data by letting 10 years of simulated migration behavior reflect the evolution of the social process of migration. Simulated results reflect both the estimated coefficients as well as shifts in the migration lags as each additional year of migration behavior is simulated.

socioeconomic controls, was compared to a model including only the migration lags. The model that included socioeconomic controls explained more of the variance in the model, but caused no significant reduction in the

Using the Clarify procedure in the STATA statistical package (Tomz et al. 1999), a migration outcome is simulated for each of 5,000 hypothetical copies of the initial respondent. Probabilities are simulated for hypothetical respondents using observed values of predictive variables (constant through all 5,000 copies) and a coefficient equaling the actual estimated coefficient plus a randomly drawn, normally-distributed error term having the coefficient's standard error as its mean. In this way, predictions account for the expected value of the coefficient in predicting the dependent variable, but discount those coefficients with high standard errors, generating predictions that reflect the true explanatory power of the model.

After 5,000 hypothetical predictions are made for each respondent in a given year, the subsequent year's migration behavior is predicted based on the same model coefficients, but using migration histories that are updated to reflect the previous year's simulated values. Predicted probabilities of family and individual migration from year y are summarized at the *bari* and village levels and entered as the previous year's migration history for a simulation of migration in year $y+1$. Each previous year's migration data is pushed back one year in the history, removing year $y-10$ from the data set. Using the updated information, the simulation predicts migration probabilities for any of the 5,000 hypothetical cases that have not already migrated in previous years. By the 10th simulated year, all migration lag data from the observed sample will have been replaced by past migration history data from the subsequent 10 years. In essence, the simulation allows us to observe how the effects of ten years of migration lags will affect the cumulative distribution and acceleration of migration from different starting points.

The simulation creates a migration history for a *synthetic period* (the opposite of synthetic cohort) of men. Since respondent's ages don't advance as they pass through the simulation, the results represent the migration behavior (in 10 different time periods) of different groups of men having the exact same characteristics as the original cohort of married men had in 1995. Under the assumption that married adult males in each year share exactly the same characteristics, the model offers a hypothetical view of the impact of accumulated social and spatial lags on the likelihood and pace of migration. Simulations are not designed to offer policy insight or predictions on the course of migration in this setting, merely to add interpretability to a

impact of the migration lag data itself.

complex model and to incorporate a stochastic component to the interpretation.

Quantitative analysis focuses on disaggregations of the simulated results in terms of categories of individual migration incidence in the year prior to the analysis at the village level (bottom 25%, middle 50%, top 25%) and the *bari*-level (no migration, any migration). Charts present the cumulative probability distribution of migration events in the different village and *bari* context for each year of the 10-year simulation period. Changes in the slope of the probability distribution indicate a declining rate of a particular form of migration. Figure 1 shows the simulated cumulative and yearly probability distributions for the pooled sample.

IV. Social Analysis of Migration

The analysis demonstrates the role of network inclusion and network absence in determining the impact of individual and family migration on subsequent migration in the origin area. In looking at network exclusion/inclusion, observations from qualitative fieldwork explain why some households have both more to gain from and more to contribute to an urban-rural network of community cooperation. Graphical simulation results support these claims by addressing the impact of village-level individual migration measures on subsequent village-level migration trends, with particular emphasis on the pace of migration for respondents in *baris* that already have experience with one of the forms of migration. The analysis also discusses how network exclusion can spur family migration. In the second portion, qualitative analysis explains how family migrants are less likely to have an impact on urban-rural exchange networks if their primary goal was to form an exclusively urban exchange network. Simulation results support these claims by addressing the impact of village-level family migration measures on subsequent migration trends.

Network Inclusion / Network Isolation

Family migration is not a commonly recognized process to many Bangladeshi rural-urban migrants or rural residents. This is particularly true in Matlab, an area that is not subject to as many ecological and economic pressures as are other districts.⁶ In starting from an initial rural

⁶. Districts whose population pressures appear to lead to high rates of out-migration are those on the opposite side of the Meghna River from Matlab, such as Barisal, Faridpur, and Madaripur, and those further southeast from Matlab such as Noakhali and Feni (Nabi 199x).

sample of individual migrant-sending households, many household heads and return migrants seemed puzzled by initial questions about family migration from Matlab. Once interviewers explained the concept, they would generally name a wealthy member of the village who had bought land in the city and brought his wife and children to the city after a number of years alone in the city. While informants could identify these prominent neighbors who had moved alone and subsequently found great success, they could not identify cases in which a husband, wife, and/or young children had left their village for the city.

In spite of having surveillance records of about 200 specific out-migrant households from four primary study villages, neither the primary respondents nor members of their social circle could recall family migrants who had left their areas.⁷ This offered a first indication of the social and economic distance between the pool of potential family migrants and those in the immediate networks of the sampled households. Unsatisfied with respondent awareness of family migration and the shortage of family migrant-sending communities in the sample, the team moved on to direct questions about specific family migration events. Using demographic surveillance records, interviewers provided informants with names and relevant information about family migrants who had once lived in the same neighborhood. This approach, combined with dedicated pursuit of the *baris* of interest, allowed tracking of at least a few areas of high family migrant activity. Many informants still did not even recognize these origin *baris*, however, even after we had identified their locations and the names of their inhabitants. Significant recall of these departed neighbors was most common among those villagers who were likely to have interacted with every villager, regardless of social status: the shopkeepers and the rickshaw pullers.

The experience of this search process suggests that family migration often involves socially isolated segments of the population. Further investigation suggests that families in these areas are likely to have been landless well before migration and to have faced a crisis such as loss of land, flood, or debt default. In those cases in which an entire nuclear family moves simultaneously, economic and ecological woes are typically compounded by a failure to secure assistance from other villagers. One qualitative respondent summed up the experience of finally

⁷. The records used in this search consisted of all entire households (not nuclear families) that had left five study villages from 1982 to 1990. This group numbered 60 households out of a combined 5,000 households living in

moving to the city after being unable to survive in the village after a flood:

We had no house to live in our village; we stayed in the road for two years. The road was also undertaken by water. If we stay in other people's land then we have to work for them, but we had nothing to eat. We had to work for them although we had nothing in our stomachs. So we had decided to come here. If we can earn just 50 Taka per day, we can manage our food here. If I had land, then I would have lived there by harvesting the land... We lived in their land. That is why they told us to leave the place and go to another place like the town. It is their loss to help us.

Landless households are common in all of the qualitative study sites, but many of these landless households belong to stronger and better-endowed social networks, often centered on wealthy village patrons. Landless households sharing proximity and lineage with more established households gain preferential sharecropping arrangements, agricultural and domestic employment, preferential access to privately-held, commonly consumed resources (e.g. fishing from ponds, crop waste for fodder), temporary homestead rights; and small loans. Many households lose their agricultural holdings but maintain the right to farm them on a shared basis from the new owner. Others have a long history of service and patronage with a wealthier family in lieu of pursuing land ownership. These forms of support may prevent migration, allow a landless household to send a scout first, or even allow a wife and children to remain in their village while the husband stays in the city for an extended period.

Consistent access to common resources and emergency support are provided on the basis of lineage, historical patronage arrangements, or ongoing informal exchange. In the realm of strictly rural economic exchange, economically vulnerable households may provide regular labor; labor on demand, and support in political struggles within a lineage, between lineages, or at the union or parliamentary level. In the realm of urban-rural exchange, this *quid pro quo* expands to include exchanges of a loyal, low cost urban labor supply for urban job and housing opportunities. Individual migration by an adult male, as opposed to migration of his whole family, would allow a local patron to benefit from continued labor from the migrant's nuclear and extended family. Both an urban husband and a rural wife would continue casting their election ballots in the origin village. A husband would also be likely to return for activities such as *salish*, the informal village court that decides cases related to land title and resource sharing.

these villages in 1993.

