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

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Abstract

We examine how the discontinuation of schooling among left-behind children is related to multiple dimensions of male labor migration: the accumulation of migration experience, the timing of these migration experiences in the child's life course, and the economic success of the migration. Our setting is rural southern Mozambique, an impoverished area with massive male labor out-migration. Results show that fathers' economically successful labor migration is more beneficial for children's schooling than unsuccessful migration or non-migration. There are large differences, however, by gender: compared to sons of non-migrants, sons of migrant fathers (regardless of migration success) have lower rates of school discontinuation, while daughters of migrant fathers have rates of school discontinuation no different than daughters of non-migrants. Furthermore, accumulated labor migration across the child's life course is beneficial for boys' schooling, but not girls'. Remittances sent in the past year reduce the rate of discontinuation for sons, but not daughters.

Keywords

labor migration; education; Mozambique

Introduction

Labor migration of a family member has large and diverse consequences for those who remain behind. In a setting of widespread male labor migration in rural southern Mozambique, this migration has been shown to impact various family outcomes, such as non-migrating women's autonomy (Yabiku, Agadjanian, and Sevoyan, 2011), their fertility (Agadjanian, Yabiku, and Cau, 2011), child mortality (Yabiku, Agadjanian, and Cau, 2012), and HIV risks (Agadjanian, Arnaldo, and Cau, 2011). Typically, research on migration compares migrants to non-migrants and makes comparisons based on current migration status. Male labor migrants, however, are a heterogeneous group: depending on their skills, networks, choices, and available opportunities, some migrants are economically more

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successful than others. Importantly, from the standpoint of the family in the sending area, successful migrants are not just those who command high incomes and not even those who send remittances. Migration is also seen by non-migrating family members as successful if migrants do not establish new families or partnerships in the receiving area, and if their absence does not disrupt the ability of the left-behind family to maintain itself economically and socially. Non-migrants are also heterogeneous: some have never migrated, while other have migrated previously but have returned to their home community. Furthermore, there is heterogeneity in the timing of migration—at what stages of the migrant's and his household members' lives migration occurs—as well as in duration of migration. In sum, simple assessments of current status may hide important variation in migration timing, experiences, and outcomes.

Our study contributes to the understanding of the effects of the heterogeneity in migrants' success, prior migration experiences, and migration timing on the well-being of left-behind family members by focusing specifically on the schooling of migrants' sons and daughters. The setting for our analyses is rural southern Mozambique, an area characterized by a long tradition of massive male labor out-migration, mainly to neighboring South Africa. The data come from a multi-wave panel study of women that has been monitoring their health and well-being, their children's schooling, and experiences with male labor migration since 2006. We use discrete-time event history analysis to examine how multiple dimensions of male labor migration are associated with the school discontinuation of boys and girls in this rural setting.

Background

Parental Migration and Children's Schooling: Conflicting Evidence

Several prior studies on the relationship between parental labor migration and children's education generally find beneficial effects of migration, even though these effects are often complex and context-specific. Thus, in Bangladesh, father and sibling migration was associated with better schooling outcomes for children in the sending areas (Kuhn, 2006). Likewise, in Pakistan, parental migration was positively associated with school attachment for children (Mansuri, 2006), and similar patterns were observed in studies in the Philippines (Battistella and Conaco, 1998; Asis and Ruiz-Marave, 2013). The duration of parental migration was also shown to affect children's schooling. Thus, in Tajikistan, left-behind children's secondary school enrollment was higher if their parents had longer migration durations (Bennett et al., 2013).

In contrast to research that generally finds positive relationships between parental migration and schooling, some studies suggest the opposite. Thus, Lu (2012) found that in Indonesia, parental migration did not produce any beneficial effects, or even had a disruptive influence on the educational attainment of young children. One proposed explanation is that the removal of a parent from the household eliminates benefits of adult-child interaction, such as supervision, authority, and academic assistance (Lu, 2012). Similarly, Hu (2013) analyzed data from rural northwest China and concluded that children's academic performance worsened when adults left the household. In a study in Mexico, 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 own success. They also noted that the removal of a parent from the household can lead to stress and supervision problems. As a result, the attachment of migrants' children to schooling may weaken and their academic aspirations, especially for university education, may diminish. On the other hand, the authors found that grades of children from migrant families were higher, perhaps due to the financial resources generated by remittances (Kandel and Kao, 2001). Nobles (2011) also reported that children of migrant fathers in Mexico had lower educational aspirations than children in households where both parents were present. In fact, the aspirations of children of migrant fathers were lower than those of children from divorced families, even though migrant fathers living away contributed more financial resources than fathers who had divorced. These findings point to social role modeling: children of migrants lower their educational expectations when their fathers are absent.

