

## **A decade of changes: Formal education and transborder linkages of young people in highly urbanized areas of the northern border**

### **Una década de cambios: Educación formal y nexos transfronterizos de los jóvenes en áreas muy urbanas de la frontera norte**

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#### **Abstract**

In the current migratory and economic context, this article analyzes the statistical associations between a set of educational indicators and two transborder linkages of young people in highly urbanized areas, having been born in the United States (USA) and living in households with crossborder workers, based on microdata from the 2010 Census. Further, the results of this analysis are compared with those obtained in 2000. Findings include the following: 1) the decrease in the number of young people living in households with crossborder workers and the increase of those born in the USA in the last decade; 2) the persistent positive association between being born in the USA and high school or university enrollment in 2010, in contrast to the negative association between these post-basic education variables and recent immigration from the USA; and 3) a null relationship between having crossborder workers at home and school enrollment at the post-basic level.

*Keywords:* education, youth, American citizenship, crossborder employment.

#### **Resumen**

En el contexto migratorio y económico contemporáneo, se examinan las asociaciones estadísticas entre una serie de indicadores educativos y dos nexos transfronterizos de los jóvenes en áreas muy urbanas de la frontera norte, haber nacido en Estados Unidos (EUA) y tener miembros del hogar que trabajan en EUA, utilizando los microdatos censales de 2010. Asimismo, se comparan los resultados de este análisis con los obtenidos en el 2000. Entre los hallazgos se ubican: 1) la disminución de los jóvenes con trabajadores transfronterizos en el hogar y el aumento de los jóvenes nacidos en EUA en la última década; 2) la persistente asociación positiva entre haber nacido en EUA y asistir a la preparatoria o a la universidad en 2010, contrario a la asociación negativa entre la asistencia escolar posbásica y la inmigración reciente de EUA; 3) la relación nula entre vivir en hogares con trabajadores transfronterizos y cursar educación formal posbásica.

*Palabras clave:* educación, jóvenes, ciudadanía americana, empleo transfronterizo.

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## Introduction

This study has 2 purposes. First, this study intends to analyze, in the current migratory and economic context, the association of school continuity at the post-basic level<sup>1</sup> for young people in highly urbanized areas of the northern border of Mexico with 2 of their transborder linkages, having been born in the United States (USA) and living in a household with transborder workers<sup>2</sup>, based on the 2010 Population Census sample (National Institute of Statistics, Geography and Computing, INEGI, by its acronym in Spanish, 2011b). Second, this study compares the results of this analysis with those obtained from the sample from the 2000 Population Census.

The analysis done for the year 2000 showed that being born in the USA and the transborder employment of household members were associated in an opposite way with the post-basic school continuity of border youth (Vargas, 2012). Being born in the USA favored attendance and completion of the upper secondary level. This association may be due to the socioeconomic and cultural background of their families and greater access to high schools in the USA. By contrast, the transborder employment of household members negatively affected university attendance, perhaps by showing that one could obtain higher income through this type of employment without investing in higher education. This finding may be explained by the types of jobs to which commuting workers had access, which to a great extent only require low educational credentials (Alegría, 2002; Escala and Vega, 2005).

The general hypothesis that guides this study is that the statistical relationships between these indicators for transborder linkages and school continuity at the post-basic level for young people may have been transformed between 2000 and 2010 because of a lower possibility of accessing American schools and a change in the educational and labor aspirations connected with these linkages during this period, in the context of increased immigration enforcement and an economy in crisis. In contrast to the context for the year 2000, in which there was practically full employment in the border labor market and the border was more permeable to crossing and international mobility, in the year 2010, the population of the Mexico-USA border was experiencing the social and economic aftermath of the change in US migration policy and the financial crisis of 2007-2008 (Cruz, 2012).

We establish as the primary hypothesis of the present study that the positive association between being born in the USA and high school attendance and achievement—found in 2000—was reduced in 2010. Access to American schools for young people with dual citizenship who live on the northern border of Mexico may have been reduced. This situation may have occurred as a consequence of the spread of an anti-immigrant climate in the USA (Ochoa and Sánchez, 2011), which was crystallized in, among other manifestations, the required verification of proof of residence among transborder students in certain school districts in the USA (Dotinga and Knox, 2008; Nuñez, 2010; Vanderpool, 2004).

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<sup>1</sup> The basic level of education in Mexico extends to the lower secondary level (*junior high school*). In 2012, educational reform extended compulsory education to the upper secondary level (*high school*), which is intended to become universal in 2021-22 (Diario Oficial de la Federación [DOF], 2012), but basic education continues to be until lower secondary school. The post-basic level in the USA begins with tertiary education and is offered in two modalities, two-year colleges and four-year universities. In this article, we do not distinguish the type of modality because, in the census of the Mexican population, this information is not available.

<sup>2</sup> Known also as *commuters* or transborder workers (Acuña, 1983; Coubès, 2008; Escala and Vega, 2005). Although the office of the *US Department of Homeland Security* uses the term *alien commuters* for persons with legal permission to cross into the USA to work, here *commuting workers* is used to refer to workers with or without legal permission to work in the USA.

A second specific hypothesis of this study is that young people in households with transborder workers may have shown higher university attendance than in the past because, in facing the economic crisis, unemployment increased drastically along the southern border of the USA and the northern border of Mexico (Calderón, Díaz, Mendoza, and Hernández, 2010) and college enrollment increased in the USA (Borrescio, 2010).

Recent immigration from the USA was not considered as a control variable in the analysis of the education of border youth in highly urbanized areas conducted for the year 2000 (Vargas, 2012). The recent increase in the return of persons who had been residing in the USA to the northern border (Cruz, 2012; Masferrer and Roberts, 2012) justifies the inclusion of this variable in 2010, as well as the possibility that those who recently returned from the USA may have transborder linkages, as some newspaper sources show (Brown, 2012; Sieff, 2011). We offer as a third working hypothesis that recent immigrants from the USA present lower educational continuity, as shown in previous studies (Giorguli and Gutiérrez, 201), and thus contribute to reducing the possible educational advantages of young people born in the USA and to increasing the disadvantages of those who live with transborder workers.

This article is organized as follows: after a brief description of the economic and migratory context of the border population in 2010, the mechanisms that mediate the association between post-basic school continuity and transborder linkages are synthesized. Then, in a third section, the methodology of the study is described. Finally, the main results are summarized and discussed in light of the contemporary demographic context.