Important lineage leaders reported that their lineage would lose its power and status if others learned that a member, even a poor one, had taken up residence in an urban slum, the typical destination of a migrant family. In this sense as well, leaders were likely to make an effort to prevent family migration in accordance with their affinity for that household.

Families with limited social connection to mainstream village support networks are also quite likely to reside in less desirable sections of the village, adding spatial isolation to the social. Furthermore, households living in undesirable sections of a village are likely to have a similar level of exposure to economic or ecological crisis. In one village, most of the recent family migrants hailed from one area where all cropland had been inundated by the construction of a major river embankment. The Water and Power Development Administration (WAPDA) had provided little compensation, and although most of these households had retained their homestead lands, most had retained no agricultural land.⁸ Further inland, the embankment had increased agricultural yields and increased incentives to intensify agricultural production, thereby increasing demand for rural labor as well as demand for raising capital through migrant transfers. Few residents of the embankment area, however, reported having regular agricultural labor arrangements, primarily gaining opportunities on a daily basis. Others pulled rickshaws along the embankment road, caught fish, or worked in the limited service activities near the neighboring boat landings.

The statistical analysis supports the role of social network inclusion in perpetuating individual migration, demonstrating the impact of past individual migration on subsequent individual migration. Figure 1, Panel a presents the cumulative probability of family and individual migration for respondents from villages in the highest and lowest quartiles of village individual migration probability in the year prior to the analysis. The figure demonstrates the association between higher past levels of individual migration and a more rapid pace of both forms of migration. As expected, past individual migration has a stronger impact on individual

⁸. The one respondents who explicitly mentioned the settlement he received from WAPDA claimed the rate of his settlement to be 2,000 taka per acre. During a similar time period, other respondents had paid in the range of 25,000-75,000 taka per acre for land that would probably have been somewhat more desirable than the land WAPDA claimed.

migration, but Panel a does suggest a significant impact on family migration as well. Figure 1, Panel b supports a similar pattern at the level of the *bari*, but the effect of past individual migration on subsequent family migration is stronger.⁹ These results connect a contextual history of individual migration with the subsequent practice of both individual and family migration, but it fails to address the role of social inclusion or exclusion in these relationships.

Figure 2 addresses the inclusion question in greater detail by crossing the village- and bari-level results from Figure 1. Within each panel, the cumulative probability distribution of subsequent family and individual migration are graphed separately for respondents from villages in the top and bottom quartile of previous year's migration probability. The three panels represent respondents from *baris* that had experienced any individual migration episode in the previous year (panel a), any family migration episode (b), or neither (c).¹⁰ Panel a shows that both family and individual migration are likely to progress at the same pace, regardless of the extent of migration at the village-level, if an individual migration episode had taken place in the *bari* in the previous year. Social connections operating within the *bari* are sufficient to maintain the pace of migration within that social grouping, regardless of the level of migrant network formation elsewhere in the surrounding area. It also suggests that the family migration process is by no means eliminated in social groupings that practice individual migration.

Panel b shows that in *baris* with a family migration episode in the preceding year, the likelihood of individual migration stagnates. A high past probability of individual migration in the surrounding spatial area does not spur any growth in the practice of individual migration (after 10 years, 6.7% for high villages compared to 7.4% for low). Respondents from family migrant-sending *baris* in high individual migration villages also experience a deficit in projected individual migration relative to *individual migrant-sending baris* in the same village (comparison to Panel a not shown, 10 year probability 6.7% for family migrant *baris* compared to 9.2% for individual migrant *baris*). This suggests that the social capital generated by past migration

⁹ *Bari*-level results are likely to be subject to a great deal of selectivity in the practice of the same form of migration since one episode has already occurred. A true reflection of incidence would also include the previous year, in which case the cumulative family migration probability would take far longer to pass individual migration.

¹⁰ Respondents from *baris* having a family or individual migration in the previous year overlap, and overlapping cases are represented in each of the categories. Such respondents account for 12.5% of individual-migrant sending *baris*, 8.8% of family-migrant sending *baris*, and 0.6% of the entire sample, making the group too small to be

experience at the village level is significantly less applicable to respondents from family migrant-sending *baris*, supporting the notion of exclusion from individual migrant networks.

Panel c demonstrates that in *baris* where neither form of migration was practiced in the previous year, the effects of increased village-level migration are particularly important, substituting for already-developed *bari*-level networks. Respondents maintain a low incidence of both forms of migration when village-level individual migration incidence is low, since the migration process can only advance with an external catalyst. For respondents coming from villages with high migration incidence, however, individual migration incidence begins to rise. By year 10, the subsequent cumulative probability has actually surpassed that of respondents from *baris* that had sent an individual migrant in the previous year, while the annual probability of migration had grown much higher.¹¹ This demonstrates the process of network expansion and network inclusion.

Simulated trends indicate that while long-term family and individual migration probabilities are *both enhanced* by an environment of high village-level individual migration history (Figure 1), family migration is enhanced at the expense of individual migration in *baris* that already have a history of family migration while the reverse is true in *baris* with individual migration experience (Panel a). The family migration process progresses far more rapidly for respondents from family migrant-sending *baris* (Panel b), particularly for those living in high individual migration villages, where the cumulative probability of family migration is 9.0%. In *baris* with no recent migration experience (Panel c), individual migration advances more rapidly and more significantly, but the family migration process advances with a strong lag. Figure 2 strongly supports a role for individual migration in driving subsequent family migration, but given that this occurs primarily for households that already have family migration experience and primarily at the expense of individual migration, the results do not support a mechanism of social inclusion, but perhaps one of social exclusion.

While the proposition cannot be addressed directly in the absence of concurrent data on

analyzed as a distinct category.

¹¹ Of course the projections of cumulative probability do not include migration episodes from the higher year, which we know are substantially higher for those from *baris* that have already sent migrants. An 11-year cumulative probability would have been higher for the group in Panel a, but it is reasonable to expect that long-term

economic change and migration prevalence, past research suggests that a likely mechanism for this relationship is a gradual crowding of marginal households from effective participation in local land, labor and capital markets. In the first round, extensive flows of urban-rural transfer income and advanced agricultural knowledge could place marginal households at further financial disadvantage. In the second round, as rural informal economic networks become integrated into rural-urban networks, labor and informal security markets may favor individuals and households who can participate in the broader system of exchange. Resulting shifts could enhance the practice of family migration as a response to economic dislocation combined with a demand for more meaningful networks of informal economic cooperation.

Network Absence and Family Migration

This section uses qualitative analysis to demonstrate the manifestations of this dislocation, suggesting that past family migrants are unlikely to have an economic stake in the migration behavior of any rural kin or acquaintances. The analysis will also touch on ways that the structure of a strictly-urban social network might not lend itself well to provision of assistance to arriving migrants. The section concludes by looking to the simulated migration projections for evidence about these relationships.

In qualitative fieldwork, many family migrants claimed to have no special bonds with people from their village; some even expressed irritation with village society and people from their village, particularly wealthy ones, because of the lack of loans, assistance, or temporary housing there. One vegetable seller, who lives in a slum along the river with her children and her brother's family, expresses her frustrations at the very social dislocation discussed in the previous portion of the analysis:

Q- what kinds of people come to Dhaka?

A- The people in the village who had no home to live, no land to cultivate, no children to look after them, are coming to Dhaka. They had dreams that they could get something in the town. Even nobody would give alms in the village. They say, "We can't afford ourselves, how can we help you?" But in the town, if we have two bites of food, we give one bite to other people if they want food from us, to reduce their hunger. In the village there is nobody to help people like this.

probabilities would be rendered quite similar by the expansion of village-level networks.

While it may be difficult to accept that people in a city as large as Dhaka are on the whole more communal and charitable than in villages, this may be the case for someone who has experienced extreme dislocation from mainstream social and economic exchange networks elsewhere.

