The Effects of Mexico-U.S. Migration on the Intergenerational Educational Mobility of Youth in Mexico

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Abstract

This paper studies the role of U.S. migration on the intergenerational educational mobility of non-migrant youth in Mexico by using data from the 10% sample of the 2000 Mexican Census to compare the educational attainment of youth ages 13 to 20 to that of their parents. Classic models of status attainment suggest that family background is a strong determinant of children educational outcomes. Household migration is expected to positively influence education through its impact on socioeconomic status. However, living in a place with high migration prevalence has been associated with schooling discontinuation and an orientation towards U.S. labor markets. Results show that the positive effects of migration in the household depend on the socioeconomic conditions of the community. In less developed areas, migration in household has a stronger impact on intergenerational educational mobility In contrast, higher migration prevalence in the community is associated with lower probabilities of intergenerational educational mobility.

Introduction

After the economic crises of the 1980s, the Mexican economy went through great economic restructuring and liberalization. The changes in the economy brought a reconfiguration of the labor market, where opportunities in skilled jobs and manufacturing decreased and the proportion of jobs in the services industry and the informal sector increased significantly, restricting opportunities for social mobility in the country (Solís, 2002; Zenteno and Solís, 2006).

Furthermore, despite large improvements in the Mexican educational system, which greatly increased schooling opportunities, family background and income continue to be strong determinants of educational attainment and social mobility in the country (Bracho, 2002). Previous studies in Mexico have established the close relationship between family background and intergenerational social mobility –particularly with regard to occupation; while other studies have explored the relationship between rural to urban migration and the occupational mobility across generations (Solis, 2002). However, no research has explored the impact of Mexico-U.S. migration on the intergenerational mobility of youth, specifically comparing the educational attainment of children relative to the educational attainment of their parents.

In the literature exploring educational outcomes and international migration we can find two main competing theoretical explanations of this relationship. On one side, human capital perspectives suggest international migration may have a positive impact on education due to increased household income; and on the other side, sociological research suggests that migration may discourage education and creates an orientation towards U.S. labor markets. In this paper I integrate these perspectives to further understand the relationship between migration and the intergenerational educational mobility of youth.

Given his gap in the literature, the main objective of this paper is to study whether U.S. migration in the family and in the community is associated to the intergenerational educational mobility of non-migrant youth in Mexico. In addition, I explore if this relationship is influenced by the level of development of the municipality of residence. The paper analyzes microdata from the 2000 Mexican Census of Population and Housing as well as community level characteristics constructed by the Mexican National Council of Population (CONAPO).

Background

Between the 1950s and the early 1980s Mexico went through a period of accelerated economic growth and industrialization based on the substitution of imports (Solís, 2002). Authors agree that during this period there were greater opportunities for social mobility, and workers had more opportunities for improving their living conditions. Important changes to the economy were brought about by the deep economic crisis of 1982, and the subsequent liberalization of the economy which brought a reconfiguration of the labor market, moving towards decreasing opportunities in skilled and manufacturing employment, and an increase in unskilled jobs and the services industry, but most importantly it led to the growth of the informal economy (Solís 2002; Zenteno and Solís, 2006; Parrado, 2005).

Recent work on social mobility in Mexico has focused on understanding occupational outcomes and inequality of access to higher social strata, additionally research has focused on both intergenerational and intragenerational mobility (Cortés and Escobar, 2005). The literature on intergenerational mobility in Mexico has explored the role of family background and community characteristics on occupational mobility. Studies of highly industrialized cities in

Mexico show that the process of occupational attainment was significantly affected by ascribed characteristics, in particular men's class of origin and father's occupation (Solís and Billari, 2002). Other studies have also found that urban areas have more opportunities for upward mobility than rural settings (Pacheco, 2005). In a country like Mexico, where life conditions are strongly related to an individual's social status, understanding the relationship between family background and intergenerational differences in education is instrumental for defining social mobility patterns, however little research has specifically explored intergenerational educational mobility (Cortés and Escobar, 2005).

In spite of the economic crises and the changes they brought, Mexico accomplished an important expansion of educational opportunities in the last two decades of the twentieth century. By 2000, school enrollment of children 6 to 14 years old was close to universal, illiteracy was less than ten percent, and the educational attainment of the population increased significantly (INEGI, 2000b; Giorguli Saucedo, 2002; Castro and Gandini, 2008). This expansion was supported by a change in the law that increased mandatory schooling from 6th to 9th grade in the early 1990s (Bracho, 2002; Ariza, 2005).

However, even with the important accomplishments in primary education, school dropout after sixth grade is still high, and less than half of the children who finish ninth grade will continue their education (Camarena, 2000). Furthermore, despite the advances in education policy, studies agree that parental socioeconomic status is still the most important determinant of school enrolment and attainment in Mexico (Giorguli Saucedo, *et al.*, 2009; Bracho, 2002). For instance, Bracho (2002) compared youth's schooling by deciles in the income distribution and found large gaps in attainment: after age 12, the average years of education for children in the bottom ten percent of the distribution never surpassed 6, while those children in the top ten

percent of the distribution made educational transitions around the normative ages. Fewer children from poor families finished secondary education and wealthier children were much more likely to finish high school and even attend college (Bracho, 2002).

With the current state of the economy, what has arisen is the idea that education no longer guarantees occupational and social mobility, and fares poorly when compared to alternatives such as U.S. labor migration. And even though international migration has become a constant presence in many communities in the country and its impact on children's education has been documented, there are no studies on the effect it has on the intergenerational educational mobility of children. Social mobility research in Mexico so far has focused on the impact of father's occupation, family background or internal migration on children's social mobility. This paper is the first study to directly address the relationship between U.S. migration and intergenerational educational mobility in Mexico.

Theoretical Framework

Models of Status Attainment

Social background has been consistently established as an important determinant of educational aspirations and employment outcomes of youth. Models of status attainment have consistently established the important role of family's socioeconomic status on the educational attainment of children. Early experiences and accomplishments have influences beyond schooling given educational attainment is a major predictor of the prestige level of the first job after school (Blau and Duncan, 1967). Following classic models of status attainment, we can expect that parental education and occupation, as well as income, to be strong determinants of children's

achievement, in addition to other individual characteristics like children's abilities (Blau and Duncan, 1967; Sewell and Hauser, 1975; Sewell, Haller, & Portes, 1969; Haveman and Wolfe, 1995; Hauser and Featherman, 1977).

In addition to parental resources, other key social and psychological mediators determine educational success, for instance family expectations on adolescent's aspirations. We can expect that higher father's educational achievements could result in higher son's educational achievement due to higher expectations and more support to continue education (Johnson, 2002; Mortimer, *et al.*, 2000; Sewell and Hauser, 1975; Sewell, Haller, & Portes, 1969). Children form higher status families receive more encouragement from parents and other adult relatives, and also earn better grades in high school, which leads to higher aspirations for a college education (Sewell, Hauser, and Ohlendorf, 1970; Jenks, *et al.,* 1983).