In summary, prior studies suggest two important points. First, conclusions about the relationships between parental labor migration and children's schooling are likely to be contingent on context: findings in some settings may differ from those in others. Second, the works of Kandel and Kao (2001) and Nobles (2011) highlight the importance of migration success as a factor in how the migration experience affects children's educational outcomes. Through their investigation of educational aspirations, these studies also point to possible mechanisms such as role modeling. Children who see their parents as successful migrants may shape their own future orientations with regard to education, work, and migration differently from other children. Having a successful migrant role model could make children more likely to become migrants themselves and to lower their academic aspirations and expectations accordingly. This role modeling, however, is likely to matter more for older children: for example, Kandel and Kao (2001) found that father's migration reduced university aspirations of children in secondary and later levels, but not those of children in primary school. Overall, the reviewed cross-national evidence suggests that relationship between parental migration and children's schooling is complex, and conceptualizations of parental migration must also include components that recognize the success of migration as well as its timing in the life course. Of course, migration success and its timing are likely related factors, and these measures may to some extent overlap. However, they embody separate concepts that are useful to distinguish in order to increase our understanding of the migration process.

Migration Success—Successful migration is not defined simply by 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--his 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. This latter possibility is suggested in recent research by Kroeger and Anderson (2014), who examined the role of remittances and children's education in Kyrgyzstan. They found that households that received remittances had lower rates of school enrollment for children between the ages of 14 and 18. The authors conclude that remittances almost

always imply an absent adult, and thus this absence likely effaces any benefit from remittances for school enrollment in that context. Similarly, the marital bond may be placed under growing stress as the duration of a partner's migration increases, which may lead to deleterious effects on children's wellbeing. Parents' absence may also harm children psychologically, through increased anxiety (Zhao et al., 2014), greater sense of loneliness (Su et al., 2013) and lower life satisfaction (Cortina, 2014).

Thus, parental migration transforms sending households in complex ways. It is the totality of many ways in which migration affects the household—and not simply through remittances — that should guide the understanding how migration affects children' schooling. Rather than categorizing households as having a migrant or not, it may be more useful to consider the degree to which the labor migration experience is overall successful: an experience that leaves the household better off than if the migration did not occur. 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; Gyimah-Brempong and Asiedu, 2014) and Asia (Kuhn, 2006; Mansuri, 2006; Battistella and Conaco, 1998). Research from Peru (Salas, 2014) shows that remittances are used to purchase higher quality schooling (private school) than the education obtained without remittance income. However, the aforementioned studies from the Mexican context (Kandel and Kao, 2001; Nobles, 2011) report that successful migration could decrease children's schooling outcomes among older children because these children may place their futures in their own eventual migration rather than with opportunities in the sending context that might require more education. And even if migration is ultimately successful, this success may take time, and in the short term parental absence can negatively impact schooling.

Migration Timing—In addition to the parents' current migration status and its perceived success, another consideration of potential importance for child outcomes is the family's prior history of migration. A life course approach is needed here because the consequences of migration are likely to accrue over time. Furthermore, it is also likely to matter when in the parents' and children's life courses the labor migration experiences occurred (Unheim and Rowlands, 2012). The timing of investments in children's education matters (Doyle et al., 2009). Specifically, investments very early in children's life have greater returns than later-life investments (Heckman, 2006). If migration allows parents to contribute more to their children's human development, migration earlier in the parental and child life course may be more beneficial, because it creates financial reserves and wealth that can be invested in very young children. If migration is postponed until children are well into schooling, the benefits of parental migration may be reduced.

In addition, motivations for and consequences of migration vary across the life course (Zenteno, Giorguli, and Gutiérrez, 2013). For example, labor migration early in an individual's life (before they have children) may be more oriented to helping their natal families (parents or siblings) or for securing a marriage (Parrado, 2004; Jampaklay, 2006). Later labor migration, after individuals have formed their own families and have children enrolled in school, might be more directed towards investments in children (Conway and

Cohen, 1998). Finally, long histories of labor migration could represent an accumulation of wealth across the life course.

