

CHAPTER 2

Patterns of Migration in Tanzania

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Introduction

Economic development is increasingly being linked with migration (see, for example, Clemens and Pritchett 2007; Vogler and Rotte 2000). Development may spur migration, and migration may result in more rapid economic growth. Standard economic theory offers multiple examples of how physical and economic mobility may go hand-in-hand. The Lewis model offers a stylized description of sectoral labor mobility, from agriculture into “modern” production processes, with increased earnings for migrants—initially well beyond the earnings for those who remain in agriculture and the village economy. The Harris-Todaro model emphasizes the migration process and that relative individual earnings incentives matter, so that both pull and push factors will drive migration. However, in equilibrium, migration would equalize expected returns, and no further migration would be observed; *on average*, welfare levels in rural and urban economies would equalize (Harris and Todaro 1970). Other work, such as the “new economics of migration” (Stark and Bloom 1985), emphasizes how migration is part of a more general livelihood strategy for the initial household as a whole, with migration as part of a welfare-maximizing strategy, with a clear role for overall household income growth as well as risk sharing. For example, Rosenzweig and Stark (1989)

find that migration patterns for marriage in rural India are consistent with risk-sharing strategies of the initial household. Recent evidence has highlighted not only the role of networks in facilitating migration from home areas, but also how migration is closely linked to migrants' access to social networks in destination areas (Munshi 2003) or to community rates of out-migration (Kilic et al. 2007). Research by others, such as Hoff and Sen (2005), propose that kinship networks may establish barriers to emigration for members and prevent members from taking advantage of economic opportunities associated with migration.

While this emphasis on the process of migration in most recent empirical work has provided many insights, there are relatively few studies about this process from Africa. Moreover, studies on international migration outnumber those on domestic migration, while the data from this chapter suggest that the latter is more prominent and more relevant to understanding domestic growth patterns. This partly reflects the large data requirements for studying migration. As a temporal process, migration studies require either longitudinal data or detailed retrospective information. Panel data are increasingly being collected in developing countries to study the dynamics of household structure, demographics, and living standards, but the costs and difficulties of tracking people's movements mean that attrition may be relatively high. High attrition may also result in the loss of some of the most relevant households to a study of migration (Beegle 2000; Rosenzweig 2003).

Using data from a region in Tanzania, this chapter describes the characteristics of migration over a 13-year period. We focus on several aspects of migration: who migrates, why people move, household characteristics associated with individual moves, and, finally, the implications of this mobility on economic outcomes. Building on a detailed panel data survey conducted in 1991–94, we traced the sample of individuals in 2004. Detailed data on these individuals and their current households were collected at both baseline and in 2004, allowing for a thorough study of migrants' characteristics before their relocation and after, in their current living situation. The high recontact rates obtained make us well placed to study these issues.

We find that tracking individuals outside their baseline villages is crucially important for assessing welfare changes. The average consumption change of individuals found outside their baseline villages was more than 4 times higher than that of individuals found within the same village. Those who moved out of the Kagera region had nearly 10 times higher consumption change from 1991 to 2004, compared to

those who remained in the community. These averages also translate into very different poverty dynamics patterns for the physically mobile and immobile. For those who stayed in the community, we see poverty rates drop by about 4 percentage points over 13 years.¹ For those who moved elsewhere within the region, we see poverty rates drop by about 12 percentage points; and for those who moved out of the region, poverty rates drop by 23 percentage points in the same period. For our whole sample of panel individuals, we find that average consumption between 1991 and 2004 increased by a bit more than US\$60 per person per year, while the poverty rates fell by about 8 percentage points. Had we only focused on those individuals still residing in the baseline community, we would have concluded that average consumption rose by a bit under \$30 and poverty rates declined by 4 percentage points. In other words, had we not interviewed people who moved out of the community—a practice found in many panel surveys—we would have seriously underestimated the extent to which poverty has decreased over the past 13 years in the Kagera region: we would have reported poverty reduction at about half of its true value. Aside from this, we would have omitted from our sample that part of the population with the highest information content on pathways out of poverty. Similarly, Clemens and Pritchett (2007) raise these issues in the context of income growth and international migration.

The Setting and Data

Between 1994 and 2004, Tanzania experienced a period of relatively rapid growth, using economic liberalization, a renewed trade orientation, a stable political context, and a relatively positive business climate to boost economic performance. Real GDP growth was of the order of 4 percent per year, while annual population growth was around 3.2 percent in the same period (URT 2004). However, this growth has not been sufficiently broad-based to result in rapid poverty reduction. On the basis of the available evidence, poverty rates have declined only slightly, and most of the poverty reduction progress has been made in urban areas. Nationally representative poverty data are available from the Household Budget Survey (HBS) for three points in time: 1991, 2000–01, and 2007 (NBS 2002; NBS 2009). Poverty rates declined over these three years from 39 percent, to over 36 percent, to 34 percent. However, poverty dropped only from 41 percent, to over 39 percent, to 38 percent in rural Tanzania, while it went from 28 percent, to over 18 percent, to 16 percent in Dar es Salaam.