Household income is positively related to children's school enrollment and educational attainment, numerous studies in developed and developing countries have consistently established this relationship (Sewell and Hauser, 1975; Alwin and Thornton, 1984; Corcoran and Datcher, 1981; McLanahan, 1985; Shaw 1982; Teachman 1987; Hill and Duncan; 1987; Binder, 1998 Nam and Huang, 2009; Giorguli Saucedo, 2002; Mier y Terán and Rabell, 2003; Cerrutti and Binstock, 2004; Buchmann and Hannum, 2001). The mechanism driving this relationship is clear, parents with higher education or higher income will provide financial, social and cultural capital that will positively impact children's educational attainment (Binder, 1998; Teachman, 1987), hence improving their children's chances to achieve intergenerational mobility.

Studies on the impact of international migration on schooling argue that remittances, like income, have a positive effect on the educational attainment of youth. Recent work has found that children of migrants are less likely to drop out of school and more likely to achieve higher

levels of schooling (Borraz, 2005; McKenzie and Rapoport, 2006; Hanson and Woodruff, 2003). These positive effects of migration on schooling are particularly true for children living in small towns (Hanson and Woodruff, 2003; Borraz, 2005). However, others have also found a negative effect of migration on the educational attainment of youth (McKenzie and Rapoport, 2006; Kandel and Massey, 2002).

Returns to Education and Educational Aspirations

Perceived returns to education are important determinants of youth's educational aspirations. In the developing world, returns to education play an important role in whether adolescents make the effort to continue in school. In Mexico, where higher education may not necessarily lead to a better job, the connection between education and social mobility may appear as direct. The issue is complicated by the fact that labor migrants to the United States usually work in low-skilled occupations when in the U.S., and they earn more money that they would earn in Mexico even if they have lower levels of schooling. This creates the impression among the children of migrants that they do not need to continue studying to achieve social mobility, and as a result, many of them desire to drop out of school and migrate. In addition to changing aspirations, having family with U.S. migration experience also creates a real connection with the migrant labor market, making it easier to succeed as a migrant than in the domestic labor market (McKenzie and Rapoport, 2006; Miranda, 2007; Meza and Pederzini, 2007).

In addition, role modeling and socialization are other ways in which family shapes children's expectations. Parental influence is not limited to economic resources; children get socialized into accepted routes to a successful life by observing their parents and other adults in the family. Adult role models help children define what sort of employment or professional paths

would be acceptable given the family's social status (Sewell and Hauser, 1975; Hill and Duncan, 1987). However, just in the same way, expectations to migrate may be a result of role modeling, so that children living in a household with international migrants will consider migration as an accepted route to success. Research in migrant communities has long established that migration creates the social capital and networks necessary to make additional migration possible (Massey, *et al.*, 1998); hence, children with migrant family members will have access to the migrant labor market, making migration a realistically attainable goal (Miranda, 2007). The expectation associated with this argument is that children of families with migrants may be discouraged to stay in school for longer, so these children may be less likely to achieve upward educational mobility relative to their parents.

Community level influences on Migration and Schooling

Another argument linking migration and education works at the community level, the argument is that opportunities for migration and economic opportunities in the community where children reside may also be important determinants of their educational outcomes. As children grow older, the influence of family is not the only thing defining their aspirations and expectations, because they begin having more contact with peers and other adults in the community who may become role models as much as family members are.

Studies on the social consequences of Mexican migration to the United States consider that remittances and international migration among members of the family, friends, and within the community result in the development of a "culture of migration" which discourages youth from viewing education as a way to economic mobility. In communities with a high prevalence of U.S. migration, migration becomes deeply rooted and it eventually becomes an established

social norm. In these places, young people expect to go to the U.S. for work at some point in their lives, and more importantly, migration is seen as an acceptable vehicle for economic mobility throughout the community, discouraging children from staying in school (Kandel and Massey, 2002; Massey, *et al.*, 1987). The expectation is that children who live in municipalities where migration is high are more likely to desire to live and work in the United States, as a result they are also more likely to drop out of school at younger ages (Kandel and Massey, 2002).

In addition to the effect of the culture of migration, youth's expectations are also shaped by the context of economic opportunity in their locality. The economy of the community will determine how much value is placed on education to obtain better employment. For instance, living in a place where opportunities for skilled jobs are low will discourage education, whereas more dynamic economies will provide more options for skilled or even professional employment thus encouraging children to pursue the schooling necessary to obtain those jobs. Context level influences have not been fully addressed in previous studies on migration and education, particularly because many of them rely on samples of rural areas, or on small samples from places with high migration, as a result, variation in the characteristics of the place of residence have not been fully accounted for.

Another issue with previous research is the application of instrumental variable approaches that use community level migration as a proxy for household level migration, making it impossible to consider the distinct impacts that household and community migration may have on children's schooling. The use of these methodological approach follows arguments that household with migrants are significantly different than household without migrants, as a result, observed differences in schooling between children of these different households may just be a result of selectivity. Econometric analyses use instrumental variables to adjust for this selectivity

bias, by using a variable that will be correlated to the likelihood that a household would have migrants, but not with educational outcome, thus this method would produce unbiased estimates of the effect of migration on education (McKenzie and Rapoport, 2006).

The instrumental variable most commonly used is historical migration rates at the community level. However, there is an important theoretical problem with using community level migration rates in the estimation of household level effects of migration on education; as I explained in the previous sections, my expectation is that migration at the household level has an effect on education through economic resources and processes of role modeling, whereas the community level migration should impact education through peer effects and migration opportunities. Following this theoretical argument we can infer that the use of community level migration prevalence as a proxy for household migration effects on education is a flawed approach. Migration prevalence in the community may indeed be a good instrument to estimate probabilities of migration in the household; however, they are not pertinent to explain the impacts of household migration on educational outcomes.

Research Questions and Hypotheses

This paper examines the role of U.S. migration at the household and community levels on the educational mobility of children compared to their parents. Based on the associated literatures, they main research questions guiding this research are:

(1) Is migration at the household level associated with higher probabilities of achieving upward intergenerational educational mobility?

(2) *Is higher migration prevalence in the community associated with lower probabilities of upward intergenerational mobility?*

(3) *Does the impact of migration on intergenerational educational mobility differ by the level of development of the community?*

These questions incorporate the relationship between improved economic resources in the household and increased opportunities for mobility given the local circumstances. Based on the literature one would expect that:

- Family migration makes investments in education viable due to increased household resources; hence we should expect that children from households with migration experience will have a higher educational attainment than their parents.
- The positive impact of migration in the household should be stronger in places that have lower levels of socioeconomic development.
- Higher migration at the community level can discourage children from making educational investments, so that children living in communities with high migration will have a level of education closer or lower to that of their parents.