A more moderate family migrant might not express such open distrust of his/her origin community, but the statement brings up the general role of prolonged separation in limiting the impact of family migrants on any aspect of origin community social life. This feature of family migration is supported both by surveillance data on return migration rates, by coded qualitative responses on frequency of rural and urban social contact, and by the low awareness of family migrant neighbors in the qualitative study villages. If family migration episodes are undertaken not to expand an existing social network but to form a new one, then migrants should neither be expected neither to maintain social contact nor to play a role in expansion of village social networks. While rural contact and financial support to parents may continue, these activities may be less likely to play a pivotal role in the migrant's own social or economic outlook and contact may decline even further when parents are no longer living.

While most rural-urban migrants in Bangladesh achieve a high level of integration into urban social life, qualitative evidence suggests that *family migrants* develop far more complex social networks and greater dependence on strictly-urban market and exchange relationships. Given that family migration is likely to be prompted by a number of sources of dislocation, residential and employment decisions are geared towards the replacement of informal security mechanisms rather than their supplementation or their integration into a broader system.

Casual employment satisfies these requirements in two major ways. First, jobs are highly fungible -- skill acquisition is rapid, exit and entry from the labor market are rapid, and jobs are easily replaced. In the absence of a rural safety net or opportunities for return migration, all of these characteristics are desirable for family migrants. Second, returns to experience are limited -- real income on the first day of work is likely to be similar to real income on the last day. The need to house an entire nuclear family at the moment of arrival, as opposed to just one person, creates demand for immediate realization of potential earnings. While jobs with high returns to experience or human capital offer higher long-term potential earnings, they are not feasible under circumstances of dislocation and their universal desirability should not be assumed without

consideration of an individual's threshold for risk.

Acquisition of housing in a slum or squatter settlement also satisfies the demands of dislocation. Peri-urban slum dwellers in Dhaka take advantage of many of the urban security mechanisms that have characterized slum dwellers in other settings (Perlman 1976, Portes and Walton 1981; Mangin 1967; Roberts 1973). Squatters in particular save money by building housing structures out of recycled materials rather than renting finished structures. Vacant land is often used to raise small crops and poultry. In the area between the Dhaka embankment and the nearest neighborhoods, embankment-dwellers graze cattle for personal consumption and to sell hides to local tanneries. Low-lying areas outside the embankment are also planted with a monsoon rice crop and winter vegetables. Open space is used for rickshaw parking and drying of hides. Slums such as those in the embankment have access to NGO schools that cater to students who have fallen behind in their education. Local NGOs also provide micro-credit loans and primary health and sanitation services.

Most importantly, slums often unify to form cooperative units that provide political, social, and informal economic support to migrants irrespective of district or family origin. In a slum, people who get no support from their villages find support from and cooperation with people who, although they do not share a common district, share a common socioeconomic history. These spatial identity units confer advantages to existing inhabitants by strengthening the power, presence, and exchange opportunities within the slum. Additionally, individuals may seek to strengthen their power within the organization of the slum through encouraging loyal or indebted to parties to move to the area. While the presence of such mutual aid networks does not imply that slums are happy places to live, it does imply that the ecology and social structure of a slum may satisfy specific needs stemming from rural dislocation (Lomnitz 1977; Portes 1972).

For family migrants, dislocation creates a demand for more focused urban integration while residential and employment decisions provide opportunities to integrate. Exclusively urban social networks are essential for gathering assimilative information, economic assistance and loans during times of need, shared household items, and shared of child care. While such networks could include people originating from the same villages or districts, qualitative investigations indicates that networks are typically based around the current urban spatial

context, irrespective of origin identity. One respondent had worked for twenty years in the shop of a distant village contact in a non-slum area where most shop owners came from other origin areas. Eventually, his own business was funded as part of his marriage to the daughter of an urban neighbor from another part of Bangladesh. He had thus developed an exclusively urban network of credit and inventory sharing with neighboring business owners:

Q: Did you take debt from any relatives?

A: There were not any relatives who could give me debt. Although some neighbors could, I knew they would not give it so I didn't ask for debt from them. So I asked help from someone where I had been working during many years.

Q: When you came here at first you didn't get any money or debt, but now you can get it. So how have you achieved it?

A: I have been living here for many years and I learned business from here. They have been observing me for many years so they have realized that I couldn't go from here and where shall I go? So they have given me money to do business.

While many urban neighborhoods develop into enclaves based on origin area, in terms of both industry and area of origin, many areas are still quite heterogeneous. This is especially true in the socially diffuse setting of a slum.

While the forms of dislocation that prompt family migration may reduce a migrant's incentive to provide social assistance to incoming migrants, certain family migrant characteristics may limit the *ability* to do so. Beyond any positive association between family migration and poverty or resource limitation, the aforementioned housing and employment choices may also lower the likelihood that family migrants will hold positions of resource allocation. An incoming migrant may visit a village contact living in a slum dwelling, but he can rarely get free housing for more than a few days because of space constraints. Similarly, incoming migrants may gain slightly more expeditious access to casual labor opportunities from past family migrant contacts, but the connection is unlikely to provide access to employment with significant returns to human capital. In this sense, past family migrants may have a greater impact on subsequent family migration from the origin community because they are more likely to know the potential family migrants and because the information they provide is more likely to be relevant to the needs of potential family migrants, but the overall impact is limited by the

level of contact, by the incentives for mutual exchange, and by the forms of assistance on offer.

Figure 3 demonstrates the role of past family migration in the village (Panel a) and the *bari* (Panel b) on the subsequent migration pattern (analogous to Figure 1 for individual migration). Panel a shows the relative invariance of both forms of migration to the level of family migration incidence in the year before the start of the period. The cumulative probability of family migration rises more rapidly if the incidence of family migration was higher already, but the difference is slight. Higher levels of family migration incidence in the village, on the other hand, inhibit the pace of individual migration. At the *bari* level (Panel b), past family migration experience does have a positive association with the pace of subsequent family migration, but the year-to-year probability remains enhanced only for the subsequent four years before harmonizing with the probability in settings of limited family migration history. This suggests that the association may not be driven as much by social connections between past and present migrants as it is by spatial and social auto-correlation over time in some other determinants of family migration (i.e. similar ecological exposure, social networks). The pace of individual migration is not affected by the incidence of family migration in the *bari* in the previous year.

In order to better address the role of contextual family migrant experience on urban-rural network formation, Figure 4 addresses the role of family migration experience on subsequent migration for three groups defined by previous year's *bari*-level experience of any individual migration (Panel a), any family migration (Panel b), or no migration at all (Panel c). First, Figure 4 can be used to address the impact of past family migration in generating subsequent family migration. Panel a demonstrates that the frequent practice of family migration at the village level has a strong impact on respondents from *baris* where individual migration took place in the most recent year (10.2% for high family migration villages compared to 8.7% for low). An analogous effect for respondents from *baris* having no previous year's migration experience is limited (Panel c), suggesting that past family migration does not foment subsequent migration in *baris* that don't already have this experience. Looking at respondents from *baris* that actually have recent family migration experience (Panel b), there is too little data on those from low family migration villages to compare within the panel, but it is possible to compare the

subsequent family migration of the existing group in Panel b (high family migration in village and *bari*) to respondents from individual migrant-sending *baris* in similar villages. The results indicate that while past practice of family migration in the village is associated with further family migration in either case, the cumulative probability of family migration is actually higher for respondents coming from *baris* with individual migration experience (direct comparison not shown). This result indicates that village-level family migration streams do not appear to operate through a social pathway. More likely, these results can be taken to mean that villages of high past family migration experience probably share certain economic or ecological circumstances in that make some respondents more vulnerable to the dislocating market distortions generated by individual migration.

