Child Mobility, Maternal Status and Household Composition in Rural South Africa*

Sangeetha Madhavan

University of Maryland and MRC/Wits Rural Public Health and Health
Transitions Research Unit, School of Public Health, University of the
Witwatersrand

Enid Schatz

University of Missouri and MRC/Wits Rural Public Health and Health
Transitions Research Unit, School of Public Health, University of the Witwatersrand

Samuel Clark

University of Washington and MRC/Wits Rural Public Health and Health
Transitions Research Unit, School of Public Health, University of the Witwatersrand

Mark Collinson

MRC/Wits Rural Public Health and Health Transitions Research Unit, School of
Public Health, University of the Witwatersrand, INDEPTH Network, Centre for
Global Health, Umeå University

All correspondences should be sent to Sangeetha Madhavan, Dept of African-American Studies, University of Maryland, 2169 LeFrak Hall, College Park, MD 20742, smadhavan@aasp.umd.edu.

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Abstract

This paper examines the influence of maternal status, socioeconomic status of the household and household composition on the mobility of children aged 0-14 in Mpumalanga Province, South Africa followed up over a nine-year period from 1999-2008. Children living in richer households and older children faced lower odds of mobility regardless of maternal status. Among those children whose mothers were members of their households, the presence of prime aged adult females and elderly women increased the odds of mobility but for those children with mothers living elsewhere, the presence of adult and elderly females lowered the odds of mobility. For maternal orphans, a threshold level of at least two prime aged females in the household was needed to lower their odds of mobility. The results underscore the importance of household livelihood strategies that operate under varying conditions to better understand child mobility and child well-being.

Introduction

Population mobility in Africa has received considerable attention in recent demographic

scholarship (Bilsborrow 1998, Collinson et al. forthcoming; Tienda et al. 2006). Much of this

literature has focused on the determinants and consequences of adult migration, particularly,

labor migration (Brockerhoff 1990; Oucho 1998) and more recently, the relationship between

migration and the spread of HIV (Lurie 2000). Children's mobility, on the other hand, has

received far less attention. The literature on child mobility in Africa has focused mainly on the

short and long term consequences of fostering in terms of health and education (Bledsoe et al.

1981; Castle 1995; Parker and Short 2009) and on community acceptance of fostered children

(Young and Ansell 2003). Although we know that the impetus for fostering depends on factors

such as parental survival, economic status, accessibility to schooling infrastructure, labor needs,

and caregiving needs (Madhavan 2004), there is a notable gap in the demographic literature on

the determinants of child mobility more generally. In one of the only studies that exist, Ford

and Hosegood (2007) found that while parental mortality from all causes substantially

increased the risk of a child moving, maternal AIDS mortality lowered the risk compared to

death from other causes.

The need for more research on child mobility is motivated on three fronts. The first is the

increase in female migrants, many of whom are mothers (Oucho 1998; Tienda et al. 2006). We

know very little about the residential patterns of children with migrant mothers in Africa.

Second is the increasing number of orphans in countries with high HIV prevalence. Nearly

twelve million children have lost one or both parents to HIV/AIDS in sub-Saharan Africa as of

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2007 (UNAIDS 2008). Whereas there has been much concern over the welfare of these children (Ainsworth and Semali 2003; Bicego et al. 2003; Case, Paxton and Ableidinger 2002), we know little about the mobility patterns of these children and the conditions under which they move. Finally, children's mobility is likely to affect key areas of child well-being such as educational attainment, nutritional status and access to health care. Therefore, it is essential that we gain a better understanding of the factors associated with mobility.

In this paper, we examine the determinants of child mobility, in particular, the effect of maternal survival/residence status, socioeconomic status of the household and the presence of potential maternal substitutes in the household. We use longitudinal data from the Agincourt Health and Demographic Surveillance System in Bushbuckridge, South Africa to conduct event history discrete time analysis to determine the risk of a child leaving a household. The value of this analysis is underscored by concerns about caregiving arrangements for children in contexts marked by economic instability, labor migration and high HIV prevalence. We conclude the paper with a discussion of a future research agenda on child mobility and how this research is important for policy initiatives to support children and their households in rural Africa.