Data

The analysis uses the ten percent sample from the 2000 Mexican Census available through IPUMS-International. This sample of 2.3 million households contains information on education, work, and migration characteristics of each household member, as well as characteristics of the household and dwelling of residence. The analysis is limited to children ages 13 to 20, who live share the household with at least one of their parents, regardless of their relationship to the

household head. The individual records are complemented with information on the education, work and migration characteristics of their mother and father, provided that they were members of the same household. In those cases where parental and migration information were missing, the observation was excluded from the sample, this resulted in the loss of less than 5% of the initial sample.[1]

Besides the individual, family and household characteristics included in the Census, this study uses municipality level data. These data consist of two indices created by the Mexican National Council of Population (*Consejo Nacional del Población*, CONAPO). The first one, an Index of Marginalization (*Índice de Marginación*) measures the degree of socioeconomic marginalization of a municipality in Mexico, for ease of interpretation the direction of this index is reversed in the multivariate analysis. With this change, negative scores will be interpreted as a lower degree of socioeconomic development and positive scores as a higher degree of socioeconomic development. The second index is an Index of Migration Intensity (*Índice de Intensidad Migratoria*) which measures the prevalence of migration and remittances receipt in each municipality in the country.

The two indices discussed above capture the specific effects of local U.S. migration prevalence and socioeconomic marginalization on intergenerational mobility. But, more importantly, they permit modeling the interaction of community and family characteristics on the outcomes of youth.

Methods

[1] The final sample size is 1,357,516. Where 52.21% (708,750) are male and 47.79% (648,766) are female.

This analysis estimates the impact of U.S. migration at the household and community level on children's educational attainment compared to their parents. For this comparison I use the highest educational attainment between the father and the mother when both are present in the household. In order to compare educational attainment, schooling for both children and parents are classified in five categories: 1) no school to incomplete primary (0 to 5 years of education), 2) completed primary school (6 to 8 years), 3) completed secondary school (9 to 11 years), 4) completed high school (12 years), and 5) some college (13 or more years of schooling).

I use multinomial logistic regression models to compare children's educational attainment to their parents' highest educational attainment, and the outcome variable has four possible states comparing the child's and the parents' educational attainment according to the categories above and accounting for the child's current school enrollment as a measure for completed or incomplete schooling.

The four possible outcomes are: 1) child is not enrolled in school anymore and has attained the same level of schooling as their parents, this is the reference category, 2) child does not attend school and has lower educational attainment than their parents (downward mobility), 3) child is still in school and has lower educational attainment than their parents, and 4) the last category includes both children who are still in school and have attained the same schooling than their parents, and those who have attained higher schooling than their parents, regardless of current school enrollment (upward mobility). The last category indicates upward or positive intergenerational mobility, evident in the children who already attained higher schooling than their parents, but also in those who attained the same educational level as their parents and are

still attending school, hence are likely to attain more education than the current level they reported in the Census.

The models control for individual characteristics such as age, sex and ethnicity; family background characteristics such as parents' education, father's status, remittances receipt in the year prior to the Census and if the household has international migrants between 1995 and 2000. Father's status is defined according to three categories combining migration status and household membership: 1) the father is a member of the household and did not migrate to the U.S. in the five years prior to the Census; 2) the father is a member of the household and has migrated to the U.S. in the five years before the Census; and 3) the father is not a member of the household, which captures both the individuals who do not have a father and the ones whose father is not a household member. The models also control for characteristics of the municipality of residence such as the level of socioeconomic development and the level of migration intensity.[2] In addition, different models are estimated for males and females.

The highest parental education is used as a measure of family's socioeconomic status; the variable takes the highest year of schooling attained between the mother and the father of the child. It has been well established that in developing countries using occupation and education as measures of household's status measures are a better estimate than direct measures of income (Mier y Terán and Rabell, 2003). Results from preliminary analyses using other measures of socioeconomic status such as occupational prestige or household assets indices, were consistent to those using parental education.

Two community level characteristics are used. First, a constructed index for the level of socioeconomic development in the *municipio* of residence, this variable is relevant to the study because I expect that the impact of migration and remittances may vary depending on the

[2] Table 1 presents variable descriptions and codes.

economic opportunities available to youth in their place of residence. For instance, we can hypothesize a stronger positive impact of migration on education at the family level in less developed communities where economic opportunities are more limited. Second, I include a measure of the intensity of international migration in each *municipio*, expectations would be that youth living in places with higher migration prevalence would be more likely to have attained lower levels of schooling due to a negative impact of migration on educational attainment aspirations.

Below I present descriptive statistics, which were all calculated using the sampling weights provided with the IPUMS data. In addition, all multivariate models were estimated using the Huber-White correction of standard errors to account for clustering at the municipality level.

Descriptive Analysis Results

Table 3 presents different intergenerational educational mobility categories by sex. The data shows that about 14 percent of males and 12 percent of females achieved the same educational level than their parents, and since they are not enrolled in school anymore, they have not achieved intergenerational educational mobility. About five percent of males and four percent of females have achieved lower schooling than their parents and have already completed their studies; this group has achieved negative intergenerational mobility. In contrast, 22% achieved lower schooling but are still enrolled in school, the children in this group are mostly under 15 years old and are yet to achieve their highest years of schooling.

Additionally, those who achieved the same schooling as their parents and have not completed their schooling are likely to eventually achieve upward mobility, especially for those

at younger ages, as well as those who regardless of their school enrollment status have achieved higher schooling than their parents. About 62 percent of females and almost 59 percent of males are within this category. This large proportion of upwardly mobile youth is to be expected because of the degree of educational expansion and improvements in attainment made in Mexico in the last few decades. Moreover, the main focus of this study is in two groups: those with lower education than their parents who already completed school, and those with higher educational attainment than their parents. The remainder of this paper only presents results of the multivariate models for the upwardly and downwardly mobile categories compared to those in the same schooling and not in school category.

Figures 1 and 2 present the percentages of youth in the three intergenerational educational mobility categories of interest by fathers' migration and household membership status for males and females respectively. Regarding males, we can see that among those with same schooling than parents and who are not enrolled in school, there are no important differences by father's status. However, there is a higher proportion of boys who have lower schooling than their parents and do not attend school among those whose father is a U.S. migrant, this shows evidence that father's U.S. migration may associated with a lower educational attainment compared to that of parents

A similar trend can be observed among the last category which includes both the boys who attained as much schooling as their parents but are still in school and those who already have higher educational attainment than their parents. The lowest proportion of boys who are in this group belongs to the sons of U.S. migrants. And the largest group among the upwardly mobile boys is of those whose father is not a member of the household, this may be a result of composition, since the comparison point for these children is their mothers' schooling, and

women of earlier generations were less likely to have achieved as much education as their male counterparts.

A very similar pattern is observed for females, with higher proportions of U.S. migrant's daughters among those with lower educational attainment compared to their parents, and higher proportions of children without a father in the higher educational attainment category.

Multivariate Analysis Results

Tables 4 to 7 present the odd ratios from the multinomial logistic regression models predicting intergenerational educational mobility among boys and girls respectively. The models control for individual, household and community level characteristics. The category of reference in the multinomial model is attaining same completed schooling as parents.

Results for males: The first column in Table 4 presents the odds ratios of being in the lower schooling completed category. According to these results, having a father with U.S. migration experience has no significant effect on the odds of being in the lower schooling completed category when compared to the children of non-migrants. The same is the case for the boys whose father is not a member of the household. In addition, having international migrants in the household has only a small and marginal effect on increasing the odds of downward mobility represented by the lower schooling completed category; however, remittances receipt in the household, increases the odds of boys achieving lower schooling than their parents which goes against my expectation that through migration income households will make investments in the schooling of their children and therefore motivate upward educational mobility. This finding goes against expectations that remittances from migration will result in higher educational

attainment. The effect of remittances, net of the effect the father and household's migration experience, likely results from poorer households being more dependent on remittance income.

