



Published in final edited form as:

J Appl Dev Psychol. 2017 ; 48: 14–24. doi:10.1016/j.appdev.2016.11.001.

Mexican-origin Adolescents' Educational Expectation Trajectories: Intersection of Nativity, Sex, and Socioeconomic Status

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Abstract

Expectancy value theory and a cultural-ecological framework are integrated in this study to examine the trajectories of 246 Mexican-origin adolescents' ($M_{age} = 12.52$, $SD_{age} = 0.58$; 51% girls, 62% U.S.-born) educational expectations across eight years. Findings from a multilevel growth model revealed that early adolescents expected to complete a post-bachelor's degree, but expectations declined in middle adolescence and improved in late adolescence. This pattern was more pronounced for immigrant, compared to U.S.-born, adolescents. Higher socioeconomic status was associated with higher expectations. Boys and girls differed in their trajectories, such that boys showed a curvilinear trajectory and girls showed a stable trajectory. Nativity moderated these sex differences. Immigrant boys showed curvilinear trajectories that dipped in middle adolescence and immigrant girls showed a declining trajectory. In contrast, U.S.-born boys and girls showed linear and stable trajectories. The discussion addresses suggestions for targeted interventions with at-risk subgroups during a sensitive period in adolescence.

Keywords

adolescence; educational expectations; Mexican-origin; nativity; sex; socioeconomic status

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¹We build on previous research (Crosnoe, 2012; Mello, 2009) and NCES recommendations (Cowan et al., 2013) to assess SES as a composite variable. However, it must be acknowledged that other research has discussed and showcased the benefits of disentangled the effects of income and parental education. For examples see: Hossler & Stage, 1992; Kao & Tienda, 1998.

Author Contribution: NPB conceived the study, participated in its design and coordination and drafted the manuscript; MYD, SAR, KU and AUT participated in the study design, interpretation of the data, and drafted the manuscript. All authors read and approved the final manuscript.

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Mexican-origin adolescents' educational achievement merits attention, given that their high school (58.4%) and college degree (9.9%) attainment rates lag substantially behind national averages (86.3% and 29.1%, respectively; U.S. Census, 2013). Scholars who study Mexican-origin adolescents' achievement gap have focused on educational attainment (e.g., obtaining a high school degree or not), but few have focused on adolescents' *educational expectations*: self-assessments of the level of schooling adolescents expect to complete (Bohon, Johnson, & Gorman, 2006; Eamon, 2005). This oversight is significant as cognitive theories (Expectancy-Value Theory: Eccles & Wigfield, 2002) and research (Mello, Anton-Stang, Monaghan, Roberts, & Worrell, 2012) suggest that expectations of school success predict future educational and career attainment. Further, theory suggests that individual characteristics (i.e., nativity, sex) and family socioeconomic status (SES) can inform such expectations (García Coll et al., 1996; Wigfield, Tonks, & Eccles, 2004).

Among ethnic minority adolescents, the intersection of individual characteristics and family SES create unique experiences that may play a role in their educational trajectories (García Coll et al., 1996). For example, immigrant adolescents may be aware of the barriers they face in applying for and receiving financial aid for college, and this may influence what level of schooling they expect to achieve (Olivas, 2009). However, adolescents' expectations of educational achievement may develop in ways that depend on their social positions at a given point during adolescence. Given our lack of attention to Mexican-origin adolescents' educational expectations, little is known about how social position informs changes in educational expectations over the course of adolescence. To address these gaps in the literature, the current study integrates a cultural-ecological framework (García Coll et al., 1996) with expectancy-value theory (Eccles & Wigfield, 2002) by exploring the trajectories of Mexican-origin adolescents' educational expectations from early to late adolescence and assessing within-group variability among these adolescents by testing the moderating roles of nativity, sex, and family SES.

Trajectories of Educational Expectations

Expectancy-value theory (Eccles & Wigfield, 2002) suggests that adolescents' expectations for success and perceived value of an outcome are associated with their persistence, performance, and task choices. For example, educational expectations can be important precursors to studying, getting good grades, seeking out educational enrichment programs, and applying for college. Adolescence is a developmental period generally defined by important transitions through middle school (i.e., early adolescence), high school (i.e., middle adolescence), and into tertiary education (i.e., late adolescence; Smetana, 2011). During adolescence the link between educational expectations and attainment is most important. In early adolescence (i.e., age 11-13), adolescents begin to explore their educational and career goals (Oyserman & Markus, 1990). In middle adolescence (i.e., age 14-17), adolescents begin planning and preparing for such goals. In particular, SAT preparation, college, and financial aid applications are due within this period (Hossler, Schmidt, & Vessler, 1999). Finally, youth in late adolescence (i.e., age 18-20) experience the social realities of aging out of high school and transitioning into available higher educational and occupational opportunities (Shanahan, 2000).

Currently, only two studies explore *changes* in educational expectations across adolescence and into late adolescence/young adulthood (Mello, 2008; 2009) and none have focused solely on normative samples of Mexican-origin youth. Mello's studies use the *National Education Longitudinal Study* (NELS) data, which include a multi-ethnic sample with 12% of the sample being Hispanic youths. Mello identified a curvilinear trajectory where youths' expectations dropped slightly from age 12 to 14 but increased from age 16 to 20, and dropped slightly from age 20 to 26. Despite the curvilinear trajectory, youths' educational expectations always fell between completing some college education and completing a college degree. Youths' educational expectation trajectories did not differ for African American, Native American, European American, or Hispanic youths. However, these studies focus on Hispanic youth as a *monolithic* group, ignoring the unique histories, social expectations, and educational experiences of Hispanic youth from different countries of origin (Delgado, Ettekal, Simpkins, & Schaefer, 2016; Portes & Rumbaut, 2006). Only one study has focused on Mexican-origin youth (Bravo, Toomey, Umaña-Taylor, Updegraff, & Jahromi, 2015); however, this study used data from adolescent mothers beginning in the third trimester of pregnancy and extended for three years.

There is substantial variability across Hispanic subgroups in social characteristics that may influence trajectories of educational expectations. Mexican-origin adolescents – the largest U.S. Hispanic and immigrant subgroup – are at risk because of higher economic disadvantage (U.S. Census, 2013), school climates that may discourage Hispanic youths' academic integration and enrollment in higher level coursework (see Gandar & Contreras, 2009, for an in-depth review), and parents' lower knowledge of the U.S. education system (Bohon et al., 2006; Sanchez, Reyes, & Singh, 2006), relative to non-Hispanic adolescents. Further, sociopolitical dynamics within the U.S. have racialized and marginalized Mexican-origin individuals leading to higher experiences of discrimination, especially for young men, immigrants, and darker-skinned individuals (Ortiz & Telles, 2012). Recently, as Mexicans comprise the largest number of unauthorized immigrants to the U.S. (62%; Hofer, Rytina, & Baker, 2010), state and U.S. political rhetoric has further targeted Mexican-origin individuals, especially Mexican-origin immigrants, by proposing anti-immigrant legislations across several southern and southwestern states (Arrocha, 2011). The increased anti-immigrant rhetoric expressed in political and media spheres and the increase securitization of southern border states has intensified the feelings that Mexican-origin individuals are highly monitored and unwelcome in the U.S., especially in the southern and southwestern regions (Menjivar, 2015). This larger sociopolitical context may have implications for Mexican-origin adolescents' educational expectation trajectories, making this group of youth important to study.

