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The Academic Adaptation of Children of Immigrants in New and Established Settlement States: The Role of Family, Schools, and Neighborhoods

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Abstract

The dispersion of immigrants has challenged educators in new immigrant destinations to adapt to the needs of their first cohorts of children of immigrants. This paper evaluates how families, schools, and neighborhoods shape the academic adaptation of immigrants' children in new and established immigrant states. Using the Educational Longitudinal Study (ELS) from 2002, the paper examines how 10th grade math and reading test scores differ across three settlement locations: established, new, and other immigrant states. Results indicate that achievement in math and reading is highest in new immigrant states. While demographic differences between settlement locations largely explained differences in achievement, families and schools in new immigrant states also strongly influenced achievement.

Keywords

Children of immigrants; immigrant destination; settlement location; academic achievement

Changing the geography of immigration, immigrant families today are less concentrated in traditional immigrant states (e.g., Texas, California, Florida, Illinois, and New York) and have dispersed to new settlement states throughout the West, Southeast, and Midwest (Massey and Capoferro 2008). As a result, children of immigrants made up over 10% of the total child population in 29 states by 2006, compared to only 16 states in 1990 (Fortuny et al. 2009). This dispersion has changed the face of public education and presented significant challenges for new immigrant states (e.g., North Carolina and Utah), many of which are learning to educate the children of immigrants for the first time.

As a consequence of this rapid growth, many educational services in new immigrant destinations lack the infrastructure, social resources, and institutional support systems that promote the adaptation of immigrant youth (Massey 2008; Perreira, Chapman, and Levis-Stein 2006; Wainer 2006). Case studies of immigrant growth in new settlement destinations indicate that public schools have been overwhelmed by the dramatic influx of a minority population with limited English fluency, few economic resources, and varying educational backgrounds (Bohon, MacPherson, and Atilas 2005; Wainer 2006). Consequently, educators

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in these new destinations have grown increasingly concerned with the high dropout rate and low achievement of their immigrant newcomers (Wainer 2006).

Only a few studies have examined how this dispersion has affected immigrant youth and their academic adaptation. One study found that Latino youth in North Carolina, a new immigrant destination, had stronger academic motivations than Latino youth in Los Angeles, an established immigrant destination (Perreira, Fuligni, and Potochnick 2010). This difference, however, partially reflected demographic differences between the locations since North Carolina's Latino youth were more likely to be foreign-born than Los Angeles'. In a national-level study of youth aged 15–17, Fischer (2010) found that, after controlling for demographic, household, and community characteristics, immigrant children in new immigrant destinations compared to those in established destinations were more likely to drop-out of high school. She did not, however, examine how differences in each of these characteristics explained variation in dropout behavior between settlement locations. Another study focusing on Latino youth found that educational stratification between Latinos and whites, as measured by the within-school gap in advanced math course enrollment, was greater in new Latino destinations than established destinations (Dondero and Muller 2012).

This study builds on this research and further advances the link between immigrant settlement location and educational context by focusing on student achievement as measured by standardized test scores—the main accountability indicator in the post-No Child Left Behind (NCLB) era. In addition to providing (to the best of my knowledge) the first national-level assessment of immigrant youth's test score achievement in new and established destinations, this study provides contextual information on how family, school, and neighborhood characteristics differ across settlement locations and how these differences contribute to diverging achievement patterns. By identifying the unique needs and resources of immigrants' children in new and established destinations, this paper provides valuable information to policymakers and educators as they develop policies and programs aimed at facilitating the academic adaptation of immigrant newcomers.

Using the Educational Longitudinal Study (ELS) from 2002, I examine how math and reading test scores for 10th grade youth differ across three settlement locations: established, new, and other immigrant states. I use two-way interactions to assess these settlement differences for each immigrant generation. Originally, I analyzed achievement trends for foreign-born youth (i.e. first generation) and children born to foreign-born parents (i.e. second generation) separately. Because trends between new and established destinations did not differ between first and second generation youthⁱ and because first and second generation youth share similar experiences related to living in an immigrant family (Pong

ⁱThe results indicated that both first and second generation youth living in new immigrant states had higher overall levels of achievement and family, school, and neighborhood resources than their respective peers living in established states. Differences in these academic resources similarly explained the observed advantage associated with living in a new immigrant state for both first and second generation youth. Because of the smaller sample sizes (particularly for first generation youth), however, some of the regression results were only marginally significant. Thus, the children of immigrants classification provides the same results as the generational analysis but also provides more statistically meaningful results.

and Hao 2007), this paper combines the two generations and focuses on children in immigrant families (“children of immigrants” hereafter).

Social Context of Reception

Both segmented assimilation theory (Portes and Rumbaut 2001, 2006; Portes and Zhou 1993) and new assimilation theory (Alba and Nee 2003) provide a useful framework for understanding how settlement in new and established immigrant states may affect the academic adaptation of immigrant youth. According to segmented assimilation theory, immigrant incorporation is determined in large part by the multitude of factors that comprise the social context of reception, including the receptiveness of government, economic barriers, such as joblessness and concentrated poverty, and social barriers, such as racial discrimination (Portes and Rumbaut 2001, 2006). Complementing segmented assimilation theory, Alba and Nee’s (2003) new assimilation theory classifies these contextual factors as distal and proximate causes and emphasizes the active role immigrants have in the assimilation process. Often deeper and more embedded in broader social structures, distal causes include the institutional structure of the state, firm and labor market, while proximate causes operate at the individual and social network level and are shaped by the capital levels (i.e. social, human, and cultural) of both the individual immigrant and his/her co-ethnic group.

For new and established immigrant destinations, social context differences may reflect variation in these many layers of influence (i.e. distal and proximate causes) on student achievement. At the state, school, and neighborhood levels, differences in economic vitality, migration histories, public reception, and structural resources of newcomers suggest that the social and educational context in new immigrant states is distinct from that in established immigrant states. Moreover, variations in the resources and characteristics of immigrant families in new and established immigrant states may also lead to distinct contexts.

The Context in New and Established Destinations

Emerging research on new destinations indicates that there are both positive and negative factors shaping the context of reception in new immigrant communities. In terms of economic vitality, new immigrant destinations (at a variety of geographical levels: region, state, county, metro area) tend to be places with well-developed and growing economic opportunities (Crowley, Lichter, and Qian 2006; Donato et al. 2008; Hirschman and Massey 2008; Leach and Bean 2008; Parrado and Kandel 2008), while established immigrant destinations (particularly at the state-level) have experienced a significant relative economic decline since the 1990s (Massey and Capoferro 2008). The superiority of the labor market and economic opportunities available for immigrant families in new destination communities, which have been tied to lower poverty rates at the regional level (Crowley et al. 2006), should benefit student achievement by increasing immigrant families’ economic well-being. Many of the jobs available in new immigrant destinations, however, are in the low skilled service sector, which may limit the economic advancement of immigrant families (Donato et al. 2008; Leach and Bean 2008).

The differing migration histories of new and established destinations may also lead to distinct social contexts that could influence student achievement. There is mixed theory and evidence as to whether immigrants in new destinations will experience more or less discrimination—a factor that has been shown to hinder academic performance (DeGarmo and Martinez 2006). Because US-born residents in new destinations are less likely to encounter immigrants, they may have fewer prejudicial attitudes and hostility towards immigrants (Atilas and Bohon 2002). Alternatively, the lack of cross-cultural experiences in new destinations may lead to more negative attitudes among the US-born majority (Hirschman and Massey 2008). Supporting both arguments, research in new immigrant destinations finds that public reception of immigrant newcomers to new immigrant communities has varied from open hostility to enthusiastic support (Fennelly 2008; Wainer 2006). Given the mixed economic and social contexts in new immigrant destinations, I have no *apriori* expectation as to whether overall academic achievement will be higher or lower in new destination states.