Parental Migration, Child Gender, and Investments in Schooling

Another complexity in the association of parental migration and children's schooling is the potential gender differences in how parents invest in their children's schooling. In many settings, parents are more likely to invest in boys' education over girls'. The nature of labor markets or non-egalitarian norms make it more likely that boys' education will be realized in employment and other returns to schooling (e.g., Zhang, Kao, and Hannum, 2007). In traditional patrilineal societies, where girls marry early and move to their husbands' homes, parents may not invest in girls' education because it is not expected to bring any substantial returns to the natal family. In such settings, parental migration therefore is likely to increase or maintain gender inequality with regards to education. For example, Hu (2013) found that the negative effect of adult migration on children's academic performance was stronger for girls in rural northwestern China. Meyerhoefer and Chen (2011), in their study of another Chinese setting, speculate that, when adults leave the household, girls may be forced to increase their home labor and reduce their schooling. However, in some settings, gender roles might demand that males, more than females, start contributing to household income earlier and thus exit schooling earlier. In this case, parental migration would help boys stay in school longer because the pressures on them to earn income would be eased by migration income. Yet, if migrant fathers serve as role models mainly for their sons, boys could be more likely to quit school than girls. In sum, the benefits of parental migration for children's schooling may be unequally distributed across male and female children depending on the gender dynamics and expectations in each specific setting.

Hypotheses

We use the reviewed literature on parental labor migration and children's education to develop our hypotheses on how male labor migration in rural Mozambique is related to children's schooling discontinuation before 7 years of education. Seven years is chosen as a threshold to reflect the structure of primary schooling in Mozambique: grades 1–5 are lower primary school and 6–7 are upper primary school. We do not consider post-primary education, as in that context it is greatly constrained by school availability, among other factors. Because we do not look at older children, for whom father's migration was found to increase school discontinuation (Kandel and Kao, 2001), and instead examine outcomes among primary school children, for whom father's migration has typically shown benefits, in general we expect that father's migration will be associated with lower rates of discontinuation.

Because we seek to capture multiple dimensions of migration experience, our hypotheses add to existing knowledge by testing how the success of migration, timing of migration, and their interactions with gender affect children's schooling outcomes. We propose three hypotheses. First, we test how the association between father's labor migration and schooling discontinuation depends on when in the life course father's migration experience is accrued: in line with Heckman's (2006) argument, we hypothesize that parental migration

experience before the child has enrolled in school will have a particularly strong negative association with school discontinuation.

Our second hypothesis focuses on the role of migration success. We assume that rather than the fact of father's migration (migrant or not), it is migration success that matters for children's schooling. Thus, we hypothesize that successful migration has the strongest benefits for lowering the rates of children's schooling discontinuation. Our third hypothesis examines the gender differences in how labor migration benefits children's schooling. Although the literature on this subject is inconclusive, given the pervasive gender inequality in the patrilineal society of rural Mozambique (Loforte, 2000), we hypothesize that the benefits of labor migration will disproportionately favor male over female children.

Setting, Data, and Methods

Setting

To examine these complex dynamics, we study rural Gaza province of southern Mozambique, an impoverished nation of 28 million in southeast Africa with a GNI per capita of some US $600. The study area, covering about 6000 sq. miles with a population of 650,000, is characterized by patrilineal kinship system and subsistence agriculture. The area's low and unpredictable agricultural yields, lack of alternative employment opportunities, and proximity to South Africa (Mozambique's much more developed neighbor), have created propitious ground for labor migration. Male labor migration from southern Mozambique, primarily to South African mines, started well before Mozambique's independence from Portugal in 1975 and has continued to date. However, in recent decades, 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 (de Vletter, 2007). Although the coverage of primary education, provided through a network of public schools, is somewhat higher in the study area than in the rest of Mozambique, the primary education system is plagued by the lack of infrastructure and shortage of teachers (Fox et al., 2012).

Data

The study uses data from three waves of a population-based survey in rural southern Mozambique. In the first wave in 2006, 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. 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.

Measures—The outcome variable is children's schooling discontinuation before 7 years of education, an important threshold in this setting. We have also conducted analyses using 5 years of education (lower primary school) as a cutoff for schooling discontinuation, and results are similar to those presented here (these results are available upon request). Once

children enroll in school, they become at risk of discontinuation until 7 years of schooling, at which point they are censored. While it is possible that children may return to school after initially leaving before completing 7 years, the discontinuity of education is a serious disruption in their schooling and places them at a disadvantage for educational attainment.

The main predictor is father's labor migration experience. To test our hypotheses, we operationalize this experience in four ways. First, we count the number of years since the child has enrolled in school that the father is away in labor migration. This approach assumes that recent 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) but before the child enrolls in school. This subtle difference is important because it corresponds to our proposition that the benefits of labor migration may start accruing before children enroll in school or are even born. Third, we include a count of the number of remittances in the past year a husband has provided to his wife, up to a maximum of 24 (non-migrant husbands are fixed at zero remittances). Although we argue that in this context the impact of migration cannot be viewed with a simple measure of financial transfers, this measure is used to partly capture the potential economic benefits of migration. Fourth, we classify migrants based on whether they are perceived as successful or not by their wives. 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 that their lives improved were coded as successful migrants; all others were coded as unsuccessful migrants.