Results in Figure 4 pertaining to the relationship between past family migration and subsequent individual migration can also shed greater light on the social impact of family migrants. In Panel a, respondents from *baris* that had experienced individual migration in the prior year actually saw a significant retardation in the pace of subsequent individual migration when village-level family migration incidence was *higher*. While this effect could be subject to selection of viable individual migrants from the pool of migrants prior to the analysis, Panel c demonstrates a smaller but still significant slowing in the pace of individual migration for respondents from *baris* that had experienced no migration episodes the prior year. The expansion of individual migration flows, as well as the transfer of migration information from a village context to other segments of the *bari*, appear to be inhibited by a high prevalence of family migration in a village.

One sensible explanation for the preceding result is that a high incidence of family migration in a large spatial area like a village may actually reduce the density of the network of individuals and families sharing extensive economic cooperation. To test this, Figure 5 looks only at respondents from *baris* that experienced neither family nor individual migration in the year before the analysis (Panel c), asking how village-level family migration history affects the projected pace of individual migration in villages with differing levels of individual migration experience. Knowing from Figure 1 that past individual migration increases the likelihood of subsequent individual migration, then the above proposition suggests that respondents from non-

migrant *baris* should only project growth in the pace of individual migration if individual migration incidence is high *and* family migration incidence is low.

Figure 5, which shows low migration villages in Panel (a), high migration villages in Panel (b), and all villages pooled in Panel (c), supports this proposition. In Panel (a), where respondents are exposed to only a low incidence of the socially operative individual migration contacts, the predicted pace of individual migration is invariant to the incidence of family migration and slightly slower than the overall pace seen in Panel (c). As anticipated from previous sections, variation in family migration behavior has no impact on subsequent migration. In Panel (b), where respondents live in spatial proximity to numerous individual migrants-sending households, the cumulative 10-year probability of individual migration ranges from 6.8% for respondents from villages with high past family migration to 11.0% for respondents from low villages; the yearly probability of individual migration in the 10th year continues to remain higher for the latter group. Villages with a history of family migration not only fail to convert that experience into a migration chain, but the associated reduction in the density of households having practice or able to practice individual migration may the effectiveness of individual migrant social capital.

VI. Conclusion

Empirical studies of the social process of migration typically approach the role of social networks or social capital using measures of previous migration experience in a spatial, social and political context. While such work has broadened our understanding of migration chains, it may fail to address the proximity of an operational context; the distinction between spatial, social and political contexts; and the role of multiple or exclusionary networks operating in the same context. These failings largely result from data limitations and the desire for an elegant model, and they do not pose an interpretive problem as long as the work is appreciated solely on its merits. They do pose a problem, however, given the prevailing and advancing notion that social networks are inherently growth- and equality-enhancing.

In general, social networks are growth-enhancing to the extent that the members are efficiently selected and matched. They are equality-enhancing to the extent that they are inclusive, without barriers that merely map pre-existing inequalities. The preceding analysis has

demonstrated that migrant social networks in one sending region in Bangladesh are quite exclusive. Families that can effectively contribute to a spatially far-flung network of community cooperation are included, gaining access to capital and informal insurance that can alter the local economy, ecology, and polity. That these traits are predicted by pre-existing access to material wealth and social status has been demonstrated in other contexts and settings as well as in the current one; living near a social network is not enough (Kuhn 2000).

Excluded families do not by default form their own broad-based networks; they just as often become marginal. When marginal populations migrate, as in the case of family migrants in Bangladesh, they do so as a way to replace the inadequate or unavailable networks of their origin area, severing many social ties. Given this separation, qualitative analysis suggests that this form of migration would not perpetuate migration chains; the quantitative results strongly support this conclusion.

In light of these findings, the goal of effective, network-oriented development policy should be in ensuring comprehensive access to primary networks of economic and social security. In a context such as Bangladesh, where participation in such networks requires the risky venture of migration to a city or another country, inherited traits such as social status, identity and economic leverage will continue to trump acquired traits such as education, effort and need until the focus of policy is shifted from catch-phrases like “urban economies of scale” and “investment promotion” to a serious attempt at “efficiency” and “equality”. Macro-level research on the impact of global systems and cumulative causation demonstrate that people will go where there are jobs, regardless of the circumstances. As this analysis shows, a positive association over time between two types of migration in the same spatial/political unit does not imply a *simple* social explanation. Individual migration begets further individual migration through a pathway of social inclusion; it begets family migration through a pathway of social exclusion. Where urban labor demand and rural labor supply are both high, migration will always be followed by more migration, but where does it take us?

Confluent advances in computing power, spatial data collection, econometrics and spatial statistics present an opportunity for social research that includes more robust attention to the power of space. The ongoing study of migration offers a unique opportunity to look at

overlapping spheres of spatial and social interaction. Spatial expansion, and the inherent risk it entails, can encourage the formation of new social networks, the expansion of existing social networks, or the fortification of existing ones. All three outcomes are likely to affect inhabitants of the same space, and while they are neither fully measurable nor of primary research interest, they are likely to determine the direction of things to come. As social researchers learn to appreciate the precise measurement of the spatial factors that confine humanity, we must continue to improve our efforts to measure or understand social ones. Above all, we must use our unique understanding of the social to decide how the two might interact.

Appendix: Qualitative Data Collection

The 1998 qualitative migration study uses a randomly selected, but biased, sample of out-migrants from Matlab as an entrée into selected migrant-sending communities in the Matlab area. The Matlab Health and Socioeconomic Survey (MHSS) is a large-scale household survey conducted in Matlab in 1996 that included a follow-up of approximately 600 out-migrants to various parts of Bangladesh. Of the 200 out-migrants contacted in Dhaka in 1996, twenty were recontacted in February 1998 to initiate what could be more appropriately characterized as a sample of the communities from which these migrants originated. Of the 21 initial respondents, 17 come from four primary villages in the area of Matlab covered by the Demographic Surveillance System of ICDDR,B. These 21 respondents, plus 9 urban informants located through the original 21, were interviewed using a semi-structured questionnaire geared towards migrants still residing in the city. Interviews were collected by 5 interviewers (four male, one female) and translated into English. Interviewers typically translated texts personally, utilizing their own notes and personal memory of the interview, but some texts were translated on a contract basis. Contractors also re-translated a sample of texts for quality control purposes, while a smaller sample were reviewed by the investigator, with some assistance from native speakers. Each male interviewer was assigned to interviews with migrants from one of the four primary villages, which would become the primary location of his rural work as well. The female interviewer conducted interviews with female migrants from all villages.

Phase II took the interview team to Matlab, where the first activity was tracking the origin households of the Dhaka-based migrants. This work extended to parts of nine villages,

focusing on four primary villages. In these origin households, the head of the household (18 interviews) and any return migrants (7 interviews) to the household were interviewed, using separate semi-structured interview forms for heads and return migrants.

Having completed origin household interviews, the team purposively sampled households in social and spatial proximity to the original household, talking to return migrants (27 interviews), seasonal migrants (7 interviews), heads of other households that had sent migrants (19 interviews), and heads of households that had sent no migrants (21 interviews). Interviewers conducted daily informal conversations with villagers in each of their field areas, keeping notes, maps, and family lineage trees for each study area as part of the sampling effort.

The investigator would accompany a different field worker each day, moving between the field sites. The rural locale permitted freer movement between areas than in the urban area, and residents had more time available for informal conversations. The formal goals of these visits were to track new respondents, to select new directions for research within a specific neighborhood, to determine whether sufficient data had been collected in a neighborhood, and to convince non-cooperative respondents of the value of participation in the research. Additionally, the visits included informal activities such as taking meals with residents, carrying on informal conversations, conducting focused follow-up interviews with important informants, and gathering contextual information about the local community. Conversations were sometimes personal but many took place in large groups, around shops, tea stalls, and in *baris* (compounds, largely kin-based, which provide much of rural social structure and operate as the mobility space of most women). These conversations became heated at times, quite often drawing crowds of more than 50 people. Some conversations were taped but most were more informal with findings noted and commented in field journals. The rural phase concluded with 15 normative questionnaires administered to the more knowledgeable or senior residents of the villages and 3 focus group discussions.