The Role of Schools and Neighborhoods

The limited migration history associated with new immigrant states is also likely to affect the availability of structural resources, particularly in schools and neighborhoods. For many children of immigrants, school attendance marks the beginning of their assimilation process by introducing them to mainstream American culture for the first time and by providing them with foundational skills for their future education and employment prospects (Kao and Thompson 2003; Kao and Tienda 1995). Often reinforcing school-level effects, neighborhood conditions define adolescents' opportunity structures and social norms by providing models for socially acceptable adult behavior, connections to the wider society, and supervision over adolescent conduct (Ainsworth 2002; Clark and Maas 2012; Crowder and South 2003; Pong and Hao 2007). Research on schools and neighborhoods in new immigrant destinations suggest that dispersion to these new areas can both promote and hinder the successful academic adaptation of immigrant youth. Thus, I assess two different hypotheses—one that hypothesizes that the characteristics of schools and neighborhoods in new destinations are positively associated with achievement while the other assumes a negative association.

On the positive side, evidence indicates that schools and, to a lesser extent, neighborhoods in new immigrant destinations have more favorable compositional characteristics and greater resources than those in established destinations. Given the newness of the immigrant population, immigrants in new destinations have not experienced (at least not fully) the detrimental effects of white-flight, which have resulted in high levels of economic, racial, and linguistic segregation in established immigrant destination neighborhoods and schools (Orfield and Lee 2005; Park and Iceland 2011; Van Hook and Snyder 2007). Extant research has shown that the racial, economic, and linguistic compositions of schools and neighborhoods are strongly associated with the availability of organizational and structural opportunities (Crowder and South 2003; Hanushek and Rivkin 2009; Mickelson 2008; Orfield and Lee 2005; Pong and Hao 2007). While controlling for the economic composition of schools and neighborhoods captures many of these resource deficiencies, research indicates that racial proportions capture additional disparities that stem from damaging racial

stereotypes, limited network opportunities, and the racial stratification of resources (Hanushek and Rivkin 2009; Mickelson 2008; Valenzuela 1999).

Recognizing the importance of school composition and resources, research on new (particularly Latino) destinations finds that schools in these destinations have significantly lower percentages of free/reduced lunch, LEP, and minority students than schools in established destinations (Dondero and Muller 2012; Fry 2011). A possible reflection of these compositional advantages, schools in new destinations enjoy greater school resources as evidenced by their smaller size, smaller teacher-student ratio, and more suburban location (Dondero and Muller 2012; Fry 2011). The availability of these resources, however, are more limited in the highest immigrant growth schools and may be eroding over time as new destination schools adapt to the immigrant influx (Fry 2011).

Similar compositional and resource trends have been observed at the neighborhood and broader community level (e.g., counties and metro areas) though the evidence is more mixed. Research finds that new destination neighborhoods/communities have lower rates of household poverty and concentrations of minority populations than established destinations (Alba et al. 2010; Fischer 2010). Less clear, however, is whether immigrants in new destination neighborhoods experience more (Park and Iceland 2011) or less (Hall 2012; Lichter et al. 2010) racial/ethnic integration. The greater access to school resources and more favorable compositional characteristics of schools and neighborhoods in new destinations fits with the spatial assimilation model, which assumes that as immigrants migrate to new neighborhoods, particularly suburban neighborhoods, they will experience greater economic integration (Alba et al. 1999; Massey and Denton 1985). According to this perspective, the context of schools and neighborhoods in new immigrant destinations should be more beneficial for immigrant achievement.

On the other hand, schools and neighborhoods in new destinations lack immigrant-specific resources and ethnic support systems to meet the diverse needs of children of immigrants. Because established destination areas have had a long history of building relationships with and providing services to immigrants, educators in these areas have the structural resources (e.g., multilingual specialists, translated documents, and bilingual education) and knowledge base to address immigrant needs (Massey 2008). In contrast, schools in new immigrant destinations struggle to train teachers in bilingual and ESL education and to offer linguistic supports for LEP students and their parents (Bohon et al. 2005; Dondero and Muller 2012; Wainer 2006). Compounding the problem, immigrant youth and families in new destinations have a limited co-immigrant/ethnic presence to help them navigate their new neighborhoods and schools. Research finds that the supportive social network associated with immigrant/ethnic enclaves can help parents minimize family disruptions and youth behavioral problems by providing external co-ethnic monitoring (Pong and Hao 2007). According to this perspective, because schools and neighborhoods in new immigrant destinations lack immigrant specific support systems they should negatively affect immigrant achievement.

The Role of Immigrant Families

Differences in achievement between new and established destinations may also reflect differences in the characteristics of immigrants settling in these destinations. Some of these differences can be easily observed (e.g., generational status and ethnic origin), while others are more difficult to distinguish. Because immigrants ultimately select their location of residence and shape the context of reception through their pragmatic actions (Alba and Nee 2003), differences in achievement may reflect migrant selectivity (i.e. more advantaged families choosing to settle in new destinations) rather than contextual differences between settlement locations.

Supporting the migrant selection explanation, research on foreign-born Latino adults educated in the US finds that more highly educated Latinos are relocating to new destination areas as second-destination migrants (Stamps and Bohon 2006). This study, however, focused on Latino immigrants who came to the US before 1990,ⁱⁱ a cohort that likely differs from the post-1990 arrivals who entered and dispersed across the US at unprecedented rates (Capps et al. 2005; Massey 2008). More recent research on Latinos in North Carolina (a leading destination state), for instance, suggests that Latino families in new destinations have lower levels of parental education, household income, and English language usage than Latino families in established destinations (Clotfelter, Ladd, and Vigdor 2012). Dispersion to new areas, however, has occurred among all ethnic/racial groups, not just Latinos (Massey and Capoferro 2008). Thus, further research is needed to assess how the characteristics of immigrant families differ between those residing in new and established destinations and how these differences shape achievement.

Research on migration to new settlement destinations indicates that a diversity of migrant streams are settling in these areas, including second destination migrants (Hall 2009; Lichter and Johnson 2009; Stamps and Bohon 2006), recent arrivals (Singer 2004), and dual-worker families (Crowley et al. 2006). Recognizing these diverse migrant streams, this study examines how the demographic characteristics of immigrants and economic and linguistic resources of immigrant families differ across settlement locations and contribute to diverging achievement trends. In terms of demographics, differences in the racial composition and generational status of immigrants in new and established states (Bump, Lowell, and Pettersen 2005; Massey and Capoferro 2008) may account for observed differences in academic achievement. Extant research has found significant variation in achievement patterns across racial/ethnic groups and immigrant generations (Kao and Thompson 2003).

Moreover, differences in familial characteristics may also contribute to diverging achievement patterns by settlement location. Researchers have identified a number of family characteristics that influence academic aspirations and achievement, including parental education, family income, family structure, household English language usage, and parental involvement (Glick and White 2003; Kao and Thompson 2003; Kao and Tienda 1995;

ⁱⁱThe paper focuses on individuals in 2000 over the age of 25 who migrated before the age of 12. To meet this criteria these individuals had to have migrated to the US no later than 1987.