Changes in *Mexican-origin adolescents'* educational expectations have not been documented; thus, our understanding is limited to insights from cross-sectional and comparative data in early and middle adolescence. Using data from the *Children of Immigrants Project*, St. Hilaire (2002) noted that 47% of the Mexican-origin early adolescents believed they would complete a graduate degree and only 1% did not expect to finish high school. Using a subset of the *Add Health* data, Bohon and colleagues (2006) noted that Mexican-origin middle adolescents reported they were moderately likely to attend college, but that they were less certain of their college prospects as compared to non-

Hispanic White, non-Hispanic Black, and Cuban adolescents. Taken together, these studies suggest that, although a subset of Mexican-origin adolescents hold high educational expectations, Mexican-origin adolescents' expectations are lower than many subgroups of the U.S. population, including other Hispanic subgroups.

Taking into account the sociopolitical context in which Mexican-origin youth reside, we expect that Mexican-origin adolescents' educational expectations may exhibit curvilinear trajectories, as suggested by previous research on ethnically diverse groups (Mello, 2008; 2009), but in a more pronounced manner. Mexican-origin adolescents may begin their educational careers with expectations tied closely to their ideal "possible-selves" and less to their social realities (Oyserman & Markus, 1990). As Mexican-origin adolescents become more aware of opportunity (Gottfredson, 1981; Quintana, 1998) and discriminatory differences in social class and ethnicity in early adolescence (Ortiz & Telles, 2012; U.S. Census, 2013), and then combine this with their understanding of personal identity and social position in middle and late adolescence (Quintana, 1998; Trusty & Harris, 1999), they may significantly lower their expectations to fit their perceived opportunities and barriers. Previous research suggests Mexican-origin adolescents recover their high expectations in late adolescence (Mello, 2008). This recovery is potentially a result of adolescents learning about financial aid opportunities available to support college attendance, developing concrete plans to aid in their college and career transitions (Zimmer-Gembeck & Mortimer, 2007), and feeling pressure to make the on-time transition into college along with their peers (Shanahan, 2000).

Educational Expectations and Adolescents' Social Position

A cross-cultural iteration of expectancy-value theory (Wigfield et al., 2004) provides support for the idea that cultural and social contexts must be acknowledged to understand cultural variation in academic achievement. We take this idea one step further, and integrate a cultural-ecological framework (García Coll et al., 1996), which suggests that social positioning constructs (e.g., nativity, race, sex, and social class) *intersect* to create barriers and opportunities towards successful development, both between and within ethnic groups. Current research focuses our attention on nativity, sex, and family SES as three individual and family characteristics that may uniquely and interactively impact Mexican-origin adolescents' educational expectations (Bohon et al., 2006; St. Hilaire, 2002).

Looking to adolescents' nativity, we are not aware of any research that explores cross-sectional nor longitudinal differences in educational expectations between immigrant and nonimmigrant Hispanic or Mexican-origin youth; therefore, we turn to research focused on nativity differences in educational adjustment in general. This body of research has noted an "immigrant paradox" phenomena, which suggests immigrants show better health and educational outcomes than native-born individuals (García Coll & Marks, 2012). Specifically, Hispanic immigrant youth show higher achievement (e.g., grade point average) and engagement (e.g., valuing and liking school) than later generation youth (Pong & Zeiser, 2012). Further, a growing literature suggests that the "immigrant-paradox" is not only an intergenerational phenomenon, but also an intragenerational phenomenon (Almeida, Johnson, Matsumoto, & Godette, 2012; Salas-Wright, Vaughn, Schwartz, & Córdova, 2015;

Suarez-Orozco, Rhodes, & Milburn, 2009) such that the protective effect of being an immigrant declines the longer adolescents live in the U.S. This research guides our hypothesis that immigrant adolescents will report higher educational expectations than U.S.-born adolescents, but such benefits may decline over time.

The role of adolescents' sex is also important to consider as adolescence is a period marked with biological and social changes that intensify the perceived and expected differences among boys and girls (Hill & Lynch, 1983). Previous qualitative work suggests immigrant boys perceive their friends and peers to be less school oriented and more work oriented (Qin-Hilliard, 2003), thus creating a male adolescent peer culture that undervalues education. In contrast, immigrant girls are more likely to be protected with more support networks at school and at home (Qin-Hilliard). Girls are also more likely to be shielded from the negative context intertwined with ethnic minority status (Qin-Hilliard), supporting the empirical findings that minority males are at higher risk for discrimination and marginalization (Ortiz & Telles, 2012). Indeed, Qin-Hilliard's work finds that Mexican-immigrant boys were more likely to consider work right after high school (25%) than Mexican-immigrant girls (11%) who are more likely to have college plans (90% of girls compared to 51% of boys). Supporting such qualitative research, trajectories of ethnically diverse adolescents living in the U.S. suggest that girls report higher educational expectations in early adolescence and a slower decline in late adolescence as compared to boys (Mello, 2008). Another related body of research, focused on recent Hispanic and Asian immigrants, notes that adolescent girls, as compared to boys, report higher GPAs (Hagelskamp, Suarez-Orozco, & Hughes, 2010) and more stable trajectories of educational performance (i.e., GPA; Suarez-Orozco, Bang, & Onaga, 2010). Sex differences for Mexican-origin adolescents' educational expectations trajectories have been scarcely explored, though the results of previous qualitative (Qin-Hilliard) and quantitative (Mello; Suarez-Orozco et al.) studies guide our hypothesis that Mexican-origin girls will show higher and more stable educational expectations as compared to boys.

Another important aspect of capital for adolescents' educational expectations is family SES. The National Center for Education Statistics (NCES; Cowan et al., 2013) defines SES as a *combination* of family economic (i.e., family income) and human resources that reflect a holistic assessment of social capital in families to support educational success. Human resources may include parents' or other family members' educational background which could increase family members' knowledge of the education system (Sanchez et al., 2006). Research has consistently noted a positive association between family SES and adolescents' educational expectations at a single time point (Bohon et al., 2006; St. Hilaire, 2002; Trusty & Plata, 2003). Mello (2009) has also noted a positive relation between SES and overall educational expectations, but no differences in trajectories. Taken together, such work suggests that higher and lower SES youth may differ in their educational expectations but not the manner in which expectations change across development.

Our cultural-ecological framework (García Coll et al., 1996) further guides our goals to understand the *intersection* of nativity with sex and family SES. In particular, we identify adolescents' nativity as a strong orienting factor that is related to adolescent and family differences in their endorsement of gender role and child rearing attitudes (Rafaelli & Ontai,

2004), and their knowledge of government systems and resources (Ojeda & Flores, 2008). For this reason, we believe it is important to consider how nativity further qualifies sex and SES differences in educational expectations. Existing research in this regard is often conflicting or non-existent. For example, prior research suggests that Mexican immigrant parents uphold more traditional gender role attitudes, as compared to later-generation parents, and, as a result, give sons more freedom than daughters (Leaper & Valin, 1996; Rafaelli & Ontai, 2004). This gendered pattern has been offered as a reason why girls outperform boys in academic achievement (Qin-Hilliard, 2003; Suarez-Orozco et al., 2010). However, immigrant parents' more traditional attitudes also have been linked to girls' increased pressure to remain close to the family after high school graduation (Sy & Romero, 2008). Therefore, these cultural values, which make girls more prone to higher academic achievement, may become deterrents toward college attendance for immigrant girls.

