PARENTS’ EDUCATIONAL ASPIRATIONS: FOSTERING YOUTH’S COMPETENCE,
INTRINSIC MOTIVATION, AND EDUCATIONAL ASPIRATIONS

A Thesis in
Human Development and Family Studies

by
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ABSTRACT

Educational research on Latino adolescents has largely focused on the influence of familial and cultural values, but less on the influence of academic competence and intrinsic motivation. With a sample of 549 Mexican-origin families, the current study examined the role of parental educational aspirations on youth educational aspirations and how this association was mediated by individual factors. Specifically, mother and father educational aspirations in 5th grade were examined as predictors of youth educational aspirations in 10th grade. Further, the mediating role of youth’s academic competence in 7th grade and intrinsic motivation in 9th grade was explored. Lastly, potential gender differences in expected associations were examined. Results in the full model indicated that both mothers and fathers educational aspirations were equally important for youth educational aspirations. In the gender models, mothers’ educational expectations contributed to youth educational aspirations in 10th grade for girls but not for boys. Findings also showed that the association between academic competence and intrinsic motivation was equally important for Mexican-origin girls and boys. Altogether, findings point to the key role that both mothers and fathers play in Mexican-origin youth educational outcomes.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of Figures</td>
<td>v</td>
</tr>
<tr>
<td>List of Tables</td>
<td>vi</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>vii</td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Literature Review</td>
<td>5</td>
</tr>
<tr>
<td>Current Study</td>
<td>12</td>
</tr>
<tr>
<td>Methods</td>
<td>14</td>
</tr>
<tr>
<td>Results</td>
<td>20</td>
</tr>
<tr>
<td>Discussion</td>
<td>29</td>
</tr>
<tr>
<td>References</td>
<td>38</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

Figure 1- Conceptual Model ......................................................................................................... 5
Figure 2- Full Model Results ........................................................................................................ 22
Figure 3- Model 3a Results ......................................................................................................... 26
LIST OF TABLES

Table 1 - Means, Standard Deviations, and Correlations ..........................................................20
Table 2 - Results of Full Model ....................................................................................................23
Table 3 - Results of Model 3a ......................................................................................................26
Table 4 - Chi-Square Results: Testing the Influence of Gender ......................................................28
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Introduction

In 2017, Latino youth had a 77% high school graduation rate compared to the graduation rates of White youth at 88%, Asian youth at 90% and the national average at 83% (McFarland et al., 2017). This is concerning because Latino youth represent a large proportion of the total population of the United States with Mexican-origin youth making up the majority (66%) of this group (Patten, 2016). Mexican-origin individuals also represent the group with the lowest educational attainment out of all Latino sub-groups (Lopez, 2015), reducing the number of social and economic opportunities for them and for the nation as a whole (Fuligni & Hardway, 2004; Robles, 2009) because they comprise a large portion of the country’s workforce (“Educational attainment and occupation groups”, 2015; Gándara & Mordechay, 2017). Education is the means for economic security of Mexican-origin individuals and the U.S. as a nation (Gándara & Mordechay, 2017); therefore, addressing ways to better target the educational attainment among this population is critical.

Past research has examined Latino youth’s academic performance (e.g., GPA) and educational attainment (e.g., high school graduation, grades) (Cupito, Stein, & González, 2014; Fite, Rubens, & Cooley, 2014; Santiago, Gudiño, Baweja, & Nadeem, 2014). Less focus has been given to parents’ and youth’s perceptions and beliefs about education which are directly associated with tangible academic outcomes (Eccles & Wigfield, 2002). Further, existing work has not fully elucidated the mechanism by which parents’ and youth’s perceptions and values around education are related. Thus, the purpose of this study was to use a longitudinal design to better understand the factors associated with the educational aspirations of Mexican-origin youth in the United States. Specifically, the current study examined the longitudinal association
between parental educational aspirations and youth educational aspirations and whether youth’s individual level characteristics (i.e. academic competence and intrinsic motivation) mediated that association. Finally, potential gender differences were explored. Following sections present the theoretical framework, conceptual model, and existing literature on this topic.