All four approaches to measuring father's labor migration experience use time-varying variables so as to capture the dynamic nature of labor migration. The temporal resolution, however, varies. The two measures of the number of years the father has been in labor migration are fully time-varying to the nearest year because they are created from yearly retrospective data on migration histories. The measures of remittances and migration success come from 2006, 2009, and 2011 survey waves and can vary only at those time points. Although this is not as precise as yearly temporal resolution, it allows to account for some change in reported remittances and perceived migration success over the 2006–2011 period.

When examining the association between migration and any outcomes, the issue of endogeneity deserves attention: to what degree may the characteristics of parental migration be influenced by children's schooling? Similarly, could there be another common factor that causes both parental migration and children's schooling? For example, if fathers with more education are more likely to be successful migrants, and these same fathers are more likely to ensure their children remain in school, the association between migration success and school discontinuation can be spurious. We acknowledge both of these possibilities and address them with our modeling approach to the extent allowed by our data. First, we have designed the time ordering of our measurement so that the migration time-varying measures predict child school discontinuation in subsequent years. This lessens the possibility that, for example, a wife's assessment of migration success is caused by a child's leaving school. Second, we include a variety of controls, measured in 2006, to guard against spurious associations and the selectivity of migration. Although these approaches cannot fully

eliminate selectivity, reverse causation, or spuriousness concerns, which are inherent to any observational study, they greatly strengthen confidence in the results.

We included several control variables. Household material status is controlled with a measure built on three indicators: ownership of consumer items (radio, frame bed with mattress, and motorcycle or car), quality of the dwelling's ceiling and walls (solid construction materials versus reeds, grasses, or palms), and access to electricity of any type (yes or no). The resulting measure of household economic status is a three point scale. Mother's age is controlled with a continuous variable. Mother's education is measured with a set of dummy variables: no schooling, 1–4 years, and 5 or more years. Father's education is measured with the same dummy variable categories used for mother's education, but an additional "missing" category is added because some women did not know their husbands' educational level. Whether her marriage is polygamous or monogamous (e.g., whether the husband has multiple wives or not) is controlled using a dichotomous variable. Because the number of children in a family may influence how resources are distributed, we control for the child's number of siblings with a continuous variable. Child's gender is also included in the model. We interact this predictor with the multiple conceptualizations of labor migration in order to test our hypothesis that the benefits of migration are unequally applied to male and female children. Finally, the supply of schooling in a community may affect discontinuation and could also be associated with father's migration decisions. In a study of primary schooling in rural Mozambique, Handa (2002) concluded that school supply was a substantial factor in enrollment rates. Although southern Mozambique has a relatively developed network of lower-level primary schools (grades 1–5), distance to schools vary, as does the availability of upper-level primary schools (grades 6–7). School supply is 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.

Methods

We use a discrete-time approach, where 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 continuously attend 7 years of schooling are censored. We do not know the timing of grade repetition: a child may have attended school for 7 years, yet successfully completed only 6 years. Thus we define our outcome as the rate of discontinuation before 7 years of schooling, rather than the rate of dropout before successful grade 7 completion. While this is a data limitation, our approach is conservative: in modeling the rate of discontinuation before 7 years of schooling, we are likely underestimating the rate of dropout before successful grade 7 completion. Finally, the baseline hazard of schooling discontinuation is parameterized with a quadratic function of time since the child began schooling (the time at which the risk of discontinuation begins).

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. The data were collected in a clustered survey in 56 villages, and

thus women from the same village are more likely to resemble one another. In addition, women may contribute more than one child to the survey data. We estimate our discrete-time hazard models with random intercepts that take this unmeasured variability into account. Using GLIMMIX in SAS, we estimate a random intercept at both the woman and the village levels.

Results

Table 1 presented descriptive statistics. We briefly describe key variables. Because we used a person-year file, there were varying numbers of observations per child. To ensure that we did not give more weight to children who had longer durations until event or censoring, we presented means evaluated at the last observed year--either the year of event or censoring. Of the 2407 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 accumulated migration experience as far back as our histories go (1994) but before the child enrolled in school, however, these same fathers averaged 5.4 years of migration experience. This suggested that fathers accrued substantial portions of their migration experience before their children enrolled in school. Another way in which we operationalized migration was 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. Finally, across all fathers, the number of remittances sent back in the past year was slightly less than 1 (.90 on average). If only migrant fathers were considered, the number of remittances sent in the past year averaged 2.8 (result not shown in table).