Regarding community level characteristics, higher levels of development in the municipality are associated with boys' lower odds of completing lower schooling than their parents, which is consistent with expectations that in more economically dynamic places, children will reach higher levels of schooling than their parents since they have more opportunities to translate higher schooling into employment. Moreover, higher levels of migration prevalence are related to higher odds of boys' downward educational mobility, this is also consistent with my hypotheses that in a context with high migration boys are discouraged from investing in school; as a result, completing a lower level of schooling than one's parents is more likely in these communities.

The next outcome in the model (not presented in these tables) lower schooling than parents for children who are still in school is mostly driven by age, and it is not necessarily meaningful for understanding intergenerational educational mobility and its relationship to U.S. migration. Most of the children belonging to this category are those who are too young to have completed their schooling, the vast majority of them are 13 or 14 years old, for these children having lower schooling than their parents will not necessarily be permanent.[3]

Regarding the group who has the same schooling than their parents and are yet to complete their education we can confidently argue that these boys are already on their way to upward educational mobility because even if they stop their schooling, they have already accomplished as much as their parents, and they are very likely to complete higher levels of education than their parents. This group is included in the same category than those who

[3] Please see Appendix I at the end of this chapter for the coefficients corresponding to the lower schooling, still in school category.

regardless of school enrollment have achieved higher schooling than their parents. Just as we observed with the males achieving lower schooling, the odds of being in the category of same or higher educational achievement are not statistically different for those whose father has U.S. migration experience than for those with non-migrant fathers. In contrast, having migrants in the household is related to increased odds of belonging to this category.

Furthermore, remittances receipt is associated to a significant increase in the odds of being in the same and higher schooling category. Since these children are what we would consider upwardly mobile, this effect is consistent with the idea that migration has a positive economic effect on schooling and consequently on educational mobility.

Consistent with the expectation that living in communities with higher socioeconomic development will be associated to higher educational achievements compared to the previous generation, the level of development in the municipality is related to increased odds of being in the same or higher schooling category. In contrast, migration prevalence is related to lower odds of belonging to said category, which is consistent with expectations of the "culture of migration" argument which predicts a negative impact of migration prevalence on the odds of upward educational mobility for boys.

Besides the main models, four models including interaction terms were estimated they include three interactions between household level migration characteristics and the level of development in the community and a fourth is between parental education and community development. The hypothesis behind these interaction terms is that the impacts of migration and family socioeconomic status will be stronger in places with fewer economic opportunities. Table 5 presents the results from these interaction models. In addition, figures 4 and 5 present graphs for the interaction effects that were statistically significant.

Regarding the lower schooling completed outcome, the interactions with household migration characteristics are not statistically significant; however, the interaction between community development and parental education has a significant effect and is represented graphically in figure 3. The meaning of this effect is that in places with lower levels of socioeconomic development, every year increase in parental education is associated to a larger increase in the odds of children being among those who completed lower schooling than their parents. This interaction illustrates the fact that the more educated parents are, the less likely it is that children will surpass their educational level when they live in less economically developed places, however, in places with higher levels of development, boys would probably achieve higher schooling and hence, be less likely to belong to the lower achievement category.

Regarding the same and higher schooling outcome category, all of the interaction effects are statistically significant and show different effects of migration in the household and parental education by level of development in the community. These interactions are presented in figure 4. As the upper left graph shows, the odds of having attained the same or higher schooling are almost the same for boys whose father is not a migrant and for boys whose father is not a household member across the different levels of community development. However, the pattern is different for the sons of U.S. migrants. The influence of father's migration is stronger in poorer places, which is consistent with expectations that in more economically stagnant places family influences will play a larger role in children's educational outcomes than in places with more economic opportunities. The same trend holds for households that have migrants and households that receive remittances, the positive impact of these characteristics on the odds of being in the upwardly mobile group is stronger in less developed municipalities. With regard to the fourth interaction, presented in the lower right graph, increases in parental educational

attainment result in higher odds of intergenerational educational mobility for boys in poorer places.

Results for females: Table 5 presents the results of the multinomial logistic regression models for females. Results are presented in odds ratios and every column of the table presents the relative risk of belonging to each mobility category compared to achieving same schooling than parents completed. As in the results for males, only the lower schooling and same-higher schooling categories are presented, for the coefficients of the lower schooling and still in school category the reader may refer to appendix I the end of this paper.

Unlike in the results for men, father's migration is significantly associated with higher odds of being in the lower education completed category for women, so is the receipt of remittances and having international migrants in the household. Regarding community level characteristics, the level of development in the community is associated with decreased odds of being in the lower schooling completed category, meaning that the more developed the place of residence is, the lower the odds of downward educational mobility are for females. This result is consistent with expectations that intergenerational educational mobility is more likely to occur in places with higher economic opportunities. Conversely, consistent with expectations, higher migration prevalence is associated with increased odds of being in the lower schooling completed category for women, however, this effect is only marginally significant.

The next outcome is the same schooling, still in school and higher schooling group which is considered the group that achieved intergenerational educational mobility. Father's migration has not significant effect on the odds of being in this group for females, however, both having migrants in the household and receiving remittances are associated to higher odds of being in the same schooling incomplete category.

Regarding community level characteristics, higher development in the municipality is associated with an increase in the odds of being in the group of females who achieved same or higher schooling, while higher migration prevalence is related to decreased odds of being in that category of attainment. Both of the community effects are consistent with expectations that in more developed places children will achieve higher schooling and in places with high migration prevalence they will have a lower likelihood of educational mobility.

The interaction effects for the models for girls are presented in table 6. For the lower attainment and not in school category, the interactions estimated between migration characteristics and community development are not statistically significant, in contrast, just as in the results for males, the interaction between parental education and level of development in the municipality is negative, which means that higher parental education results in increased odds of children achieving lower schooling than the parents for children living in poorer communities (figure 5). Lastly, regarding the same or higher schooling achieved category, the covariates follow the same pattern as they do for males and they are graphically presented in figure 6.

Conclusions

This paper makes important contributions to the understanding of the intergenerational implications of migration. Results from my previous research on school enrollment and educational attainment consistently support the existence of two processes linking educational outcomes and migration, one is a positive impact on schooling through increased family resources; the other is the discouragement of schooling in places with migration is highly prevalent. The findings of this paper support and help expand on those findings.

The specific findings of this analysis show that the odds of intergenerational educational mobility are no different for children with migrant fathers than for children of non-migrant fathers. There are two exceptions to this finding, first girls have increased odds of being in the "lower schooling than parents and not enrolled in school category," and second, there are consistent negative interaction effects between father's migration and level of development in the community for those achieving same or higher educational attainment than their parents. This last finding is consistent with the idea that father's migration will have a stronger impact in the odds of educational mobility in places where economic opportunities are limited.

Moreover, having other international migrants in the household significantly increases the odds of being among the youth who achieves same and higher schooling than their parents. Remittances receipt has a more ambiguous effect because it is associated with increased odds of belonging to both the upwardly mobile and the downwardly mobile categories. As results from my previous research show, the impact of remittances on adolescents' schooling may have contradictory effects depending on youth's age and level of schooling.