The second urban phase completed the picture of rural-urban linkages by interviewing some of the out-migrants from households approached in the rural purposive sample. These included some who were brothers of the original urban respondents as well as some originating from other rural households. By conducting interviews in Dhaka as well as Narayanganj

(industrial town near Dhaka) and Chandpur (minor port and District headquarters for Matlab), 20 of these follow-up interviews were collected.

The project utilized separate questionnaires for migrants, migrant household decision makers, return migrants, and non-migrants. The out-migrant questionnaires included separate modules on *Migration Decision (MG)*, *History of Past Migration (HI)*, *Village Context (VI)*, *Capital Accumulation (CP)*, *Urban Context (UR)*, *Village Ties (VT)*, and *Household Migration (HH)*. The rural interviews included the same sections with the exception of sections *UR and HH*. Additional questionnaires introduced during the project included a seasonal migrant questionnaire, a questionnaire better suited to the needs of female migrants and household heads, a short questionnaire studying the origins of a Matlab-origin enclave in one part of Dhaka, an international migrant questionnaire, a normative questionnaire, and a focus group discussion guide.

| Variable | Village-Level Measurement | | Bari-Level Measurement | |
|---------------------------------|---------------------------|-------|------------------------|-------|
| | Mean | S.D. | Mean | S.D. |
| Individual Migration Year-1 | 0.007 | 0.007 | 0.006 | 0.032 |
| Individual Migration Year-2 | 0.006 | 0.008 | 0.005 | 0.030 |
| Individual Migration Year-3 | 0.011 | 0.011 | 0.009 | 0.040 |
| Individual Migration Year-4 | 0.007 | 0.007 | 0.006 | 0.030 |
| Individual Migration Year-5 | 0.009 | 0.008 | 0.007 | 0.035 |
| Individual Migration Year-6 | 0.011 | 0.009 | 0.009 | 0.038 |
| Individual Migration Year-7 | 0.009 | 0.008 | 0.007 | 0.033 |
| Individual Migration Year-8 | 0.009 | 0.007 | 0.006 | 0.035 |
| Individual Migration Year-9 | 0.009 | 0.010 | 0.008 | 0.040 |
| Individual Migration Year-10 | 0.010 | 0.012 | 0.007 | 0.043 |
| Family Migration Year-1 | 0.010 | 0.010 | 0.008 | 0.037 |
| Family Migration Year-2 | 0.010 | 0.010 | 0.008 | 0.037 |
| Family Migration Year-3 | 0.011 | 0.009 | 0.009 | 0.038 |
| Family Migration Year-4 | 0.010 | 0.008 | 0.008 | 0.037 |
| Family Migration Year-5 | 0.009 | 0.009 | 0.007 | 0.034 |
| Family Migration Year-6 | 0.013 | 0.013 | 0.010 | 0.042 |
| Family Migration Year-7 | 0.011 | 0.010 | 0.008 | 0.037 |
| Family Migration Year-8 | 0.010 | 0.009 | 0.008 | 0.042 |
| Family Migration Year-9 | 0.009 | 0.011 | 0.007 | 0.037 |
| Family Migration Year-10 | 0.010 | 0.012 | 0.007 | 0.044 |
| Average Household Size | 1.5 | 0.1 | 1.7 | 0.5 |
| Average Age | 44.0 | 1.7 | 44.1 | 5.8 |
| Total Households | 327.4 | 261.2 | 7.6 | 6.7 |
| Individual/Household Variables: | | | | |
| Household Size | 6.3 | 3.0 | | |
| Respondent's Age | 44.1 | 14.8 | | |
| N (Village / Bari) | 149 | | 4506 | |

Table 2: Multinomial Logistic Estimates of Migration Behavior

| | Village-Level Coefficients | | Bari-Level Coefficients | |
|--|---------------------------------|---------------------------------|---------------------------------|--------------------------------|
| | Individual | Family | Individual | Family |
| Individual Migration Year-1 | 16.792 [*] (8.675) | 4.714 (10.680) | -3.743 ^{**} (1.846) | 0.832 (1.400) |
| Individual Migration Year-2 | -2.826 (8.135) | 10.081 (7.865) | 1.745 (1.585) | 1.915 (1.779) |
| Individual Migration Year-3 | 1.939 (6.245) | 1.479 (6.399) | 0.501 (1.239) | -0.566 (1.177) |
| Individual Migration Year-4 | 1.045 (10.122) | 2.602 (12.632) | 2.371 (2.779) | -0.520 (2.490) |
| Individual Migration Year-5 | 0.915 (8.586) | -8.115 (9.803) | 1.661 (1.376) | 3.124 [*] (1.321) |
| Individual Migration Year-6 | 1.440 (6.327) ^{**} | 3.459 (6.750) | 0.773 (1.616) | 3.557 ^{**} (1.033) |
| Individual Migration Year-7 | 20.578 (7.110) | 10.305 (9.696) | 3.111 (1.232) | 2.052 [*] (1.198) |
| Individual Migration Year-8 | -8.224 (11.897) | -7.092 (12.210) | 1.670 (1.503) | 2.450 (1.005) |
| Individual Migration Year-9 | 4.425 (6.111) | 14.381 ^{**} (6.127) | -0.244 (2.110) | 0.294 (1.096) |
| Individual Migration Year-10 | -6.581 (7.260) | 3.027 (5.526) | 1.256 (1.431) | 2.064 [*] (0.996) |
| Family Migration Year-1 | 7.405 (6.759) | -0.348 (6.283) | -0.017 (1.319) | 0.772 (1.165) |
| Family Migration Year-2 | -4.683 (5.508) | 3.982 (6.882) | 0.962 (1.956) | 0.610 (1.270) |
| Family Migration Year-3 | -14.535 [*] (8.661) | 8.546 (7.738) | -1.143 (1.379) | 0.166 (1.296) |
| Family Migration Year-4 | -1.161 (9.998) | -5.272 (7.499) | 1.303 (1.457) | 3.378 [*] (1.157) |
| Family Migration Year-5 | -0.930 (8.431) | 11.559 (7.280) | 0.968 (1.291) | 2.229 [*] (1.167) |
| Family Migration Year-6 | -10.403 [*] (5.371) | -7.012 (6.689) | 0.368 (1.469) | 0.189 (1.298) |
| Family Migration Year-7 | 1.732 (7.290) | -9.985 (8.324) | -1.485 (1.809) | 0.379 (1.438) |
| Family Migration Year-8 | -7.386 (8.103) | 0.794 (7.575) | -0.316 (1.018) | 0.358 (1.276) |
| Family Migration Year-9 | 5.070 (7.009) | 8.082 (7.043) | 1.452 (1.280) | 0.988 (1.119) |
| Family Migration Year-10 | 5.453 (6.180) | -9.541 (6.339) | 0.964 (1.022) | 1.729 (1.402) |
| Average Household Size | -0.615 (0.824) | 1.643 (1.020) | 0.002 (0.013) | -0.001 (0.011) |
| Average Age | 0.145 [*] (0.053) | 0.054 (0.052) | 0.015 (0.012) | -0.001 (0.013) |
| Total Households | 0.000 0.000 | 0.000 0.000 | 0.010 (0.008) | 0.004 (0.008) |
| Joint Chi-Square Individual (10 DF) [#] | 21.0 ^{**} | 13.2 | 20.9 ^{**} | 37.1 ^{**} |
| Joint Chi-Square Family (10 DF) [#] | 9.2 | 8.0 | 6.3 | 19.0 ^{**} |
| Joint Combined Chi-Square (20 DF) [#] | 32.5 ^{**} | 27.4 | 31.6 ^{**} | 71.7 ^{**} |
| N / Joint Chi-Square (40 DF) [#] | 149 | 59.8 ^{**} | 4506 | 99.9 ^{**} |
| Individual's Age | -0.157 ^{**} (0.029) | 0.013 (0.036) | 33528 | |
| Individual's Age ^ 2 | 0.001 0.000 | -0.001 0.000 | | |
| Constant | -6.670 ^{**} (3.082) | -9.352 ^{**} (3.306) | | |