### **The current economic and migratory situation in the northern border of Mexico**

Various studies have documented the low levels of education for border cities, in comparison with the rest of the cities in the country, due to high internal migration and the opening of the border labor market (Coubès and González, 2011; Vargas, 2012). On the one hand, international migration has been a source of sharp tension for the school system due to its impact on the growing demand for educational services, and the high volume of youth migrating for reasons of labor tended to pull down educational statistics. On the other hand, the opening of the border labor market has also acted to the detriment of post-basic education by offering to young people a range of low-skilled jobs, for example, at *maquiladoras*, in services, or transborder employment, but few opportunities to high-skilled youth. Nevertheless, in the last decade, employment and migration to this part of Mexico have undergone significant transformations.

The capacity to absorb the labor force diminished at the Mexico-USA border between 2000 and 2010. Since the beginning of the decade, a series of structural and contextual factors, including the crises in the maquiladora industry and the policy of USA border security after the terrorist attack of September 11, 2001, have affected economic dynamism at the northern border. With the financial crisis of 2007, unemployment in the northern states of Mexico rose to very high levels (Calderon et al., 2010), reaching an average of approximately 7% among the economically active population at the end of 2009.<sup>3</sup> Thousands of jobs were lost on both the Mexican and the American side. By 2010, active population in the US

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<sup>3</sup> Between 6.4% and 8.5% of the economically active population sought work at the northern border states in the fourth trimester of 2009, while during the first trimester of 2008, only between 2.6% and 4.6% of this population sought work in these states, according to the Department of Labor and Social Security (Calderón et al., 2010).

south reached rates of unemployment that fluctuated between 12.5% and 8.2%, with California and Texas at these 2 extremes, respectively (Calderón et al., 2010).

With regard to changes in migration, the security infrastructure at its southern border and surveillance inside the country were reinforced as part of the national security policy of the USA from 2001 onward (Cruz, 2012). Immigrants were seen as a national security problem, and an anti-immigrant climate took hold in the USA (Ochoa and Sánchez, 2011). With the strengthening of the border, border crossings from Mexico to the USA were reduced and became slower and more unpredictable (*San Diego Association of Governments [SANDAG], 2006*). Further, from 2006 onward, deportations from within the USA grew consistently, undocumented migration to the USA diminished, and the documented migration of migrant workers was recorded to be on the rise (Cruz, 2012; Passel, Cohn, and González, 2012).

An especially relevant demographic event at the northern border was the increase of return immigration from abroad in the last decade. The proportion and volume of returning international immigrants increased for border states (INEGI, 2011a), especially in certain municipalities such as Tijuana, Ciudad Juárez, Mexicali, Matamoros, and San Luis Río Colorado (Masferrer and Roberts, 2012). The increase was so significant that, in these municipalities, immigrants from the USA outnumbered immigrants from any Mexican state, who showed a drastic decline during this decade (Cruz, 2012). The border ceased to be the magnet for internal migration that it had been during the 1980s and 1990s,<sup>4</sup> both due to the economic situation and due to social violence, and in the first decade of the 21<sup>st</sup> century, it became instead a magnet for migrants returning from the USA.

Facing the increased deportation or removal of Mexicans who were living in the USA (Passel, Cohn and González, 2012), urban border localities became some of the primary receiving areas for these international migrants. For some migrants, returning to their place of origin was not an alternative because of the lack of labor opportunities or the breakdown of social networks (Masferrer and Roberts, 2012). Further, for families with mixed citizenship, the border was a strategic option for taking advantage of labor markets and schools for their children in the USA (Brown, 2012; Sieff, 2011).

This is the context in which the population census of 2010 is set: a southern border of the USA where crossings are better controlled than in 2000, especially for undocumented workers, where there is less tolerance for Mexican immigration, and which, further, has not managed to recover from the economic crisis of 2007; and a northern border of Mexico that receives fewer internal migrants and more return migrants from the USA and is experiencing the aftermath of the financial collapse of the neighboring country. This situation may have influenced the transborder linkages of young people, by changing the binational educational institutional context and their educational and work aspirations.

Next, we summarize the mechanisms that may mediate the relationship between formal education for young people and their transborder linkages, and we explain how these mechanisms may have been affected by these recent economic and migratory transformations.

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<sup>4</sup> Net migration was much smaller than in past periods in border states, although still positive, with the exception of Chihuahua and Coahuila (INEGI, 2011a).

## **Transborder relations and education of young people from the north of Mexico**

Crossing daily into the USA to work, study, do shopping, use public or private services, and visit family members and friends has been part of everyday life for a sector of the border population. This crossing from one side of the border to the other results in the production and reproduction of transborder relationships: a set of social, economic, and cultural relations that are explained through the porosity of the border and the geographical adjacency of profound economic and social differences (Alegría, 1989). These relationships are facilitated by the existence of social networks comprising kinship and friendship linkages between residents from both sides of the border (López, 1994; Ojeda, 1994; Velasco, 2014).

Using the population census, one can examine certain indicators of the transborder relations of the young population of the northern border of Mexico, including birth in the USA and the transborder employment of household members. In the year 2000, 3% of border young people between the ages of 16 and 20 were born in the USA, and 7% were living in households with at least 1 transborder worker (Vargas, 2012).

Although these 2 indicators are quite different, both can be conceptualized as part of the life strategies of transborder families that have been enacted for generations (Estrella, 1994; Ojeda, 1994). The first, giving birth of children in the USA has been a medium-term strategy for reducing the future socio-economic risks of the household or of the children, whether through access to American labor markets and social services or through access to emigration to the USA thanks to the American citizenship of the children (Cueva and Vásquez, 2009). On the other hand, transborder employment has been a short-term strategy to “[...] guarantee its daily reproduction in light of the unequal characteristics of the two countries” (Ojeda, 1994, p. 17). With this strategy, a better quality of life is achieved for the household because the cost of living is lower on the Mexican side and salaries are higher on the American side (Escala and Vega, 2005).

The mechanisms that explain the relationship between having been born in the USA and attending post-basic education include the desire of mothers who crossed to give birth on the American side to have children with American or dual citizenship, and to give children a better education, which helps children learn English while still young (Cueva and Vásquez, 2009; Ojeda, 1994; Velasco, 2014). This cultural disposition may be similar to what theorists of migration have called the optimism hypothesis (Kao and Tienda, 1995; Pereira, Harris and Lee, 2006). This hypothesis refers to cultural values and high expectations that first-generation immigrants in the USA have regarding the formal education and social mobility of their children, in addition to the positive effect that this cultural capital may have for the educational success of the children who are born and socialized in this country.