Perhaps an explanation for this ambiguous effect is that migration offers resources for those who decide to continue their schooling, so the impact of migration on schooling would be positive for these people. However, there will be a group of youth who even with access to the economic resources to pursue their education may decide not to continue in school, this is more likely because their educational aspirations and expected returns to education are low. In addition, what my previous analyses of educational attainment show is that at older ages, migration in the household does not have such a positive impact, and the strongest impact is in the community level. This is consistent with the idea that as adolescents grow older, parental

influences will have a weaker impact in their decisions compared to their own agency or to influences form peers.

In addition, another possible explanation is that continuing education may look like a good alternative when there is migrant income in the household, however, at the same time, access to opportunities in the U.S. labor market is also an attractive alternative, especially because economic benefits from migration can be attained even with low schooling, and this impact may be exacerbated by the existence of migrant networks in the community.

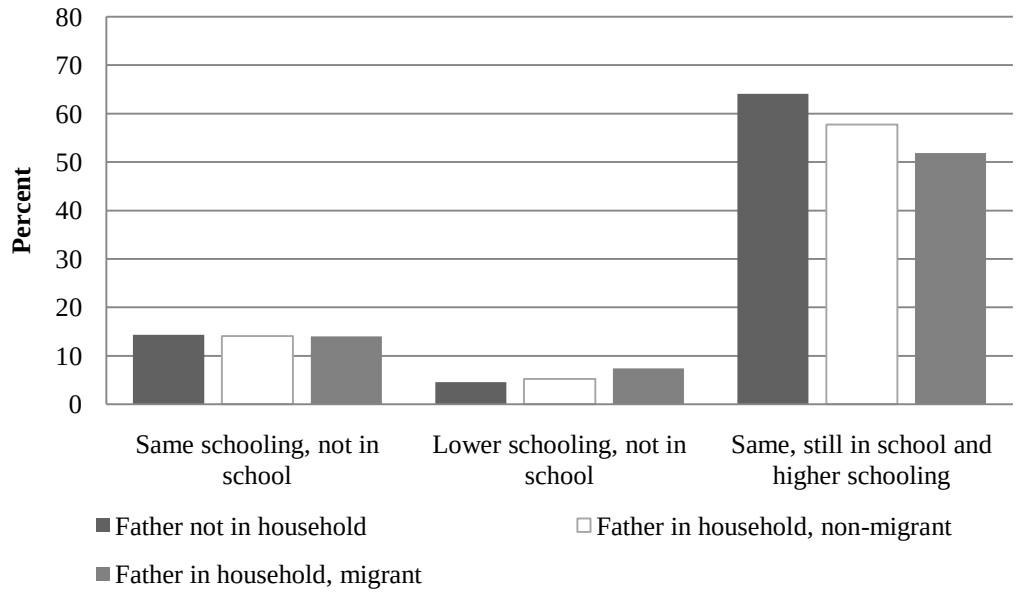
There is no ambiguity regarding community effects, as expected, the level of socioeconomic development in the municipality is related to decreased odds of downward educational mobility and significantly related to increased odds of achieving upward intergenerational educational mobility. Following my expectations, the intensity of migration in the community is related to decreased odds of youth achieving higher education than their parents, and positively associated with youth's lower educational achievements compared to their parents. In addition to the effects of community characteristics, there is an important interactive effect of migration and the level of development in the community. The findings of this paper show that in poorer communities there is a stronger effect of household migration characteristics in increasing the odds of upward mobility.

The effects of community level migration characteristics reflect the impact of peer effects and migration opportunities, these results are consistent with the culture of migration argument. This migration effect is still there even after controlling for household level migration, showing that community level migration is not a proxy for household level migration but an evidence of the existence of a culture of migration. By distinguishing between household and community level migration characteristics this study has been able to tap into the specific processes

associated with each and demonstrate the complex nature of migration's impact on youth's educational outcomes.

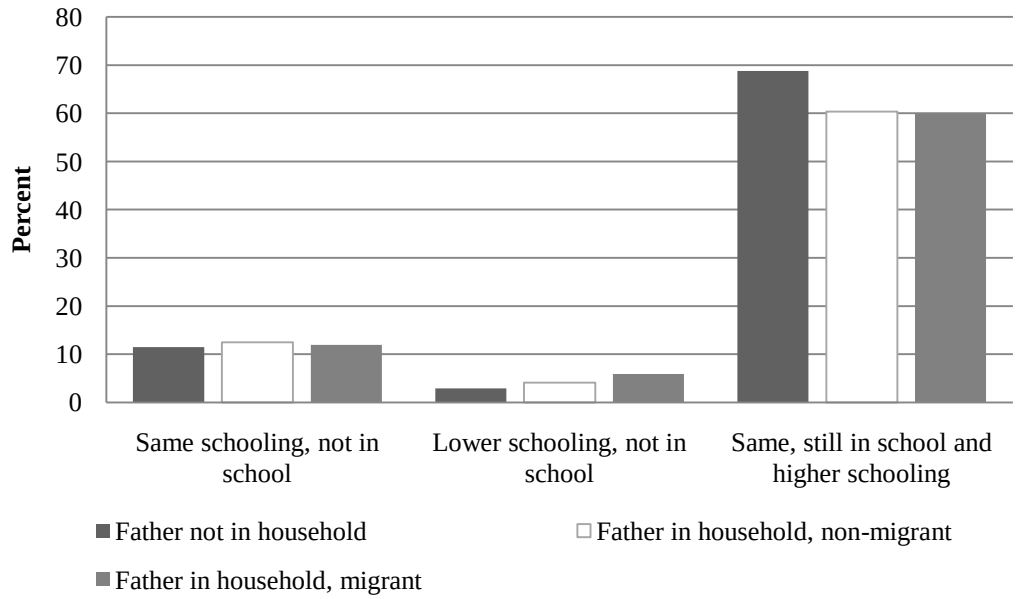
Tables and Figures

Figure 1. Intergenerational Educational Mobility by Father's Status, Males, Mexico 2000