These declines in poverty rates are not fast enough to attain the Millennium Development Goals.

The Kagera region is an area far from the capital and coast, bordering Lake Victoria, Rwanda, Burundi, and Uganda. It is overwhelmingly rural and primarily engaged in producing bananas and coffee in the north, and rain-fed annual crops (maize, sorghum, cotton) in the south. Relatively low-quality coffee exports and agricultural produce are its main source of income. It is not one of the poorest areas of Tanzania, with mean per capita consumption near the mean of mainland Tanzania in 2000. Growth and poverty reduction appears to mirror the rest of Tanzania: real GDP growth was just over 4 percent per year between 1994 and 2004, but poverty is estimated to have fallen only by 2 percentage points (from 31 percent to 29 percent between 1991 and 2000–01, using the national data; see Demombynes and Hoogeveen 2007).

The challenge in Kagera may then seem to be rather representative for provincial Tanzania as a whole. While in some pockets, such as Dar es Salaam and other coastal areas, substantial growth and poverty reduction appears to have taken place, less-well-connected areas have not fared equally well. Kagera's challenge can be seen as reflecting the typical problems of land-locked, agriculture-based economies: how to deliver poverty reduction if the main engine of growth appears to be elsewhere (De Weerd 2009). However, caution is necessary when using the existing evidence to fully assess the welfare changes linked to the recent decade of growth. Poverty reduction is about improved living standards of people, not regions, and as we will document below, people move to try to take advantage of and partake in changing circumstances. The data set used in this study can assess this appropriately.

The Kagera Health and Development Survey (KHDS) was originally conducted by the World Bank and Muhimbili University College of Health Sciences (MUCHS) and consisted of about 915 households interviewed up to four times from fall 1991 to January 1994 (at six- to seven-month intervals) (see World Bank 2004). The KHDS 1991 (first round) serves as the baseline data for this paper. Initially designed to assess the impact of the health crisis linked to the HIV-AIDS epidemic in the area, the survey used a stratified sample to ensure sufficient observations of families experiencing adult mortality. Comparisons with the 1991 HBS suggest that in terms of basic welfare and other indicators, it can be used as a representative sample for this period for Kagera.

The objective of the KHDS 2004 survey was to reinterview all individuals who were household members in any round of the KHDS 1991–94

survey and who were alive at the last interview (Beegle, De Weerd, and Dercon 2006). This effectively meant turning the original household survey into an individual longitudinal survey. Figure 2A.1 in the Annex maps out how the 912 households from baseline split into the 2,719 households interviewed in the follow-up survey.

Although the KHDS is a panel of respondents and the concept of a “household” after 10–13 years is a vague notion, it is common in panel surveys to consider recontact rates in terms of households. Excluding households in which all previous members are deceased (17 households with 27 people), the field team recontacted 93 percent of the baseline households.² This is an excellent rate of recontact compared to panel surveys in both low-income countries and high-income countries. The KHDS panel has an attrition rate that is much lower than that of other well-known panel surveys summarized in Alderman et al. (2001), in which the rates ranged from 17.5 percent attrition per year to the lowest rate of 1.5 percent per year. Most of these surveys in Alderman et al. (2001) covered considerably shorter time periods (two to five years).

Much of the success in recontacting respondents was due to the effort to track people who had moved out of the baseline communities. One-half of the 2004 households were not in the baseline communities. Of those households tracked, only 38 percent were located near the baseline community. Overall, 32 percent of all households were not located in or relatively near the baseline communities. While tracking is costly, it is an important exercise, because, as will be shown below, it greatly improves recontact rates, and migrant households have quite different income dynamics.

Turning to recontact rates of the sample of over 6,000 respondents from baseline, Table 2A.1 shows the status of the respondents by age group (based on their age at first interview in the 1991–94 rounds). Older respondents were much more likely to be located if still alive, which is consistent with higher migration rates among the young adults in the sample. Excluding people who died, 82 percent of all respondents were reinterviewed. Table 2A.2 shows the location of respondents. Without tracking, reinterview rates of surviving respondents would have fallen from 82 percent to 52 percent (2,797 out of 5,394 survivors). Nonlocal migration is not trivial; restricting the tracking to nearby villages would have resulted in 63 percent recontact of survivors. Migration proved to be an important factor in determining whether someone was recontacted. While 8 percent of traced individuals resided outside Kagera, 43 percent of untraced individuals were reported to be residing outside the region.