Another mechanism through which the birth of children in the USA may benefit their formal education is the socioeconomic selectivity of their families, as this phenomenon is more common among the middle and upper classes (Cueva and Vásquez, 2009; Guendelman and Jasis, 1992). Thus, having children on the “other side” may also be linked to the social and economic investment of families in the education of their children.

One more mechanism for the association between the birth of children in the USA and their formal education in border cities may be greater access to educational institutions on both sides of the border. Those born in the USA can have access to free basic education in this country, tuition for residents, and financial aid for higher education. Students must fulfill the residence requirement, which is feasible for

those who can mobilize their transborder social networks in the school district of the high school or in the state where the university is located.<sup>5</sup>

Data from various household surveys demonstrate a higher level of crossing to study in the USA for young people who were born there in comparison to those who were not. According to the *Survey on Social Geography* (XVI City Government of Tijuana, 2000) conducted in Tijuana in 2000, 24% of the students born in the USA who lived in this municipality crossed over to study "on the American side" versus only 1% of the other students in this city (based on the author's estimates). In 2007, using the *Survey of households on the internal and international migration process in Baja California* (El Colef, 2007), it is estimated that 20% of the students born in the USA crossed to study in that country versus 0.6% of the rest of the young people from the border municipalities of this state (based on the author's estimates). Unfortunately, these surveys have sample sizes that are too small to study this phenomenon in depth, and they do not allow one to confirm whether those born in the USA reduced their border crossings to study.

With respect to the linkage between the transborder employment of household members and the education of young people, theories about the association between international migration and youth education in Mexico (Giorguli and Serratos, 2009; Giorguli, Vargas, Salinas, Hubert, and Potter, 2010) are used in this study as a basis for understanding this linkage (Vargas, 2012). In the relationship between migration and education, 3 basic mediating mechanisms are found: *a*) migration can generate economic benefits (Taylor, 1987) that allow the children of immigrants to dedicate themselves exclusively to study; *b*) however, migration can reduce the necessary social capital in the household for children's success in school, especially when one of the parents is absent (Coleman, 1988; Zoller, 1995); and, finally, *c*) migration can also have a negative effect on the educational aspirations of young people who reside in families or communities of migrants by demonstrating the economic and cultural benefits of work in the USA (Kandel and Kao, 2000; Kandel and Massey, 2002).

In particular, we think that the transborder work of household members may reduce aspirations for attending post-basic education among young people because the salaries of commuting workers are higher than those of workers on the Mexican side and their jobs generally do not require high qualifications (Alegría, 1990; Alegría 2002; Escala and Vega, 2005). Although the better economic situation of commuting workers might favor the post-basic education of their children, the labor model offered through transmigration, as well as the time invested in long work days and transit to the USA, can have the opposite effect.

Further, in contrast to young people born in the USA, the children of transborder workers do not necessarily have American citizenship. Only a small percentage of young people in households with this type of worker were born in the USA, between 18% of 16-20 year olds with 9 years of schooling and 29% of those with 12 or more years of schooling (author calculations based on Census sample 2010, INEGI, 2011b). Thus, young people who live in households with commuting workers may have more limited access to higher education in the USA than those born there. Although it is prohibited in the USA to deny basic education (including high school) to youth based on their immigration status, it is very difficult to attend college or university without financial aid (Gonzales, 2007). Higher education in the USA is

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<sup>5</sup> One can prove residence, for example, through a lease, a proof of mortgage, a contract or receipt for services in the name of the legal guardians, or a letter from a legal guardian regarding the residence of the young person in his property under his responsibility. The proof of residence applies to the school district at the high school level and to the state at the university level.

costly, and the financial aid that can be obtained without citizenship is null in some states, or it depends on where high school was attended.<sup>6</sup>

The question we ask here is whether these mechanisms have changed in the context of the prevailing economic and migratory conditions. With respect to having been born in the USA, we believe that the families of young people born in the USA have continued to show binational social networks and socio-economic selectivity in 2010, potentially facilitating access to post-basic education.

However, access to schools at the basic level in the USA<sup>7</sup> may have changed due to US border enforcement and the expanding anti-immigrant climate in the USA (Castañeda, 2013; Ochoa and Sánchez, 2011). Both in the conservative state of Arizona and in US schools belonging to some school districts in liberal states such as California, administrators have taken on the task of investigating the veracity of residence documents and expelling those who do not have them (Brown, 2012; Dotinga and Knox, 2008; Nuñez, 2010; Vanderpool, 2004). The question was not their legal status but rather that of paying taxes in certain school district. Thus, even with American citizenship, some transborder students have been at risk of expulsion from high schools.

With regard to the mechanisms that mediate the relationship between formal education and the transmigration of household members, we think that the economic crisis may have increased educational aspirations. Economic recessions have the potential of influencing school attendance, although the meaning of their impact is uncertain. On one hand, these crises may reduce the ability of families to finance the studies of young people and require their economic participation to increase family income, a situation that occurred in Tijuana during the crisis of the 1990s when the city experienced a labor market with a high ability to absorb the labor force (Toledo, 2006).<sup>8</sup> However, an increase in unemployment may also reduce the opportunity costs of dedicating time to study and increase educational aspirations. Unlike the crisis of the 1990s, the crisis of 2007 increased the levels of unemployment at the northern border. This situation may have favored school attendance for urban young people, whether in Mexico or in the USA, who had the family support to do so. In the USA, it was shown that the rise in unemployment resulting from the economic crisis had a positive effect on the enrollment of young people at community colleges (Borrescio, 2010).

## Methodology

The basic source of information is the sample of 10% of the 2010 Population Census (INEGI, 2011b). The study only includes the population of municipalities bordering the USA because the intensity of transborder linkages in these municipalities is greater than in the rest of the country (Tuirán and Ávila, 2002).

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<sup>6</sup> In California and Texas, in accordance with the DREAM Act of 2001, law AB-540 and law HB-1403, respectively, undocumented young people can always access in-state tuition if they complete high school in these states. In New Mexico, through the law SB-582 of 2005, it is prohibited to deny entry to post-basic education schools or benefits to undocumented immigrants (El Colef, 2014). By contrast, in Arizona, since 2007, when proposition 300 was approved, access to higher education has been limited for immigrant students. Undocumented students have not had the right to in-state tuition or to financial aid, irrespective of how long they have been living in the USA (Ochoa and Sánchez, 2011).

<sup>7</sup> At universities, residence in the state where one is going to school must be proven, which makes supervision more difficult than in a school district. Further, tuition must be paid at universities because, for some, they are only partially subsidized. Some universities offer services to border residents from the north of Mexico when they pay the required tuition. A good example is the University of Texas in El Paso, where, in 2008, 10% of the enrollment was comprised of this type of students (Dotinga and Knox, 2008).