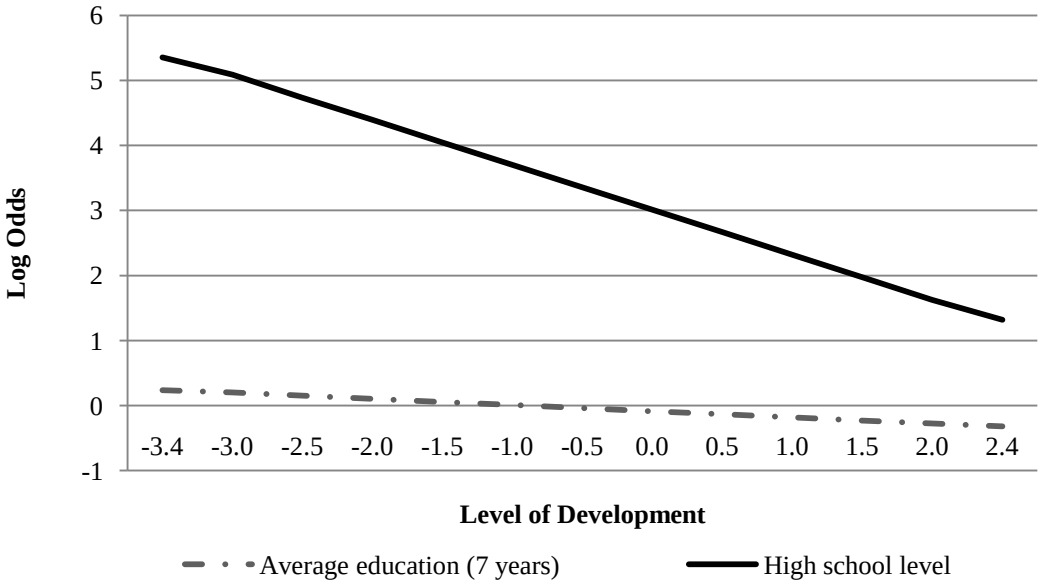
Source: 2000 Mexican Census Subsample, IPUMS International

Figure 2. Intergenerational Educational Mobility by Father's Status, Females, Mexico 2000



Source: 2000 Mexican Census Subsample, IPUMS International

Figure 3. Log Odds of Achieving Lower Schooling than Parents by Parental Level of Education for Boys, Mexico, 2000



Source: 2000 Mexican Census Subsample, IPUMS International

Figure 4. Interaction Terms and Log Odds of Attaining Same or Higher Schooling than Parents for Boys, Mexico, 2000

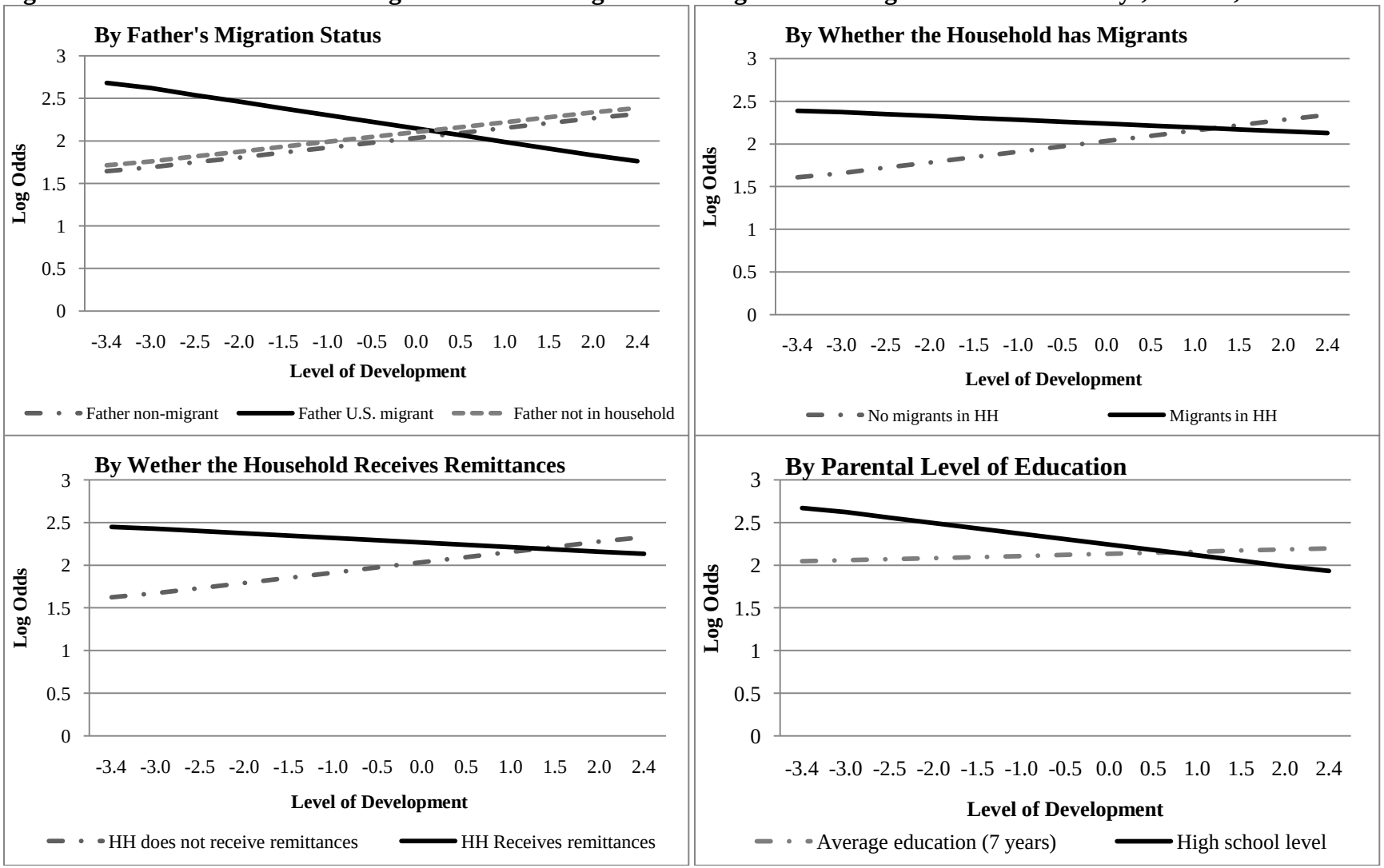
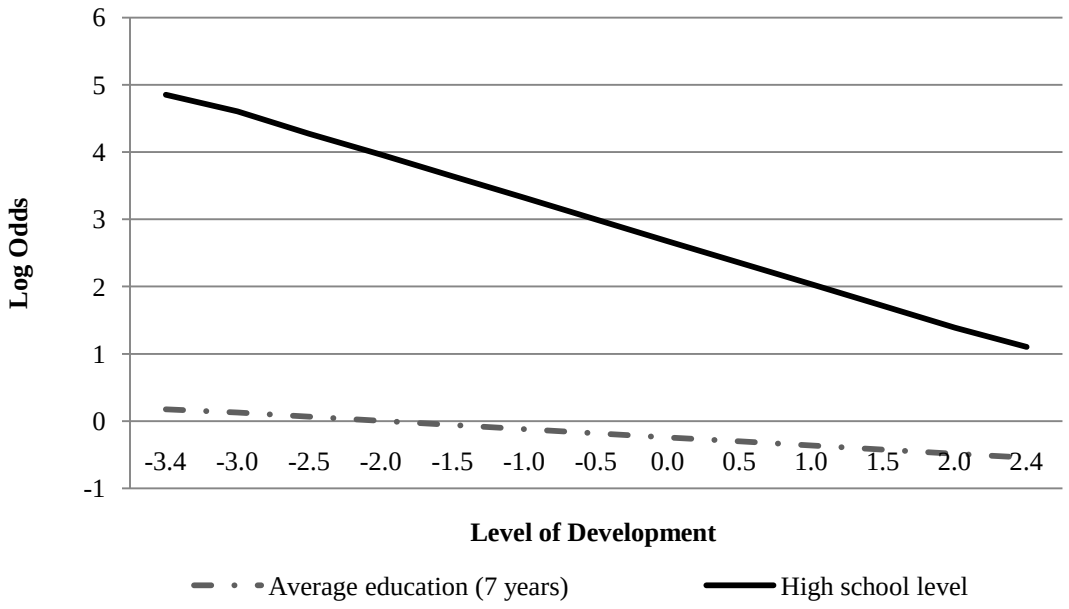


