The Demographic Dynamics of Migration in Coastal Ghana

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To project future migration and urbanization patterns in Africa, and to understand the processes that drive economic development and its consequences, it is important to examine the demographic characteristics of migrants and to investigate some of the factors that influence migration. In addition, studying the relationships between migration and other social and demographic processes, like marriage, fertility, mortality, and educational attainment, can illuminate the causes and consequences of rapid demographic change. Event history analysis is one of the best ways to examine these developments and their timing. This paper will use unique event history data from coastal Ghana to examine the migration and urbanization process and its link to other social and demographic processes.

Although there have been several studies of internal migration in the developing world using event history data (Chattopadhyay, 1997; Goldstein, White and Goldstein, 1997; Liang and White, 1996; White, Moreno and Guo, 1995; Baydar et al., 1990), there is still relatively little research on sub-Saharan Africa. This project is probably the first to use a life history calendar in sub-Saharan Africa to study migration (White et al., 2003).

Ghana is a particularly valuable place to study these relationships. Important migration routes in West Africa related to nomadic movements and traders have been used for centuries. Due to its central location in the region, Ghana is a key component of these routes. In recent years, these migration routes have been supplemented by increasing rural-to-urban migration, as cities in Ghana, such as Accra and Kumasi, have

become magnets for young migrants seeking work and educational opportunities. Ghana is also one of the countries in sub-Saharan Africa where the demographic transition is well-underway, stimulated by increasing urbanization. Moreover, Ghana has benefited from superior economic growth, a least in comparison to many sub-Saharan countries. According to United Nations projections, Accra may reach replacement level fertility within the next 10 years (UN, 2002).

The data for this paper come from the 2002 Population & Environment Survey of the Central Region in Ghana, which was conducted by a collaborative team including: the Population Studies and Training Center, Brown University (Michael J. White, PI); the Institute for Land Management and Development, University of Science and Technology, Ghana (Eva Tagoe, Co-PI); the Demography Unit, University of Cape Coast, Ghana, and the Graduate School of Oceanography, University of Rhode Island, USA (Scott Nixon, Co-PI). Central Region is one of 10 major administrative regions in Ghana.

The study site is an area that has long been settled, but which has experienced increasing economic and population growth, as well as increased urbanization in recent years. Economic activities along the coast range from traditional farming and fishing, to large-scale industry to tourism built around historical sites and rainforest ecology. The impact of migration on increasing urbanization and its impact on the environment is yet another important reason to examine the migration process and demographic determinants of migration in Ghana.

The survey was designed to enable researchers to examine the relationship between demographic dynamics and environmental change in Coastal Ghana. The

household-level survey contains a unique retrospective life history calendar for each household member over the age of 15.

The life history calendar includes questions about region of residence, urban or rural residence, education, occupation, marital status, and births and deaths of children by yearly intervals. Information was collected by year, rather than month, because the LHC covers an individual's entire lifetime and it was not expected that older individuals will remember information on a monthly basis for events that occurred early in their lifetimes. The total sample size is 2,506; 1,093 men aged 15 and above, or 94 percent of identified eligible men, were interviewed; 1,413 women aged 15 and above, or 93 percent of identified eligible women, were interviewed in the survey.

This paper will use discrete time event history logit models to estimate the probability of a migration event occurring in the next year as a result of the current year's characteristics. The dependent variable is lagged by one year on the assumption that changes in the current year may affect the probability of migrating in the next year. Such timing should capture the majority of the variation in migration due to changes in the personal characteristics. Inter-regional moves, as well as moves between rural and urban areas will be examined. Almost thirty-three percent of survey respondents reside in rural areas and over 67% live in urban areas, demonstrating the highly urbanized nature of this region of Ghana (Table 2).

As shown in Table 2, the sample is over 57% female and about 43% male, with a sex ratio of 0.77, reflecting a high out-migration of men in this region of Ghana. Although out-migrants cannot be identified in this survey (which may lead to some bias

in estimates), current survey work is identifying the characteristics of absent household members.