Conceptualizing Child Mobility

We frame the issue of child mobility in rural communities in Africa using two key components: 1) the separation of children and parents, particularly mothers and 2) the coping capacity of households in the face of economic hardship and shocks resulting from death. We focus on mother absence because prior research demonstrates the dominant influence of maternal absence compared to paternal absence for children's educational and health outcomes (Desai

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1992; Lloyd and Blanc 1996). However, mothers are increasingly mobile due to employment needs, education, or union formation and dissolution. Whereas men historically have been the majority of labor migrants in South Africa, female internal labor migration has been steadily rising (Posel 2006). The percentage of female adults who are migrants in rural areas increased from 7.4% in 1993 to 8.9% in 1997. In an analysis of these female migrants, Posel found that they are, on average, older than nonmigrants and therefore, more likely to have children. Furthermore, it was found that while having young children (<6 years) decreased the probability of female migration, having older children (7-14) increased it. Additionally, the presence of elderly women in the household increased the probability of female migration possibly because of their ability to provide substitute care for children. Labor migration is not the only way in which mothers are separated from their children. In some cases, women do not live with their children because they are in unions in which children from previous unions are not welcome. The mother might have a greater say in decisions about her children's welfare if she were providing financial support for them. Finally, it is important to consider the death of mothers, which, in the South African case, has led to great concern about the welfare of orphans left behind. In such cases, most of the decision-making power about the children left behind would rest with the household in which they reside.

The coping capacity of households can be examined using the rural livelihoods framework, which explains the ways in which individual and household coping strategies are used to safeguard social reproduction, improve opportunities for the next generation, and reduce worry about depleting a household's resources (Rakodi 2002). Child mobility can be seen as part of a household's response strategy to livelihood stresses and shocks. The decision to have a child

move with or without his/her mother is likely to weigh children's contributions to household welfare, their consumption of limited household resources, and their health and developmental needs. Children's contribution to a household is mainly determined by age and to a lesser extent, gender. In a broader scope, all household-level decisions are dependent on access to a mix of monetary and non-monetary assets or capitals, including social, financial, physical, natural and political resources. Household composition potentially affects a household's ability to optimize livelihood strategies through access to and use of these capitals. Households' livelihoods are dependent on (1) the capitals that each member, including children, contributes, and (2) the burden that a household can sustain for its members. When the burden becomes too great, child mobility may be used as a rebalancing strategy.

We propose a typology that discriminates between child mobility when the mother is a member of the sending household and mobility when she lives elsewhere or is dead. In the first instance, a child could move accompanied or unaccompanied by mother. Children whose mothers do not live with them or are dead would, by definition, only be able to move unaccompanied. This typology enables us to better understand the decision-making process about children's mobility that occurs at the household level and between mothers and other caregivers. Children may accompany their mothers in a move if women can manage child care in the case of labor migration or if new household conditions are welcoming to her children in the case of new union formation. However, mothers may be more willing to leave their children behind if maternal substitutes are available and if economic conditions in the household permit. This may be a good short-term option when mothers are testing out their new environments. As a longer-term option, leaving children behind may be a more efficient use of resources and increase

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income generation for the household. For example, a female migrant would be able to save money on child care and remit money back to the household where her children live. Additionally, depending on the age of the child, it may be desirable for a household to keep children who can contribute household labor such as collecting firewood or water, cooking and cleaning. The socioeconomic status of the household would mediate all such decisions, given that richer households tend to be better equipped to care for children but may be less likely to need children to contribute labor to the household.

The unaccompanied movement of a child when a mother is a member of the household often indicates financial hardship necessitating fostering as a means of dispersing child care responsibilities. Unaccompanied moves of this sort are more likely to be instigated by poverty and less likely to be influenced by the presence of maternal substitutes regardless of maternal status. Fostering out to another household would relieve the dependency burden of the sending household and enable the mother and other women freedom to find employment. However, in some cases, fostering is done to improve opportunities for the child, as in the case of sending children to a household with access to a better school (Bledsoe 1994). In this type of livelihood strategy, a household uses child mobility to build educational capital to strengthen a child's future positions in the labor market and, by extension, its own.