Perreira, Harris, and Lee 2006). Of all the familial characteristics, research suggests that parental socioeconomic status (SES), which incorporates elements of both financial and human capital, is the strongest predictor of student achievement (Glick and White 2003; Kao and Thompson 2003). For immigrant families, English language usage is another important human capital resource. Research indicates that English language ability of both the parent and child as well as the usage of English in the home can have a positive impact on student achievement (Glick and White 2003; Perreira et al. 2006).

While this study will not be able to completely decouple migrant selection from social context (e.g., determine whether family economic differences stem from labor market differences or differences in migration flows), it will explore how the educational resources of children of immigrants differ between settlement locations and if these differences are associated with diverging achievement patterns across settlement locations. The results of this analysis will help teachers and educators (who have little control over the familial characteristics of the students enrolled in their schools and classrooms) in new and established destinations to understand the specific needs and resources of their immigrant student body.

Study Design

Data and Sample

This analysis utilizes data from the base year of the Educational Longitudinal study of 2002 (ELS), which is sponsored by the National Center for Education Statistics (NCES). Data were collected on a cohort of approximately 16,200 10th graders from a sample of 750 schools beginning in the spring of 2002 with follow-ups conducted in 2004 and 2006. Providing rich contextual information, NCES collected information from students, parents, teachers, and school administrators, and the restricted datasets (for which I have licensed access) can be connected to zip-code level 2000 census data to identify neighborhood characteristics (Ainsworth 2002).

I include all self-identified white, black, Asian, and Latino students in the sample (N=14,380 rounded to the nearest 10 as required by NCES) but eliminate other racial/ethnic groups since the sample sizes are small. No students have missing values on the dependent variable, and I correct for missing data on independent variables by imputing missing data using multiple imputation by multivariate normal regression (the MVN command in STATA).

Measures

Academic Achievement—I use reading and math test scores as my indicator for student achievement for two reasons. First, states are required by NCLB to rely on standardized tests in both math and reading to measure student and school performance. Second, math and reading ability have been shown to affect future labor market outcomes (Farkas 2003). The standardized math and reading test scores created by NCES provide an indicator of achievement relative to the spring 2002 10th grade population and have a mean value of 50 and standard deviation of 10. Thus, to interpret the effect sizes of coefficients (or mean differences) one simply divides the coefficient by 10 to calculate the difference as a proportion of a standard deviation. For instance, a coefficient size of three indicates about a

quarter of a standard deviation difference in achievement and a coefficient of one indicates a tenth of a standard deviation difference.

Settlement Location Type—Research on new destinations has classified new immigrant (and Latino immigrant) gateways across a variety of geographic levels: regions (Crowley et al. 2006), states (Hall 2009; Leach and Bean 2008; Massey and Capoferro 2008), metropolitan and non-metropolitan areas (Kandel and Parrado 2005; Parrado and Kandel 2008; Stamps and Bohon 2006), counties (Donato et al. 2008), cities (Singer 2004), and suburban areas (Singer 2004). I focus on immigration at the state level for several reasons. First, a large portion of research on demographic trends of immigrant families has focused on how high growth in new immigrant states may potentially strain their educational systems (Capps et al. 2005; Fortuny et al. 2009; Murray, Batalova, and Fix 2007), but research has yet to examine these state-level implications. Second, through state policies, states determine the broader economic, social and political contexts that shape the path of assimilation (Portes and Rumbaut 2006). For example, as the primary funding source for K-12 education, states determine immigrant youth's access to educational resources through policies such as English-only laws, affirmative action repeals, and state accountability measures (Capps et al. 2005). While there is variation within states in terms of immigrant history (Suro and Singer 2002), previous research indicates that the state-level classification still captures overall trends between new and established immigrant destinations (Hall 2009; Leach and Bean 2008; Massey and Capoferro 2008).

I use a variation of Massey and Capoferro's (2008) typology to identify new, established, and other immigrant states. Similar to most definitions, Massey and Capoferro classify states based on the historical concentration of immigrants in the state and the percent change in the immigrant population over time. Two strengths of Massey and Capoferro's classification are that: 1) they provide a longer historical context (examining trends since 1965 not just 1990), and 2) instead of only examining growth among the immigrant population as a whole (i.e. all racial/ethnic groups combined), they examine growth for each ethnic/racial immigrant group—Mexicans, other Latinos, Asians, white and black immigrants.

In their classification of established states, Massey and Capoferro include 10 states: 1) the "big five" immigrant-receiving states (California, Texas, Illinois, New York, and Florida) where upwards of 70% of immigrants settled between 1965 and 1990, and 2) five "second tier" states (New Jersey, Massachusetts, Washington, Virginia, and Maryland), which received a significant (though considerably lower) number of immigrants during the same time period. They then classify 20 states as new immigrant states because these states accounted for more than one percent of the inflow of any recently arrived (in US less than five years) immigrants of any ethnic/racial group between 1980 and 2005. The remaining states are classified as other. I follow this typology but classify "second tier" states as new immigrant states, since they are at a "considerable distance behind the 'big five' states." I also classify Washington DC as a new destination given that it has experienced high growth in its immigrant population (Wilson and Singer 2011). Figure 1 indicates the classification for each state.

Student Background—To control for potential demographic differences between settlement locations, I include the following controls: age, gender, ethnic/racial group, and generational status. Gender is measured as a female dummy variable, and age is month-based. I create five mutually exclusive racial/ethnic categories non-Latino white (reference category), non-Latino black, non-Latino Asian, Mexican and other Latino. For simplicity, I hereafter refer to the first three categories as white, Asian, and black. While Asian and Latinos are pan-ethnic groups with significant variation in achievement (Kao and Thompson 2003), only for Latinos is the sample size large enough to distinguish Mexicans (the largest and most disadvantaged sub-ethnic group; Portes and Rumbaut 2001) from other Latinos. For generational status, I originally used a three-category classification: first generation (both child and parents were foreign-born), second generation (child was US-born and at least one parent was foreign-born) and third generation and higher (child and both parents were US-born). Because trends between new and established states did not differ between first and second generation youth, I combine these categories to make a two category classification: children of immigrants (first and second generation youth) and children of US-born parents (third generation and greater).

Family Context—To assess variation in familial resources across immigrant destinations, I measure the economic, educational and linguistic resources of parents as well as the structure of the family. I also include an indicator of prior achievement—9th grade GPA (range: 0–4.0)—to capture unobserved familial inputs invested before the 10th grade. While test scores and grades (i.e. GPA) measure somewhat different aspects of achievement, they are highly complementary and provide a good indication of overall student ability (Willingham, Pollack, and Lewis 2002). Thus, 9th grade GPA serves as a strong but not complete indicator of prior student achievement.

To measure the family's economic and educational well-being, I use the standardized scale of socioeconomic status (SES; range: from –2.11 to 1.82) created by NCES, which is a composite measure of five equally weighted and standardized components: mother's and father's education, mother's and father's occupational prestige (based on the 1961 Duncan Index), and family income (NCES 2007). To measure the linguistic resources of immigrant families, I create a measure indicating whether English is the student's native language (i.e. the first language they learned to speak; 1=yes; 0=else). This measure is highly correlated with student's self-reported English language ability ($r=.95$).

To control for differences in family structure, I follow the work of Glick and White (2003) and create five dummy variables: 1) respondent lived with both biological parents (60%), 2) respondent lived with one biological parent and that parent's partner (15.3%), 3) respondent lived with a single mother (19%), 4) respondent lived with a single father (3.2%), and 5) respondent lived with neither parent (typically lives with grandparents or another relative; 2.6%). Because the sample sizes are small in the latter two categories, I combine them with single-mothers to make one dummy category—single/other parent family. Research suggests that among adolescents these three family structures—particularly single mothers and fathers who face similar time constraints and parental pressures (Amato 2005)—are similarly disadvantaged in terms of school engagement (Brown 2004). Thus, I have three

dummy indicators for family structure: biological parent family (reference group), stepparent family, and single/other family.