<sup>8</sup> The previous evidence points to an increase in youth participation in the work force in Tijuana during the 1994 crisis (Toledo, 2006). However, the impact that it had on the rates of school attendance is not immediately known.

The study is based on sub-samples of young people of 16-17 and 19-20 years of age, which are used as base populations to create the educational indicators. Young people are selected from localities of 100,000 residents or more to ensure the presence of higher education supply,<sup>9</sup> and young people who are children of the head of household<sup>10</sup> are selected because the theoretical framework understands transborder linkages as life strategies for households.<sup>11</sup>

The dependent variables created by Vargas (2012) are used in this paper. These variables are intended to measure school continuity at upper secondary and university levels and school achievement at the preceding levels (middle and upper secondary education, respectively).<sup>12</sup> The dependent variables are: *a*) completion of junior high school for young people 16 and 17 years of age, conditional on having completed elementary school; *b*) school attendance for this age group, conditional on having completed junior high school; *c*) completion of high school for young people 19 and 20 years of age with junior high school completed; and, finally, *d*) school attendance for for this age group, conditional on having completed high school.<sup>13</sup> In 2010, these sub-groups of the youth population in highly urbanized areas of the northern border represented between approximately 186,000 and 78,000 persons, depending on the age-education group (Table 1). Sample sizes are specified in each table.

The explanatory variables were having been born in the USA and having household members who work in the USA.<sup>14</sup> In addition, the following control variables were included in the models: age, sex, being born in some other state, being a migrant from another municipality between 2005 and 2010, household structure, years of education of the head of household, that is of the father or mother, and the number of assets in the residence.<sup>15</sup> Finally, a variable for young people who recently

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<sup>9</sup> In 2010, 81% of the youth border population in this age group resided in this type of locality. These localities were located in the following municipalities: Mexicali and Tijuana in the state of Baja California; Nogales and San Luis Rio Colorado in Sonora; Acuña and Piedras Negras in Coahuila; Juárez in Chihuahua; and Matamoros, Nuevo Laredo, and Reynosa in Tamaulipas.

<sup>10</sup> The children of the head of household represented 82% of the young people aged 16-17 and 64% of the young people aged 19-20 who live in the highly urbanized areas of the northern border. Although for the first time in 2010 the population census allowed the parents of young people to be identified within the household, information regarding the children of the head of household was used to be able to compare results with those of the 2000 Population Census.

<sup>11</sup> It is worth noting that the change in the census definition of household between the 2000 and 2010 census does not have a significant impact on this study. This definition changed from a household group sharing expenses and residence (2000) to a household that only shares residence (2010). However, only 1.4% of residences in border municipalities had 2 or more households in 2000 (Vargas and Navarro, 2013). The subsamples are composed by children of the head of household, most of whom are concentrated in nuclear families in 2010, as were in 2000.

<sup>12</sup> The indicators of school continuity used here intend to measure whether, in the 2 ages subsequent to the age of transition, the young people who finish a certain level remain in the school system, that is, whether they continue studying. Ages 15 and 18 are considered to be grade transition years, as young people at these ages are placed (without having repeated a grade) in 1 of 2 grades depending on the month of birth; for example, for June 2010, date of the census, young people who turned 18 in the first half of 2010 should be in the final year of high school, while those who turned 18 in the second semester of 2009 should be attending the first year of university. However, the census does not report the month of birth.

<sup>13</sup> It is important to note that the indicators of school continuity used were not designed to measure school coverage. For estimating this indicator, broader age groups are needed, the groups aged 16-18 for upper secondary and aged 19-23 for university, in accordance with the normative ages for enrollment at these levels. School coverage is an aggregate indicator for the population that is enrolled in a particular school grade in comparison to the population that has the normative age for being enrolled in that grade (Secretaría de Educación Pública [SEP], 2006).

<sup>14</sup> We did not exclude the case of young people in households in which they themselves were commuting workers because, to a great extent, these individuals were found in households where other commuters were located. Only 3.5% of 16-17-year-olds and 20% of 19-20-year-olds had this characteristic, but 100% of the former and 95% of the latter lived with other commuting workers.

<sup>15</sup> The latter measure was calculated according to the total of the following durable goods in the household: television, radio, refrigerator, blender, washing machine, telephone, heater, and computer.



immigrated from the USA was added (according to their usual residence in June 2005).

The need for adding these control variables was considered for various reasons. Variables for internal migration were included because they have had a negative weight on school attendance for border young people (Coubès and González, 2011). Living in a single-parent or extended household, in comparison to living in a nuclear household with both parents, was added as an indicator of less social capital available for youth in the household (Coleman, 1988; Zoller, 1995); the education level of the head of the household was included as a proxy for cultural capital in the household (Farkas, 1996); and the number of goods included as an indicator for economic capital in the residence (Filmer and Pritchett, 2001). It was assumed that migrants and those young people with less social, cultural, and economic capital would have fewer possibilities of continuing in school at higher education levels.

Descriptive and multivariate statistics were used to meet the objectives noted above. First, we estimated the frequencies of educational indicators for young people as related to the explanatory variables, and percentages of change were calculated using the indicators for transborder linkages for 2000 as reference (Vargas, 2012). Using descriptive statistics, the composition of the sample selected in 2010 was also observed according to the independent variables included in the study.

Second, 4 logistic models were estimated using census microdata from 2010, 1 for each educational indicator. The models were applied for the total population in the subsamples. The models are not shown by sex because the sample sizes linked to the explanatory variables do not allow this separation. Further, the interactions between transborder linkages and educational indicators are not presented because they were not found to be statistically significant. Standard errors were corrected from the autocorrelation of observations within households, since 2 or more youngsters could live in the same household.

Two models for each dependent variable were included: a first model without the variable for recent immigration from the USA and a second model with this variable. In the models, except for the model involving high school completion, improvements were found in the goodness of fit of the models when introducing this control variable (based on tests of differences in the log likelihood, prior to adjusting for standard errors).

## **Results**

### ***Educational inequality of border youth in highly urbanized areas and their transborder linkages***

At the national level, upper secondary education and tertiary education recorded important expansion over the last decade.<sup>16</sup> However, in this period, disadvantages in education for youth in highly urbanized areas of the northern border were preserved from the upper secondary level, as compared to youth in this type of areas in Mexico (Table 1). While only 80.6% of these border 16-17 year-olds finished secondary education, 84% of their Mexican counterparts completed it.