Key Characteristics of Migration

Who Moves and Why

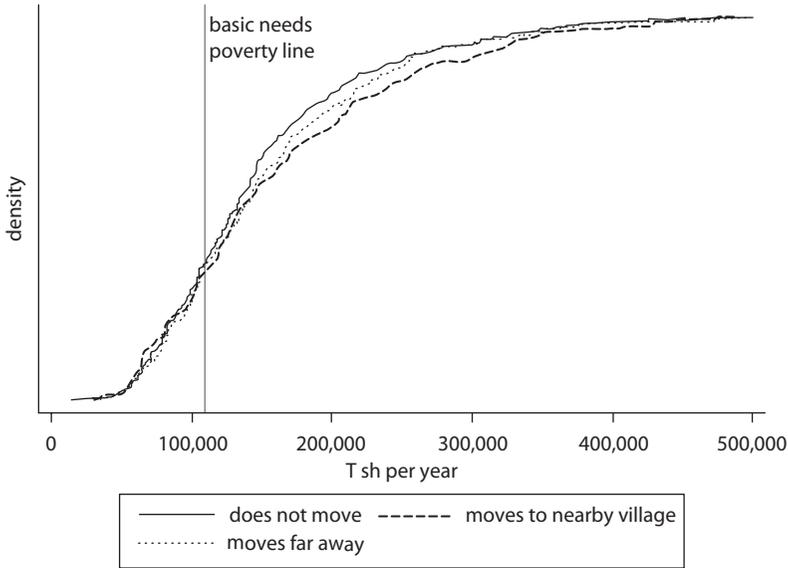
We divide the sample into three categories to examine the individual characteristics of movers and nonmovers. Specifically, for movers, the categories are those who moved to a nearby village (14 percent of the entire sample) and those who moved farther away (23 percent). The remaining 63 percent of individuals surveyed were residing in the same village in 2004 as in 1991. As shown in Table 2.1, not surprisingly, the most salient traits of movers are that they are younger on average and more likely to have never married. Women are more likely to move, as marriage (which is universal) is associated with relocating to the husband's community in this setting (patrilocality). Individuals who were the head, spouse of the head, or child of the head were less likely to move than others. Those residing in better-connected districts, such as Bukoba Rural and Bukoba Urban, were more likely to move.

Figure 2.1 plots the cumulative distribution function for consumption per capita for the three groups. At baseline, there was no difference in the poverty rate across groups (indicated by the intersection of the vertical

Table 2.1 Baseline Characteristics of Nonmovers and Movers

	<i>Did not move</i>	<i>Moved to nearby village</i>	<i>Moved farther away</i>
Age (years)	20.5	14.2	15.0
Male	0.53	0.34	0.45
Never married	0.32	0.65	0.62
Mother resides in household	0.50	0.50	0.44
Father resides in household	0.41	0.42	0.36
Head, spouse, or child of head	0.77	0.56	0.56
Education (years)	2.4	2.8	2.9
Completed primary	0.21	0.25	0.25
Chronic illness	0.15	0.07	0.10
Any children residing outside of household	0.75	0.21	0.26
<i>District</i>			
Biharamulo	0.08	0.07	0.09
Bukoba Urban	0.17	0.27	0.27
Bukoba Rural	0.31	0.30	0.35
Karagwe	0.15	0.15	0.08
Muleba	0.16	0.13	0.14
Ngara	0.12	0.09	0.07
Number of observations	2,797	626	1,971

Figure 2.1 Cumulative Density Function of Consumption per Capita in 1991 by Future Migration Status



Note: The basic needs poverty line is 109,663 Tanzanian shillings (T sh) per year.

line in Figure 2.1 with the curves). Movers were slightly wealthier on average (indicated by the slight right shift in the curve for movers), although the differences in the means were not statistically significant.

Since many of the characteristics of migration are interrelated (such as age and never been married, or age and being household head), we examine the migration decision using multivariate analysis in Table 2A.3. Most of the patterns found in Table 2.1 remain in the multivariate results. The age-migration relationship is nonlinear. Age is associated with higher probability of moving for those under 20 in baseline; after that point, the age-migration relationship is negative. Males and not-yet-married persons are more likely to move. Persons residing with their mother or the head, spouse of the head, or child of the head are less likely to move than others. Education is positively associated with probability of migrating. As will be discussed below, the strong association of migration with individual traits, as opposed to the role of household characteristics, will be a critical aspect to the analysis of migration impacts on consumption growth. Specifically, the key variables for that work will be the relative position within one's household with respect to age, sex, and relationship to head, as well as interactions of these traits with other covariates.