Figure 5. Log Odds of Achieving Lower Schooling than Parents by Parental Level of Education for Girls, Mexico, 2000



Source: 2000 Mexican Census Subsample, IPUMS International

Figure 6. Interaction Terms and Log Odds of Attaining Same or Higher Schooling than Parents for Girls, Mexico, 2000

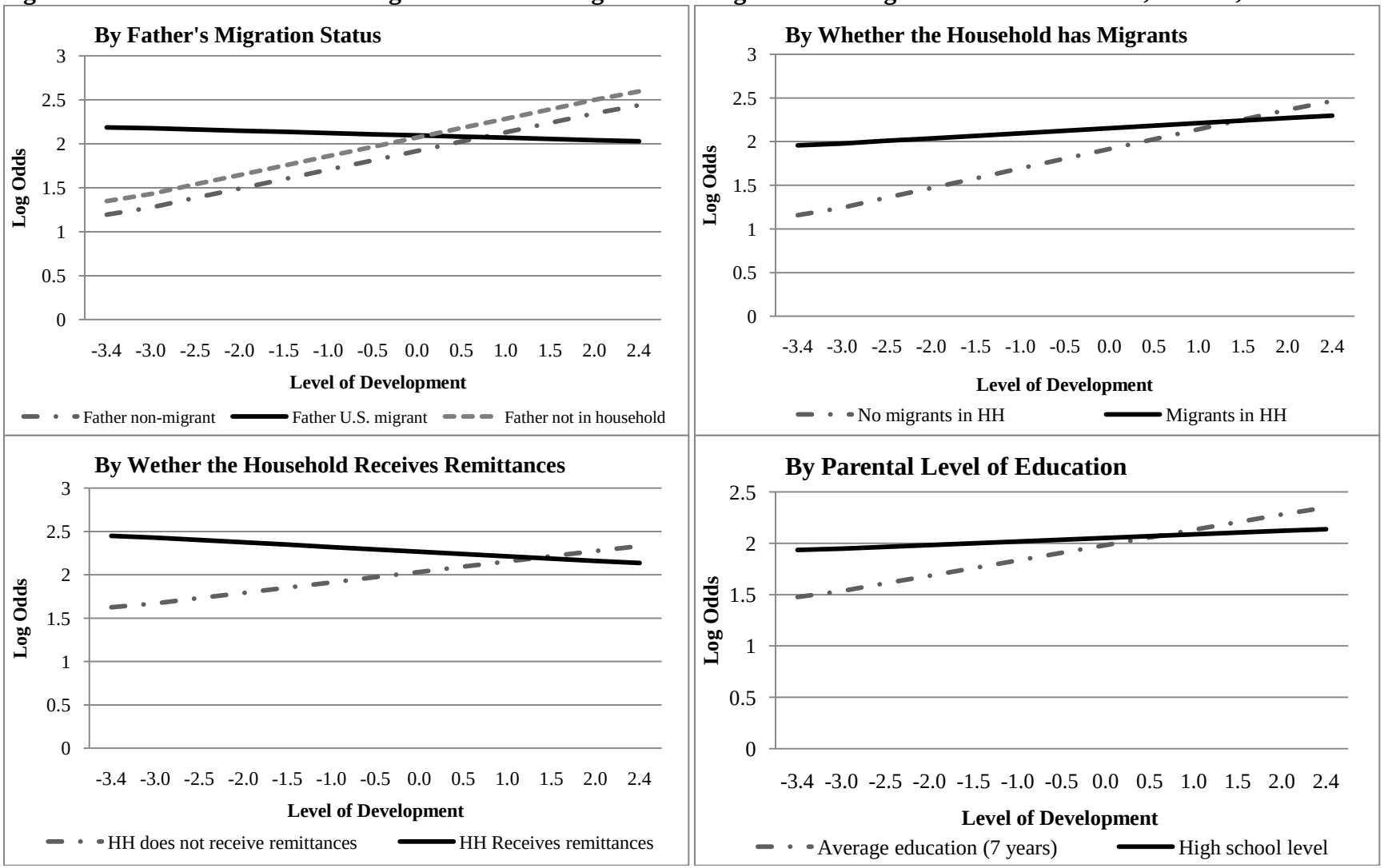


Table 1. Variable Definitions

Dependent Variables	
Same Schooling, not in School (ref.)	=1 if child attained the same schooling as parents and is no longer enrolled in school, 0 otherwise
Lower Schooling, not in School	=1 if child attained lower schooling than parents and is no longer enrolled in school, 0 otherwise
Lower Schooling, Still in School	=1 if child attained lower schooling than parents and is still enrolled in school, 0 otherwise
Higher Schooling and Same Schooling, Still in School	=1 if child attained higher schooling (regardless of school enrollment) or same schooling than parents and is still enrolled in school, 0 otherwise
Independent Variables	
Age	Children's age in years
Indigenous	=1 if child belongs to an indigenous group, as identified by the parents
Parents' Education	Years of schooling, takes the highest value among mother's and father's
Father migrated to the U.S.	=1 if the child's father is a member of the household and migrated to the U.S. in the 5 years prior to the Census
Father is not a household member	=1 if the child's father is not a member of the household
Household has international migrants	=1 if there are any current or former household members who, in the past 5 years went to live in another country
Household received remittances	=1 if the household receives remittances
Development level	Constructed variable for the level of development in the municipality of residence
Migration intensity	Constructed variable for the migration prevalence in the municipality of residence

Table 2. Sample Characteristics, Youth Ages 13 to 20, Mexico, 2000

	Boys	Girls
Indigenous	5.9%	5.5%
Parents' education (years) [b]	7.0(4.59)	6.9(4.58)
Father is U.S. migrant [a]	0.3%	0.3%
Father not in household	16.3%	17.1%
Household has international migrants [a]	6.7%	7.5%
Household receives remittances [a]	4.1%	4.7%

[a] In the five years prior to the Census
[b] Mean, standard deviation in parentheses
Source: 2000 Mexican Census Subsample, IPUMS International
Weighted frequencies

Table 3. Intergenerational Educational Mobility by Sex, Mexico, 2000

Mobility Categories	Male %	Female %	Total %
Same schooling as parents, not in school	14.2	12.3	13.3
Lower schooling than parents, not in school	5.1	3.9	4.6
Lower schooling than parents, still in school	21.9	21.9	21.9
Same schooling, still in school and higher schooling than parents	58.8	61.8	60.2
Total	100	100	100

Source: 2000 Mexican Census Subsample, IPUMS International
Weighted frequencies

Table 4. Multinomial Logistic Regression Model to Predict Intergenerational Educational Mobility among Boys Ages 13 to 20