Turning to the interaction of nativity with family SES, family economic and educational resources may be more important factors for immigrant versus non-immigrant families' perceptions of college affordability because they may be less aware of resources (e.g., federal grants) and more aware of barriers to paying for college (Ojeda & Flores, 2008). Despite the potential importance of nativity status in creating a context of perceived opportunities and barriers, the intersection of SES and nativity is rarely studied. This lack of research may be partially because immigrant status and SES are often confounded because immigrant families tend to reside within low SES households (García Coll & Marks, 2012). One study explored the role of SES on nativity differences in academic adjustment (Crosnoe, 2012). In this study using national data to compare first-generation and second-generation Mexican immigrant youth, Crosnoe (2012) noted nativity differences supporting the immigrant paradox phenomena and these nativity differences increased when SES was accounted for in this model. However, this work only controlled for SES; it did not compare youth of different SES backgrounds; thus, the intersecting role of SES and nativity remains unexplored to our knowledge. Given the conflicting and lacking research, our study explores the moderating role of nativity on sex and SES differences in adolescents' trajectories of educational expectations.

Overview of the Current Study

Guided by a cultural-ecological perspective and expectancy-value theory, with the goal of understanding the factors that may shape Mexican-origin adolescents' educational attainment, the current study investigated changes in educational expectations and tested whether individual and family characteristics moderated these changes. First, by using a longitudinal ethnically homogenous design, we aimed to identify the average trajectories of Mexican-origin adolescents' expectations for their educational attainment from early (age 12) to late adolescence (age 20). Second, we tested the moderating role of adolescents' individual and family characteristics and resources. Research informed by the “immigrant paradox” (Pong & Zeiser, 2012; Suarez-Orozco et al., 2009) guided our first hypothesis that immigrant adolescents would show higher educational expectations than their non-immigrant peers, and that such expectations would decrease over time. Next, studies on sex differences in educational attainment (Qin-Hilliard, 2003; Suarez-Orozco et al., 2010) informed our second hypothesis positing that girls would show higher and more stable

trajectories of expectations as compared to boys. Research focused on socioeconomic inputs to educational outcomes among Hispanic adolescents (Mello, 2008; St. Hilaire, 2002) informed our third hypothesis that Mexican-origin adolescents' educational expectations would be higher for high SES adolescents, as compared to low SES adolescents. Finally, our study explored whether adolescents' nativity further qualified differences in trajectories of educational expectations for boys and girls and adolescents from varying SES backgrounds. This portion of the study was exploratory given that current research was lacking or conflicting in its evidence for the potential role of nativity on sex differences (Qin-Hilliard, 2003; Sy & Romero, 2008) and SES differences (Crosnoe, 2012). Given the research noting that having at least one parent who is knowledgeable of the U.S. school system is impactful to adolescents' academic achievement (Rumbaut, 1997), and the convention to control for educational achievement (e.g., GPA, test scores) when studying educational expectations (Eccles & Wigfield, 2002; Trusty, Plata, & Salazar, 2003), we controlled for parents' immigrant status and adolescents' self-reported GPA at the onset of the study.

Method

Participants

The current data included mothers, fathers, and young adolescents in 246 Mexican-origin families who were part of a longitudinal project on family socialization and adolescent development (Updegraff, McHale, Whiteman, Thayer, & Delgado, 2005). Given the goals of the larger project, participating families met the following criteria: (a) mothers were of Mexican-origin; (b) target adolescents were living in the home with an older sibling and were not diagnosed with a learning disability; (c) biological mothers and biological or long-term adoptive fathers (i.e., more than ten years) lived at home; and (d) fathers worked at least 20 hrs/week. Most fathers (93%) were of Mexican-origin.

Mexican-origin families with 7th graders were recruited from schools in a southwestern metropolitan area in 2002/2003. To recruit families, letters and brochures describing the study in both English and Spanish were sent to families, and bilingual staff conducted follow-up phone calls to assess eligibility and interest in participation. Families' names and contact information were obtained from junior high schools in five school districts and from five parochial schools. Schools were selected to represent a range of socioeconomic situations, with the proportion of students receiving free/reduced lunch varying from 8% to 82%. Of 421 families who were eligible, 284 (67%) agreed to participate, 95 (23%) refused, and we were unable to re-contact the remaining 42 families (10%). Thirty-eight families agreed but did not participate in the final sample because we were unable to locate them to schedule a home interview after repeated attempts. In the end, interviews were completed by 246 families at Wave 1 (W1).

At W1, families represented a range of socioeconomic levels. The percentage that met federal poverty guidelines was 18.3%, similar to the 18.6% of two-parent Mexican-origin families living in poverty in the county from which the sample was drawn (U.S. Census, 2000). Annual median income was \$41,000 ($M = 53,184$, $SD = 45,381$; Range \$3,000 to over \$250,000). Parents had completed an average of 10 years of education ($M = 10.34$; $SD = 3.74$ for mothers, and $M = 9.88$; $SD = 4.37$ for fathers). Of parents, 71% were born outside

of the U.S.; this subset of parents had lived in the U.S. an average of 12.37 ($SD = 8.86$) and 15.17 ($SD = 8.77$) years for mothers and fathers, respectively. Almost 70% of the parent interviews were conducted in Spanish. With respect to adolescents, the sample included 125 girls and 121 boys who averaged 12.51 ($SD = .58$) years of age at Wave 1. Adolescents were born in the U.S. (62%; $n = 153$) or Mexico (38%; $n = 93$) and were interviewed in English (84%) or Spanish (16%).

Two years later, Wave 2 (W2) interviews were conducted with target adolescents when they were in the 9th grade and averaged 14.64 years of age ($SD = .59$). Wave 3 (W3) interviews were completed about three years after W2, when adolescents were 17.72 years of age on average ($SD = .57$), and Wave 4 (W4) interviews were conducted two years after Wave 3, when adolescents averaged 19.60 years of age ($SD = .66$). Retention rates were 90%, 75% and 70% for Waves 2 through 4, respectively. Those who did not participate could not be located ($n = 10$ at Wave 2; $n = 43$ at W3; $n = 45$ at W4), had moved to Mexico ($n = 0$ at W2; $n = 2$ at W3; $n = 4$ at W4), could not presently participate or were difficult to contact ($n = 0$ at W2; $n = 8$ at W3; $n = 4$ at W4), or refused to participate ($n = 13$ at W2; $n = 8$ at W3; $n = 8$ at W4). At W3, participating families differed from non-participating families on W1 maternal education ($M = 10.62$, $SD = 3.80$ versus $M = 9.48$, $SD = 3.45$, $F(1, 245) = 4.37$, $p < .05$), and family income ($M = \$59,517$, $SD = \$48,395$ versus $M = \$37,632$, $SD = \$28,606$, $F(1, 245) = 11.05$, $p < .001$). At W4, participating families differed from non-participating families on W1 maternal education ($M = 10.75$, $SD = 3.75$ versus $M = 9.35$, $SD = 3.53$, $F(1, 245) = 7.42$, $p < .01$), paternal education ($M = 10.46$, $SD = 4.37$ versus $M = 8.49$, $SD = 4.08$, $F(1, 244) = 10.66$, $p < .001$), family income ($M = \$59,136$, $SD = \$46,674$ versus $M = \$41,635$, $SD = \$39,095$, $F(1, 245) = 8.41$, $p < .01$).

Procedure

At Waves 1, 3, and 4, families participated in structured in-home interviews lasting two to three hours. Parents and adolescents gave informed consent/assent and reported on parent-adolescent relationship qualities, cultural backgrounds and values, and adjustment. Interviews were conducted separately with each family member. Bilingual interviewers read questions aloud to maximize uniformity and prevent potential error due to variability in participants' reading levels. At W2, target adolescents were re-contacted and invited to participate in a one-hour phone interview using the same procedure used in the home interview. Families received \$100 for in-home interviews with all four family members at W1, target adolescents received \$40 at W2, families received \$125 at W3, and each family member received \$75 at W4. The university's Institutional Review Board approved all procedures.