In sum, maternal status, household socioeconomic status, and household composition in sending and receiving households are the primary factors affecting child mobility. The following hypotheses reflect how each of these factors is likely to influence child mobility from

the perspective of the sending household:

1) The higher the socioeconomic status of the household, the lower the likelihood of both accompanied and unaccompanied mobility;

2) In cases where the mother is a member of the child's household, the presence of maternal substitutes will lower the likelihood of accompanied mobility but will not affect unaccompanied mobility;

3) In cases where the mother is living elsewhere or dead, the presence of maternal substitutes will lower the likelihood of child mobility;

Even though the age of the child is not part of our central hypotheses, we expect older children to face a lower likelihood of moving because of their potential to contribute labor to the household.

METHODS

Setting

Under apartheid, men and sometimes women were separated from their children for extended periods of time because labor migration necessitated fostering as a coping strategy (Murray 1981; Spiegel 1987). Children were moved between households as a means of coping with economic hardship (Jones 1993; van der Wal 1996). This practice continues even today as men and increasingly women move away from rural households in search of work. The sub-district of Agincourt, the site for the present analysis, is an area that was and continues to be a "sending" area for labor migrants. Located 500 kilometers northeast of Johannesburg in Mpumalanga Province, this semi-rural area was part of a former homeland under apartheid.

High population density and low rainfall make the area inadequate for subsistence farming and more suitable for cattle or game rearing. Even though all villages have primary schools and attendance is near universal, school progress lags, with half of 20 year olds still enrolled. Employment opportunities are scarce, made evident by unemployment rates of 29% for men and 46% for women (Collinson 2009). The province has an HIV-prevalence rate (based on antenatal survey data) of 32.1 per cent making it one of the worst affected areas in the country (SADOH 2007). This is an ideal setting to examine child mobility because 1) labor migration has always been high and increasingly involves women, 2) there is variation in household socioeconomic status and 3) mortality from HIV has been increasing over time.

Data

The data for this analysis come from the Agincourt and Health Demographic Surveillance System (AHDSS) conducted in 21 villages (another 2 villages were added in 2008). The baseline census was conducted in 1992 followed by annual visits to each household in the site to update births, deaths, and migration and individual status such as residence, union, relationship to household head, and education of every household member. Household socioeconomic status is based on ownership of assets such as cattle, car, and cell phone as well as access to amenities including drinking water and sanitation. As in other HDSS sites (Ford and Hosegood 2005), verbal autopsies are conducted to determine cause of death. Additional modules on topics such as household asset ownership, labor force participation, social grants uptake, and temporary migration have been conducted at periodic intervals (Kahn et al. 2007).

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Migration has been classified into two categories. A permanent migrant is defined as a person moving into or out of a household with a permanent intention. Someone who left the household permanently since the last update will not appear on the subsequent household roster. A temporary migrant, on the other hand, is someone who is identified as a member of the household but has spent six or more months of the previous year out of the household for employment or other reasons. In recent census rounds (since 2006), the temporary migrant category has been further refined to differentiate labor migrants from those who have been absent for other reasons, such as caregiving or accompanying a family member. A de jure definition of household is employed which includes temporary migrants as members of the household. This distinction is important in assessing the strength of ties between migrants and their households. Temporary labor migrants are more likely to send remittances and visit more frequently than permanent migrants. Considerable effort has gone into the collection of high quality migration data ranging from the training of fieldworkers to cross-checking data to the ongoing efforts at reconciling migration from one household and migration into another to minimize double counting of household members. Therefore, these data are ideally suited for the analysis described below.

In 2008, the total surveillance population was 81,147 living in 14,119 households. Despite a notable fertility decline (Garenne et al. 2006), the population is relatively young, with 36% of the population under the age of 15 (Kahn et al. 2007). There has been an increase in mortality partly attributable to HIV/AIDS (Kahn 2006). Previous work on migration using the AHDSS data has found that population mobility in Agincourt has increased over time, particularly among young children and adult women. Each year around 20% of childrenmake a permanent

or temporary move and there was an increase between 1995-1999 and 2000-2004 in mobility among children 0-4 (Collinson 2007). Only 4% of temporary migrant fathers and 10% of temporary migrant mothers are accompanied by their children when they move. Most of the children who stay behind remain in the same household, usually under the care of the mother if the father is the temporary migrant or grandmothers if the mother is a temporary migrant (Collinson 2009). Recent ethnographic work shows that men manage to retain some form of social connection with their children even if they are not members of the same household (Madhavan et al. 2008).