School Context—To assess variation in school context across settlement locations, I examine the compositional characteristics (socio-economic, racial/ethnic, and linguistic) and overall resources associated with schools—factors that have been shown by prior research to differ across new and established destinations (Dondero and Muller 2012; Fry 2011). First, I include an indicator for the proportion of students on free and reduced lunch in the school as a measure of the school's poverty level (Orfield and Lee 2005). Second, I include an indicator of the proportion of minority students in the school to assess the influence of racial/ethnic composition. I calculate the proportion minority by subtracting the proportion of non-Latino white students from one. Lastly, I account for the proportion of students who are limited English proficient (LEP) to measure linguistic composition. Since proportion LEP is highly skewed, I classify proportion LEP into three dummy variables: low (prop. LEP=0), mid (prop LEP is >0 and < 0.10), and high (prop. LEP> 0.10).

For overall school resources, I include an indicator for the teacher-student ratio, since students are found to perform better in schools with a smaller student-teacher ratio and since student teacher-ratio is a commonly used school resource indicator (Ainsworth 2002; Krueger 2003). Additionally, I control for whether the student attends a public or private school given the varying resources associated with school type. I also control for differences in urbanicity—urban, rural, and suburban—given that school resources are found to be higher in suburban areas and that schools in new destinations are more likely to be located in suburban areas (Dondero and Muller 2012; Fry 2011).

Neighborhood Context—Similar to schools, I measure the social context of neighborhoods by including information on the economic and ethnic/racial make-up of the zip-code in which the student lives and by assessing the neighborhood's experience with immigrant populations. To measure the neighborhood's economic well-being, I include an indicator of the proportion of households living below the poverty level. To measure the influence of ethnic/racial composition, I include an indicator of the proportion of minorities residing in the zip-code by subtracting the proportion of non-Latino white from one. To capture the effect of living near other immigrant groups (a proxy indicator for an immigrant enclave/network system), I include a measure of the proportion of zip-code residents that were foreign-born (Pong and Hao 2007).

Analytical Approach

To understand children of immigrants' academic adaptation in new and established immigrant states, I evaluate proportion and mean differences in academic achievement as well as key socio-demographic, family, school and neighborhood characteristics by settlement type (new, established, and other). I also assess these differences for children of US-born parents to serve as a reference point for understanding whether achievement and resource differences across settlement locations are unique for children of immigrants or apply to all children. While the focus of the paper is to compare new and established

immigrant states, for reference purposes I provide information on other immigrant states in the tables.

To assess how differences in family, school, and neighborhood resources contribute to diverging achievement patterns across settlement location, I use two regression strategies. First, I estimate OLS regression models that include two-way interactions between two sets of dummy variables: immigrant status (children of immigrants and children of US-born parents) and settlement location (established, new, and other). These interactions allow me to compare how the achievement of children of immigrants (children of US-born parents) differ between settlement locations. A baseline model that includes only the main effects and interaction variables of the two-way interaction terms indicates the total difference in achievement between children of immigrants (children of US-born parents) living in established states compared to children of immigrants (children of US-born parents) living in new (other immigrant) states. I then subsequently add blocks of variables representing each of the theoretical constructs (i.e. individual, family, school, and neighborhood characteristics) to assess how differences in each of these constructs contribute to the differing achievement patterns by settlement location. All models correct for design effects by using sample weights, robust standard errors, and a correction for the clustering of students in schools.ⁱⁱⁱ

Second, I use regression decomposition to assess the share of the settlement achievement gap that can be explained by each of the demographic, family, school, and neighborhood constructs. Often referred to as the Oaxaca-Blinder decomposition, regression decomposition is a common technique used in the wage discrimination literature but has been applied by education and migration scholars as well. The decomposition technique separates achievement differences into two components: 1) the explained portion which reflects differences in the characteristics of the children of immigrants population living in new and established destinations (i.e. mean/level differences), and 2) the unexplained portion which reflects differences in the associations of these characteristics and achievement for each of the settlement locations (i.e. coefficient/return differences; Jann 2008). To run the analysis one must choose a set of coefficients to use (e.g. new or established states). Because there is no compelling argument to use one set of coefficients over another, I follow Elder, Goddeeris, and Haider's (2010) suggestion and use common coefficients estimated from a pooled regression of new and established states with the inclusion of a group specific intercept:

$$\bar{y}^1 - \bar{y}^0 = (\bar{X}^1 - \bar{X}^0)\hat{\beta}^p + \bar{X}^1(\hat{\beta}^1 - \hat{\beta}^p) + \bar{X}^0(\hat{\beta}^p - \hat{\beta}^0)$$

$\hat{\beta}^p$ indicates the coefficient vector produced from the pooled regression. The first term on the right hand side is the explained component and the sum of the next two terms is the unexplained component.

ⁱⁱⁱBecause the within-school sample size is sufficiently small (over 75% of observations come from high schools with fewer than 25 students) and the intraclass correlations are low ($ICC_{Reading}=.23$; $ICC_{Math}=.23$) hierarchical linear models are not appropriate (Maas and Hox 2004). Instead, I use robust standard errors, which provide more consistent and more conservative estimates of the covariances of the regression coefficients (Maas and Hox 2004).

Characteristics of Settlement Locations

While immigrant families have dispersed across the US, results indicate that children of immigrants are still largely concentrated in established states with approximately 60% of children of immigrants living in an established destination (Table 1). For those who have dispersed to new states, there appears to be an academic advantage. Compared to established destinations, children of immigrants living in new destinations have higher reading ($M_{\text{New}}=48.83$; $M_{\text{Estab}}=46.06$; Difference=2.77 or about a quarter of a standard deviation) and math ($M_{\text{New}}=49.02$; $M_{\text{Estab}}=47.25$; Difference=1.77 or .18 of a standard deviation) test scores. These differences in high school achievement may partially reflect key demographic differences between settlement locations. Results indicate that a larger share of children of immigrants living in new immigrant states than established states are white (34% vs. 12%).

In addition to demographic differences, I find that children of immigrants living in new destinations benefit from greater familial economic and linguistic resources. As measured by familial SES, children of immigrants in new immigrant states have more financial and human capital resources ($M=-0.11$; $SD=.06$) than their peers in established states ($M=-0.37$; $SD=.04$). In terms of linguistic resources, I find that English is the native language for a larger percentage of children of immigrants in new compared to established destinations (52% vs. 37%). Lastly, I find that 9th grade GPA scores are higher in new than established destinations—a difference that likely reflects further family resource disparities.

As demonstrated by previous research (Dondero and Muller 2012; Fry 2011), schools in new immigrant states, compared to those in established states, have more resources and benefit from more favorable compositional characteristics. Compared to established states, children of immigrants in new states attend schools with a lower proportion of minority students (.40 vs. .67) and students on free and reduced lunch (.20 vs. .35)—two indicators associated with school resources. Mirroring settlement location differences in the size of the immigrant population, I also find that the proportion of LEP students in a school is highest in established immigrant states. Regarding school resources, I find that teacher-student ratios are higher in established states ($M=20.06$; $SD=0.30$) than in new states ($M=16.89$; $SD=0.41$). Schools in new states are also less likely to be located in urban areas and more likely to be located in the suburbs.