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<sup>16</sup> According to the historical series of the national educational system, enrollment at the upper secondary level went from 2.95 million in the 2000-2001 period to 4.33 million in 2011-2012, while enrollment at the upper level went from 2.15 million to 3.16 million in the same period in Mexico (SEP, 2013). Just between the 2006-2007 and 2011-2012 periods, the coverage at the upper secondary level increased from 58.6% to 64.6% (SEP, 2013) and at the university level from 25.9% to 36.8% (Gil, 2014).

Among these graduates, only 72.5% attended upper secondary education, in comparison with 75.4% of their Mexican counterparts. While the improvement (relative change between 2000 and 2010) in both indicators was more rapid in highly urbanized areas of the northern border than it was for Mexico as a whole, the northern border retained lower levels.

Among the highly urban population 19 and 20 years of age, differences in the completion of high school broadened between the northern border and Mexico as a whole over the last decade (Table 1). It was at this level where the “bottleneck” in educational expansion was found in the region. Only 50% of the border population of these ages who finished secondary education managed to graduate from high school, versus 58% of the Mexican population. The expansion was greater at the national level, as indicated by the gain of 11% from 2000 to 2010 at the northern border in comparison with 16% at the national level. Further, among the population that completed high school, only 59% attended university in the northern border, in contrast to 66% of the Mexican population in this age group in 2010. This finding signified a slight reduction in the gap in university attendance among young people from cities of the northern border and Mexican cities in general, although the advantage for the latter was retained.<sup>17</sup>

**Table 1. Educational variables for the highly urbanized youth population<sup>a</sup> by place of residence. Mexico, 2010**

Educational outcome	Northern Frontier				Mexico			
	%	n	N	Change, 2000 <sup>b</sup> - 2010 %	%	n	N	Change, 2000 <sup>b</sup> - 2010 %
Lower secondary completion for population 16-17 with elementary education	80.6	5 827	186 293	11.6	84.0	66 360	1 685 678	8.0
High school attendance for population 16-17 with lower secondary education	72.5	4 694	151 177	10.4	75.4	55 731	1 436 378	2.8
High school completion for population 19-20 with lower secondary education	49.9	4 795	155 741	11.0	58.0	59 409	1 538 228	16.9
University attendance for population 19-20 with high school	59.0	2 411	77 743	2.4	66.0	33 860	905 107	-2.1

Notes: <sup>a</sup> in localities with 100,000 or more residents; <sup>b</sup> estimates from 2000 done by Vargas (2012).

Source: Estimates for 2010 based on the sample of the Population census of Housing and Population (INEGI, 2010).

<sup>17</sup> This held even when the Federal District was excluded from the analysis.

Table 2 shows the percentages for the averages of educational indicators according to the transborder linkages in 2000 and 2010. Among highly urbanized youth, those who were born in the USA showed advantages in all educational indicators compared to those born in Mexico in both years. The gaps between those born in the USA and those who were born in Mexico for each census year were identical at both secondary and high school completion, although these gaps showed discrepancies in high school and university attendance.

**Table 2. Educational indicators for young people in highly urbanized areas<sup>a</sup> according to transborder linkages and recent immigration from the United States. Northern Border, México, 2000 and 2010**

Year/Educational outcome	Born in the USA (%)			Household with transborder workers (%)		
	Yes	No	Yes/No	Yes	No	Yes/No
<b>2010</b>						
Lower secondary completion for population 16-17 with elementary education	89.9	82.57*	1.09	88.41	82.41*	1.07
	(219)	(4 581)		(209)	(4 591)	
High school attendance for population 16-17 with lower secondary education	78.03	75.94*	1.03	79.07	75.84*	1.04
	(194)	(3 792)		(181)	(3 805)	
High school completion for population 19-20 with lower secondary education	66.47	54.52*	1.22	58.72	54.91*	1.07
	(151)	(2 962)		(186)	(2 927)	
University attendance for population 19-20 with high school	79.51	66.51*	1.20	68.5	67.35	1.02
	(112)	(1 653)		(115)	(1 650)	
<b>2000<sup>b</sup></b>						
Lower secondary completion for population 16-17 with elementary education	83.3	76.2*	1.09	81.2	76.0*	1.07
	(159)	(6 473)		(481)	(6 151)	
High school attendance for population 16-17 with lower secondary education Attendance at high school for population 16-17 with secondary	85.6	72.1*	1.19	76.5	72.1*	1.06
	(135)	(4 971)		(397)	(4 709)	
High school completion for population 19-20 with lower secondary education Finishing high school for population 19-20 with secondary	65.2	53.4*	1.22	54.7	53.6	1.02
	(123)	(4 109)		(339)	(3 893)	
University attendance for population 19-20 with high school	77.8	68.2*	1.14	63.2	69.1*	0.91
	(85)	(2 281)		(208)	(2 158)	

Notes: <sup>a</sup> Children of the head of the household in localities with 100,000 residents or more; <sup>b</sup>Vargas (2012).

\* Significant differences of percentages,  $p < .001$ ; sample size between parentheses.

Source: Vargas (2012) and our own estimates based on the sample of the Population Census (INEGI, 2010).

Between 2000 and 2010, the advantage in high school attendance of those born in the USA diminished. A slight decrease was evident in high school attendance for those born in the USA in 2010 in comparison to 2000. This finding could be due to the impact of recent immigration and/or more limited binational institutional access. By contrast, the educational advantages of those born in the USA grew at the tertiary level between 2000 and 2010 because, among those born in the USA, university attendance increased slightly, while attendance was reduced for those born in Mexico. It is possible that the better economic position of those born in the USA allowed them to continue enrolled in higher education in a context of crisis.

Urban youth living with commuting workers, in comparison to those who do not have this transborder linkage, showed advantages in the first 3 educational indicators in 2010: lower secondary completion, and high school attendance and completion. However, in the year 2000, this group had only demonstrated advantages in the first 2 indicators. In particular, it is noteworthy that lower university attendance for young people in households with transborder workers in 2000, with respect to other young people, decreased in 2010. Young people in households with commuting workers substantially increased their attendance at university, while the remaining border young people aged 19-20 showed a decrease.

### ***Transborder linkages and the characteristics of youth in highly urbanized areas***

The indicators for transborder linkages for young people showed a relevant change over the last decade in highly urbanized areas of the northern border of Mexico. The frequency of young people born in the USA almost doubled, while that of young people with transborder workers in the household diminished substantially. For example, among young people aged 19-20 who had completed high school, the proportion of those born in the USA increased from 3.5% to 6.7%, while the proportion of those with commuting workers in the household dropped from 9.4% to 6.1% (Table 3).