Measures

Measures were forward and back-translated into Spanish for local Mexican dialect (Knight, Roosa, & Umaña-Taylor, 2009) and reviewed by a third Mexican-origin translator. Discrepancies were resolved by the research team. Descriptive information for all study variables are in Table 1.

Adolescents' educational expectations (W1-W4)—Adolescents were asked the highest level of education they expected to attain using the following prompt “How far do you really think you will go in school?” Interviewers coded adolescents' responses using a list of pre-specified categories: 10=10th grade; 11=11th grade; 11.5=GED; 12=High school diploma, 13 = one year of college or vocational/technical school; 14= two years of college, Associate's degree, or vocational/technical school, 15= three years of college or vocational/technical school, 16= College diploma (e.g., bachelors of science, bachelors of arts); 17=Some advanced graduate work, but no graduate degree, 18= Master's Degree, 19=Some work toward advanced graduate degree, 21= Advanced graduate degree (MD, JD, DO, DDS, or PH.D.). If an adolescent's response did not clearly fit into one of the specified codes, interviewers probed to identify the correct code by asking how long adolescents believed it would take to earn their expected degree or post-secondary certification.

Adolescents' personal characteristics (W1)—To assess *adolescents' nativity*, mothers reported on whether adolescents were born in Mexico (0 = immigrant) or the U.S. (1 = U.S.-born). For *adolescents' sex*, we used the dummy code: 0 = girl; 1= boy. *Adolescents' age* was computed by subtracting their birth date from each of the four interview dates.

Family socioeconomic status (SES; W1)—Mothers and fathers reported on their annual income and highest level of educational attainment, which was coded using the same options as educational expectations (reported above). Household income was calculated by summing mothers' income, fathers' income, and any other household income, and then transforming to correct for skew. A composite family SES score¹ was created (Cowan et al., 2013) by averaging household income, mothers' education, and fathers' education, after standardizing each variable. Higher composite scores can be interpreted as reports of higher SES. Cronbach's alpha was .78 indicating adequate internal consistency between the three standardized variables.

Controls (W1)—*Parent immigrant status* was calculated by noting if at least one parent was born in the U.S. or immigrated to the U.S. before age 12 (termed U.S.-raised families). Age 12 was considered the critical age for parents to immigrate because they would have experienced some schooling within the U.S. system (Rumbaut, 1997; Stevens, 1999). Then, if neither parent immigrated prior to age 12, then those families were considered our immigrant families. Because parents' immigration history was a control variable, a contrast code was used (U.S.-raised = -.5; Immigrant = .5). Our second control variable was *adolescents' self-reported grade point average (GPA)* at W1. Adolescents self-reported their current grades in four core subject areas (i.e., English, social studies, science, math) at W1 using a four-point scale (1 = F, 2 = D, 3 = C, 4 = A). Grades in the four subject areas were averaged to create an overall GPA. The bivariate correlation between adolescents' GPA calculated from their self-reported grades and school report card grades at W1 was .89 for adolescents who had both ($n = 228$), suggesting adolescents can reliably report their GPAs (*author citation*).

Analytic Plan

To examine trajectories of adolescents' educational expectations, we conducted growth models in a multilevel modeling (MLM) framework (Raudenbush & Bryk, 2002) using PROC MIXED in SAS 9.3. Within a multilevel modeling framework, an analysis of repeated measures data (i.e., educational expectations at W1-4) is considered a two-level model as different measurement occasions (i.e., time) are nested within individuals. At Level-1, we included age as our indicator of "time" using different time polynomials (i.e., linear and quadratic) to describe changes in educational expectations. Time was centered at 12 years old so our intercept represented adolescents' educational expectations at age 12. At Level-2, time-invariant social position characteristics that varied across individuals were included in the model (i.e., nativity, sex, family SES). We also included control variables such as parents' immigrant status (-.5 = U.S.-raised, .5 = immigrant), and adolescents' self-reported GPA at W1 (grand-mean centered). Cross-level two-way interactions (i.e., nativity \times time, sex \times time, SES \times time) were estimated in separate models to estimate the effects of our Level-2 social position characteristics on adolescents' educational expectation trajectories (Level-1). Finally, cross-level three-way interactions were estimated in separate models to assess the moderating role of nativity on the trajectories of boys and girls (i.e., nativity \times sex \times time), and families of varying SES (i.e., nativity \times SES \times time). For parsimony, our final models only include the significant higher-order interactions, and their related lower-order terms.

Follow-up analyses for significant interactions were conducted using Aiken and West's (1991) recommendations. For our dichotomous variables (i.e., nativity, sex), we reversed the dichotomous code (e.g., boys = 0 and girls = 1) and reran our model to estimate the intercept, linear, and quadratic terms for the second dichotomous group (e.g., boys). For our continuous variable, we included interaction terms one standard deviation (SD) above and below the sample mean and reran our model to estimate the intercept and slope for high (1 SD above the mean) and low (1 SD below the mean) family SES. Estimates for the primary models are reported in Table 2 for educational expectations. Follow-up estimates are reported in the Table 3. Deviance tests were used to examine the significance of the Level-1 and Level-2 variance components to determine whether we should treat each coefficient as a random or fixed effect (Singer & Willett, 2003). Maximum likelihood estimation was used to account for missing data across waves of data collection (Enders, 2010). Pseudo R^2 statistics were estimated for all major analytic models as a measure of effect size (Fairchild, MacKinnon, Taborga, & Taylor, 2009).

Results

Adolescents' Average Educational Trajectories from 12 to 20 Years of Age

The intraclass correlation assessing similarity in educational expectations reports across time was .34, indicating there is substantial change (66%) across time within-persons and supporting our decision to estimate a 2-level growth model. The initial growth model predicting adolescents' educational expectations (Table 2, Model 1), including control (i.e., parents immigration status, adolescents' self-reported GPA) and social position variables (i.e., adolescents' nativity, sex, and family SES), revealed that 12-year-old adolescents (age

at intercept), on average, expected to complete 16.37 years of education; furthermore, a quadratic trajectory emerged in which expectations declined into middle adolescence but increased into late adolescence. Girls and higher SES adolescents reported significantly higher educational expectations at age 12, but nativity differences in the intercept were not found. Based on deviance tests, a model with a random linear term fit the data better than a model without a random linear term, $\chi^2(2) = 6.1, p < .05$, and better than a model that also included a random quadratic term, $\chi^2(2) = 4.2, p = .24$. Therefore, the linear term was random and the quadratic term was fixed in all models, indicating that individual variance existed in the linear slope. Model 1 accounted for 7% of the residual variance originally estimated in a null model (a model with no random effects, time effects, or predictor variables included; Null model residual variance = 3.28).

