Father's Labor Migration and Children's School Discontinuation in Rural Mozambique

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Abstract

Although there is substantial existing research on the relationships between labor migration and child's schooling, research on migration typically has emphasized the migrant versus non-migrant dichotomy. Labor migrants, however, are a diverse group: depending on their skills, networks, and available opportunities, some are economically more successful than others. In this paper, we examine the association between diverse conceptualizations of male labor migration and an important family outcome: the discontinuation of children's schooling. The setting for our analyses is rural Mozambique, a setting characterized by massive male labor migration, mainly to South Africa. The data come from a multi-wave panel study of women that has been monitoring their reproductive health and well-being, children's schooling, and experience with male labor migration since 2006. We examine male migration success and accrued migration experience, and find that both conceptualizations of labor migration benefit children's schooling.

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Introduction

Labor migration of a family member has large and diverse consequences for those who remain behind. In a setting of frequent male labor migration in rural Mozambique, we have documented significant impacts of male labor migration on women's autonomy (Yabiku, Agadjanian, and Sevoyan 2011), child mortality (Yabiku, Agadjanian, and Cau, forthcoming), and fertility (Hayford and Agadjanian 2012). Typically, research on migration emphasized the migrant versus non-migrant dichotomy. Male labor migrants, however, are a diverse group: depending on their skills, networks, and available opportunities, some are economically more successful than others. Importantly, from the standpoint of the family in the sending area, successful migrants are not only those who command high incomes and not even those who send remittances. Migration is also seen by left-behind family members as successful if migrants do not begin new families or affairs in the receiving area, and if their absence does not disrupt the ability of the origin family to maintain itself. In other words, migration success is broad assessment that is likely not easily indicated by clear markers, such as remittances (Yabiku et al., forthcoming) . Our prior research finds that migration success, as subjectively perceived by the wife, is more strongly linked to many family outcomes than would-be objective measures of remittance receipt.

Building upon these prior findings, we examine the association between diverse conceptualizations of male labor migration and an important family outcome: the discontinuation of children's schooling. The setting for our analyses is rural Mozambique, a setting characterized by massive male labor migration, mainly to South Africa. The data come from a multi-wave panel study of women that has been monitoring their reproductive health and well-being, children's schooling, and experience with male labor migration since 2006.

Background and Hypotheses

Prior studies on the relationship between labor migration and children's education generally find positive and beneficial effects of migration, although these effects are often complex and context-specific. For example, Lu (2012) found that the sibling migration increased the educational outcomes of children who remained in the household; but parental migration tended to have less beneficial effects, or even disruptive effects on the educational attainment of young children. In Bangladesh, father and sibling migration was associated with better schooling outcomes for children in the sending context (Kuhn 2006). Similarly, in Pakistan, parental migration was positively associated with school attachment for children (Mansuri 2006), and similar patterns were observed in another study in the Philippines (Battistella and Conaco 1998).

In contrast to the studies in Asia that generally find positive relationships between parental migration and schooling, some studies from Mexico suggest the opposite. Kandel and Kao (2001) found that a family member's successful migration experience can decrease a child's educational aspirations because children with a successful migrant parent see migration, rather than schooling, as the best pathway to success. As a result, children may develop lower attachment to schooling. Nobles (2011) also reported that children of migrant fathers had lower educational aspirations.

These prior studies suggest several important points. First, conclusions about the relationships between parental labor migration and children's schooling are likely to be contingent on context: findings in North America may differ from those of Asia and Africa. Second, the work of Kandel and Kao (2001) and Nobles (2011) highlights the importance of migration success as a factor in how the migration experience affects families' educational outcomes.

Parental migration is thus more complex than a simple migrant versus non-migrant dichotomy. Successful migration is more than simply remittances and their economic impacts. Rather, successful

migration is a confluence of factors, some economic and some non-economic. For example, even if a migrant sends remittances--an apparently successful migrant under many definitions--this migration experience may still be a failure from the sending family's perspective if expectations of migration were not met, or if the stress and hardship of a family member's absence outweigh the economic benefits of remittances. Similarly, the marital bond may be placed under great stress when a partner becomes a migrant for a long duration, which may also influence if a migration is perceived as successful or not.