The third row for each transborder linkage (Table 3) includes the estimates of the frequencies of the linkages excluding recent emigrants from the USA. The small reduction in the percentage of young people with transborder linkages indicates that this factor might only slightly intensifies the frequency of those born in the USA and the frequency of young people with transborder workers in the household, except for the linkage with commuting workers among young people aged 19-20 who have finished high school. If recent immigration from the USA affect the relationship between the educational indicators and transborder linkages is evaluated in the final section of this article.

In Table 3, recent immigration from the USA for these age-education groups is also included because it is important to show its slight increase from 2000 to 2010. Although the proportions of these immigrants are low across these groups, the proportions almost doubled in each group. For example, among young people aged 16-17 who have completed secondary education, this proportion increased from an estimate of approximately 6 immigrants per 1,000 to 11 per 1,000.<sup>18</sup>

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<sup>18</sup> It is estimated that the proportion of recent immigrants from the United States among young people aged 16-20 is greater in certain border municipalities that are less urbanized than those analyzed here, including Rosarito and Tecate in Baja California, with 2.8% and 2.6%, respectively; San Luis Rio Colorado and Agua Prieta in Sonora, with 3.2% and 2.1%, respectively; and Ojinaga in Chihuahua, with 4.2%.

**Table 3. Percentage of young people who have transborder linkages and recent immigration from the USA in different sub-samples of young people analyzed in highly urbanized areas<sup>a</sup>. Northern Border of Mexico, 2000 and 2010**

Independent variables	16-17 with primary	16-17 with lower secondary	19-20 with lower secondary	19-20 with high school
Born in the USA				
2000 <sup>b</sup>	2.56	2.79	2.84	3.46
2010 <sup>c</sup>	4.51	4.85	5.78	7.02
2010 <sup>d</sup>	4.12	4.38	5.25	6.68
Member of the household works in the USA				
2000 <sup>b</sup>	7.41	7.87	9.05	9.45
2010 <sup>c</sup>	4.21	4.50	5.78	6.14
2010 <sup>d</sup>	3.99	4.26	5.69	6.18
Recent immigration from the USA				
2000 <sup>d</sup>	0.71%	0.62%	0.61%	0.59%
2010 <sup>d</sup>	1.01%	1.14%	1.15%	1.04%
n 2000	6 632	5,106	4 232	2 366
n 2010	4 800	3,986	3 113	1 765

Note: <sup>a</sup> Children of the head of the household in localities with 100,000 or more residents. <sup>b</sup> Vargas (2012). <sup>c</sup> Transborder linkages, without counting recent immigrants from the USA. <sup>d</sup> Transborder linkages including recent immigrants from the USA.

Source: Own estimates based on the sample of the Population and Housing census (INEGI, 2000, 2010).

In Table 4, the socioeconomic characteristics of youth in 2010 are shown. The variables exhibited the profiles expected by educational level. At the lower levels of education, both 16-17 and 19-20 year-olds were more likely to be males have heads of household with less education, and live in extended or combined households. On the contrary, youth with more education were more likely to have higher socioeconomic and cultural capitals and both parents at home.

In Table 4, one may also observe some differences by age for young people of the same educational level. Older youths tended to live less with both parents and were more frequently internal migrants, although not recent migrants. In the following section, we use these characteristics as control variables in the models for association between the educational variables and transborder linkages.

### **Statistical association between transborder linkages and formal post-basic education**

In Tables 5 and 6, the odds ratios derived from the multivariate logistic regression models are included. *Model B* adds recent immigration from the USA to *Model A*. The results corroborate that those born in the USA have an advantage over those born in Mexico in terms of education at the upper secondary and university levels at the northern border of Mexico in 2010. This relationship becomes clearer when one

takes recent immigration from the USA into consideration. In the B models, one observes that those born in the USA showed a 51% greater odds ratio for attending upper secondary, 71% greater for completing this level, and 87% greater for attending university than their counterparts born in Mexico; ratios are significant at the 95% confidence level.

**Table 4. Demographic and socioeconomic characteristics of populations used to analyze each educational indicator (averages). Northern Border, 2010**

<b>Independent variables</b>	16-17with primary	16-17 with lower secondary	19-20 with lower secondary	19-20 with high school
Age	16.49	16.51	19.48	19.49
Male	52.8%	50.7%	52.3%	49.4%
<b>Migration</b>				
Recent intermunicipal migrant	3.1%	2.8%	2.7%	2.3%
Interstate migrant	23.5%	23.0%	27.7%	26.2%
<b>Educational level of head of household</b>				
<Primary (0-5 years)	12.6%	10.3%	12.7%	7.9%
Elementary or <Secondary (6-8 years)	25.8%	23.2%	25.6%	19.9%
Secondary or <High school (9-11 years)	31.6%	32.7%	31.3%	29.4%
High school or more (>=12 years)	30.0%	33.8%	30.4%	42.8%
<b>Structure of the household</b>				
Nuclear two parent	63.2%	65.3%	52.7%	59.9%
Nuclear one parent	14.8%	14.2%	16.1%	16.3%
Extended or mixed	22.1%	20.5%	31.2%	23.8%
No. of assets in the household	7.6	7.8	7.9	8.3
n	4 800	3 986	3 113	1 765

Notes: <sup>a</sup> Highly urbanized young people, children of the head of household.

Source: Own estimates based on the sample of the Population and Housing census (INEGI, 2000, 2010).

With regard to having transborder workers in the household, statistically significant differences according to this transborder linkage do not appear for any of the educational indicators analyzed (Tables 5 and 6), in spite of the descriptive statistics presented in the first results section, in which youth with this linkage showed advantages in secondary and high school achievement and in high school attendance (Table 2). This result in the multivariate analysis indicates that these gains were associated with the better socioeconomic situation of youth with commuting workers in the household, but not specifically with this transborder linkage.