N = 33,528 ; * = Significant at p<0.10 level ; ** = Significant at p<0.05 level

= Joint tests apply only to migration history lags exclusive of controls

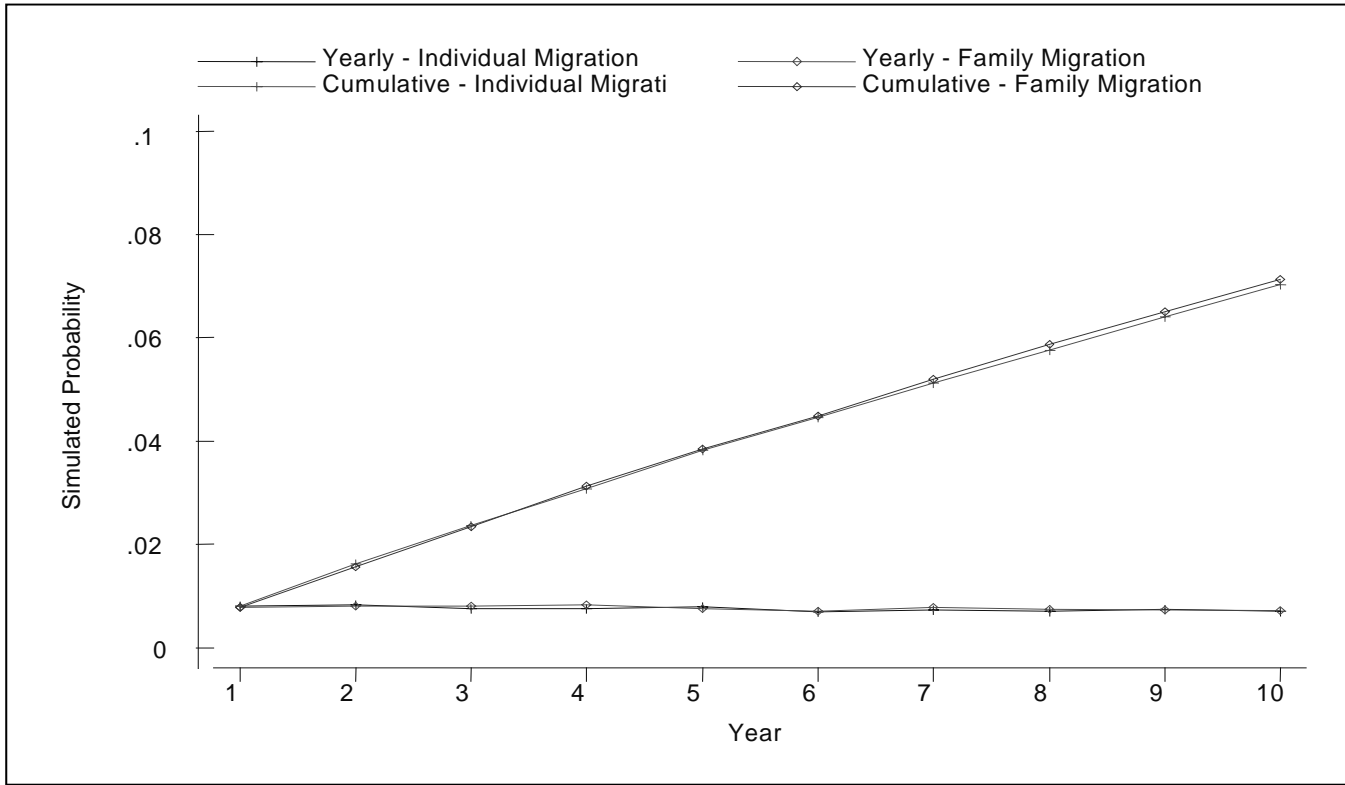
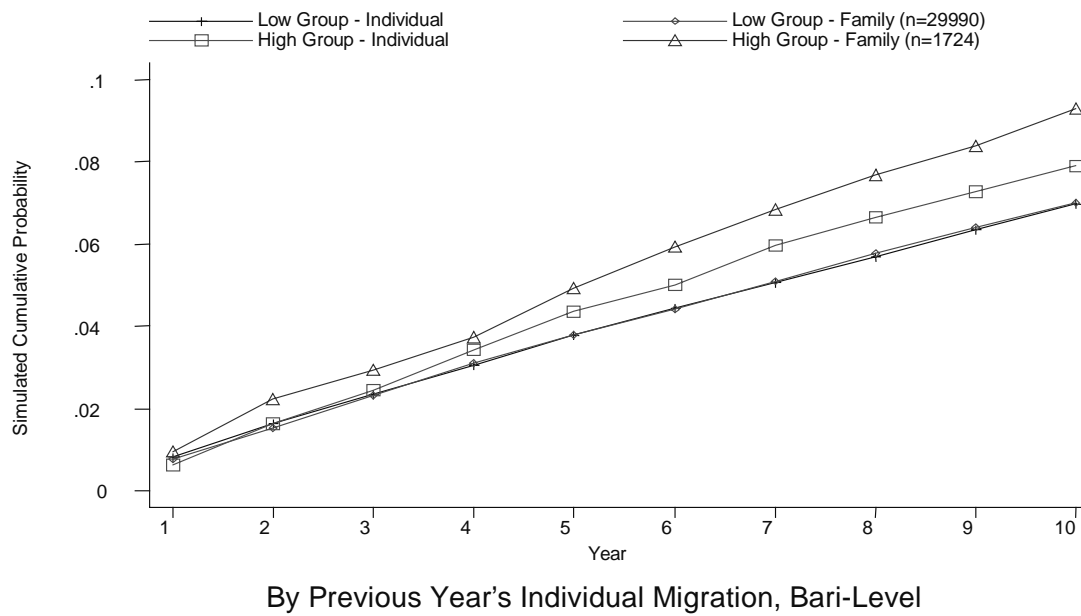
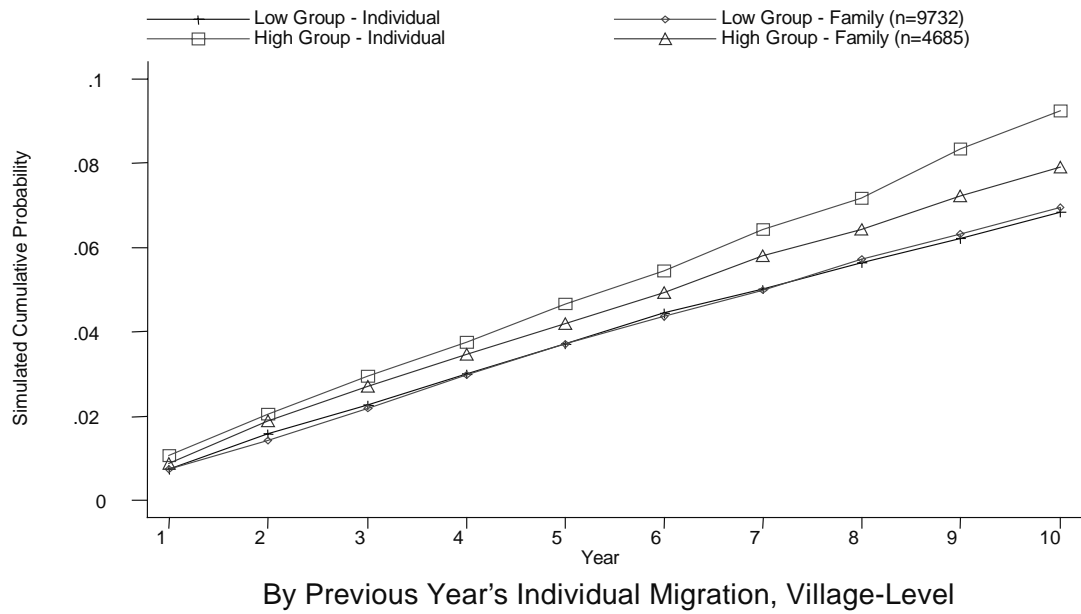
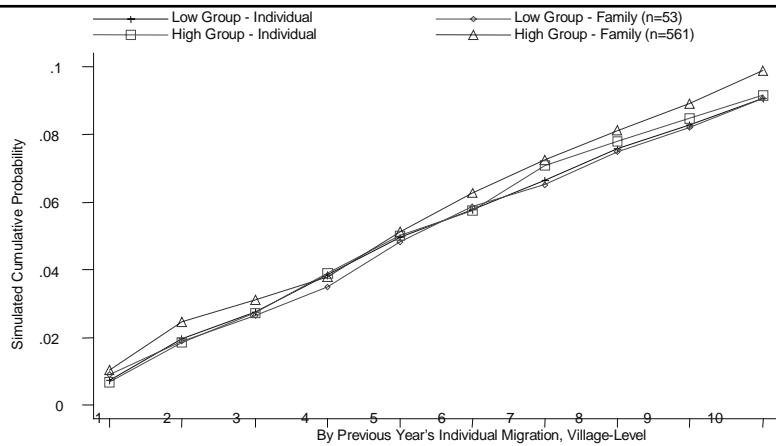