	Lower schooling and not in school vs. same schooling and not in school		Same and higher schooling vs. same schooling and not in school	
	OR		**OR**	
Individual Characteristics				
Age				
(13 Years) [a]				
14 Years	0.793	***	0.675	***
15 Years	0.597	***	0.529	***
16 Years	0.466	***	0.436	***
17 Years	0.407	***	0.395	***
18 Years	0.323	***	0.356	***
19 Years	0.203	***	0.363	***
20 Years	0.152	***	0.344	***
Ethnicity				
(*Mestizo*)				
Indigenous	1.008		0.974	
Parents' Education (in years)	1.654	***	1.001	
Father's Status				
(Father in the household, non migrant)				
Father migrated to the U.S.	1.136		0.983	
Father is not in a household member	1.019		1.071	***
Household's Migration Characteristics				
Household has international migrants	1.070	†	1.147	***
Household received remittances	1.245	***	1.171	***
Context Characteristics				
Development level in municipality	0.930	***	1.122	***
Migration intensity in municipality	1.073	***	0.900	***
Log pseudo-likelihood			-475427	
N			708750	

† p < 0.05 * p < 0.01 ** p < 0.005 *** p < 0.001

Source: 2000 Mexican Census Subsample, IPUMS International

Standard Errors adjusted for clustering at the municipality level

[a] Reference categories in parentheses

Table 5. Interaction Effects from Multinomial Logistic Regression Models to Predict Intergenerational Educational Mobility among Boys Ages 13 to 20

	Lower schooling and not in school vs. same schooling and not in school		Same and higher schooling vs. same schooling and not in school	
	OR		**OR**	
Main effects				
Father migrated to the U.S.	1.098		1.117	
Development level in municipality	0.930	***	1.122	***
Interaction effect				
Father migrated * Development level	0.971		0.761	***
Log pseudo-likelihood			-475418	
N			708750	
Main effects				
Household has international migrants	1.028		1.227	***
Development level in municipality	0.931	***	1.133	***
Interaction effect				
HH has migrants * Development level	0.999		0.844	***
Log pseudo-likelihood			-475337	
N			708750	
Main effects				
Household received remittances	1.188	***	1.262	***
Development level in municipality	0.930	***	1.128	***
Interaction effect				
Remittances * Development level	1.010		0.840	***
Log pseudo-likelihood			-475369	
N			708750	
Main effects				
Parents' education (in years)	1.858	***	1.022	***
Development level in municipality	2.093	***	1.268	***
Interaction effect				
Parents' education * Development level	0.888	***	0.970	***
Log pseudo-likelihood			-473905	
N			708750	

† $p < 0.05$ * $p < 0.01$ ** $p < 0.005$ *** $p < 0.001$

Source: 2000 Mexican Census Subsample, IPUMS International

Standard Errors adjusted for clustering at the municipality level

Table 6. Multinomial Logistic Regression Model to Predict Intergenerational Educational Mobility among Girls Ages 13 to 20

	Lower schooling and not in school vs. same schooling and not in school		Same and higher schooling vs. same schooling and not in school	
	OR		**OR**	
Individual Characteristics				
Age				
(13 Years) [a]				
14 Years	0.847	**	0.752	***
15 Years	0.592	***	0.638	***
16 Years	0.475	***	0.561	***
17 Years	0.428	***	0.525	***
18 Years	0.310	***	0.489	***
19 Years	0.182	***	0.497	***
20 Years	0.129	***	0.455	***
Ethnicity				
(*Mestizo*)				
Indigenous	1.048		0.759	***
Parents' Education (in years)	1.625	***	1.000	
Father's Status				
(Father in the household, non migrant)				
Father migrated to the U.S.	1.392	**	1.067	
Father is not in a household member	0.897	***	1.167	***
Household's Migration Characteristics				
Household has international migrants	1.086	†	1.199	***
Household received remittances	1.268	***	1.153	***
Context Characteristics				
Development level in municipality	0.897	***	1.237	***
Migration intensity in municipality	1.031	†	0.953	***
Log pseudo-likelihood			-405848	
N			648766	

† p < 0.05 * p < 0.01 ** p < 0.005 *** p < 0.001

Source: 2000 Mexican Census Subsample, IPUMS International

Standard Errors adjusted for clustering at the municipality level

[a] Reference categories in parentheses

Table 7. Interaction Effects from Multinomial Logistic Regression Models to Predict Intergenerational Educational Mobility among Girls Ages 13 to 20

	Lower schooling and not in school vs. same schooling and not in school		Same and higher schooling vs. same schooling and not in school	
	OR		**OR**	
Main effects				
Father migrated to the U.S.	1.305		1.194	†
Development level in municipality	0.896	***	1.238	***
Interaction effect				
Father migrated * Development level	1.045		0.787	**
Log pseudo-likelihood			-405841	
N			648766	
Main effects				
Household has international migrants	1.004		1.267	***
Development level in municipality	0.895	***	1.251	***
Interaction effect				
HH has migrants * Development level	1.057		0.847	***
Log pseudo-likelihood			-405758	
N			648766	
Main effects				
Household received remittances	1.168	**	1.226	***
Development level in municipality	0.895	***	1.246	***
Interaction effect				
Remittances * Development level	1.070		0.842	***
Log pseudo-likelihood			-405783	
N			648766	
Main effects				
Parents' education (in years)	1.792	***	1.014	***
Development level in municipality	1.828	***	1.363	***
Interaction effect				
Parents' education * Development level	0.901	***	0.977	***
Log pseudo-likelihood			-404645	
N			648766	

† $p < 0.05$ * $p < 0.01$ ** $p < 0.005$ *** $p < 0.001$

Source: 2000 Mexican Census Subsample, IPUMS International

Standard Errors adjusted for clustering at the municipality level

Appendix I. Results for the Lower Schooling and Still in School Category

Table A. Multinomial Logistic Regression Model to Predict Intergenerational Educational Mobility among Youth Ages 13 to 20:

Lower schooling and still in school vs. same schooling and not in school	Males OR		Females OR	
Individual Characteristics				
Age				
(13 Years) [a]				
14 Years	0.330	***	0.389	***
15 Years	0.069	***	0.068	***
16 Years	0.021	***	0.024	***
17 Years	0.011	***	0.012	***
18 Years	0.003	***	0.002	***
19 Years	0.001	***	0.000	***
20 Years	0.000	***	0.000	***
Ethnicity				
(*Mestizo*)				
Indigenous	1.355	***	1.179	***
Parents' Education (in years)	2.614	***	2.706	***
Father's Status				
(Father in the household, non migrant)				
Father migrated to the U.S.	1.047		1.020	
Father is not in a household member	1.114	***	1.245	***
Household's Migration Characteristics				
Household has international migrants	1.106	***	1.101	**
Household received remittances	1.133	**	1.151	***
Context Characteristics				
Development level in municipality	1.023		1.134	***
Migration intensity in municipality	0.803	***	0.846	***
Log pseudo-likelihood	-475427		-405848	
N	708750		648766	

† p < 0.05 * p < 0.01 ** p < 0.005 *** p < 0.001

Source: 2000 Mexican Census Subsample, IPUMS International

Standard Errors adjusted for clustering at the municipality level

[a] Reference categories in parentheses

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