Methods

The child cohort is comprised of children aged 0-14 who ever lived in the site between July 1, 1999 - July 1, 2008[1].Children entered the cohort either through birth or in-migration. The event occurred if they moved. Observations were right censored if they turned 15, died or reached the end of the study before experiencing a move at which point all non-movers were censored. All observations were ended as of July 1, 2008. The result is a child cohort over 9 years with a total of 199,978 child-years observed for 52,190 children less than 15 years old, among whom 10,047 children moved out of the household accompanied and 7,095 moved unaccompanied.

A discrete time event-history analysis was conducted whereby each child's exposure time was divided into child years starting at birth or entry into the household and consisting of one-year intervals. For each year, a dummy variable indicated whether or not the child made a move, accompanied or unaccompanied by his/her mother, that year and before the child turned 15

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[1] The choice of this time period was based on the availability of the most complete and reliable data.

years old. A move was defined accompanied if the difference between the mother's and child's move date was no more than 3 months for permanent moves and the difference in dates was zero for temporary moves. We pooled temporary and permanent migrations in the models to simplify interpretation. Additionally, we restricted this analysis to only the first move in a child's life and included only characteristics of the sending household.

Three sets of logistic regression models were run. The first model estimated 1) the odds of a child moving accompanied and the odds of a child moving unaccompanied *only* for children with mothers who were members of the household; 2) the odds of a child moving unaccompanied *only* for children with mothers who lived elsewhere; and 3) the odds of a child moving unaccompanied *only* for children whose mothers were dead. Multilevel models using the xt commands in STATA were used to account for multiple levels of clustering at the child and household levels.

Measures

The key factors of interest are mother's survival/residence status, presence of maternal substitutes and socioeconomic status. Mother's status is categorized as 1 for member of household, 2 for living elsewhere and 3 for dead. Maternal substitutes are measured by the presence of prime-aged females (15-59) other than the mother and by the presence of at least one elderly female (60+). Prime-aged female is a three category variable with 0 for none present, 1 for one present and 2 for two or more present. Elderly female is a dichotomous variable with 0 for none and 1 for at least one. We treat these groups separately because they

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make different types of contributions to child care as a result of their physical and, sometimes, financial ability to do so. In the South African context, women aged 60 and over receive a non-contributory state funded pension, which has increasingly been used to sustain households that lack wage earners (Case and Deaton 1998). Socioeconomic status is measured by household asset ownership converted into wealth quintiles. All these variables are treated as time varying. Control variables include the gender of child, age of child categorized into four groups — newborn, 1-4, 5-9 and 10-14 — and a child dependency ratio defined as the ratio of children under the age of 15 over total household size at the start of the period. With the exception of gender, all are treated as time varying although age group does not necessarily change yearly. Paternal status is not included because data on fathers have not been collected consistently over the time period.

RESULTS

Descriptive Characteristics

Table 1 shows the distribution of child mobility types stratified by age and gender. The mobility of children is high, particularly in the youngest age group where 37% of boys and 35% of girls made an accompanied move in the time period. As age increases, the percentage of children making an accompanied move decreases. As expected, we find more children making accompanied moves compared to unaccompanied moves, although about 20% of children 5-9 are in the unaccompanied move category, about the same percentage that make an accompanied move. The only significant gender differences are found in the youngest and oldest age groups for unaccompanied moves reflecting the possible preference for fostering girls out of the household.

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(Insert Table 1 here)

Table 2 shows the distribution of maternal status at the beginning of the first observation period. Most children have mothers who were living with them at the beginning of the period, though this decreases as children age. As expected, a higher proportion of older than younger children have mothers who are temporary migrants or who live elsewhere. It is striking that 6% of children aged 10-14 were maternal orphans at the start of the observation period. Maternal mortality in this sample is likely attributable to HIV/AIDS.