Characteristics of Migration

Consistent with the demographic characteristics of movers, marriage was the most common self-reported reason for leaving the village (Table 2A.4). Over two-fifths of local migrants (41 percent) reported moving for marriage. Work-related motives were commonly reported for non-local moves, with reasons such as having found work, seeking work, and being posted to a job accounting for over 20 percent of these cases. Following parents was reported to have motivated 12 percent of such long-distance moves. In general, though, the reasons for moving are varied and often reflect sociocultural, economic, and life cycle-related motives.

In Table 2A.5, we show some of the basic characteristics of migrants' location as of 2004. Migrants may have moved to several places between 1991 and 2004, and we have only information to compare their 2004 location with the baseline location.³ While migration is often associated with urbanization (or at least, not moving to more remote locations), we find that less than one-third of migrants are residing in less remote locations. Fully one-third actually reside in more remote areas of Tanzania, compared to their baseline location. Moves to less remote locations are associated with large average distances between origin and 2004 location, averaging 258 kilometers. This reflects the distance of Kagera from Dar es Salaam, the commercial capital on the opposite side of the country.

Household Splitting

An interesting phenomenon associated with individual migration is that the household as a unit splits up as members move out. Table 2A.6 describes the baseline characteristics of households for two groups of households, based on whether any member is located in another village or town by 2004. About 14 percent of households (122 out of 895) did not have any member locate to a new village or town. Migration is not a rare event for households in Kagera. For many traits, including male headship, age of head, education of head, wealth, and land holdings, there is no statistical difference between the two groups of households. However, households with higher education (measured by the highest level among members) and larger households are significantly more likely to have someone move.

Economic Impact of Migration

As noted above, migrants and nonmigrants did not have wealth or income differences at baseline. Yet when we examine their relative incomes in 2004 and relative income growth, a very different picture emerges.

Table 2.2 shows the poverty rate and consumption per capita for the sample for both years and the difference (growth). Among the entire sample, the poverty rate declined by 8 percentage points. This statistic, however, hides important differences between subgroups of the panel respondents based on their 2004 location. For those found residing in the baseline community, poverty rates dropped by 4 percentage points. Those who moved experienced larger declines with poverty rates dropping by 11, 13, and 23 percentage points for those who moved to neighboring communities, elsewhere in the Kagera region, and outside the region, respectively. A similar pattern can be noted with respect to average consumption per capita. While this grew by around US\$65 for

Table 2.2 Average Consumption Movements of Panel Respondents, by 2004 Location

	<i>Mean 1991</i>	<i>Mean 2004</i>	<i>Difference between means</i>	<i>N</i>
<i>Poverty headcount (%)</i>				
Full sample	0.35	0.27	-0.08***	4,075
Within community	0.36	0.32	-0.04***	2,611
Nearby community	0.33	0.22	-0.11***	566
Elsewhere in Kagera	0.37	0.24	-0.13***	571
Out of Kagera	0.30	0.07	-0.23***	327
<i>Consumption per capita (T sh)</i>				
Full sample	159,217	225,099	65,882***	4,075
Within community	155,641	186,479	30,838***	2,611
Nearby community	166,565	230,807	64,242***	566
Elsewhere in Kagera	162,116	262,964	100,848***	571
Out of Kagera	169,994	457,475	287,480***	327
<i>Food consumption per capita (T sh)</i>				
Full sample	106,113	145,991	39,878***	4,075
Within community	103,889	121,919	18,030***	2,611
Nearby community	111,077	150,478	39,401***	566
Elsewhere in Kagera	108,323	168,022	59,699***	571
Out of Kagera	111,416	291,958	180,542***	327
<i>Nonfood consumption per capita (T sh)</i>				
Full sample	57,059	79,108	22,049***	4,075
Within community	55,383	64,560	9,177***	2,611
Nearby community	60,126	80,329	20,202***	566
Elsewhere in Kagera	58,450	94,942	36,493***	571
Out of Kagera	62,712	165,516	102,804***	327