In short, perceived migration success is likely to be an important concept in understanding how migration affects children' schooling. The nature of this association, however, is complex. On the one hand, successful parental migration may provide resources that allow children in the sending region to stay in school rather than exit school early in order to enter the labor market, as has been suggested by prior studies in Africa (Lu and Treiman 2007) and Asia (Kuhn 2006; Mansuri 2006; Battistella and Conaco 1998). However, the aforementioned studies from the Mexican context (Kandel and Kao 2001; Nobles 2011) report that successful migration could decrease children's schooling outcomes because these children place their futures in their own eventual migration, rather than with opportunities in the sending context that might require more education. In this paper, we test these competing hypotheses about the effect of migration success.

Setting

The longitudinal survey data used in this study were collected in rural areas of Gaza province of southern Mozambique, an impoverished nation of 24 million in southeast Africa with a GNI per capita of US$470. The study area, covering about 6000 sq. m. with the population of 650,000, is characterized by subsistence agriculture, periodic droughts and floods. (See study area in Figure 1) The area's proximity to South Africa, Mozambique's more developed neighbor, low and unpredictable agricultural yields, and lack of alternative employment opportunities have created propitious ground for labor migration. Male

labor migration from southern Mozambique, primarily to the mines of South Africa, started well before Mozambique's independence from Portugal in 1975 and has continued to date. However, it the last decade and a half, the nature and outcomes of migration have been changing. Once an orderly process managed through formal recruitment with fixed wages, migration has increasingly become less formal and its outcomes have grown less consistent and predictable.

(Figure 1)

Data and Methods

Data. The study uses data from three waves of a population-based survey. In the first wave, 1680 women married to migrants and non-migrants were selected through multi-stage probability sampling in 56 villages of four contiguous districts of Gaza province. The women were reinterviewed in 2009 and then in 2011. Figure 2 shows the sample retention. In each wave, the survey collected detailed information on respondents' demographic and socioeconomic characteristics and their migrant and non-migrant husbands' employment. The survey also gathered data on women's children, with details of children's school enrollment and attendance collected in 2011.

The dependent outcome is children's schooling discontinuation before 7 years of education. We choose a cutoff of 7 years of schooling given that the schooling system in Mozambique is structured such that grades 1-5 are lower primary and 6-7 are upper primary. Note we have also conducted analyses using 5 years of education as a cutoff for schooling discontinuation, and results are similar. Once children enroll in school, they become at risk of discontinuation until 7 years of schooling, at which point they are censored.

The main independent variable is father's labor migration experience. We conceptualize this in three ways. All three approaches use time-varying variables so that the dynamic nature of labor migration is reflected in the measures. First, we count the number of years since the child has enrolled in school that the father is away in labor migration. This conceptualization assumes that benefits

accrued in labor migration may be used to further children's schooling. Second, we count all the years the father is away in labor migration since 1994 (the beginning of our retrospective migration histories). This subtle difference is important because it conceptualizes the benefits of labor migration as potentially accruing long before children enroll in school or are even born. Third, we go beyond the migrant/non-migrant dichotomy and instead classify migrants as to whether they are perceived as successful or not. If women had migrant husbands, women were asked the question, "In your opinion, since your husband went to work there, did the living conditions in your household improve, worsen, or remain the same?" Men whose wives said their lives improved were coded as successful migrants; all others were coded as unsuccessful migrants.