Figure 1: Simulated Yearly and Cumulative Probability of Migration

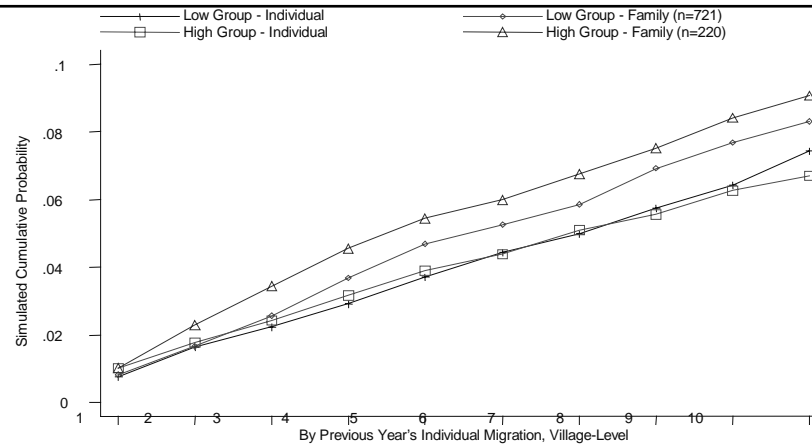


By Individual Migration History

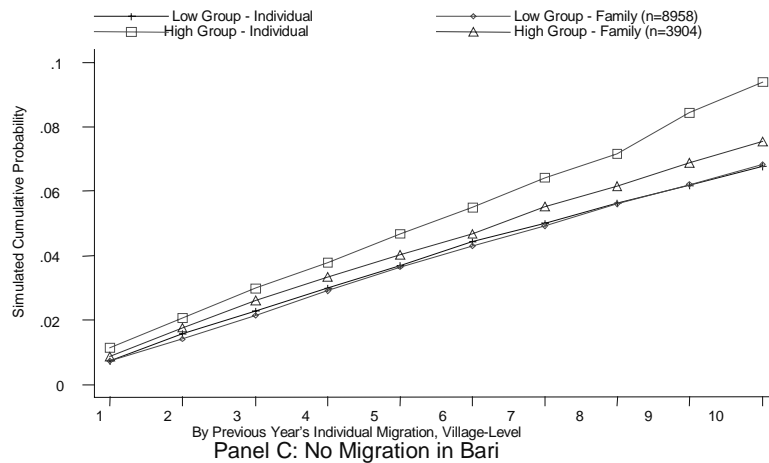
Figure 2: Simulated Cumulative Probability of Migration, 10 Years