Similar to schools, I find that the economic and racial composition of neighborhoods differs between established and new immigrant states. For children of immigrants, the proportion of zip-code residents living in poverty in established states is .18 compared to .11 in new states, and the proportion of zip-code residents who are minority is .61 and .34, respectively. Youth in established states are also more likely to live in neighborhoods with a larger immigrant population (.28 vs. .14).

The Role of Family, School, and Neighborhood Context

I use multiple regression and two-way interactions to assess the extent to which differences in demographic, family, school and neighborhood characteristics account for observed differences in reading (Table 2) and math (Table 3) test scores between children of immigrants and children of US-born parents living in different settlement locations. To

interpret the substantive meaning and statistical significance of the interaction terms, I calculate the marginal coefficient of X (settlement location) on Y (test score) by adding the main coefficient of X and the interactive coefficient between X and Z (settlement location*immigrant status) for each value of Z, and then calculate the variance of the estimate (Brambor, Clark, and Golder's (2005)).^{iv} I report these marginal coefficient estimates in table 4.

The results demonstrate that demographic differences largely account for the observed settlement location differences in achievement. Once I control for the higher percent of Mexicans (who have lower achievement than their white peers) in established states, the academic advantage for children of immigrants residing in a new immigrant state compared to an established state becomes non-significant and decreases from 2.37 to 0.85 in reading and from 1.50 to -0.55 in math (Table 4; Model 1 and 2). Demographic differences also largely explain the academic advantage observed among children of US-born parents living in new vs. established destinations.

Given that racial/ethnic differences in achievement are the product of wider social and economic disparities, I examine how disparities in family, school, and neighborhood resources may further contribute to achievement differences across settlement locations. Once I control for family contexts, I find that the achievement gap reappears but that children of immigrants residing in new states are now actually disadvantaged. In the family model, the marginal coefficient in math becomes negative and significant (marg. coeff.= -1.40; $p < .05$; Table 4, Model 3) for children of immigrants.

Differences in school characteristics and resources further contribute to differences in achievement by settlement location. Once I control for differences in the economic composition of schools in new and established states and for the lower student-teacher ratios in schools in new states, I find that math achievement rates are even lower in new (and other) immigrant states. For children of immigrants, the marginal coefficient on new immigrant states increases from -1.40 to -2.12 (or about a fifth of a standard deviation difference in achievement; Table 4; Model 4). These school characteristics and resources also benefit children of US-born parents. Once I control for school differences, children of US-born parents living in new destinations perform slightly worse (coeff.= -0.63 or less than a tenth of a standard deviation difference) than their peers in established states. Overall, these school results support the hypothesis that schools in new immigrant states have a positive effect on achievement due to their more favorable economic composition and overall resources.

The remaining negative effect, which is stronger for children of immigrants than children of US-born parents, may partially reflect the fact that schools in new immigrant states lack immigrant-specific resources. ELS, however, has limited information on these resources to fully test this hypotheses. The only indicator of immigrant resources in ELS is whether youths' reading or math teacher received eight hours of LEP training. While the percent of

^{iv}For the general equation: $Y = \beta_0 + \beta_1 X + \beta_2 Z + \beta_3 XZ$: Total Marginal Effect= $\beta_1 + \beta_3 Z$; Variance= $\text{var}(\beta_1) + Z^2 \text{var}(\beta_3) + 2Z \text{cov}(\beta_1 \beta_3)$.

children of immigrants taught by an LEP trained teacher was greater in established vs. new immigrant destinations (52% vs. 25%), variation in this immigrant-specific resource does not explain the remaining negative effect associated with residing in a new immigrant state (results not shown). This measure, however, provides no information on the number and type of services offered to LEP students and parents—key measures needed to fully assess the effect of immigrant-specific resources.

The results from the neighborhood model provide some evidence that the lack of immigrant-specific resources in new immigrant states is hindering achievement. Overall, the results indicate that the achievement disadvantage found among children of immigrants weakens once I control for differences in neighborhood characteristics across each settlement location. The attenuation of the marginal coefficient (from -2.12 to -1.97 ; Table 4, Model 4 and 5) on new immigrant states indicates that neighborhood characteristics are detracting from student achievement in math. Having more foreign-born neighbors, a potential immigrant-specific resource, increases math test scores (as seen by the positive and marginally significant coefficient on Proportion zip-code is foreign-born -2.91 ; Table 3; Model 5), but youth in new immigrant states are less likely to have foreign-born neighbors.

Decomposing the Relative Role of Family, School, and Neighborhood Context

Now that I have examined which mediating factors contribute to the overall difference in achievement across settlement locations, I use regression decomposition to identify the share of the gap explained by each of these factors. For this assessment I focus on children of immigrants living in new and established states, and provide the total share of the difference explained by each of the main constructs—demographic, family, school, and neighborhood—as well as the specific measures within these constructs.

For both reading and math, the results indicate that differences in overall family resources account for the largest share of the achievement gap (Table 5). If children of immigrants in new states had the same family resources as those in established states (i.e. lower familial SES and 9th grade GPA), their test scores would be 61.7% lower in reading and 86.1% lower in math. Schools had the second largest influence on the achievement gap across settlement locations explaining 38.5% of the gap in reading and 71.3% of the gap in math. If children of immigrants in new destinations were to attend the higher poverty and lower resourced schools (as measured by teacher-student ratio) found in established destinations their achievement would be substantially lower. While demographic and neighborhood differences between settlement locations also contributed to the total achievement gap difference, the share of the gap explained by these factors is smaller than that explained by families and schools.

Sensitivity Analysis

Given that researchers have used a variety of different classification schemes to identify new and established immigrant destinations, I ran several sensitivity checks to assess the robustness of my results. I re-classified settlement locations following different classification schemes at both the state and county level and re-ran the regression analysis. At the state level, I modified Massey's classification by re-classifying the 5 "second tier"

states as traditional immigrant states instead of new immigrant states and found similar results.

At the county level, I followed a modified version of Suro and Singer's (2002) four tier classification of Hispanic metro areas. Following their guidelines, I classified counties as established if their base population in 1990 exceeded the national average and as new if their growth between 1990–2000 was in the top 50th percentile (averages were highly skewed). All other counties were classified as other destinations. By measuring the influence of a geographical level lower than the state, I am able to identify within state variation in migration history and educational context (Cogner and Atwell 2012). Similar to other classification cutoffs used (Fischer 2010; Dondero and Muller 2012), my classification indicated that 90.2% of children of immigrants lived in established counties, 6.1% in new counties, and 3.7% in other counties. Because the new and established counties were small, I combined the two categories to increase statistical power. The county-level results reaffirm the findings at the state level for children of immigrants. The results (available upon request) were robust to the findings in Tables 2–4.

Discussion

This paper examines one of the most pressing challenges facing the educational system: the diaspora of immigrant families. To assess how this geographic dispersion of immigrants affects the education of immigrants' children, I explored how 10th grade academic achievement in math and reading test scores differed across settlement locations for a national sample of 10th grade children of immigrants and children of US-born parents. I then assessed how differences in socio-demographic, family, school, and neighborhood characteristics contributed to differences in achievement across settlement locations.

I found that overall achievement was higher in new immigrant states than in established states for both children of immigrants and for children of US-born parents. Demographic differences between settlement locations largely explained overall differences in student achievement among children of immigrants. The children of immigrants population in established immigrant states consisted of a larger proportion of minority students (particularly Mexican youth), and these youth generally had lower levels of achievement in math and reading than white youth. Similar trends occurred for children of US-born parents. Once I accounted for demographic differences between settlement locations, there was no longer a benefit associated with residing in a new immigrant state for either children of immigrants or children of US-born parents.