Adolescents' Social Position Characteristics

Cross-level interactions to assess trajectory differences were analyzed for nativity, sex, and family SES. Nativity differences emerged in the linear and quadratic slopes (Table 2, Model 2). Simple slopes for nativity indicated that U.S.-born adolescents ($n = 153$) initially expected to complete a bachelor's degree, $b_{intercept} = 15.89, SE = .26, p < .001$, with non-significant linear, $b_{linear} = -.15, SE = .15, p = .33$, or quadratic slopes, $b_{quadratic} = .02, SE = .02, p = .23$ (Figure 1). Immigrant adolescents ($n = 93$) reported high educational expectations in early adolescence, but showed significant linear and quadratic (Table 2, Model 2) trajectories that declined into middle adolescence and then increased into late adolescence. Next, sex differences emerged in the quadratic slopes (Table 2, Model 3). Simple slopes for sex indicated that boys ($n = 121$) initially expected to complete a bachelor's degree, $b_{intercept} = 16.10, SE = .33, p < .001$, with a significant linear, $b_{linear} = -.67, SE = .18, p < .001$, and quadratic slope, $b_{quadratic} = .08, SE = .02, p < .001$ (Figure 1). These estimates suggest that boys lowered their expectations in middle school but increased their expectations in late adolescence. Girls ($n = 125$) reported high educational expectations that did not change over time, non-significant linear and quadratic slopes (Table 2, Model 3). There were no significant differences in the linear and quadratic slopes for family SES in the two-way interaction model; therefore, the most parsimonious model testing for family SES effects was comparable to Model 1, which indicated a positive family SES effect at the intercept only. High-SES adolescents initially expected to complete some post-bachelor's education, $b_{intercept} = 16.72, SE = .29, p < .001$, whereas low-SES adolescents expected to complete a bachelor's degrees, $b_{intercept} = 16.03, SE = .29, p < .001$ (Figure 1).

Next we tested three-way cross-level interactions: time \times nativity \times sex, and time \times nativity \times family SES. There was a significant time \times nativity \times sex interaction for the linear and quadratic slopes; therefore, we present findings for our primary model (Table 3, Model 4) as well as follow-up analyses (Models 4A-C) where we changed the reference group in order to test for statistical significance for the trajectories of each reference groups, and test for nativity differences between sexes, and sex differences between nativity groups, for each reference group. Our primary model (Model 4) used immigrant boys as the reference group and indicated that immigrant boys showed a sharp downward and curvilinear trajectory that differed from the trajectory for immigrant girls, and U.S.-born boys. This difference came as a result of the fact that immigrant girls' and U.S.-born boys' quadratic terms were close to

zero (quadratic coefficients $< .03$). Therefore, we estimated a more parsimonious model when rerunning our follow-up analyses because the inclusion of non-significant higher-order terms can increase error and, thus, reduce model fit and power to detect significant effects (Aiken & West, 1991; Singer & Willett, 2003). Using these models, immigrant girls showed a downward linear trajectory and U.S.-born boys showed no change over time. When looking at the follow-up model using immigrant girls as the reference group, linear slope differences emerged compared to U.S.-born girls. U.S.-born girls showed quadratic slopes nearing zero in the full model (Model 4; quadratic $< .02$); therefore, the follow-up model using U.S.-born girls as the reference group only estimated the linear slope effect; however, the linear slope was also non-significant (Model 4C). Finally, Model 4C also showed significant differences in the intercept but not the slope for U.S.-born girls, compared to U.S.-born boys. Group trajectories are represented in Figure 2. There were no significant time \times nativity \times family SES interactions.

Discussion

Expectancy-value theory suggests that expectations of success influence achievement-oriented behaviors (Eccles & Wigfield, 2002). Our ethnically homogenous and longitudinal design contributes to insights regarding within-group variability in Mexican-origin adolescents' educational expectation trajectories as a function of adolescents' nativity, sex, and family SES as a means to identify subgroups and sensitive periods when youth may be at risk for lower educational achievement. This study is among the first to specifically explore educational trajectories among a normative sample of immigrant and non-immigrant Mexican youth.

We extend prior research and practice in four key ways. First, our integration of the cultural-ecological framework (García Coll et al., 1996) and expectancy-value theory (Eccles & Wigfield, 2002) helped place adolescents' educational expectations in the context of adolescents' social position. By acknowledging multiple social positioning characteristics, we were able to showcase the importance of such characteristics in informing initial expectations (i.e., SES) and trajectories (i.e., sex, nativity) while also highlighting the within-group variability that exists among Mexican-origin adolescents. Specifically, we noted that Mexican-origin girls reported more stable trajectories than Mexican-origin boys, and higher SES adolescents reported higher initial educational expectations as compared to lower SES adolescents. These results align with our hypotheses and prior work exploring sex and SES differences in ethnically-heterogeneous samples (Bohon et al., 2006; Mello, 2008; 2009; Qin-Hilliard, 2003; Suarez-Orozco et al., 2010).

Second, the variation in trajectories for immigrant and non-immigrant adolescents also supports and extends our knowledge of the “immigrant paradox” (Pong & Zeiser, 2012) and informs practice. Our findings for immigrant adolescents align with the “immigrant-paradox” literature by showing that immigrant adolescents show higher initial educational expectations, compared to U.S.-born adolescents. However, when considering the developmental changes in educational expectations for immigrant and U.S.-born adolescents, U.S.-born adolescents showed more stable trajectories such that they consistently expected to complete a four-year degree. In contrast, immigrant adolescents

initially reported high expectations that decreased in middle adolescence, at which time they expected to complete an associate's degree or trade school certification. Although expectations increased in late adolescence, immigrant youths' expectations reached similar, not higher, educational expectation levels as their U.S.-born counterparts in late adolescence. That is, the initial benefits of being an immigrant youth were not sustained across adolescence. This trajectory provides support for the notion that the "immigrant-paradox" is not only an intergenerational, but also an intra-generational phenomenon (Almeida et al., 2012; Salas-Wright et al., 2015; Suarez-Orozco et al., 2009).

These trajectory differences might be indicative of the economic and sociopolitical context adolescents experienced. Mexican-immigrant adolescents often experience uncertainty about the possibility of attending college as they and their families often lack institutional knowledge about the U.S. tertiary school system (Bohon et al., 2006; Sanchez et al., 2006), and are targets of localized and systemic discrimination that marginalizes Mexican-origin individuals, in general (Ortiz & Telles, 2012), and Mexican immigrants, in particular (e.g., Arizona Bill, SB 1070; Arrocha, 2011; Menjivar, 2015). Although immigrant adolescents' expectations increased once again in late adolescence, the dip in expectations occurred during a sensitive period (15 to 17 years of age) when adolescents are typically preparing and applying for college entrance, financial aid, and scholarship support (Hossler et al., 1999). Hossler and colleagues have attributed the lack of early and on-time preparation to apply for college as a major factor in the ethnic and social class stratification of college enrollment rates. In particular, Hossler et al. found that parents' lack of knowledge of the college system, and school counselors' minimal or late college advising, were two reasons why adolescents in low-income and minority-serving schools showed reduced college attendance rates. As immigrant status was correlated with low income in the current sample, we note that immigrant adolescents may be experiencing significant gaps in parental and counselor guidance, and this lack of support may impact their educational expectations. Furthermore, the mismatch between home and school is also consistent with García Coll and colleagues' (1996) conceptualizations of social position and social stratification, such that experiences of marginalization and discrimination (Ortiz & Telles) may lead parents to feel fearful, unwelcome, and/or unsupported in their youth's school setting, impeding the fruitful development of educational expectations. Special efforts should be made to help immigrant adolescents understand the accessibility of college. Such efforts could include increasing Mexican immigrant parents' knowledge of financial aid options for college, increasing high school counselors' accountability in promoting and guiding immigrant adolescents through the college and financial aid application processes, and increasing universities' outreach efforts to low-income, high minority/immigrant serving schools.