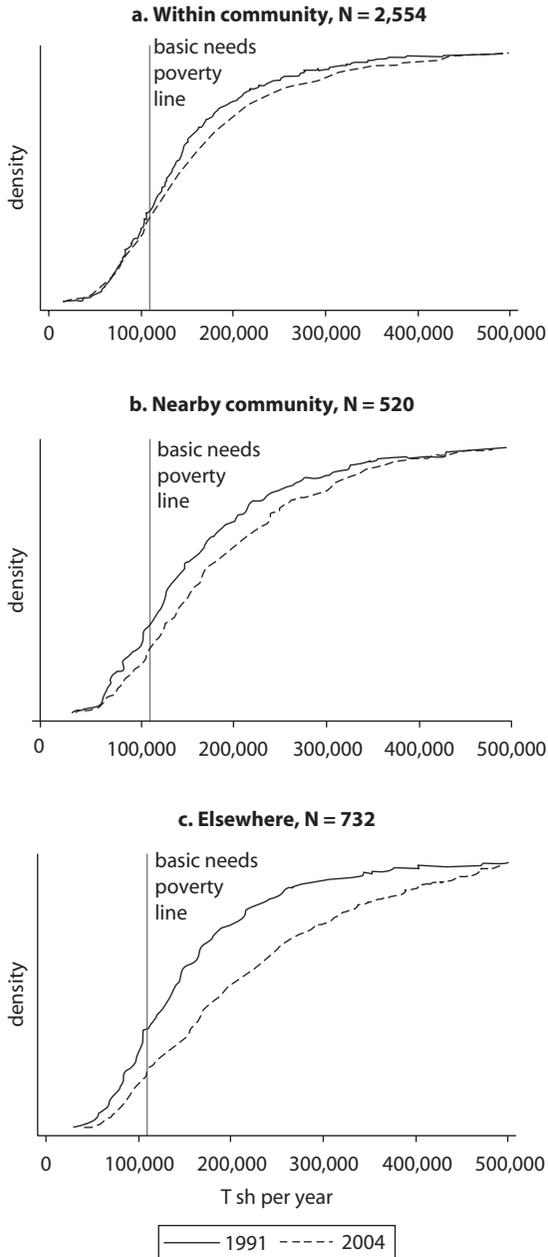
Note: Significance of the difference with the 1991 value using a paired t-test: *** = 1%; T sh = Tanzanian shilling. Sample size is 4,075, including only observations for which all variables used in regressions analysis are available.

the whole sample, it grew by only \$30 for those found in the same community and by \$65, \$100, and \$287 for those who moved to neighboring communities, elsewhere in Kagera, and outside the region, respectively. Table 2.2 further shows that splitting the consumption aggregate up into its food and nonfood components gives the same picture. In other words, our entire basic assessment of welfare changes would have been wrong if we only had focused on those individuals still residing in the community, a practice found in many panel data surveys. We would have concluded that average consumption increased by only half of its true value, and poverty dropped by only half of its true value.

Figure 2.2 suggests that these conclusions are robust across the cumulative distribution of consumption. Panel a in Figure 2.2 depicts the cumulative density function for consumption per capita for those people who remained in the same community. Panels b and c show the same graph for respondents found residing in neighboring communities and elsewhere (in the Kagera region and outside the region). The poverty line is shown as a vertical line. As respondents were located farther from their baseline location, the difference between the 1991 and 2004 graphs becomes more pronounced. Note how, for people who remained in the baseline community, the 1991 and 2004 distributions lie close to each other under the poverty line and diverge above it, while for other mobility categories there is more divergence at the bottom of the graph. Thus in the baseline community very little movement out of poverty occurred, while those who moved out of the baseline community were more likely to improve their consumption—below or above the poverty line.

What drives the association between migrating and consumption growth?⁴ Up to now, physical mobility per se has been used as a categorizing variable without regard to details on the destination to which people moved. By 1991, 68 percent of the sample were living in rural villages, of which a little over half were categorized by the survey team as poorly connected in terms of infrastructure. The rest of the sample were people living in (or close to) the regional capital, Bukoba (17 percent), or other small towns (14 percent). The income gains may be driven by moving to a better-connected center (for example, from a poorly connected to a better-connected village, or from a rural area to an urban center). About 10 percent of the sample moved to a better-connected area, and they experienced approximately 86 percent consumption growth. Those who moved to an equally connected area experienced consumption increases

Figure 2.2 Cumulative Density Function of Consumption per Capita



Note: The basic needs poverty line is 109,663 Tanzanian shillings (T sh) per year.

of 42 percent, while those who moved to a less-connected area experienced an increase in consumption of about 25 percent; this is still higher than the consumption growth of those who did not move. Clearly, it matters whether you move to a more or less remote area, but moving seems to matter in itself too.

A second plausible idea is that migration is capturing occupational or sectoral change. For example, consumption growth is highest for those who moved into nonagricultural activities (67 percent). Since migration may be tied to income, we explore this by looking at growth for the following groups: by sector change (stay in agriculture, move from agriculture to other occupations, stay in nonagricultural occupations, and move into agriculture from nonagricultural occupations) and by migration status. We find that irrespective of the sectoral change, migration is associated with higher average consumption. The only exception is for those who move into agriculture from nonagricultural activities, but this is a rare change.