These demographic differences in achievement, however, reflected underlying differences in familial resources. The regression decomposition results indicate that differences in family resources across settlement locations explained the largest share of the achievement gap. Compared to children of immigrants living in established states, children of immigrants in new states came from families with higher levels of human capital as measured by socioeconomic status, native English language, and 9th grade GPA. These higher levels of human capital persisted when comparing across immigrant generations with first and second generation immigrant youth in new receiving states reporting higher levels of familial SES

than their generational peers in established immigrant states (results not shown). Once the model accounted for this more positive familial context, children of immigrants in new destinations actually had lower achievement in math than their peers in established destinations.

These results support both the migrant selection (i.e. more advantaged immigrants are migrating to new immigrant destinations) and the economic context hypotheses. In terms of migrant selection, these results fit with previous research that suggests more advantaged immigrant groups are migrating to new immigrant destinations (Lichter and Johnson 2009; Stamps and Bohon 2006). While other research suggests the opposite (i.e. more disadvantaged immigrants are migrating to new immigrant destinations) these studies do not make specific comparisons within immigrant generations (Donato et al. 2008; Parrado and Kandel 2008). An alternative explanation, however, is that the broader economic context in new immigrant destinations is more advantageous for immigrant families, and thus, these families have more resources to invest in their child's education. While this paper cannot determine which hypotheses is correct, the overall lesson for educators is that the familial needs of children of immigrants living in non-established areas are distinct from those living in established destinations. Moreover, the lower level of achievement observed in new destination states once the models account for family characteristics suggests that educators in these states need to do more to help children of immigrants reach their full potential.

One potential way of helping these children is through improving schools and neighborhoods. I found that schools and neighborhoods in new immigrant destinations both promoted and hindered academic achievement. Children of immigrants living in new immigrant destinations attended schools with more favorable compositional characteristics (i.e. lower proportion on free and reduced lunch) and higher overall resources (i.e. lower teacher-student ratios), which in turn, contributed to their academic achievement. Similarly, the neighborhoods where children of immigrants resided had lower poverty rates and a lower concentration of minority populations (two potential indicators for greater resources and more equitable opportunity) than their peers living in established destinations. As found in other studies, these neighborhood characteristics reinforced the economic and ethnic/racial context of the schools youth attended and had a positive effect on achievement (Clark and Maas 2012; Pong and Hao 2007). Once these overall school resources and neighborhood and school composition were accounted for, though, immigrant youth actually performed worse in new immigrant destinations. These results fit with Fischer's (2010) study that found high school dropouts were higher in new immigrant destinations once she controlled for individual, family, and community characteristics.

The lack of a co-immigrant support system and immigrant specific resources in schools and neighborhoods may account for some of the remaining negative effect. At the neighborhood level, my results indicate that children of immigrants in new destinations are less likely to have immigrant neighbors (as measured by proportion foreign-born) and that immigrant neighbors improve achievement. Previous research has shown that immigrant neighborhoods advance student achievement by providing co-ethnic monitoring and immigrant support systems (Pong and Hao 2007). While I am not able to effectively measure immigrant specific resources in schools, previous studies indicate that schools in

new immigrant states lack sufficient linguistic and cultural support services for immigrant youth (Dondero and Muller 2012; Massey 2008; Perreira et al. 2006; Wainer 2006). Because children of immigrants make up a smaller share of the schools' student body, these schools may be less able and willing to target their resources towards meeting the unique educational needs of immigrant youth (Potochnick and Handa 2012).

Strengths and Limitations

Though this study has many strengths—the sample is national and the data have more detail on family, school, and neighborhood characteristics than the US Census—the results of this study should be read with some caveats in mind. First, the analysis uses a cross-section of the panel data available in ELS. Thus, I identify important associations that need to be further evaluated using longitudinal data.^ν Second, while I minimize migrant selection concerns by eliminating labor migrants (i.e. youth who never enroll in US schools) and controlling for individual and family characteristics (including prior student achievement), migrant selection remains an issue. Because families choose their settlement location, neighborhoods and schools, it is possible that the associations I detect reflect these choices rather than the effects of social context. Instead of resolving the migrant selection vs. social context debate, this paper helps researchers understand how (not necessarily why) the educational resources of children of immigrants differ across settlement locations and the implications of these resource disparities.

Third, because the sample of ELS is drawn from youth enrolled in 10th grade, I exclude youth who have dropped out of high school before the 10th grade. This important subpopulation of youth may have a different schooling experience than youth who remain in school. Fourth, while ELS provides the most recent national-level assessment of youth's school experiences, the data are drawn from 2002. Thus, this study reflects the schooling experiences of youth in the early 2000s, which may differ from more recent cohorts. Lastly, the sample sizes were not large enough to examine within ethnic/racial differences. Future research should examine how settlement location affects the academic achievement of the different subgroups of Asians (e.g., Chinese, Filipino, etc.) and Latinos (e.g., Mexican, Cuban, etc.).

Conclusion

For educators and policymakers, this study demonstrates that schools in new and established immigrant destinations face unique educational challenges. Established states are challenged with educating a large immigrant population with relatively lower levels of human capital than their immigrant generational peers in new states. New states, on the other hand, are challenged with responding to the needs of a small but rapidly growing immigrant population. To promote the academic adaptation of this growing population, schools in new destinations can rely on their relatively greater economic integration (i.e. lower poverty

^νWhile ELS is a longitudinal study, there was not sufficient variation in family and school characteristics to capitalize on the longitudinal nature of the data. Family characteristics were only collected during the base year and school and neighborhood characteristics were highly collinear ($r > .85$) across years. Given this limited variation, I was unable to utilize the data to further control for migrant selection.

rates) and higher overall resources, but these school resources alone are not sufficient to ensure the success of immigrant youth. As suggested by previous research, the academic adaptation of immigrant youth in new states may be constrained by the limited immigrant related resources, infrastructure, and support systems available. The challenge for schools in new immigrant states is determining how best to respond to the unique educational needs of immigrant youth, while still maintaining similar levels of school integration and overall resources. The path of assimilation that immigrant youth in new immigrant states follow will largely depend on whether schools are able to meet this challenge.

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Figure 1.
Source: Massey and Capoferro 2008

Table 1

Weighted Characteristics of High School Sophomores in 2002 for Children of Immigrants and Children of Natives by State Settlement Type