Third, our focus on the *intersection* of social position, as posited by García Coll and colleagues (1996), guided our interest in studying how nativity intersected with sex and family SES and, as a result allowed us to further specify youth who are at risk for lower expectations and, as a result, further improve practice. Disparities in educational expectations between immigrant and non-immigrant youths were further compounded when exploring sex differences among immigrant adolescents. Whereas U.S.-born boys *and* girls showed stable trajectories, immigrant boys showed sharp declines between early and middle adolescence and did not reach the same levels of educational expectations as girls until age

19. The dip in educational expectations for immigrant boys may be due to the many factors described above; however, immigrant boys are also subject to further risk from a peer culture in which boys are expected to undervalue academic achievement and highly value the early transition into work (Qin-Hilliard, 2003), and are at risk for increased experiences of discrimination targeted towards immigrant *and* male Mexican-origin youth (Ortiz & Telles, 2012). Therefore, the above mentioned support services could be further targeted towards immigrant boys, especially during middle adolescence, and incorporate additional messages regarding the value of education for boys as a means to achieve familial economic mobility and stability. In contrast, immigrant girls showed a declining trajectory across adolescence. This finding is consistent with the idea that immigrant girls may become more aware of gender norms when they enter into adolescence (Rafaelli & Ontai, 2004), which, for Mexican immigrant girls, may include the perceived pressure to stay close to the family after high school (Sy & Romero, 2008). Such pressure to remain close to the family, along with the increased awareness of economic barriers to pay for college (Ojeda & Flores, 2008), may reduce immigrant girls' expectations to be able to achieve a post bachelor's education, as they had originally expected. Involving immigrant girls' parents in planning for their academic futures might help guide parents and their daughters to reconcile the possibly conflicting familial and educational goals, thus, creating a context where adolescent girls feel supported and encouraged by their family to attend college.

Finally, although our results showed an intersecting association between sex and nativity, they did not show an intersecting association between nativity and SES on educational expectation trajectories. This null result leads us to our fourth and final contribution. As stated previously, SES and nativity have been confounded in the literature (García Coll & Marks, 2012) as immigrant families are also highly likely to live in low-income households. This has prevented researchers from fully understanding if nativity and SES influence adjustment in unique ways, and/or if they interactively influence adjustment. Our model building strategies allowed us to identify that nativity was associated with differential educational expectation trajectories, while SES was associated with differences in initial expectations. We did not find that nativity *and* SES interacted to create a more prohibiting context for development. Thus, our findings suggest that these two social positions are associated with the development of academic expectations in distinct ways and do not intersect to create a higher risk context that may adversely impact youth adjustment. In this way we extend the field by disentangling how SES and nativity are associated with one aspect of adolescents' educational outcomes. It will be important to replicate these findings in different samples.

Study Limitations and Future Directions

Our study benefited from several methodological strengths, but it was not without limitations. Because our sample only included adolescents residing in two-parent families, this limits our generalizability to all Mexican-origin adolescents. Future studies should examine the generalizability of our findings with Mexican-origin families of varying family structures such as single-parent, blended, and mixed-ethnicity families. Also, because the variables that comprise our SES composite were standardized, our family SES composite represented the current study's sample distribution rather than U.S. national standards for

low, middle, and upper income families (Pew Research, 2015). Although our low and average SES families aligned with national cut-offs, our high SES families reported an average family income that fell within the category of “upper middle class,” not upper class; thus, results for high-SES families should not be generalized to U.S. upper-income families. Next, our coding scheme assessing adolescents' educational expectations did not differentiate between those who expected to complete an associate's versus a vocational/technical degree. Because these two degrees suggest different pathways, it would help to separate these two educational expectations in future studies. Finally, our study focused on individual and family characteristics that vary by status/power (García Coll et al., 1996; Quintana, 1998), but our lack of focus on cognitive (e.g., awareness of social position) and relational (e.g. support, discrimination) factors limited our ability to interpret *why* we found different trajectories. To further integrate a cultural-ecological perspective into the notions set forth by expectancy-value theory, future studies would benefit from exploring the correlational and predictive role of such cognitive and relational factors on adolescents' changing educational expectations. In particular, a focus on mediating factors that link social position measures to achievement, motivation, and expectations will further inform the field's understanding of Mexican-origin adolescents' trajectories of educational expectations.

Conclusion and Practical Implications

Adolescents' educational expectations are an important precursor to educational attainment (Bohon et al., 2006; Eccles & Wigfield, 2002) and this study, with its ethnically homogenous and longitudinal design, illustrated how *Mexican-origin adolescents' educational expectations* changed across adolescence. Given the rapid growth of the Mexican-origin U.S. population (U.S. Census, 2015), the future U.S. economic landscape is dependent on the educational attainment of this growing group. Our findings provided clear suggestions for at-risk subgroups (e.g., Mexican-immigrant adolescents, especially Mexican-immigrant boys) as well as sensitive periods for targeted interventions (e.g., ages 15-17). In particular, these findings suggest important intervention and practical implications at individual (i.e., student), familial, high school, and college levels. Our findings can be applied to interventions with students and their families by incorporating education for *immigrant* students and their parents on college accessibility, college options, and financial aid; further, interventions can target the economic utility of a college education for *immigrant middle adolescent boys* and college planning for *immigrant girls' parents*. In high schools, school counselors' accountability for promoting and guiding the application process for immigrant youth should increase. Finally, at the college level, outreach programs should target schools with a high proportion of low-income and immigrant-student to discuss college accessibility, financial aid, and the long-term benefits of a college education. Such discussion should also include students and their families in order to build a cohesive network of support for students considering the pursuit of higher education. Future research is still needed to understand the cognitive and relational factors that place Mexican-immigrant groups at risk for lower educational attainment, but this paper provides a significant first step towards ensuring we target our intervention efforts to build a highly educated U.S. workforce in upcoming decades.

Acknowledgments

We are grateful to the families and youth who participated in this project, and to the following schools and districts who collaborated: Osborn, Mesa, and Gilbert school districts, Willis Junior High School, Supai and Ingleside Middle Schools, St. Catherine of Sienna, St. Gregory, St. Francis Xavier, St. Mary-Basha, and St. John Bosco. We thank Susan McHale, Ann Crouter, Mark Roosa, Nancy Gonzales, Roger Millsap, Jennifer Kennedy, Leticia Gelhard, Sarah Killoren, Emily Cansler, Lorey Wheeler, Shawna Thayer, Devon Hageman, Ji-Yeon Kim, Lilly Shanahan, Kelly Davis, Anna Solmeyer, and Shawn Whiteman for their assistance in conducting this investigation. Funding was provided by NICHD grants R01HD39666 (Updegraff, PI) and R01HD32336 (Ann C. Crouter & Susan M. McHale, Co-PIs) and by the Cowden Fund to the School of Social and Family Dynamics at ASU.

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Highlights

- Mexican-origin early adolescents expected to complete post-bachelor's degrees.
- However, expectations declined in middle adolescence and improved in late adolescence.
- This curvilinear pattern was more pronounced for immigrant youths, compared to U.S.-born youths.
- Boys and girls did not differ in their initial levels of expectations but differed in their trajectories.
- Nativity further moderated the sex differences in adolescents' trajectories.