Table 2 presented the multivariate results. The coefficients were presented as odds ratios: these were the exponentiated coefficients from the discrete-time logistic regression hazard models and represented multiplicative effects on the rate of school discontinuation. Given the small number of events relative to the number of person-years of risk, the rates and the odds of schooling discontinuation were essentially the same, and we described the results in terms of rates. Odds ratios greater than one were positive effects that accelerate school exit. Odds ratios less than one were negative effects that slowed discontinuation from school. Model 1 tested the hypothesis on the association between cumulative years the father had been a labor migrant since the child entered school. There was a negative association, but it was marginally significant ($p<.10$). Control variables generally had effects as found in the prior literature. Children with more educated fathers (5+ years of schooling, in this setting) had 62% lower rates of discontinuation (1.00 − .38 = .62) compared to children whose fathers had no education (the reference). The availability of upper primary schools nearby had a strong negative association with schooling discontinuation, which emphasized the importance of the supply of schooling. If the nearest school offered upper primary education (grades 6–7), the rate of school discontinuation was 63% lower (1.00 − .37 = .63) than for children whose nearest school did not have upper primary grades. The remaining control variables in model 1 were not significantly associated with discontinuation. The time pattern of discontinuation ("Time since child's enrollment"), modeled as both linear and quadratic, showed that the risk of discontinuation increased over time but at a decreasing rate. The effects of controls were consistent across the models.

Model 2 again examined father's cumulative migration experience, but this time migration experience was defined as all years of the father's experience before the child enrolled in school. The results showed that this measure was significantly associated with lower rates of school discontinuation ($p<.01$). In support of our first hypothesis, this result suggested that migration that occurred earlier in the child's life course may have been more beneficial for children's schooling than migration experience gained later. The odds ratio of .92 meant that for each year of migration before the child entered school, the risk of discontinuation was reduced by 8% (1.00 − .92 = .08).

To test our hypothesis about the role of migration success, Model 3 conceptualized migration's impact on the family as the number of remittances sent in the past year. If the benefits of migration on schooling operated primarily through remittances, then the corresponding coefficient should have been negatively associated with discontinuation rates. The coefficient was not, however, significantly different from zero. Model 4 considered whether the father was a successful or unsuccessful migrant, as perceived by his left-behind wife. The reference group was children whose fathers were non-migrants. Supporting our second hypothesis, the results showed that children of fathers who were considered successful migrants had significantly lower rates of school discontinuation compared to children of non-migrant fathers (about 60% lower). However, there were no significant benefits for children of men who were unsuccessful migrants with regards to school discontinuation rates. When comparing the school discontinuation rates between children of successful and unsuccessful migrants, the advantage of having a successful migrant father approached significance ($p=.07$, model not shown).

Model 5 combined all three conceptualizations of migration—cumulative years of migration experience, remittances, and the perceived success of migration. In this model, years father was away before the child enrolled in school retained its significance, and the effect was of identical magnitude to that in model 2. In addition, in model 4 the measure of successful migration was still significantly associated with school discontinuation rates. The number of remittances sent in the past year remained not associated with discontinuation.

Table 3 examined how the associations between father's migration experiences and school discontinuation varied by gender. Recall that we hypothesized that the benefits of labor migration in a patriarchal setting like rural Mozambique might be directed more towards boys' education. Overall, the results from Table 3 supported this hypothesis of unequal gender distribution of benefits from father's migration. In model 1, there was a significant interaction between child being female and years of father's labor migration since the child enrolled in school. Thus, for boys, each year of father's labor migration significantly reduced the rate of discontinuation by 16% (1.00 − .84 = .16). For girls, there was virtually no benefit: .84 * 1.20 = 1.01, or a close to null coefficient. Model 2 examined the father's migration experience before the child enrolled. Results were similar to migration experience after enrollment in model 1, although the interaction coefficient was not significant at the conventional level of $p<.05$. The main effect of years away, however, remained significant, as it was in Table 2. Each year of experience before enrollment reduced the rate of discontinuation by 12%.

The gender interaction models in Table 3 suggested a slight change in our conclusions about the timing of father's migration and children's schooling. In Table 2, the pattern showed that only migration before children's enrollment reduced discontinuation. Table 3 suggested that, once gender was considered and the model was therefore more properly specified, father's labor migration at any time in the life course benefitted boys' schooling. However, migration had no impact on girls' schooling.