Can we interpret these results as evidence that migration itself is a means of economic growth for individuals in Tanzania? That is a difficult question to address. Correlations between migration and income do not settle the issue of whether these changes are in fact directly related to migration or are spurious. A key problem is having access to data that allow a careful and convincing assessment of the relative welfare of migrants and nonmigrants, due to the standard evaluation problem that you cannot observe one person as both a migrant and a nonmigrant. A few studies have access to experimental data, such as international migration lotteries (for example, McKenzie, Gibson, and Stillman 2006), but most studies work with nonexperimental data. The key concern, that there is unobserved heterogeneity affecting both outcomes and the process of migration, bedevils most studies, usually leading to a quest for imaginative but convincing instruments for migration (see the review of the migration and poverty literature by McKenzie and Sasin 2007, and the references therein).

Although we do not have experimental data, we try to assess this through a number of empirical approaches. We use a difference-in-difference estimator, in which we compare consumption growth for those moving out of the initial community with that of those who stayed. As we have individual-level panel data, we can control for individual fixed heterogeneity affecting consumption levels. This resolves already a large number of possible sources of endogeneity usually mentioned as affecting studies of the impact of migration, such as risk aversion or

ability, likely to affect both migration and income or consumption outcomes. However, it may be that certain families or individuals are likely to have higher *growth* in consumption due to factors that are also affecting the migration decisions. By looking within households, we can control for all initial household-level heterogeneity. This identifies the impact of migration using *within initial household* variation—differences between members of the same initial households, effectively controlling for initial growth paths. Furthermore, we can control for a wide set of individual level factors that may simultaneously affect consumption growth and migration.

It may be of concern that despite controlling for fixed individual heterogeneity and both fixed and time-varying household-level heterogeneity (including initial growth paths), unobserved individual factors may still affect migration as well as consumption growth, despite a broad set of observables used as controls. Finding plausible instruments that would satisfy exclusion from the consumption growth regression is not straightforward. We used three types of variables: migration pull factors, push factors, and variables reflecting social relationships. These instruments reflect the results of the previous section, that some of the migration decisions are related to relative individual traits within households rather than solely household-level factors.

In the initial household fixed effects regressions, we find a strong and significant effect of migration out of the community and a measure of the distance moved. Moving out of the community adds about 36 percentage points to the growth in consumption between 1991 and 2004. The regressions on distance moved suggest that the farther one moves, the greater the impact. As these regressions are identified using within initial household variation, these are very strong effects. Overall, migration has large impacts on consumption levels of migrants, but also causes strong divergence between people that initially lived together, including siblings and other family members. This does not preclude that substantial transfers take place between different split-offs, but definitely not enough to constitute within-household consumption smoothing. It provides little evidence for the theory that the migration decision is part of a household-level maximization strategy (although it cannot preclude it).⁵

We find (very remarkably) that the 2SLS (IV with fixed effects) results are identical to initial household fixed effects results. In other words, there is little or no evidence that unobserved individual time-varying heterogeneity affected the noninstrumented results. The conclusion is strong: being able to move out of the village or community appears to

play a strong role in being able to experience larger consumption growth, and if those who moved had stayed behind, our evidence suggests that they would not have done as well. We perform a variety of checks to verify the robustness of these findings, which are described in detail in Beegle, De Weerd, and Dercon (2008).

Taken together, this suggests that there are windows of opportunity—being in the right place at the right time—that certain categories of people can take advantage of: not having social and family constraints in a window of time when physical mobility has large payoffs. Missing these windows implies remaining trapped in a low-return environment.

Our results throw new light on the debate about the role of traditional values and norms in a modernizing society characterized by relatively high economic growth. People need to move to take advantage of opportunities that arise over time and space in the region, yet social norms can prevent some categories of people from moving. For example, Hoff and Sen (2005) theorize that kinship groups establish exit barriers for their members, because in some situations it can be in the interest of the kinship group to prevent some of its members from migrating. The analysis in Beegle, De Weerd, and Dercon (2008) largely points to social and family norms interacting with pull (nearby towns) and push (shocks) factors as determinants of who can be allowed (or are chosen) to move. These are traits linked with age, gender, and social position in the household, as well as the interaction of these traits with distance to a town. People in their teens and twenties, with weaker ties to the households in which they live, unmarried individuals, and males have more freedom to take advantage of the windows of opportunity that come their way. Similarly, being head or spouse of the head will typically imply local responsibilities making it harder to leave.

This still raises the question of why more people do not move, and why these barriers remain in place if they are so welfare reducing.