(Insert Table 2 here)

Multivariate Analysis

Table 3 presents results from two models of child mobility when the mother is a member of the child's household. The first model compares the odds of making an accompanied move relative to not moving and the second model compares the odds of making an unaccompanied move relative to not moving. An odds ratio greater than 1 indicates increased likelihood of the type of move in question.

(Insert Table 3 here)

When the mother is a member of the household, boys face significantly higher odds of moving accompanied but significantly lower odds of moving unaccompanied compared to girls. The effect of age is not linear and differs for accompanied and unaccompanied moves, In the accompanied move category, children in the age group 1-4 are four times as likely to move as the oldest children and, in the unaccompanied category they are 26% more likely to move than

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the oldest children. Infants are the next most likely group to move with their mothers (3 times likely as the oldest children), whereas infants are least likely to move separately from their mothers (half as likely). Compared with 10-14 year olds, children 5-9 are more likely to move either accompanying their mother or separately. The effect of socioeconomic status is similar across move categories and in general, we find that the wealthier the household, the lower the odds of moving. A larger child dependency ratio substantially reduces the odds of both categories of moves. The presence of an elderly woman has a substantial positive association with an accompanied move and a smaller positive association with an unaccompanied move. The presence of adult females other than the mother increases the odds of an accompanied move but has no effect on unaccompanied moves.

Table 4 presents results from two models examining the odds of moving unaccompanied when the mother lives elsewhere or is dead. When the mother lives elsewhere or is dead, boys face a lower odds of moving. Children in the 1-4 age group face the highest odds of moving, odds that are 2.5 times that of the oldest age group when their mothers are living elsewhere but there are no age differences when their mothers are no longer alive. Except at the highest income level, socioeconomic status makes very little difference when mothers live elsewhere, but a higher level of income appears to lower the odds of moving when the mother is dead; this is particularly strong in the second and fourth quintiles of wealth. The child dependency ratio lowers the odds of moving when the mother is living away but has no effect when the mother is dead. In terms of maternal substitutes, we see a reversal in effects for both elderly and female adults when the mother is living away. The presence of at least one elderly woman reduces the odds of moving by more than 25%. The presence of at least 1 prime age female reduces the

odds of moving by 30% and the presence of two or more reduces the odds of moving by nearly

50%. However, only the presence of two or more female adults reduces child mobility when

the mother is dead.

(Insert Table 4 here)

Summary and Discussion

Using data from the Agincourt Health and Demographic Surveillance System in Mpumalanga,

South Africa, this analysis examined the influence of maternal status, household socioeconomic

status, and household composition on child mobility. Confirming hypothesis 1, children are less

likely to move from wealthier households. Regarding the presence of maternal substitutes, we

found that this varies by the status of the mother. When the mother is a member of the

household, the presence of both elderly as well as prime age females increases the odds of

moving accompanied but has little effect on unaccompanied mobility. These results partially

confirm our second hypothesis by showing that potential maternal substitutes have little

influence on unaccompanied moves when the mother is a member of the household. However,

contrary to what we expected, it appears that they actually increase the likelihood of an

accompanied move. When the mother is living elsewhere, the presence of maternal substitutes

greatly lowers the odds of mobility. For maternal orphans, the presence of at least two prime

aged females is needed to lower the odds of moving. Again, we find partial support for

hypothesis 3. Additionally, we also found that older children are less likely to move because of

their potential to contribute labor to the household.

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Interpreted through a livelihoods framework, the results suggest that rural households utilize different strategies regarding the placement of children when the mother is part of the household, when she is not part of the household, and when she is no longer alive. When the mother is a member of the child's household, she would be expected by other household members, particularly, adult females in the household, to bear more of the child rearing responsibilities. Therefore, if she were to move, she would be expected to take her children with her, particularly, if they are young and boys who may be viewed as a greater burden on household resources even if the household is well off. However, a high proportion of children in the household consistently lowers mobility under all circumstances, which suggests that households do attempt to maximize potential child labor supply in the household. The role of elderly women in the household is partly a function of their pension status. It has been shown that pensioners in a household increase female mobility by allowing women greater freedom to pursue opportunities (Ardington et al. 2008). Our results extend this finding by including children in the increased mobility. In the case of prime aged females, the story might have more to do with the burden of additional child care that women are unwilling to take on when a mother is available. An unaccompanied move by children (or fostering out) when the mother is part of the household appears to be driven primarily by financial circumstances of the household. Such a strategy could either be driven by poverty such that children are neither able to accompany their mothers nor remain in the household or it could be motivated by wealthier families having the financial means to access better social capital for children (i.e., better schools).