Model 3 tested how the association between remittances sent in the past years was associated with school discontinuation differentially by gender. Although there was not a main effect of remittances in Table 2, it appeared that there were significant differences by gender: for boys, each remittance reduced the rate of discontinuation by 18% (1.00 − .82 = .18). For girls, there was essentially no effect: .82 * 1.31 = 1.07, which was close to a null coefficient. Model 4 tested how the benefits of father's migration success varied by gender of the child. Again, there was a significant gender interaction. Sons of successful migrant fathers had rates of discontinuation 81% (1.00 − .19 = .81) lower than sons of non-migrant fathers. Surprisingly, even sons of unsuccessful migrant fathers had lower rates of discontinuation by 64% (1.00 − .36 =.64); the difference in these two coefficients, however, was not significant (tested in a separate model, not shown). For girls, however, migration success brought no benefits. Daughters of successful migrants had rates of discontinuation only 21% lower than daughters of non-migrants (.19 * 4.32 = .82; 1.00 − .82 =.18), which was not significant (significance tested in separate model, not shown). Daughters of unsuccessful migrant fathers had rates of discontinuation 63% higher (.36 * 4.53 = 1.63) than girls of non-migrant fathers, although this difference among girls was not significant (significance tested in another model, not shown).

In sum, supporting our hypothesis, the results in models 1–4 of Table 3 generally showed that the benefits of migration in reducing children's schooling discontinuation rates were more oriented to boys' schooling, with few benefits for girls, regardless of the conceptualization of migration. However, we should remind the reader that the different measures of migration were not completely empirically distinct. The overlap of these various measures of migration experience, when allowing the effect of measures to vary by gender, was demonstrated in model 5. In this model, we included all three conceptualizations of migration—total years in migration, remittances, and success/failure— simultaneously, along with the corresponding gender interactions. Compared to the previous models, the magnitudes of the coefficients decreased in the combined model, and several were no longer statistically significant. Only years father was away before child entered school and father being a successful migrant were associated with lower schooling discontinuation.

Discussion

Although there is substantial existing research on the relationship between parental labor migration and child's schooling, the foregoing analyses of a typical sub-Saharan rural setting have added to our understanding of the complexity of this relationship, by considering different aspects of migration (migration success, past and present migration experience, and the timing of these experience in the life course) and variation in their effects on schooling

continuity. We also explored how gender differentially was associated with this critical educational outcome.

All migrants, and all migrant experiences, are not equal, and thus combining all migrants in one category, as it is routinely done in the literature, may obscure important heterogeneity. Notably, our findings suggest that migration success appears to be a distinct dimension from accrued migration experience: both measures of labor migration were significant in a combined model (Table 2, model 5). In taking a life course approach to migration experience, our gender-combined analysis showed that overall only father's migration accrued across the life course even before the child's school enrollment was associated with lower rates of school discontinuation.

Yet, the foregoing analyses also contributed to our understanding of gendered patterns in the consequences of father's migration for children's schooling. The tests of how these benefits of migration varied by the gender of the child showed large differences between boys and girls. The models without gender interactions suggested overall beneficial effects of labor migration for schooling. Upon further refinement, however, models that allowed the effect of migration to vary by gender showed that benefits were exclusively for boys. Each year of migration experience reduced boys' discontinuation rates, but not girls'. Boys of successful and even unsuccessful migrants had lower rates of discontinuation compared to boys with non-migrant fathers. For girls, their fathers' accrued migration experience provided no schooling continuation benefit; daughters of successful and unsuccessful migrants had discontinuation rates similar to those of daughters of non-migrants.

An additional contribution of our work is that that our setting is that of rather lower overall primary school discontinuation. Nationally, dropout rates for upper primary (grades 6 and 7) in Mozambique were estimated at 11.8% in 2008 (Ministry of Education and Culture of Mozambique, 2011). Thus our work adds to the study of assessing the effects of migration in a developing setting where primarily schooling has become relatively widespread and retention has improved.

Our study is not, of course, without limitations. While we observe patterns of father's migration and children's schooling that are consistent with theory, we are unable to identify the precise pathways through which these outcomes are produced. We do not know the reasons why children discontinue schooling before 7 years of education. The literature points to diverse mechanisms such as the demand for children's labor and reduced schooling aspirations in children. These important variables are not available from our data. The perceived success or failure of migration adds significant insight into how migration affects family processes in the sending area, but as we argued earlier, success or failure of the father's migration experience cannot be reduced to remittances. Thus, the absence of adults in the households, regardless of remittances, has important consequences for left-behind household members, including increasing stress for the remaining parent (Kandel and Kao, 2001), removing adult supervision of children, and worsening children's emotional problems (Zhao et al., 2014; Su et al., 2013; Cortina, 2014). We cannot document which of these mechanisms, if any, are leading to lower school continuation in our setting. Another data limitation was that the survey did not ask the timing of grade repetition. Yet school

attachment, regardless of grade completion, is still an important outcome, as children with lower school attachment are more disadvantaged than those who attend school longer.