	Children of Immigrants				Children of US-Born Parents			
	Established State	New State	Other State	Diff. ¹	Established State	New State	Other State	Diff. ¹
	Mean/Prop. (SD)	Mean/Prop. (SD)	Mean/Prop. (SD)		Mean/Prop. (SD)	Mean/Prop. (SD)	Mean/Prop. (SD)	
Achievement								
Reading test score	46.06 (.42)	48.83 (.54)	48.04 (1.13)	a	50.23 (.36)	51.65 (.27)	49.45 (.42)	a,b
Math test score	47.25 (.49)	49.02 (.57)	48.71 (1.08)	a	50.47 (.35)	51.30 (.28)	49.17 (.42)	b,c
9th Grade GPA	2.46 (.04)	2.67 (.04)	2.63 (.08)	a,c	2.60 (.03)	2.73 (.02)	2.76 (.03)	a,c
Demographics								
Female	0.49	0.50	0.49		0.49	0.50	0.51	
Age	16.19 (.03)	16.17 (.03)	16.14 (.05)		16.14 (.02)	16.18 (.01)	16.23 (.02)	b,c
Race/Ethnicity								
Non-Latino White (ref.)	0.12	0.34	0.51	a,b,c	0.65	0.80	0.75	a,c
Non-Latino Black	0.08	0.11	0.09		0.18	0.16	0.20	
Non-Latino Asian	0.16	0.20	0.13	b	0.01	0.01	0.00	b,c
Mexican	0.45	0.19	0.15	a,c	0.13	0.03	0.04	a,c
Other Latino	0.19	0.16	0.12	c	0.03	0.01	0.01	a,c
Family Characteristics								
SES	-0.37 (.04)	-0.11 (.06)	0.04 (.07)	a,c	0.06 (.03)	0.10 (.02)	-0.04 (.04)	b,c
Family Structure								
Biological parent family (ref.)	0.60	0.61	0.62		0.54	0.59	0.54	a,b
Stepparent family	0.14	0.15	0.17		0.18	0.16	0.19	b
Single parent/other family	0.26	0.24	0.21		0.28	0.25	0.27	
English is native language	0.37	0.52	0.67	a,b,c	0.95	0.98	0.98	a,c
School Characteristics								
Prop. free and reduced lunch	0.35 (.02)	0.20 (.02)	0.21 (.03)	a,c	0.22 (.01)	0.17 (.01)	0.25 (.02)	a,b
Prop. minority	0.67 (.02)	0.40 (.03)	0.27 (.03)	a,b,c	0.39 (.02)	0.25 (.01)	0.26 (.03)	a,c
Prop. LEP population--low (ref.)	0.11	0.18	0.37	a,b,c	0.30	0.39	0.52	b,c
Prop. LEP population--mid	0.35	0.56	0.53	a,c	0.47	0.56	0.45	

	Children of Immigrants				Children of US-Born Parents			
	Established State	New State	Other State		Established State	New State	Other State	
			Mean/Prop. (SD)	Mean/Prop. (SD)			Mean/Prop. (SD)	Mean/Prop. (SD)
								Diff. ¹
Prop. LEP population--high	0.54	0.26	0.09	0.09	0.23	0.06	0.03	a,c
Student-teacher ratio	20.06 (.30)	16.89 (.41)	15.51 (.36)	15.51 (.36)	17.79 (.33)	16.66 (.24)	15.43 (.33)	a,b,c
Urbanicity								
Urban (ref.)	0.50	0.35	0.31	0.31	0.32	0.25	0.25	
Rural	0.06	0.11	0.24	0.24	0.18	0.23	0.29	
Suburban	0.44	0.54	0.44	0.44	0.50	0.52	0.46	
Public (vs. private)	0.94	0.92	0.95	0.95	0.92	0.91	0.95	
Neighborhood Characteristics								
Prop. zip-code in poverty	0.18 (.01)	0.11 (.01)	0.12 (.01)	0.12 (.01)	0.13 (.01)	0.10 (.00)	0.14 (.01)	a,b
Prop. zip-code is minority	0.61 (.02)	0.34 (.02)	0.23 (.02)	0.23 (.02)	0.35 (.02)	0.21 (.01)	0.22 (.02)	a,c
Prop. zip-code is foreign-born	0.28 (.01)	0.14 (.01)	0.05 (.01)	0.05 (.01)	0.12 (.01)	0.06 (.00)	0.03 (.00)	a,b,c
N ² =	2050	1400	160	160	2830	6030	1910	

¹ Indicates statistical differences (p<.05) between the samples using chi-square tests for proportions and T-tests for means: a=established vs. new, b=new vs.other, and c=established vs. other.

² N's are rounded to the nearest 10 as required by NCES.

Table 2

Effect of Settlement Location on Reading Test Scores for High School Sophomores in 2002 (Data Weighted; OLS Regression with Robust SE)

	Model 1 Baseline	Model 2 Demog.	Model 3 Family	Model 4 School	Model 5 Nghbd
	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)
Main Effect					
New state vs. established state	1.04 (.23) ***	0.55 (.37)	0.33 (.31)	0.05 (.31)	0.14 (.32)
Other state vs. established state	-1.14 (.30) ***	-1.16 (.47) *	-1.38 (.39) ***	-1.47 (.42) ***	-1.29 (.42) **
Child of immigrant vs. child of US-born parents	-3.56 (.29) ***	-1.40 (.47) **	0.49 (.43)	0.73 (.43) †	0.49 (.42)
Two-Way Interaction					
New * Children of immigrants	1.33 (.43) **	0.29 (.57)	-0.42 (.50)	-0.72 (.50)	-0.56 (.48)
Other * Children of immigrants	2.71 (.93) **	0.53 (1.01)	-0.36 (.96)	-0.87 (.97)	-0.61 (.96)
Demographics					
Female		0.98 (.19) ***	0.13 (.17) ***	0.10 (.17) ***	0.09 (.17) ***
Age		-3.15 (.17) ***	-1.28 (.16) ***	-1.27 (.16) ***	-1.25 (.16) ***
Mexican vs. Non-Latino white		-7.11 (.47) ***	-2.56 (.41) ***	-2.04 (.38) ***	-1.99 (.38) ***
Other Latino vs. Non-Latino white		-5.58 (.55) ***	-1.88 (.46) ***	-1.66 (.47) ***	-1.75 (.47) ***
Non-Latino Black vs. Non-Latino White		-7.17 (.31) ***	-3.49 (.29) ***	-3.14 (.30) ***	-2.96 (.31) ***
Non-Latino Asian vs. Non-Latino White		-1.38 (.53) *	-0.96 (.46) *	-1.02 (.45) *	-1.08 (.45) *
Family Characteristics					
9th grade GPA			4.46 (.12) ***	4.48 (.12) ***	4.49 (.12) ***
SES			2.93 (.14) ***	2.58 (.14) ***	2.54 (.14) ***
Stepparent family vs. biological family			-0.50 (.24) *	-0.44 (.24) †	-0.42 (.24) †
Single parent/other family vs. biological family			-0.21 (.21)	-0.18 (.21)	-0.18 (.21)
English is native language			3.03 (.38) ***	2.75 (.38) ***	2.87 (.39) ***
School Characteristics					
Prop. free and reduced lunch				-4.38 (.89) ***	-3.34 (1.02) **
Prop. minority				1.04 (.67)	0.21 (.94)

	Model 1 Baseline	Model 2 Demog.	Model 3 Family	Model 4 School	Model 5 Nghbd
	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)
Prop. LEP population--mid vs. low				0.01 (.29)	-0.07 (.29)
Prop. LEP population--high vs. low				-1.18 (.45) **	-1.52 (.47) **
Student-teacher ratio				-0.07 (.03) *	-0.08 (.03) *
Rural vs. urban				-0.55 (.38)	-0.62 (.38)
Suburban vs. urban				-0.57 (.30) [†]	-0.66 (.31) *
public				-0.26 (.43)	-0.18 (.45)
Neighborhood Characteristics					
Prop. zip-code in poverty					-2.73 (1.91)
Prop. zip-code is minority					0.15 (.94)
Prop. zip-code is foreign-born					3.89 (1.36) **
Constant	50.95 (.19)	102.94 (2.74)	57.27 (2.74)	60.13 (2.76)	59.67 (2.73)

[†] p<.10,

* p<.05,

** p<.01,

*** p<.001

N=14380 (rounded to the nearest 10 as required by NCES)

Table 3

Effect of Settlement Location on Math Test Scores for High School Sophomores in 2002 (Data Weighted; OLS Regression with Robust SE)