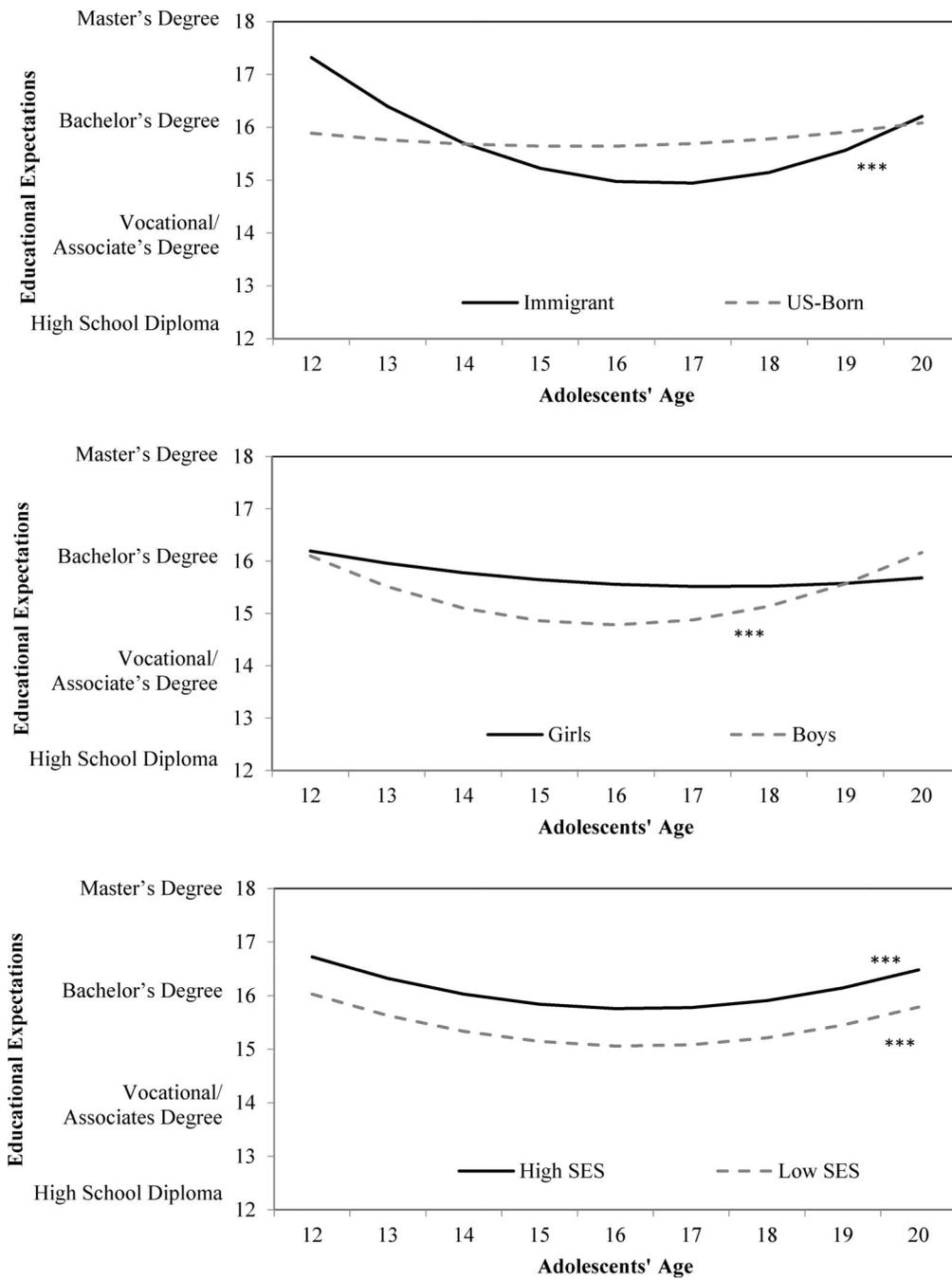


Figure 1. Adolescents' trajectories of educational expectations by nativity (top), sex (middle), and family socioeconomic status (SES; bottom)

Note. *** indicates the linear and quadratic slopes were significant at $p < .001$.

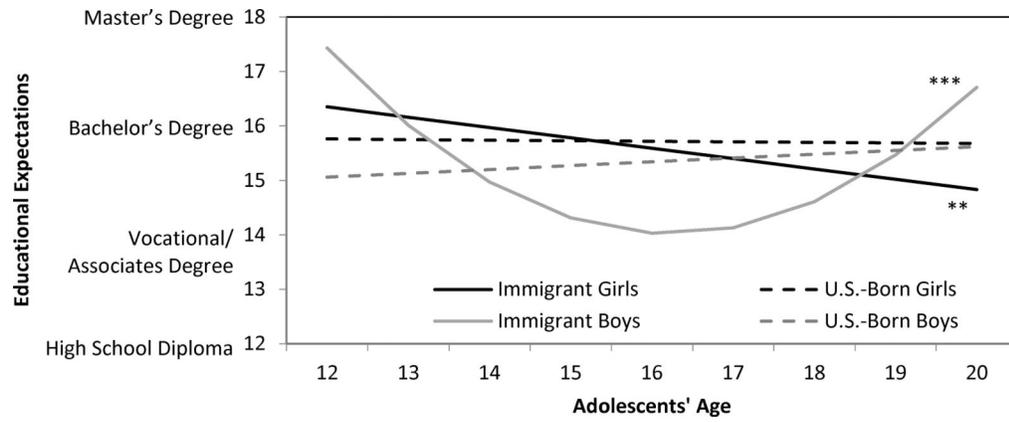


Figure 2. Moderated developmental trajectories of educational expectation for U.S.-born boys ($n = 73$) and girls ($n = 80$), and immigrant boys ($n = 48$) and girls ($n = 45$)
Note. ** indicates the linear slope was significant at the $p < .01$ level for immigrant girls.
 *** indicates the linear and quadratic slopes were significant at the $p < .001$ level for immigrant boys.

Table 1
Correlations, Means, and Standard Deviations (SD) for Study Variables for U.S.-born (n = 93; Above the Diagonal) and Immigrant (n = 153; Below the Diagonal) Adolescents

	1	2	3	4	5	6	7	8
1. Educational Expectations W1	—	.28**	.31*	.29*	-.15	.12	-.02	.40**
2. Educational Expectations W2	.32**	—	.29*	.16	-.34**	-.05	-.02	.28**
3. Educational Expectations W3	.21*	.36**	—	.61**	-.08	.21	-.12	.28*
4. Educational Expectations W4	.41**	.35**	.43**	—	.00	.26*	-.05	.24
5. Adolescents' Sex	-.19*	-.27**	-.05	-.04	—	.10	-.03	-.20
6. Family SES W1	.36**	.24**	.17	.22*	-.18*	—	-.28**	-.04
7. Parents' Immigrant Status	-.20*	-.02	-.03	-.02	.03	-.52**	—	.04
8. Adolescents' Self-Reported GPA W1	.33**	.41**	.39**	.33**	-.21**	.34**	-.06	—
U.S.-Born								
Mean	15.63	15.64	15.88	16.09	1.48	0.24	0.44	2.81
(SD)	(2.33)	(2.01)	(2.12)	(2.52)	(0.50)	(0.79)	(0.50)	(0.91)
Immigrant								
Mean	15.85	14.83	14.58	15.08	1.52	-0.42	0.92	2.62
(SD)	(1.96)	(2.45)	(2.18)	(2.47)	(0.50)	(0.73)	(0.27)	(0.94)
Overall Sample								
Mean	15.71	15.33	15.45	15.73	1.49	-0.01	0.62	2.74
(SD)	(2.20)	(2.22)	(2.22)	(2.54)	(0.50)	(0.83)	(0.49)	(0.92)

Note. W1 = Wave 1, W2 = Wave 2, W3 = Wave 3, and W4 = Wave 4. Adolescents' sex was coded as 0 = girls and 1 = boys. Parents' immigrant status is coded 0 = at least one U.S.-raised parent, and 1 = both parent are immigrants. GPA is adolescents' self-reported grade point average. SES is socioeconomic status.

