

International Family Migration and the Academic Achievement of 9th Grade Students in Mexico

- Author 1: Bryant Jensen
Brigham Young University
bryant_jensen@byu.edu
- Author 2: Silvia Giorguli
El Colegio de México
sgiorguli@colmex.mx
- Author 3: Eduardo Hernández
Instituto Nacional para la Evaluación de la Educación
ehernandez@inee.edu.mx

Abstract

Many children and youth in Mexico, especially those in rural settings, have parents and other relatives who have migrated to the US. Policies in Mexico and bilateral agreements address the wellbeing of these children, but little is known about how family migration shapes Mexican children's schooling opportunities. Some studies have found that exposure to family migration improves the enrollment and educational attainment (i.e., years of schooling) of youth remaining behind whereas others have concluded the opposite. This study uniquely focuses on the academic achievement (i.e., performance on standardized tests) of Mexican children exposed to family migration. Using a nationally representative sample of 9th grade students in 2008 from, we explore how family migration is associated with academic risk, and to what extent family migration predicts academic performance above and beyond risk factors. We estimate multilevel null models to analyze achievement variations at the individual, school and state levels.

Introduction

Often lost in the deluge of policy opinions regarding international migration management is the development and wellbeing of children and youth who in one way or another are affected by their parents' decisions to leave communities of origin in Mexico for opportunities in the United States. The experiences of these students are diverse. Some migrate at an early age with their parents, others take on solitary migratory journeys during adolescence, and yet others cross the border over and over again, leading truly transnational lives. Most, however, are affected by migration less directly, through the international migration experiences of their parents and/or other relatives (resulting, among other things, in stresses associated with family separation).

Some research has considered the influence family international migration on educational outcomes of students remaining in Mexico. These studies, however, are not conclusive. Whereas earlier research found modest positive effects for those exposed to migration on schooling outcomes (e.g., Portes & MacLead, 1996), in recent years fairly consistent evidence has begun to emerge suggesting that adolescents living in communities with high family exposure are, in general, less likely to be enrolled in school and have lower educational attainment (Lopez-Cordova, Tokamn & Verhoogen, 2008; Giorguli & Gutiérrez, 2011).

Others have found that the effects of family migration on education outcomes in Mexico are mediated by remittances sent from abroad (Giorguli & Gutierrez, 2011). Sawyer (2010), for example, compared remittance-receiving households with non-remittance receivers in terms of total educational attainment in a rural community in the state of Oaxaca, Mexico, across family SES variables. He discovered that remittance income was related to a greater likelihood of upper

secondary completion (but only for those with *higher* maternal education levels). In other words, remittances can help Mexican students in rural, migrant-sending communities with their educational pursuits, but some students more than others.

The influence of family migration on the educational outcomes of students remaining behind is deeply important in Mexico, where the decision to emigrate and to develop other ambitions is strongly influenced by comparable decisions made by parents and other family members (Kandel & Massey, 2002). This is especially true in many rural communities in Mexico where outmigration has become the norm, particularly for men. Does the decision to migrate influence educational ambitions, success or even academic learning of children remaining behind? If so, in what direction? And what do these decisions imply for local, national, and bilateral policymaking?

Mexico's educational system is already designed in ways that perpetuate social inequality, where urban and private schools are much better resourced than (Reimers, 2002) rural schools. These inequalities are evident in the academic performance of students from preschool through high school (INEE, 2007).

This paper explores the educational wellbeing of adolescents in Mexico who have been affected—whether directly or less directly—by international migration of family members. Most other studies of international migration and education in Mexico operationalize student wellbeing in terms of enrollment or the academic *attainment* (i.e., years of school completion). Much less is known about how family migration or the “culture of migration” influences the academic *achievement* of students (i.e., individual academic performance on standardized measures).

Our research questions include:

- 1) What portion of 9th grade students in Mexico is exposed to family migration?
- 2) How do factors associated with academic achievement (school type, parent education, student effort, school failure, parent support) vary by family exposure to migration?
- 3) To what extent does family migration predict academic performance in 9th grade, above and beyond risk factors?

Data

All data from this paper are drawn from the 2008 results of the *Exámenes de la Calidad y el Logro Educativos (Excale)*, a set of standardized tests applied to a randomly selected sample that is representative at the national and state levels supervised by the Instituto Nacional para la Evaluación de la Educación (INEE). Along with the academic assessment, the *Excale* database includes a context questionnaire in which nearly 85,000 9th grade students were asked about parents and family migration experiences to US. It also included information on students own future migration intentions. With these data, it is possible to explore the link between the family exposure to international migration and achievement results—a unique opportunity to analyze the potential impact of international migration on other educational wellbeing rarely seen in research literature (in this case achievement measured through the results of the standardized tests).

Excale exams contain multiple-choice questions and occasionally a call for open responses. The format of the test and item presentation (i.e., matrix design) are modeled from PISA assessments, and tests are administered to students by trained examiners. Items from *Excale* exams are aligned with the national curriculum standards, and the reading literacy exam assesses reading comprehension and linguistic reflection, including knowledge of grammar, spelling, and punctuation. Before administering exams to the national, stratified sample, items were piloted—i.e., administered to a subsample of students from select schools within a few states. Item

analyses were then conducted to establish item blocks based on difficulty level and variation of correct responses within the pilot sample.