The strategy changes quite drastically when the mother is not a member of the household or when she is dead. When mothers live elsewhere, the additional income from a pensioner, available child care from adult females, and the potential labor contributions of the child might comprise the optimum arrangement for keeping the child in the household. Additionally, the non-resident mother might be in agreement or perhaps even have initiated such an arrangement. In the case of maternal orphans, there is far less choice involved given that circumstances are the result of a crisis situation instigated by death. Children are likely to be seen as being more vulnerable and, therefore, in greater need of support from household members, particularly adult females who are willing to substitute for mothers. However, more than one adult female is needed to keep the child from moving and this effect is not as great as the influence of household socioeconomic status.

While the statistical results presented here are very robust and based on a large sample, there are limitations to the analysis that need to be considered in future research. First, our definition of "accompanied" is based solely by the presence of mothers in the move. It does not account for the presence of others whom the child accompanies either with or without the mother. This could be a potentially confounding factor in interpreting the effects that we find. Second, we did not account for conditions in the receiving household. This can be done once ongoing reconciliation of in and out migrants is completed in the field site. Third, distinguishing between temporary and permanent child moves may help clarify the conditions under which coping mechanisms work. Fourth, we need to further refine the model by including the conditions of women's mobility. For example, why and where the mother goes might help explain why children stay behind or accompany her. The type of job and accompanying wage

and/or the distance to place of employment are several factors that might help explain decision-making around children's mobility.

One of the common concerns about HDSS data is its lack of national representativeness. In other words, how unique is the Agincourt context? Our confidence in these results is increased in several ways. First, our results are consistent with Ford and Hosegood's results (2005) for Kwa-Zulu Natal. Both analyses found that older children are less likely to move, children from wealthier households are less likely to move and that boys are less likely to move than girls (except for accompanied moves where they face higher odds of moving). Second, research that has been compared adult migration patterns in the AHDSS data and the national census data found similar patterns. Both datasets revealed high levels of circular migration, stepwise migration, and return migration to the rural areas (Collinson et al. 2007). Finally, household mobility is common to most rural Black communities in South Africa owing to their common history of apartheid-era labor migration policies and ongoing labor market dynamics that provide incentives for labor migration from rural areas. Therefore, it is conceivable that household level responses are similar across contexts. However, to fully confirm this, analysis on child mobility in other datasets including national census and survey data should be conducted.

From a policy perspective, the value of this analysis can be seen in two ways. First, it is important to understand the conditions under which children move. This is crucial for the improvement of service delivery mechanisms already in place. South Africa is one of the only African countries wealthy enough to provide a suite of poverty alleviation grants for the poor.

This comes in the form of elderly pensions, child care grants, disability grants, and foster care grants. In addition, there are various initiatives, e.g. cash transfer and food parcel programs, focused specifically on HIV-affected households and orphans. The success of these programs depends, to a large extent, on better understanding household dynamics and inter-household connectivity. Child mobility is clearly one important component of this agenda. Second, this analysis sets the stage for addressing a key policy-driven question. Under what conditions does child mobility enhance well-being and when does it have adverse effects on health and education? Exploratory bivariate analysis on the AHDSS data shows that there is no effect on educational attainment for children who accompanied their parents as a temporary migrant but there is a negative effect of accompanied permanent migration (Collinson 2007). If child mobility is part of a rural household strategy, then it is conceivable that one objective is to enhance child well-being, as in the case of voluntary fostering for better schooling. However, it is also likely to occur in a crisis situation driven by, for example, a mother's death, with potentially negative outcomes. This has important implications for policies that are targeted towards improving rural livelihoods and children's outcomes. Rather than assume that children ought to stay where they are, it is clearly desirable to have the evidence to decide under what conditions that is preferable. Therefore, research should incorporate measures of children's mobility more centrally into data collection and analysis focused on children's well-being.