We include a variety of controls to guard against spurious associations and the selectivity of migration. Household material status is measured with indicators of three components: ownership of consumer items (radio, frame bed with mattress, and motorcycle or car), quality of the dwelling ceiling and walls (solid construction materials versus reeds, grasses, or palms), and access to electricity (yes or no). Household economic status is thus measured with a three point scale. Mother's education is measured with a series of dummy variables: no schooling, 1-4 years, and 5 or more years. Mother's age is controlled with a continuous variable. It is reasonable to believe that the supply of schooling may affect discontinuation and could also be associated with father's migration decisions. Therefore, community influences on school discontinuation are controlled with an indicator of whether or not the nearest school offers education beyond 5 years, i.e., whether upper primary education (grades 6-7) is available. Child's gender is controlled as a dichotomous indicator.

In our discrete-time approach, the dependent variable of school discontinuation is coded 0 for every year the child is in school, and it becomes 1 in the year the child leaves before 7 years of schooling. Children who attend 7 years of schooling are censored. Finally, the baseline hazard of schooling discontinuation is parameterized with a quadratic function of time.

Because our panel data collection started in 2006, we include children who are at risk of discontinuation in 2006 through 2011. Note that this approach still permits the full age range of children to be at risk. For example, a child who enrolls in school in 2002 is not included in the analysis until 2006, and then remains at risk until he or she discontinues, or achieves 7 years of schooling in 2009.

Results

Table 1 present descriptive statistics. We briefly describe a few key variables. Because we have a person-year file, there are varying numbers of observations per child. To ensure that we do not give more weight to children who had longer durations until event or censoring, we present means evaluated at the last observed year--either the year of event of censoring. Of the 2409 children at risk, about 5.1% discontinued schooling before 7 years. Since the time each child enrolled in school, by the child's last observed year, their fathers had accumulated on average 2.4 years of migration experience. If we accumulate migration experience as fast back as our histories go, however, these same fathers average 7.8 years of migration experience. This suggests that fathers are accruing substantial portions of their migration experience before their children enroll in school. Another way of conceptualizing migration is its perceived success. During the children's last observed year, 68% of their fathers were non-migrants, 17% were successful migrants, and 15% were unsuccessful migrants.

(Table 1)

Table 2 presents the multivariate results. The coefficients are presented as odds ratios and represent multiplicative effects on the rate of school discontinuation. Odds ratios greater than one are positive effects that accelerate school exit. Odds ratios less than one are negative effects that slow discontinuation from school. Model 1 tests the association between cumulative years the father has been a labor migrant since the child entered school. There is significant, positive association. This suggests that father's accumulative experience with labor migration provides benefits to aid children's

school attachment (as has been found in Asian and African settings). Control variables generally have coefficients as expected. Children with highly educated mothers (5+ years, in this setting) have lower rates of discontinuation compared to women with no education (the reference). Children of older mothers also had lower rates of school exit ($p<.10$). The availability of upper primary schools nearby had strong associations with schooling discontinuation, which emphasizes the importance of the supply of schooling.

(Table 2)

Model 2 again examines father's cumulative migration experience, but this time migration experience is conceptualized as all years of experience, even those before the child enrolls in school. The results show that this measure, too, is significantly associated with lower rates of school discontinuation. This suggests that benefits accrued potentially much earlier in the father's life course may persist many year later.

Model 3 considers whether the father is a successful or unsuccessful migrant, as perceived by his wife in the sending context. The reference group is fathers who are non-migrants. The results show that children of fathers who are successful migrants have significantly lower rates of school discontinuation, but there are no significant benefits for children of men who are unsuccessful migrants.

Models 4 and 5 combine these two ways of conceptualizing migration--cumulative years of migration experience along with the success of migration. The results show that even with both estimated in the same model, cumulative years and migration success have largely independent associations with school discontinuation. In both models, successful migration has significant negative effect on discontinuation. Cumulative father's years since school enrollment (model 4) has a coefficient significant at $p<.10$, and all cumulative years going back prior to enrollment (model 5) also has a significant impact ($p<.01$).