Panel A: Any Individual Migration in Bari



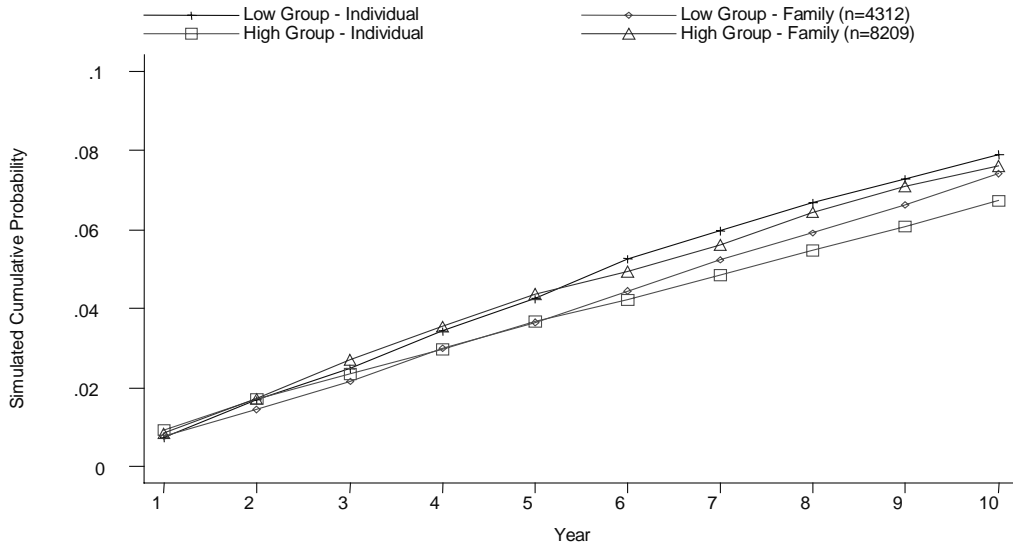
Panel B: Any Family Migration in Bari



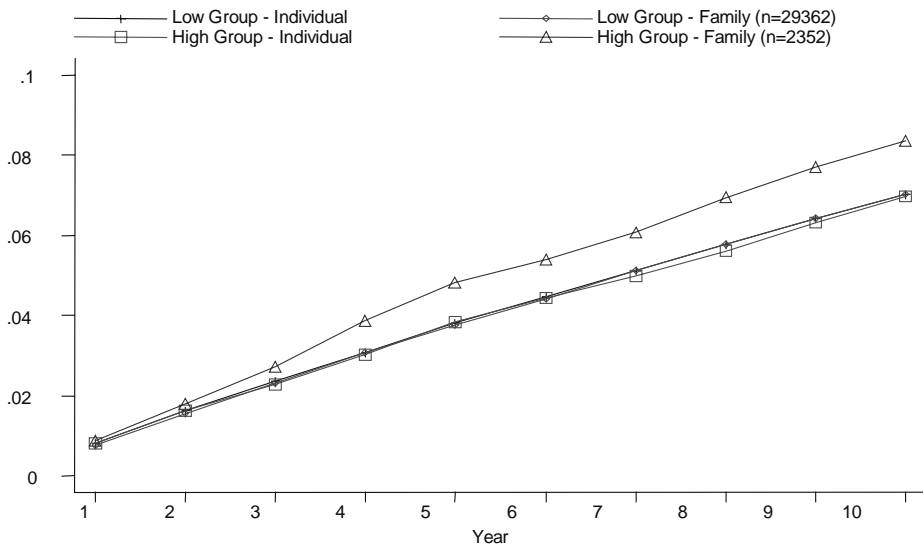
Panel C: No Migration in Bari

Broken Down by Past Year's Bari Migration

Figure 3: Simulated Cumulative Probability of Migration, 10 Years

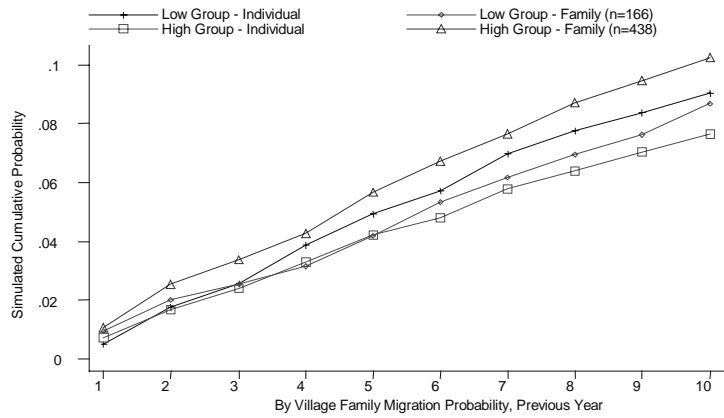


Panel A: By Village Family Migration Probability: Previous Year

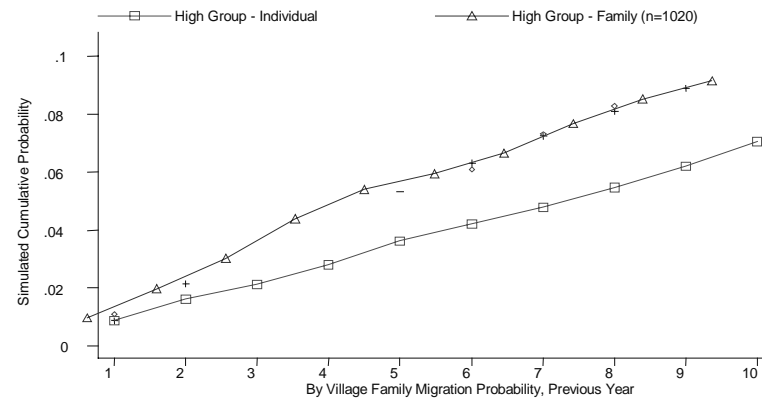


Panel B: By Family Migration Episode in Bari, Previous Year

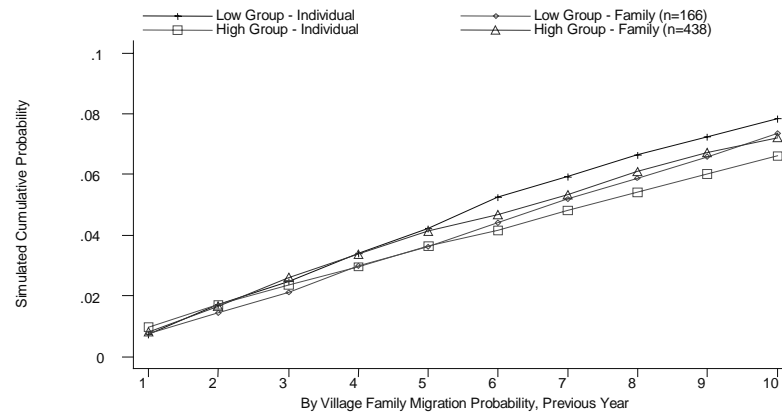
By Individual Migration History
 Figure 4: Simulated Cumulative Probability of Migration, 10 Years



Panel A: Any Individual Migration in Bari



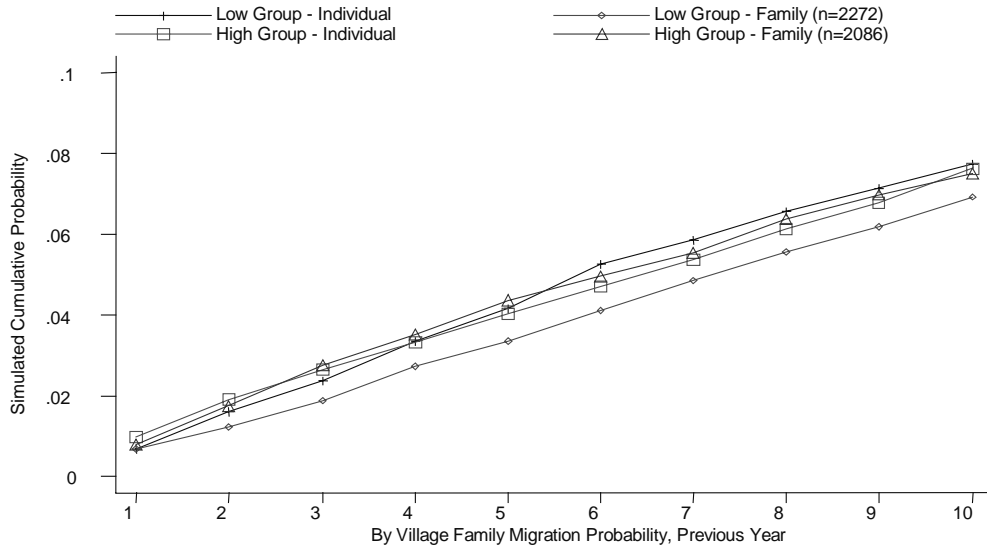
Panel B: Any Family Migration in Bari



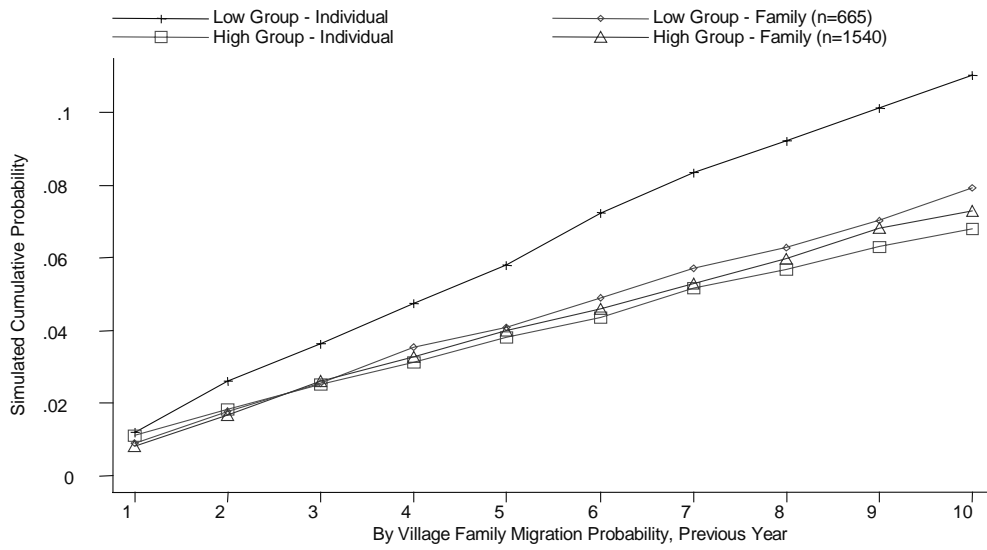
Panel C: No Migration in Bari

Broken Down by Past Year's Bari Migration Experience

Figure 5: Simulated Cumulative Probability of Migration, 10 Years



Panel A: Low Family Migration in Village



Panel B: High Family Migration in Village

By Individual Migration History

Figure 6: Simulated Cumulative Probability of Migration, 10 Years