The 2008 *Excale* study focused exclusively on 9th grade students in Mexico. For this study we focus on Spanish literacy performance data. Nearly 85,000 students participated. Four questions in the student questionnaire addressed parents and family migration experiences to US. These Likert-time questions were:

- 1) Do you have a relative who has migrated to another country?
- 2) Which, if any, of your parents have migrated to another country?
- 3) Do you consider migrating to another country?
- 4) If you consider one day migrating, when would you do it?

Methods

To answer the above research questions, we conduct a series of descriptive and multilevel analyses. Frequencies, means, and standard deviations will be analyzed for each of the achievement outcomes associated with the above measures to assess state, school, and student (by socioeconomic status and type of school) differences, sample sizes permitting. This will give us an idea of a) the amount of variation we have to work with and b) any peculiarities associated with the instruments (e.g., ceiling or basal effects). Means, standard deviations, and histograms across subgroups will be computed and analyzed to identify average and distributional (e.g., skewness) differences. Bivariate descriptives will also be conducted and analyzed to explore relationships between variables so that we can anticipate the types of regression models we should estimate. Analyses will include bivariate scatterplots, crosstabulations, and bivariate correlations.

Multilevel null models will be analyzed using HLM software to determine proportions of achievement variation associated with students within schools, schools within Mexican states, and between states. In each HLM model, Level 1 will be the student level, Level 2 the school level, and Level 3 the state level.

Variance components, standard deviations, and significance tests associated with each level will be computed as well. Variance partitioning coefficients will also be computed to estimate the proportion of total variance in the model accounted for by the variance within each cluster (or level) (Raudenbush & Bryk, 2002, p. 230). The total variability in the outcome Y_{ijk} will be partitioned into its three components: (Level 1) among children in the same school, σ^2 ; (Level 2) among schools within states, τ_π ; and (Level 3) between states, τ_β . These variance partitions, or variance components, will be interpreted to estimate the proportion of achievement variation within classrooms, between classrooms within schools, and between schools. That is,

$$\begin{aligned} \sigma^2 / (\sigma^2 + \tau_\pi + \tau_\beta) & \text{ is the proportion of variance within schools;} \\ \tau_\pi / (\sigma^2 + \tau_\pi + \tau_\beta) & \text{ is the proportion of variance among schools within states; and} \\ \tau_\beta / (\sigma^2 + \tau_\pi + \tau_\beta) & \text{ is the proportion of variance among states.} \end{aligned}$$

Preliminary Findings

Many middle school students in Mexico belong to families exposed to international migration. More than 1 in 4 reported to have at least one parent with migration experience according to our analyses. Even so, a sizeable portion (nearly half) of 9th grade students remains ambivalent about their own migration future. Interestingly, among school types, private school students are the most decided about migration. Among those decided to leave Mexico, private school students have the clearest timeline.

Telesecundaria (or rural) students (1 in 5 nationally), on the other hand, are the most exposed to family migration among school type groups. Yet they are also the most ambivalent about

migrating themselves. Additionally, among those intending to migrate, they have the most urgent timeline, with the lowest educational aspirations.

On several dimensions we found that family exposure to migration is associated with poorer academic learning *opportunities*, conceived as a combination of student, family, school, and community factors. We found that family migration exposure, as reported by students, is associated with less student effort, more course failures, less maternal education, and less parental support in school. These variables are associated with academic risk (poorer achievement).

Preliminary analyses of multilevel regression models of student achievement demonstrate, above all, the power effects of SES factors. Both within- and between-school SES (mother education) affect student achievement. Also, the following student-level academic risk/asset variables were found to significantly affect achievement above and beyond maternal education and school type:

- Grade retention (reprobacion escolar) – large effect (negative)
- Course failure (reprobacion de material) – large effect (negative)
- Student effort (esfuerzo estudiantil) – large effect (positive)
- Parent support (apoyo) – small-moderate effect (negative)

We have also found that migration variables affect achievement above and beyond maternal education, school type, and student risk/asset variables:

- (student level) Family migration – not significant
- (student level) Migration plans – sign, small effect (negative)
- (state level) migration prevalence – not significant

And some significant interaction effects:

- Student level
 - Course failure * maternal education (small, neg effect)
 - Family migration exposure * migration plan (small, negative)

Further Analyses

We still have to conduct a series of analyses:

- Estimate level variances by model to determine effect sizes, etc. This means computing:
 - Variance components for each model
 - Variance partitions for each model
 - Accurate R squared and adjusted R squared estimates.

We also need to rerun multilevel models to address the significance and size of family migration variables above and all risk factors simultaneously. And we would also like to conduct models with telesecundaria students only (to see how effects sizes change), given the different types of migration experienced by private school and other high SES students. We will have to verify sample sizes before running multilevel models.

Finally, given the significance of the “migration plan” variance on achievement, we would like to consider interacting this with other variables. How do students’ personal migration plans interact with academic risk factor (retention, course failure, parent support, student effort) to affect their academic performance?

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