Conclusion

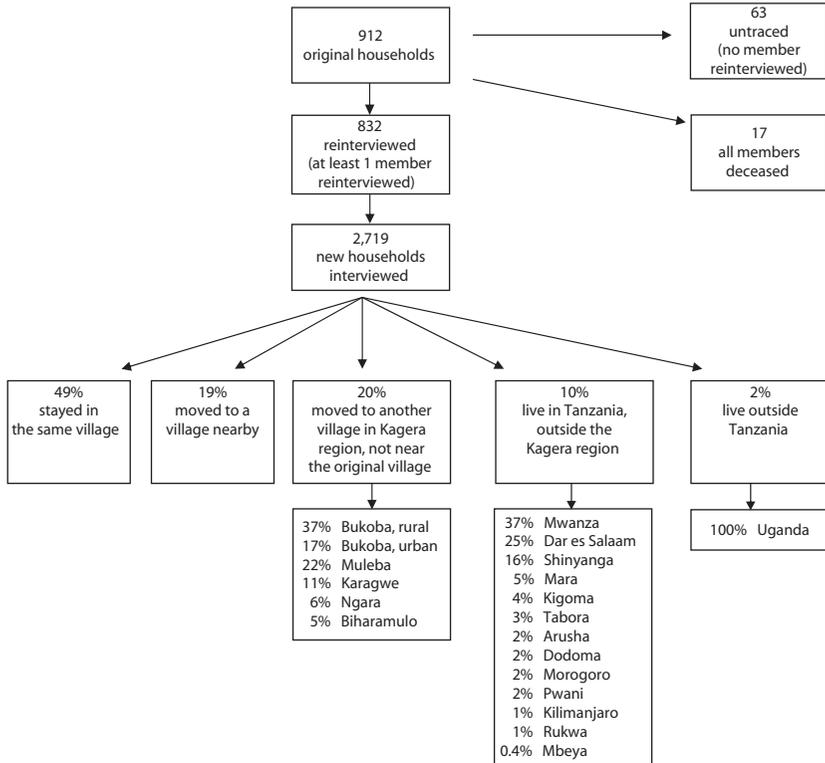
Migration may be a pathway for economic development, but we often lack the longitudinal data required to study patterns of migration. This chapter uses unique panel data from Tanzania to explore the patterns of migration among Tanzanian households. Nearly half of all respondents migrated out of their baseline village or town between 1991 and 2004. Almost all of this is migration within Tanzania. Only about 14 percent of

the baseline households had no household members residing outside the baseline village. Migration among members is the norm, rather than the exception. We find a number of individual traits associated with migration, whereas household characteristics are less likely to predict members moving out of the village. Moreover, consumption measured at baseline is not associated with future migration.

Individuals who migrate have higher consumption growth and higher rates of poverty reduction than nonmovers. Using a number of econometric techniques, we attempt to assess the causal impact of migration. We find that individuals who migrate do better, even when some migrate to more remote locations, and regardless of changes in their sector of work.

Annex

Figure 2A.1 KHDS 2004: Recontacting Respondents after 10+ Years



Note: KHDS = Kagera Health and Development Survey.

Table 2A.1 KHDS Individuals, by Age

<i>Age at baseline 1991–94</i>	<i>Recontacted</i>	<i>Deceased</i>	<i>Untraced</i>	<i>Reinterview rate among survivors (%)</i>
<10 years (Percentage)	1,604 (77.1%)	160 (7.7%)	317 (15.2%)	83.5
10–19 years (Percentage)	1,406 (73.2%)	104 (5.4%)	412 (21.4%)	77.3
20–39 years (Percentage)	823 (63.3%)	287 (22.1%)	190 (14.6%)	81.2
40–59 years (Percentage)	436 (70.6%)	148 (23.9%)	34 (5.5%)	92.8
60+ years (Percentage)	163 (37.6%)	262 (60.4%)	9 (2.1%)	94.8
Overall (Percentage)	4,432 (69.7%)	961 (15.1%)	962 (15.1%)	82.2

Note: Sample of individuals ever interviewed in KHDS 1991–94 and alive at last interview. Age categories are based on age at first interview. KHDS = Kagera Health and Development Survey.

Table 2A.2 KHDS Reinterview Rates by Location

	<i>Number</i>	<i>Location</i>	<i>Percent</i>
Baseline sample	6,355		
Reinterviewed	4,432		
		Same community	63.1
		Nearby community	14.1
		Elsewhere in Kagera	14.4
		Other region	7.1
		Other country	1.3
Untraced	962		
		Kagera	56.7
		Dar es Salaam	12.3
		Mwanza	10.4
		Other region	7.9
		Other country	5.5
		Don't know	7.3
Deceased	961		

Note: Locations for untraced respondents were reported by other household members from the baseline survey who were successfully located, interviewed, and able to provide location information on the respondent. In some cases, this information comes from other relatives or neighbors residing in the baseline communities. KHDS = Kagera Health and Development Survey.