Finally, as we mentioned earlier, unmeasured factors may be leading to fathers' decisions to migrate, women's assessments of migration success, and children's schooling discontinuation. To minimize this bias, we included a rich set of controls at the household level, such as parental socioeconomic characteristics, as well as the availability of schools in the community. Our modeling strategy with time-varying variables that predict risk in subsequent years also helped to remedy the problem of endogeneity. Nevertheless, it is not possible to make strong causal assertions with our observational data.

Also due to data limitations, we can only speculate why father's labor migration benefits boys' schooling but has no benefit for girls. In rural Mozambique, might daughters of migrant fathers—but not sons—be more likely to be pulled into household chores and other activities that compete with successful academic performance? While girls tend to have overall lower propensities to quit schooling, household stresses due to a father's labor migration could lessen this advantage by adding specific risks for girls' schooling but not boys'. Engaging the debate on intergenerational transmission of labor migration, our results suggest that fathers' migration does not lead to their male children stopping schooling prematurely, at least at the primary level, influenced by their migrant fathers' experience. We speculate that Mozambican migrants who are exposed to different models of socioeconomic advancement in a more developed context of South Africa, where such models tend to be strongly contingent on educational attainment, may encourage their sons to stay in school. However, our analysis examines younger children, and the link between parental migration experience and school stopping may be palpable at more advanced ages. Overall, a more rigorous investigation of these possible influences require extending the analysis beyond the primary school years. Thus, although we cannot support these speculations with our data and document the precise mechanisms through which labor migration transforms households and affects boys and girls in sending communities, our findings point to important next directions in this research.

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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
Years father away before child entered school	5.41	5.01	0	17
Times remittances sent in the past year	.90	2.29	0	24
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 has no education	.25	.43	0	1
Mother has 1–4 years of education	.49	.50	0	1
Mother has 5+ years of education	.27	.44	0	1
Mother’s age	28.67	5.80	18	41
Mother is an polygynous marriage	.27	.45	0	1
Father has no education	.14	.34	0	1
Father has 1–4 years of education	.36	.48	0	1
Father 5+ years education	.34	.47	0	1
Father’s education missing	.17	.38	0	1
Household material status (scale 1–4)	1.31	.76	0	3
Child is female	.51	.50	0	1
Child’s number of siblings	2.39	1.81	0	9
Nearest school offers grade 6 or higher	.35	.48	0	1

N=2407 children

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Table 2

Father's Labor Migration and Rate of Child's School Discontinuation

	1	2	3	4	5
Years father away since child entered school	0.92 (−1.77)				1.04 (0.58)
Years father away before child entered school		0.92 ** (−2.93)			0.92 * (−2.41)
Times remittances sent in the past year			0.98 (−0.52)		1.07 (1.42)
Father is a successful labor migrant †				0.41 ** (−2.71)	0.34 ** (−2.68)
Father is an unsuccessful labor migrant †				0.83 (−0.65)	0.75 (−0.87)
Mother has 1–4 years of education ‡	1.14 (0.53)	1.13 (0.48)	1.16 (0.57)	1.16 (0.58)	1.13 (0.50)
Mother has 5+ years of education ‡	0.57 (−1.52)	0.53 (−1.71)	0.56 (−1.54)	0.56 (−1.56)	0.51 (−1.76)
Mother's age	0.95 (−1.94)	0.96 (−1.59)	0.95 (−1.80)	0.95 (−1.85)	0.96 (−1.59)
Mother is in a polygynous marriage	1.41 (1.48)	1.39 (1.41)	1.44 (1.55)	1.38 (1.39)	1.36 (1.32)
Father has 1–4 years of education ‡	0.80 (−0.77)	0.82 (−0.68)	0.77 (−0.90)	0.78 (−0.84)	0.81 (−0.74)
Father has 5+ years of education ‡	0.38 ** (−2.63)	0.39 ** (−2.60)	0.38 ** (−2.67)	0.38 ** (−2.69)	0.38 ** (−2.68)
Father's education missing ‡	0.70 (−1.01)	0.76 (−0.80)	0.69 (−1.04)	0.67 (−1.13)	0.71 (−0.97)
Household material status scale	1.04 (0.23)	1.11 (0.67)	0.98 (−0.15)	1.07 (0.43)	1.18 (1.02)
Child is female	0.74 (−1.53)	0.74 (−1.52)	0.74 (−1.52)	0.74 (−1.52)	0.75 (−1.50)
Child's number of siblings	1.08 (0.95)	1.08 (0.98)	1.09 (1.11)	1.08 (1.02)	1.08 (0.99)
Nearest school offers grade 6 or higher	0.37 ** (−3.10)	0.37 ** (−3.12)	0.36 ** (−3.15)	0.36 ** (−3.20)	0.37 ** (−3.17)
Time since child's enrollment	3.65 *** (5.75)	3.41 *** (5.47)	3.51 *** (5.61)	3.55 *** (5.64)	3.39 *** (5.39)
Time since child's enrollment, squared	0.89 *** (−4.27)	0.89 *** (−4.21)	0.89 *** (−4.24)	0.89 *** (−4.27)	0.89 *** (−4.21)
Intercept	0.01 *** (−5.67)	0.01 *** (−5.72)	0.01 *** (−5.72)	0.01 *** (−5.65)	0.01 *** (−5.61)
N (person-years)	8866	8866	8866	8866	8866