*** $p < .001$;

** $p < .01$;

* $p < .05$

Table 2
Developmental Trajectories of Mexican-origin Adolescents' (N = 246) Educational Expectations from Age 12 to 20 by Adolescents' Nativity, Sex, and Family Socioeconomic Status (SES)

	Model 1 (Quadratic Model)			Model 2 (Nativity × Time)			Model 3 (Sex × Time)		
	<i>b</i>	(SE)	<i>p</i>	<i>b</i>	(SE)	<i>p</i>	<i>b</i>	(SE)	<i>p</i>
Intercept	16.37	(0.27)	0.00	17.32	(0.36)	0.00	16.19	(0.32)	0.00
<i>Level-1 Fixed Effects</i>									
Linear	-0.45	(0.12)	0.00	-1.03	(0.20)	0.00	-0.25	(0.17)	0.13
Quadratic	0.05	(0.01)	0.00	0.11	(0.02)	0.00	0.02	(0.02)	0.24
<i>Level-2 Fixed Effects</i>									
Parents' Immigrant Status W1	0.09	(0.24)	0.70	0.11	(0.24)	0.66	0.08	(0.24)	0.73
Self-Reported GPA W1	0.71	(0.11)	0.00	0.71	(0.11)	0.00	0.71	(0.11)	0.00
Family SES W1	0.42	(0.14)	0.00	0.40	(0.14)	0.00	0.41	(0.14)	0.00
U.S.-Born	-0.01	(0.22)	0.96	-1.43	(0.43)	0.00	-0.01	(0.22)	0.98
Boys	-0.46	(0.19)	0.01	-0.47	(0.19)	0.01	-0.09	(0.41)	0.82
U.S.-Born × Boys									
<i>Cross-Level Interactions</i>									
U.S.-Born × Linear				0.89	(0.25)	0.00			
U.S.-Born × Quadratic				-0.09	(0.03)	0.00			
Boys × Linear							-0.41	(0.24)	0.09
Boys × Quadratic							0.06	(0.03)	0.04
U.S. × Boys × Linear									
U.S. × Boys × Quadratic									
<i>Random Effects</i>									
L1 Residual	3.04	(0.24)	0.00	2.92	(0.24)	0.00	3.04	(0.24)	0.00
L2 Intercept Variance	0.75	(0.46)	0.05	0.85	(0.45)	0.03	0.70	(0.46)	0.06
L2 Linear Slope Variance	0.03	(0.02)	0.10	0.03	(0.02)	0.09	0.02	(0.02)	0.16
Pseudo R ²									
L1 Residual	0.07			0.04			0.00		
L2 Linear Slope Variance				0.01			0.23		

Note. Boys is coded as 1 = boys and 0 = girls. U.S.-born is coded as 1 and Immigrant = 0. Parents' immigrant status is coded -.5 = at least one U.S.-raised parent, and .5 = both parent are immigrants. L1 = Level 1. L2 = Level 2. Pseudo R² for Model 1 was estimated by comparing the residual variance in Model 1 to a null model (Null Model – Model 1 / Null Model). Pseudo R² for Models 2 to 4 were estimated by computing the following formula (Model 1 – Model X/Model 1). The pseudo R² can be used as an estimate of effect size (Fairchild, MacKinnon, Taborga, & Taylor, 2009).

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Table 3
Fixed-effects Probing the Nativity × Sex × Time Interaction with Immigrant Boys, Immigrant Girls, U.S.-born Girls, and U.S.-born Boys as the Reference Group

	Follow-Up Models											
	Model 4 (Reference: Immigrant Boys)		Model 4A (Reference: Immigrant Girls)		Model 4B (Reference: U.S.-Born Boys)		Model 4C (Reference: U.S.-Born Girls)					
	<i>b</i>	(SE)	<i>p</i>	<i>b</i>	(SE)	<i>p</i>	<i>b</i>	(SE)	<i>p</i>			
Intercept	17.43	(0.48)	0.00	16.35	(0.33)	0.00	15.06	(0.24)	0.00	15.76	(0.23)	0.00
<i>Level-1 Fixed Effects</i>												
Linear	-1.61	(0.28)	0.00	-0.19	(0.07)	0.01	0.07	(0.05)	0.15	-0.01	(0.05)	0.88
Quadratic	0.19	(0.03)	0.00									
<i>Level-2 Fixed Effects</i>												
P. Immigrant Status W1	0.11	(0.24)	0.65	0.11	(0.24)	0.66	0.11	(0.24)	0.66	0.11	(0.24)	0.66
Self-Reported GPA W1	0.72	(0.11)	0.00	0.71	(0.11)	0.00	0.71	(0.11)	0.00	0.71	(0.11)	0.00
Family SES W1	0.40	(0.14)	0.00	0.42	(0.14)	0.00	0.42	(0.14)	0.00	0.42	(0.14)	0.00
Nativity	-2.13 ^a	(0.60)	0.00	-0.59 ^c	(0.40)	0.15	0.40	(0.41)	0.33	0.59 ^c	(0.40)	0.15
Sex	-0.75 ^b	(0.68)	0.27	-0.88	(0.45)	0.05	0.70 ^d	(0.33)	0.04	-0.70 ^d	(0.33)	0.04
Nativity × Sex	1.43	(0.84)	0.09	0.18	(0.55)	0.74	0.18	(0.55)	0.74	-0.18	(0.55)	0.74
<i>Cross-Level Interactions</i>												
Nativity × Linear	1.50 ^a	(0.36)	0.00	0.18 ^c	(0.09)	0.03	-0.14	(0.09)	0.13	-0.18 ^c	(0.09)	0.03
Nativity × Quadratic	-0.17 ^a	(0.04)	0.00									
Sex × Linear	1.16 ^b	(0.41)	0.00	0.13	(0.10)	0.21	-0.08 ^d	(0.07)	0.25	0.08 ^d	(0.07)	0.25
Sex × Quadratic	-0.116 ^b	(0.05)	0.00									
Nativity × Sex × Linear	-1.23	(0.50)	0.02	-0.05	(0.12)	0.71	-0.05	(0.12)	0.71	0.05	(0.12)	0.71
Nativity × Sex × Quadratic	0.16	(0.06)	0.01									
<i>Random Effects</i>												
L1 Residual	2.90	(0.23)	0.00	3.21	(0.26)	0.00	3.21	(0.25)	0.00	3.21	(0.26)	0.00
L2 Intercept Variance	0.79	(0.45)	0.04	0.48	(0.46)	0.14	0.48	(0.46)	0.14	0.48	(0.46)	0.14
L2 Linear Slope Variance	0.02	(0.02)	0.15	0.01	(0.02)	0.33	0.01	(0.02)	0.33	0.01	(0.02)	0.33
Pseudo R ²												

Follow-Up Models

	Model 4 (Reference: Immigrant Boys)	Model 4A (Reference: Immigrant Girls)	Model 4B (Reference: U.S.-Born Boys)	Model 4C (Reference: U.S.-Born Girls)
	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>
	(SE)	(SE)	(SE)	(SE)
	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>
L1 Residual	0.05			
L2 Linear Slope Variance	0.24			

Note. Column labels reflect the reference group for each model. If a group did not show a significant quadratic slope, then a more parsimonious model that only included a linear slope was estimated. To help the reader interpret the comparisons between groups in the intercept, linear, and quadratic (when appropriate) slopes, estimates with a superscript

^a compare Immigrant Boys and U.S.-born Boys, estimates with a superscript

^b compare Immigrant Boys and Immigrant Girls, estimates with a superscript

^c compare Immigrant Girls and U.S.-Born Girls, and estimates with a superscript

^d compare U.S.-Born Girls and U.S.-Born Boys. P. Immigrant Status is Parents' Immigrant Status.