	Model 1 Baseline	Model 2 Demog.	Model 3 Family	Model 4 School	Model 5 Nghbd
	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)
Main Effect					
New state vs. established state	0.90 (.46) †	-0.06 (.35)	-0.35 (.30)	-0.63 (.30) *	-0.58 (.30) †
Other state vs. established state	-1.26 (.59) *	-1.61 (.44) **	-1.93 (.37) **	-1.89 (.39) ***	-1.75 (.39) ***
Child of immigrant vs. child of US-born parents	-3.15 (.53) ***	-0.49 (.46)	0.85 (.43) *	1.13 (.43) *	0.96 (.41) *
Two-Way Interaction					
New * Children of immigrants	0.60 (.76)	-0.49 (.61)	-1.05 (.57) †	-1.49 (.58) *	-1.39 (.56) *
Other * Children of immigrants	2.31 (1.14) *	0.12 (.90)	-0.39 (.82)	-1.05 (.81)	-0.88 (.81)
Demographics					
Female		-1.47 (.19) ***	-2.45 (.16) ***	-2.47 (.16) ***	-2.47 (.16) ***
Age		-3.64 (.16) ***	-1.68 (.15) ***	-1.63 (.15) ***	-1.61 (.15) ***
Mexican vs. Non-Latino white		-7.84 (.43) ***	-3.53 (.39) ***	-2.83 (.38) ***	-2.77 (.38) ***
Other Latino vs. Non-Latino white		-6.50 (.55) ***	-2.93 (.46) ***	-2.47 (.47) ***	-2.52 (.47) ***
Non-Latino Black vs. Non-Latino White		-8.27 (.34) ***	-4.36 (.30) ***	-3.55 (.31) ***	-3.38 (.32) ***
Non-Latino Asian vs. Non-Latino White		1.11 (.61) †	1.03 (.52) *	1.08 (.51) *	1.05 (.50) *
Family Characteristics					
9th grade GPA			4.95 (.12) ***	4.98 (.12) ***	4.99 (.12) ***
SES			2.78 (.15) ***	2.43 (.15) ***	2.38 (.15) ***
Stepparent family vs. biological family			-0.44 (.24) †	-0.39 (.23)	-0.37 (.23)
Single parent/other family vs. biological family			-0.27 (.20)	-0.19 (.20)	-0.19 (.20)
English is native language			1.77 (.36) ***	1.50 (.37) ***	1.57 (.37) ***
School Characteristics					
Prop. free and reduced lunch				-5.91 (.88) ***	-4.90 (1.06) ***
Prop. minority				0.63 (.67)	0.17 (.96)

	Model 1 Baseline	Model 2 Demog.	Model 3 Family	Model 4 School	Model 5 Nghbd
	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)
Prop. LEP population--mid vs. low				0.20 (.27)	0.13 (.27)
Prop. LEP population--high vs. low				-0.36 (.49)	-0.63 (.51)
Student-teacher ratio				-0.07 (.03) *	-0.07 (.03) *
Rural vs. urban				-0.18 (.38)	-0.25 (.38)
Suburban vs. urban				-0.11 (.31)	-0.20 (.31)
public				0.52 (.41)	0.53 (.42)
Neighborhood Characteristics					
Prop. zip-code in poverty					-3.01 (1.87)
Prop. zip-code is minority					-0.11 (.89)
Prop. zip-code is foreign-born					2.91 (1.46) *
Constant	50.45 (.36)	112.54 (2.59)	65.57 (2.56)	66.58 (2.66)	66.36 (2.64)

[†] p<.10,

* p<.05,

** p<.01,

*** p<.001

N= 14380 (rounded to the nearest 10 as required by NCES)

Table 4

Marginal Coefficients of Settlement Location on Reading and Math Test Scores by Immigration Status of High School Sophomores in 2002 (Data Weighted)

	Model 1 Baseline		Model 2 Demog.		Model 3 Family		Model 4 School		Model 5 Nghbd	
	MC (SE)	Diff ¹	MC (SE)	Diff	MC (SE)	Diff	MC (SE)	Diff	MC (SE)	Diff
A. Reading										
Children of Immigrants										
New vs. established	2.37 (.36)	***	0.85 (.57)		-0.09 (.49)		-0.67 (.51)		-0.42 (.50)	
Other vs. established	1.57 (.87)	†	-0.62 (1.03)		-1.74 (.95)	†	-2.34 (.98)	*	-1.90 (.97)	†
Children of US-Born Parents										
New vs. established	1.04 (.23)	***	0.55 (.37)		0.33 (.31)		0.05 (.31)		0.14 (.32)	
Other vs. established	-1.14 (.30)	***	-1.16 (.47)	*	-1.38 (.39)	***	-1.47 (.42)	***	-1.29 (.42)	**
B. Math										
Children of Immigrants										
New vs. established	1.50 (.77)	†	-0.55 (.60)		-1.40 (.55)	*	-2.12 (.61)	**	-1.97 (.59)	**
Other vs. established	1.06 (1.17)		-1.48 (.93)		-2.32 (.82)	**	-2.95 (.84)	***	-2.63 (.84)	**
Children of US-Born Parents										
New vs. established	0.90 (.46)	†	-0.06 (.35)		-0.35 (.30)		-0.63 (.30)	*	-0.58 (.30)	†
Other vs. established	-1.26 (.59)	*	-1.61 (.44)	***	-1.93 (.37)	***	-1.89 (.39)	***	-1.75 (.39)	***

N=14380 (rounded to the nearest 10 as required by NCES)

¹ Indicates marginal coefficient is statistically different from the marginal coefficient for established immigrant states:

† p<.10,

* p<.05,

** p<.01,

*** p<.001

Each model includes the same controls as the corresponding model in tables 2 and 3

Table 5

Regression Decomposition Showing the Contributions of Demographic, Family, School, and Neighborhood Characteristics to the New and Established Destination Test Score Achievement Gap for Children of Immigrants

	Reading		Math	
	Components of Change	% of Total Gap Explained	Components of Change	% of Total Gap Explained
Demographic Measures Total	0.60	21.83	0.97	54.72
Female	0.00	-0.12	-0.03	-1.82
Age	0.03	1.17	0.03	1.87
Race/Ethnicity	0.58	20.77	0.97	54.67
Family Measures Total	1.71	61.74	1.53	86.13
9th grade GPA	0.82	29.75	0.93	52.66
SES	0.60	21.82	0.52	29.51
Family structure	0.00	-0.12	-0.01	-0.43
English is native language	0.29	10.30	0.08	4.39
School Measures Total	1.07	38.53	1.26	71.26
Prop. free and reduced lunch	0.50	18.03	0.97	54.81
Prop. minority	-0.33	-11.74	-0.17	-9.36
Prop. LEP	0.61	21.93	0.31	17.61
Student-teacher ratio	0.32	11.69	0.21	11.83
Urbanicity	-0.02	-0.86	-0.04	-1.99
Public	-0.01	-0.52	-0.03	-1.65
Neighborhood Measures Total	-0.25	-9.04	-0.34	-18.91
Prop. zip-code in poverty	0.10	3.65	0.06	3.28
Prop. zip-code is minority	0.23	8.26	0.22	12.20
Prop. zip-code is foreign-born	-0.58	-20.95	-0.61	-34.40
Total Explained	3.13	113.07	3.42	193.20
Unexplained	-0.36	-13.07	-1.65	-93.20
Total Change	2.77		1.77	

N=3450 (rounded to the nearest 10 as required by NCES)

Notes: Regression decompositions are based on pooled coefficients from a pooled regression (including a group-specific intercept) from both new and established states.