**Table 5. Logistic regression models for different educational outcomes of youth in highly urbanized areas .<sup>a</sup> Northern Border, 2010**

Independent variables	Lowersecondary completion		Upper secondary attendance	
	Model A	Model B	Model A	Model B
	ORp> z	ORp> z	ORp> z	ORp> z
Born in the USA (No)	1.12	1.05	1.42+	1.51*
Member of the household works in the USA (No)	1.17	1.13	1.24	1.27
Recent immigrant from the USA (No)	- - -	2.67*	- - -	0.60*
Age	1.89***	1.90***	0.70***	0.70***
Male (Female)	0.58***	0.58***	0.84**	0.83**
Recent intermunicipal migrant (No)	0.64**	0.65**	0.75	0.75
Interstate migrant (No)	0.94	0.93	1.12	1.12
<i>Educational level of head of household (0-5 years)</i>				
Elementary or <Secondary (6-8)	1.38***	1.38***	0.95	0.95
Secondary or <High school (9-11)	2.42***	2.43***	1.35**	1.35**
High school or more (>=12)	4.80***	4.83***	2.86***	2.83***
<i>Structure of the household (Two parent)</i>				
Single parent	0.93	0.93	0.86	0.86
Extended or mixed	0.63***	0.63***	0.54***	0.53***
Assets in the household	1.57***	1.57***	1.69***	1.69***
Log-pseudolikelihood	-1895.6	-1898.7	-1959.5	-1956.2
n	4 800	4 800	3 986	3 986

Notes: OR=Odds Ratios; reference category in parenthesis \*\*\*p<.001 \*\*p<.01 \*p<.05 +p<.1; <sup>a</sup> Only children of head of household.

Source: Our own estimates based on the sample of the Population and Housing census (INEGI, 2010).

The odds ratios for recent immigration from the USA differed by type of educational indicator in 2010. Young people who are recent immigrants from the USA aged 16-17 showed more than double the odds of having completed secondary education than their non-immigrant counterparts. However, the odds of attending school for recent immigrants from the USA were 40% lower at the upper secondary level and 72% lower at the tertiary level than those who did not participate in this geographical mobility. This may be linked to the disruption in educational trajectory that takes place when migrating to the US, the difficulty of being reinserted into the educational system upon returning to Mexico, or the preference and need to participate in the labor market.

**Table 6. Logistic regression model for different educational outcomes in youth from highly urbanized areas.<sup>a</sup> Northern Border, 2010**

Independent variables	Completion of upper secondary		Attendance at university	
	Model A	Model B	Model A	Model B
	ORp> z	ORp> z	ORp> z	ORp> z
Born in the USA (No)	1.72*	1.71*	1.62+	1.87*
Member of household works in the USA (No)	0.98	0.98	0.86	0.86
Recent immigrant from the USA (No)	- - -	1.06	- - -	0.28**
Age	1.31***	1.31***	0.88	0.88
Male (Female)	0.61***	0.61***	0.83*	0.83*
Recent intermunicipal migrant (No)	0.71+	0.71+	0.69	0.68
Interstate migrant (No)	0.92	0.92	0.86	0.86
Education of head of household (0-5 years)				
Elementary or <Lower secondary (6-8)	1.14	1.14	1.41*	1.42*
Lower secondary or <High school (9-11)	1.40***	1.40***	1.42*	1.43*
High school or more (>=12)	2.97***	2.97***	3.17***	3.16***
Structure of the household (Two parent)				
Single parent	0.98	0.98	0.72**	0.72**
Extended or mixed	0.46***	0.46***	0.50***	0.50***
Assets in the household	1.75***	1.75***	1.36***	1.35***
Log-pseudolikelihood	-1778.4	-1778.4	-1037.1	-1033.2
n	3 113	3 113	1 765	1 765

Notes: OR=Odds ratio; reference category in parenthesis \*\*\*p<.001 \*\*p<.01 \*p<.05 +p<.1; <sup>a</sup> Only children of the head of household.

Source: Own estimates based on the sample of the Population and Housing census (INEGI, 2010).

With respect to the rest of the independent variables, some exhibited a statistically significant association and in the same direction with most educational indicators. Being female, having a father or mother with more education, especially with high school or above,<sup>19</sup> living in two-parent nuclear households (in comparison to living in extended or mixed households), and having more assets in the household were linked to greater odds of having completed junior high school or high school and of attending high school or university.

<sup>19</sup> For attendance and completion of high school, having parents who did not finish primary and having parents who finished it but did not reach the middle level of formal education made no difference.



However, some associations diverged in their direction and significance according to each educational indicator. For example, while greater age was associated with having graduated from lower secondary education or high school, lower age was linked to attending high school. Living in a single-parent nuclear household, with respect to living in a two-parent nuclear household, was only associated negatively with attending university. Finally, recent intermunicipal migration was only negatively linked to completing secondary education, despite the fact that, in the past decade, it was a leading factor to not attending post-basic education (Coubès and González, 2011; Vargas, 2012).

**Table 7. Odds ratios for different models for each educational indicator and census year among youth from highly urbanized areas. Northern Border, 2000 and 2010**

Dependent/ Independent Variables	2000		2010	
	Model A <sup>a</sup>	Model B	Model A	Model B
	OR <sub>p&gt; z </sub>	OR <sub>p&gt; z </sub>	OR <sub>p&gt; z </sub>	OR <sub>p&gt; z </sub>
<b>Lowersecondary completion</b>				
Born in the USA (No)	1.20	1.13	1.12	1.05
Member of household works in the USA (No)	1.07	1.10	1.17	1.13
Recent immigrant from the USA (No)		1.39		2.67*
<b>Attendance at upper secondary</b>				
Born in the USA (No)	1.83*	1.84*	1.42+	1.51*
Member of household works in the USA (No)	0.92	0.92	1.24	1.27
Recent immigrant from the USA (No)		0.96		0.60*
<b>Completion of upper secondary</b>				
Born in the USA (No)	1.97*	1.91*	1.72*	1.71*
Member of household works in the USA (No)	0.84	0.84	0.98	0.98
Recent immigrant from the USA (No)		0.95		1.06
<b>University attendance</b>				
Born in the USA (No)	1.33	1.29	1.62+	1.87*
Member of household works in the USA (No)	0.68**	0.66**	0.86	0.86
Recent immigrant from the USA (No)		0.82		0.28**

Notes: <sup>a</sup> Vargas (2012). OR=Odds ratio; reference category in parenthesis \*\*\*p<.001 \*\*p<.01 \*p<.05 +p<.1. Models include the following control variables: recent internal migration, interstate migration, years of education of head of household, structure of the household, and assets in the household.

Sources: Vargas (2012) and our own calculations based on samples of the Population censuses (INEGI, 2000, 2010).