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Table 1: Distribution of children's accompanied and unaccompanied first moves, by age over the time period 1999-2008

Type of Move	0-4 % (N)		5-9 % (N)		10-14 % (N)		Total
	Male	Female	Male	Female	Male	Female	N
Accompanied Move	36.6 (2854)	34.8 (2722)	22.9 (1385)	22.6 (1405)	6.7 (805)	6.8 (835)	10006
Unaccompanied Move	12.9 (1012)	15.1** (1181)	19.9 (1207)	20.4 (1266)	8.6 (1037)	11.0** (1351)	7054
No Move	50.5 (3940)	50.0 3910	57.2 (3465)	57.0 (3542)	84.7 (10221)	82.1 (10052)	35130
Total (N)	7806	7813	6057	6213	12063	12238	52190

***significant at the .001 level ** sig at the .01 level * sig at the .05 level

Table 2: Distribution of maternal status by age group of child at the beginning of the first

observation period, 1999-2008

	0-4 (%)	5-9 (%)	10-14(%)	Total (N)
Co-resident	85.9	74.7	69.4	39,077
Temporary Migrant	7.5	8.6	9.7	4142
Lives Elsewhere	5.4	12.5	14.8	4771
Dead	1.2	4.2	6.2	1591
Number of children[+]	24,076	13,439	12,066	49,581

[+] Missing data

Table 3: Logistic models for the effects of sex, age, and household characteristics on child

mobility when mother is a member of the household

	Accompanied vs. no move	Unaccompanied vs. no move
	Odds Ratio	Odds Ratio
Male	1.05* (.030)	.85***(.033)
Age Groups		
0	3.17***(.160)	.52***(.051)
1-4	4.15***(.160)	1.26***(.061)
5-9	2.11***(.085)	1.21***(.055)
10-14	1.00	1.00
Household SES		
1	1.00	1.00
2	.86**(.046)	.85*(.059)
3	.83***(.047)	.73***(.053)
4	.82***(.047)	.77***(.056)
5	.88*(.052)	.90 (.066)
Child Dependency Ratio[+]	.52***(.070)	.36***(.062)
Presence of at least 1 elderly woman	1.61***(.072)	1.12* (.064)
Presence of Adult Females other than Mother		
None	1.00	1.00
One	1.12**(.045)	.91 (.047)
Two +	1.40***(.061)	.97 (.054)
Wald Chi-Square (*p*)	1708.13***	182.24***
N	162890	158718

***significant at the .001 level ** sig at the .01 level * sig at the .05 level [+] child dependency
ratio is the number of children 0-14 over the total household size

Table 4: Logistic models for the effects of sex, age, and household characteristics on child mobility when mother is not a member of the household or mother is dead

	Mother Not Member	Mother Dead
	Odds Ratio (SE)	Odds Ratio (SE)
Male	.85**(.052)	.74*(.095)
Age Groups		
0	1.86***(.302)	1.44 (.813)
1-4	2.47***(.204)	1.37 (.281)
5-9	1.43***(.093)	1.20 (.156)
10-14	1.00	1.00
Household SES		
1	1.00	1.00
2	.89 (.095)	.58* (.125)
3	.87 (.092)	.72 (.149)
4	.82 (.089)	.50***(.110)
5	.78*(.086)	.75 (.165)
Child Dependency Ratio[+]	.54**(.118)	.71 (.344)
Presence of at least one elderly woman	.72***(.053)	1.07 (.164)
Presence of Adult Females other than Mother		
None	1.00	1.00
One	.70***(.058)	1.03 (.191)
Two +	.55***(.047)	.65* (.128)
Wald Chi-Square (p)	213.63***	32.69***
N	16296	6334

***significant at the .001 level ** sig at the .01 level * sig at the .05 level [+] child dependency ratio is the number of children 0-14 over the total household size