† Reference is non-migrant

‡ Reference is no education

Coefficients are odds ratios; numbers in parentheses are t-statistics

* p<.05

** p<.01

*** p<.001, two-tailed tests

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Table 3

Father's Labor Migration and Rate of Child's School Discontinuation

Testing Gender Differences					
	1	**2**	**3**	**4**	**5**
Child female * Years father away since child entered school	1.20 * (2.33)				1.05 (0.48)
Years father away since child entered school	0.84 ** (−2.76)				1.01 (0.18)
Child female * Years father away before child entered school		1.09 (1.80)			1.03 (0.55)
Years father away before child entered school		0.88 ** (−3.25)			0.91 * (−2.07)
Child female * Times remittances sent in the past year			1.31 * (2.45)		1.08 (0.71)
Times remittances sent in the past year			0.82 * (−2.00)		1.01 (0.07)
Child female * Father is a successful labor migrant				4.32 * (2.22)	2.40 (1.05)
Child female * Father is an unsuccessful labor migrant				4.53 * (2.54)	3.15 (1.69)
Father is a successful labor migrant †				0.19 ** (−3.09)	0.22 * (−2.18)
Father is an unsuccessful labor migrant †				0.36 * (−2.09)	0.4 (−1.69)
Mother has 1–4 years of education ‡	1.12 (0.46)	1.12 (0.45)	1.15 (0.54)	1.11 (0.40)	1.09 (0.33)
Mother has 5+ years of education ‡	0.56 (−1.58)	0.53 (−1.69)	0.56 (−1.52)	0.54 (−1.64)	0.5 (−1.80)
Mother's age	0.95 * (−1.97)	0.96 (−1.61)	0.95 (−1.85)	0.95 * (−1.97)	0.95 (−1.72)
Mother is in a polygynous marriage	1.41 (1.49)	1.40 (1.44)	1.42 (1.49)	1.36 (1.30)	1.35 (1.26)
Father has 1–4 years of education ‡	0.79 (−0.82)	0.82 (−0.70)	0.78 (−0.84)	0.80 (−0.75)	0.82 (−0.69)
Father has 5+ years of education ‡	0.38 ** (−2.65)	0.39 ** (−2.61)	0.38 ** (−2.65)	0.38 ** (−2.64)	0.38 ** (−2.66)
Father's education missing ‡	0.72 (−0.94)	0.78 (−0.73)	0.71 (−0.96)	0.70 (−0.99)	0.75 (−0.79)
Household material status scale	1.05 (0.33)	1.12 (0.73)	0.98 (−0.14)	1.07 (0.45)	1.18 (1.04)
Child is female	0.51 ** (−2.65)	0.56 * (−2.30)	0.59 * (−2.50)	0.50 ** (−2.94)	0.43 ** (−3.00)
Child's number of siblings	1.08 (1.00)	1.08 (0.98)	1.09 (1.12)	1.09 (1.10)	1.09 (1.08)
Nearest school offers grade 6 or higher	0.37 ** (−3.11)	0.38 ** (−3.10)	0.36 ** (−3.14)	0.35 ** (−3.19)	0.37 ** (−3.17)
Time since child's enrollment	3.69 *** (5.80)	3.42 *** (5.48)	3.54 *** (5.63)	3.59 *** (5.68)	3.43 *** (5.43)
Time since child's enrollment, squared	0.89 *** (−4.32)	0.89 *** (−4.22)	0.89 *** (−4.26)	0.89 *** (−4.30)	0.89 *** (−4.25)
Intercept	0.01 *** (−5.43)	0.01 *** (−5.56)	0.01 *** (−5.54)	0.01 *** (−5.31)	0.01 *** (−5.15)

Testing Gender Differences					
	1	**2**	**3**	**4**	**5**
N (person-years)	8866	8866	8866	8866	8866

†Reference is non-migrant

‡Reference is no education

Coefficients are odds ratios; numbers in parentheses are t-statistics

*p<.05

**p<.01

***p<.001, two-tailed tests