Table 2A.3 Probability of Migrating

	<i>Moved out of village/town</i>	<i>Moved further away than nearby village</i>
Age (years)	0.038*** (0.008)	0.030*** (0.007)
Age squared	-0.001*** (0.000)	-0.001*** (0.000)
Male	-0.398*** (0.037)	-0.193*** (0.037)
Never married	0.778*** (0.089)	0.613*** (0.088)
Mother resides in household	-0.154*** (0.058)	-0.182*** (0.058)
Father resides in household	0.005 (0.066)	-0.082 (0.069)
Head, spouse, or child of head	-0.428*** (0.074)	-0.242*** (0.076)
Education (years)	0.034*** (0.010)	0.035*** (0.010)
Chronic illness	-0.074 (0.067)	-0.000 (0.065)
Any children residing outside of household	0.019 (0.020)	0.007 (0.019)
Number of observations	5,390	5,390

Note: Probit estimation. District dummies also included. Significance level: *** = 1%.

Table 2A.4 Reasons for Moving

	<i>Moved to nearby village</i>	<i>Moved farther than nearby village or outside region</i>	<i>All movers</i>
Found work	2.7	5.8	3.5
To look for work	5.4	15.3	8.7
Posted on a job	1.2	1.6	1.0
Looking for land	7.1	6.1	8.7
Schooling	4.4	9.9	6.0
Marriage	41.1	22.8	28.9
Divorce	2.2	1.9	2.0
Parents died	4.7	3.1	3.7
To care for a sick person	0.5	0.6	0.7
To seek medical treatment	0.5	1.1	0.7
Following inheritance	5.1	2.8	5.8

(continued)

Table 2A.4 Reasons for Moving (continued)

	Moved to nearby village	Moved farther than nearby village or outside region	All movers
Other family problems	7.6	6.4	8.5
Follow parents	8.4	12.0	10.3
Follow spouse	0.5	0.8	0.8
Follow relatives	0.7	3.2	1.8
New house	1.2	0.0	1.4
Other	6.4	5.7	7.0
No reason reported	0.5	0.7	0.7
Total	626	1,012	1,638

Note: Reason for move pertains to the original move from the dwelling/compound at which the person was residing at baseline (and not necessarily the reason for choosing the current location as of the interview in 2004). Excludes movers who were not relocated in 2004.

Table 2A.5 Characteristics of Migration

Remoteness	Percent of respondents	Average distance of move (km)
Less remote location	28.9	258
Similar location	36.5	40
More remote location	34.6	39
Number of observations	1,633	

Note: Sample of respondents who located to a new village or region by 2004. Kilometers are calculated based on GPS location of village at baseline and location of household in 2004 interview. Remoteness is based on the changes in classification among six possibilities, in order of remoteness: island in Lake Victoria, remote village, connected village, urban center, district capital, regional capital.

Table 2A.6 Characteristics of Households by Future Migrant Status

	No members moved to another village by 2004	Some members moved by 2004
Male household head	0.78	0.73
Age of household head ^a	45.1	48.7
Years of education of head	4.0	4.2
Highest years of education among members ^a	5.6	6.4
Water from river/stream/other	0.71	0.73
Toilet facility	0.91	0.92
Good flooring ^a	0.09	0.18
Value of physical stock (T sh)	2,058,241 [1,185,393]	2,198,099 [1,448,865]

(continued)

Table 2A.6 Characteristics of Households by Future Migrant Status (continued)

	<i>No members moved to another village by 2004</i>	<i>Some members moved by 2004</i>
Value of durable goods (T sh)	57,700 [0]	79,444 [0]
Land value (T sh)	1,279,800 [876,722]	1,139,444 [777,293]
Acres of land owned	4.2	4.1
Consumption per capita (T sh)	227,030	196,580
Household size ^a	3.98	6.17
Number of observations	122	773

a. Indicates that the difference between columns is statistically significant at 10%. Median values in brackets.
T sh = Tanzanian shilling.

Notes

1. Defined as the proportion of population below the “basic needs” poverty line of T sh 109,663 per year.
2. Throughout this discussion and the calculations of migration rates, individuals who were deceased by 2004 are not included.
3. Likewise, the reason for migrating reflects the reason they left the village and, for multiple moves, it is not necessarily the reason they are living in the current location. Similarly, nonmigrants may have relocated between 1991 and 2004, but at some point they returned to the baseline village/town where they were residing during the 2004 survey.
4. The rest of this section draws heavily on Beegle, De Weerd, and Dercon (2008), where a more in-depth discussion and full results are presented.
5. We have data on transfers sent by different split-off households to each other, and there is little evidence that such transfers are, on average, of the order of magnitude that could offset the consumption differences.

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