Discussion and next steps

Although there is substantial existing research on the relationships between labor migration and child's schooling, our analyses have suggested that the issue of migrant success is an important factor to be considered. All migrants, and all migrant experiences, are not equal, and thus combining all migrants in one category may obscure important heterogeneity. Migration success also appears to be a distinct dimension from accrued migration experience: both conceptualizations of labor migration were significant in a combined model.

For the final version of our paper, we plan several improvements. First, we will re-estimate our models using random effects approaches to address the clustering in the data: children are clustered within families, and these families are part of villages in the clustered sample design. Second, we will explore further these two dimensions of migration (accrued experience and success). There are good reasons to expect that these two dimensions interact: years of migration success should have even more beneficial outcomes for child schooling if the father is a successful migrant. Third, it is likely that the impact of these migration measures vary by gender and across the child's schooling career. In other words, male labor migration might be more beneficial for girls than boys (Mansuri 2006; Lu 2012), or for maintaining children's school enrollment at higher grades than lower grades. These additional theoretically-driven tests will enrich the final paper.

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Table 1: Descriptive Statistics

	Mean	Std Dev	Minimum	Maximum
Child Discontinued Schooling	.05	.22	0	1
Years father away since child entered school	2.38	2.65	0	8
Total years father away	7.79	6.42	0	18
Father is not a labor migrant	.68	.47	0	1
Father is a successful labor migrant	.17	.38	0	1
Father is an unsuccessful labor migrant	.15	.36	0	1
Mother no education	.25	.43	0	1
Mother 1-4 years education	.49	.50	0	1
Mother 5+ years education	.27	.44	0	1
Mother's age	28.67	5.80	18	41
Household material economic status	1.31	.76	0	3
Child is female	.51	.50	0	1
Nearest school offers grade 6 or higher	.35	.48	0	1

N=2409 children

Table 2: Father's Labor Migration and Rate of Child's School Discontinuation, odds ratios

	1	2	3	4	5
Years father away since child entered school	0.89**			0.92+	
	(-2.78)			(-1.84)	
Total years father away		0.94***			0.95**
		(-3.89)			(-3.17)
Father is a successful labor migrant †			0.40**	0.47*	0.50*
			(-3.02)	(-2.37)	(-2.18)
Father is an unsuccessful labor migrant †			0.82	0.94	0.99
			(-0.74)	(-0.23)	(-0.05)
Mother 1-4 years education ‡	1.02	1.00	1.06	1.04	1.02
	(0.08)	(-0.02)	(0.26)	(0.20)	(0.09)
Mother 5+ years education ‡	0.38**	0.36**	0.39**	0.39**	0.37**
	(-3.08)	(-3.26)	(-2.98)	(-2.98)	(-3.14)
Mother's age	0.97+	0.98	0.98	0.97	0.98
	(-1.67)	(-1.36)	(-1.34)	(-1.61)	(-1.41)
Household material economic status	1.15	1.22	1.14	1.20	1.27+
	(1.10)	(1.54)	(1.00)	(1.42)	(1.85)
Child is female	0.79	0.78	0.79	0.79	0.79
	(-1.31)	(-1.33)	(-1.28)	(-1.28)	(-1.29)
Nearest school offers grade 6 or higher	0.40***	0.40***	0.39***	0.39***	0.39***
	(-3.80)	(-3.77)	(-3.90)	(-3.86)	(-3.83)
Time since child's enrollment	3.83***	3.62***	3.64***	3.79***	3.65***
	(6.02)	(5.79)	(5.80)	(5.96)	(5.82)
Time since child's enrollment, squared	0.88***	0.88***	0.88***	0.88***	0.88***
	(-4.61)	(-4.54)	(-4.57)	(-4.61)	(-4.57)
Intercept	0.00***	0.00***	0.00***	0.00***	0.00***
	(-8.13)	(-8.00)	(-8.19)	(-8.08)	(-7.96)
N (person-years)	8890	8890	8890	8890	8890

† Reference is non-migrant
‡ Reference is no education

+p<.10, *p<.05, **p<.01, ***p<.001, two-tailed tests

Figure 1. Map of Mozambique