Preliminary results (see Table 3) from the discrete time event history logit models indicate that several customary hypotheses about migration are supported by the Ghana data, yet notably, several other conventional relationships do not emerge. Overall, men were significantly more likely to migrate than women. More educated people were more likely to migrate, although the effect of secondary education drops out when co-variates for the total number of migrants and urban residence are added. Previous migrants are much more likely to move again, with the probability of moving increasing with each additional move. And married people are less likely to move than non-married people are.

Yet rural residents are much less likely to move than urban residents, which may reflect the highly urbanized nature of the area and the likelihood of moving from one urban area to another. The typical pattern of rural-to-urban migration streams found in much of the developing world does not appear to hold for this sample. More analysis of the migration pattern here will help to shed some light on what may be newer processes of migration occurring in rapidly changing demographic contexts in Africa.

Also, there did not appear to be an effect for age, which could be an interesting finding, or it could mean that many of the younger people have migrated out of the region. Further research in the future on out-migration will help to clarify this. This could also have something to do with the findings about rural/urban residence.

Finally, there does not appear to be a direct relationship between a birth or child death and the probability of migrating, but those with more children are less likely to

move, which is intuitively sensible. Further examination of the interaction between various demographic processes will be important to tease out some of the potential relationships.

References

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Table 1

Variables and Definitions

Characteristic	Variable Name	Definition and Coding
Migration Event	LAGMOVE	0=No move between regions during next year 1=Move between regions during next year (lagged by one year to use this year's characteristics as predictors)
Sex	FEMALE	0=Male 1=Female
Age	AGE AGESQ	Continuous variable, 15-100 years Age Squared
Total Number of Moves	MOVESUM	Continuous variable, total number of previous moves between regions
Region of Residence	URBAN	0=Rural 1=Urban
Number of Living Children	LIVKIDS	Continuous variable, total number of living children (parity minus number of child deaths)
Birth	BIRTH	Birth event in that year=1
Child Death	DEATH	Child death event in that year=1
Educational Attainment	EDUPRIM EDUSECOND	0=No education or Koranic education; or secondary education 1=Primary or Middle School education 0=No education or Koranic education; or primary or middle school education 1=Secondary or Higher education
Marital Status	MARRIED	0=Not married 1=Currently married or in a consensual union

Table 2

General Characteristics of the Sample (Women and Men Age 15+)

Characteristics	N	Mean or Proportion	Standard Deviation
Migrants	1,482	59.78%	49.04
Age at Migration	1,482	25.81	14.19
Sex			
Male	1,437	42.65 %	49.47
Female	1,069	57.34 %	49.47
Age	2,505	35.21	17.28
Region of Residence			
Urban	1,683	67.19%	46.96
Rural	822	32.81%	46.96
Children Ever Born	2,505	3.19	3.46
Educational Attainment			
None/Koranic	795	31.78%	46.57
Primary/Middle	1,356	54.13%	49.84
Secondary+	354	14.13%	34.84
Marital Status			
Married	1,405	56.09%	49.64
Not married	1,100	44.11%	49.66
TOTAL	2,506	100.00%	

Table 3

Discrete Time Logit Event History Model (Dependent Variable=Migration Event)

	Model 1		Model 2		Model 3	
	Odds Ratio	Standard Error	Odds Ratio	Standard Error	Odds Ratio	Standard Error
Female	0.72***	0.038	0.79***	0.042	0.81***	0.043
Age	0.99	0.012	0.96***	0.012	0.97*	0.012
Age Squared	0.99*	0.0001	0.99	0.0001	0.99	0.0001
Primary Education	1.35**	0.132	1.35**	0.132	1.40***	0.139
Secondary Education	1.42**	0.163	1.08	0.125	1.07	0.124
Married	0.84**	0.053	0.85**	0.053	0.89	0.059
Total Number of Moves			1.45***	0.027	1.47***	0.028
Urban			2.44***	0.148	2.42***	0.147
Birth					1.03	0.087
Child Death					0.85	0.165
Number of Living Children					0.92***	0.017
Log likelihood	-6,934.30		-6,615.29		-6,604.05	
Pseudo R^2	0.0275		0.0722		0.0738	
LR Chi^2	392.02 (6)		1,030.05 (8)		1,052.54 (11)	
N	53,909		53,909		53,909	

*** P<0.001, ** P<0.01, * P<0.05