Did the results change regarding associations between educational variables and transborder linkages over the last decade? The results from 2010 contrast with those from 2000 for certain educational indicators. In Table 7, we show the primary findings for the multivariate statistical analysis for both years. First, one observes that the relation of recent immigration from the USA only was significant in 2010 and that its inclusion broadened the advantages in education for those born in that country as compared to those born in Mexico. From this we can deduce that, as we suggested in the working hypothesis, the low likelihood of school attendance for recent emigrants from the USA also applies to immigrants born in the USA, and drives down the educational advantages of the latter. However, recent immigration from the USA does not change the relationship between educational indicators and the transborder employment of household members.

In 2010, the advantages of those born in the USA in school achievement and attendance at the upper secondary level remained significant, although slightly lower than in 2000 once recent immigration from the USA was introduced into the models. By contrast, in university attendance, those born in the USA showed a significant advantage in 2010 that they had not shown in 2000. One explanation would be the effect of anti-immigrant policies and reinforcing the border only on access to high schools. It is also possible that the socioeconomic selectivity of those born in the USA broadened their educational advantages over those born in Mexico.

It is notable that, in 2010, the odds of university attendance for youth with commuting workers in the household did not differ from the odds of their counterparts without this transborder linkage, contrary to the disadvantage seen in 2000 (Table 7). It is reasonable to postulate that, with the economic crisis and recent migratory changes, the educational aspirations of continuing at the university level for these young people may have become similar to those belonging to the rest of the border young people in highly urbanized areas.

## **Conclusions**

The objectives of this study were to analyze the associations between transborder linkages for urban youth in the northern border of Mexico and their formal post-basic education in the contemporary migratory and economic context, based on the sample from the 2010 population census, and to compare the results with those for the year 2000. Descriptive statistics were used to describe both educational indicators and transborder linkages, and multivariate statistics were used to analyze these associations while also considering recent immigration from the USA.

One of the primary findings of this study was the persistence in 2010 of educational disadvantages at the upper secondary and tertiary levels for border urban youth with respect to urban youth at the national level. Despite the educational expansion at these levels between 2000 and 2010, the educational inequalities faced by border youth continued in 2010 in the context of the economic crisis. Thus, the goal of universalizing upper secondary education, as stipulated by the constitutional reform of 2012 (DOF, 2012), is a true challenge at the northern border. This is because it is not only a matter of broadening school infrastructure but also of giving incentives to remaining in school to large groups of young people who, due to economic need or lack of educational motivation, leave school to take low-skill jobs or seek other alternatives for economic mobility in the short term.

The second finding was the increase in urban border youth born in the USA and the decrease in those with commuting workers in the household. This last trend was predictable given the increase in unemployment in the southern US, border enforcement, and the anti-immigrant climate in the USA. However, the first trend was not predictable because, as one observes in the results, it is not attributable to

recent return migration. The births of these young people in the USA occurred between 1990 and 1994 and could perhaps be interpreted as an appropriation of transborder space, as a social response to the blocking of the border (Cueva and Vásquez, 2009; Velasco, 2014). Recall that, the actions of sealing the border with "Operation Hold the Line" (1993) and "Operation Gatekeeper" (1994) began in this period (Cruz, 2012). Future investigations must study trends over time in the transborder practice of crossing to give birth in the USA.

The third finding of this study was the maintenance of the positive relationship between birth in the USA and attendance and completion of high school, in addition to a new positive association between birth in the USA and university attendance in 2010. The hypothesis regarding the reduction of the relationship between birth in the USA and attendance and completion of high school was confirmed. The anti-immigrant climate may have reduced crossings to study in the USA at American high schools for youth born in the USA but who live in Mexico, and this could have led to their lower school attendance at this level in 2010 in comparison to 2000.

Nevertheless, those born in the USA also showed an advantage over those born in Mexico in attendance at the tertiary level of education in 2010, a finding that was not recorded in 2000. This finding could owe to the fact that anti-immigrant actions in schools occurred within school districts at basic levels of education. Instead, American citizenship may facilitate access to in-state tuition and financial aid at universities (Gonzales, 2007), once residence in the state is demonstrated through transborder networks. Further, the better socioeconomic position of those born in the USA may have played an important role in their advantage in school attendance at this level, as compared to those born in Mexico, who could have more deeply felt the impact of the economic crisis and thus have reduced their university attendance in relative terms.

The fourth finding was the null association between the selected education indicators and having transborder workers in the household in 2010, as opposed to the negative association between this indicator and university attendance found in 2000 (Vargas, 2012). This finding may owe to the increase in educational aspirations of young people in families with commuting workers between 2000 and 2010. While unemployment and the anti-immigrant climate in the USA may have reduced transborder crossing to work in that country, they may have also demonstrated the instability of transborder employment as an alternative to university attendance in earning a living, and they may have increased the aspirations to acquire higher education among the young people immersed in these labor networks.

Finally, it was found that recent international immigration was significant as a control variable in the models of educational indicators, since it reduces the educational advantages of those born in the USA. Adolescents who recently immigrated from the USA had very low school attendance, as has been documented in other studies (Camacho, 2014; Giorguli and Gutiérrez, 2011). Although some of the young people who arrived from the USA continued crossing the border to study (Brown, 2012), these immigrants in general were more likely not to study than their non-immigrant counterparts. The low incorporation of these immigrants in the school system points to the need for an educational policy to increase the demand for education and to facilitate reinsertion in school. Many of immigrants may have lived for long periods in the USA and experience barriers to access and integration within the Mexican school system.

One of the limitations of this study consists of the inability to differentiate the associations studied according to region within the northern border. Followed by Texas, anti-immigrant policies have been more severe in Arizona than in California

and New Mexico in recent years, although with nuances at the local level (Castañeda, 2013). Thus, the associations studied may differ within the northern border of Mexico. However, the sample sizes used made a more detailed analysis impossible. The use of a mixed methodology for studies focused on particular borders between specific border states of the USA and Mexico would be recommendable for extending the analysis performed here.

Despite these limitations, this article extends our knowledge of the connections between transborder linkages and post-basic school continuity for young people in highly urbanized areas of the northern border. The statistical analysis and the interpretations derived therefrom contribute to understanding that the associations addressed here are historical, as they vary over time, and that unequal educational opportunities continue to be present among social groups on the northern border. Formal post-basic education at the border is influenced by the family composition and socio-economic status of young people with transborder linkages, as well as by contextual factors that impact the binational supply of educational services, in addition to their work and educational aspirations.

Future changes in the associations of transborder relationships and formal education will depend to a great extent on changes in economic trends and the actions of the states in the southern USA to stop immigration and control their labor and economic markets. While transborder employment in 2010 did not appear to be a threat to the university education of border young people in highly urbanized areas, this situation could change with a possible economic recovery in the USA and the weakening of anti-immigrant platforms.

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