**Theoretical Framework**

Guided by Expectancy value theory (EVT), this study explored the longitudinal influence of parental educational aspirations and the importance of youth’s individual level domains in predicting youth educational aspirations. The following information outlines how expectancy theory supports the proposed associations.

EVT underscores parent and youth factors that promote youth expectations for academic achievement (Wigfield & Eccles, 2000). EVT posits that parental values around education and individuals’ behaviors directly influence individuals’ expectancies and values they hold for reaching a goal (Eccles & Wigfield, 2002). Parents’ role as socializing agents gives them the ability to directly communicate the value of education to their youth, which then translates to youth’s behaviors and values around education. Specific to this study, EVT supports the direct longitudinal association of parental educational aspirations to youth educational aspirations.

EVT also posits that socializers’ (i.e. parents) beliefs and behaviors directly influence youth’s self-concept of abilities. In line with this idea, parental educational aspirations have been theorized to directly foster youth’s perceptions of academic competence (Eccles et al., 1983; Eccles & Wigfield, 2002). Youth’s academic competence encompasses individuals’ perceptions of how well they can do a particular activity or task (Wigfield & Eccles, 2000). The beliefs about
academic abilities that parents model for their youth (e.g., I expect my child to graduate from college) contribute to youth’s internalizing of beliefs and values about their academic competence. Therefore, in this study the association between parental aspirations to youth academic competence was included.

Finally, EVT guides the inclusion of two more paths informing the development of youth educational aspirations: youth’s academic competence to intrinsic motivation and intrinsic motivation to youth educational aspirations. EVT postulates that individual domains such as academic competence and intrinsic motivation are essential to the development of youth educational aspirations. Intrinsic motivation is defined as an internal process that all individuals possess and refers to doing some activity—in this case school related activities—because these activities are inherently interesting or enjoyable (Ryan & Deci, 2000). EVT posits that youth’s self-concept motivates youth’s interest/enjoyment in education, and thus influences expectation for success (Eccles et al., 1983; Eccles & Wigfield, 2002). In the current study, intrinsic motivation was used to assess interest/enjoyment. In sum, EVT provided a map to understand how youth’s academic competence, intrinsic motivation, and educational aspirations influence one another and can play a key role in mediating the relationship between parental and youth educational aspirations. Based on EVT, the following conceptual model was developed.

**Conceptual Model**

The conceptual model (see Figure 1) outlines the mediational process by which parental educational aspirations and youth individual level domains (i.e. academic competence and intrinsic motivation) are expected to contribute to youth educational aspirations.
Specifically, the conceptual model proposes a direct association between parental educational aspirations in 5th grade and youth educational aspirations in 10th grade. This association is furthered explained by mediating processes among parental educational aspirations in 5th grade, youth academic competence in 7th grade, and intrinsic motivation in 9th grade. Specifically, parental educational aspirations in 5th grade contribute indirectly to youth educational expectations via fostering youth academic competence and intrinsic motivation. Furthermore, youth academic competence in 7th grade is expected to influence intrinsic motivation in 9th grade and ultimately youth educational aspirations in 10th grade. The last link outlined in the model proposes that youth intrinsic motivation in 9th grade contributes to youth educational aspirations in 10th grade.

Finally, the conceptual model brings attention to the influence of gender of parent and youth. Specifically, beliefs and behaviors can differ by parental and youth gender (Raffaelli & Ontai, 2004). Therefore, mother and father educational aspirations were separately included. Further, differences by youth’s gender were explored in the association between youth’s intrinsic motivation in 9th grade and educational aspirations in 10th grade.
Literature Review

Parental educational aspirations can have a lasting impact on children’s academic outcomes as the starting point by which children’s educational values are communicated (Spera, 2005). Because of their significance, it is critical to understand the process by which youth internalize parental educational aspirations into their own educational aspirations. In addition to parental educational aspirations, youth individual level factors (academic competence and intrinsic motivation) also have the ability to influence how youth develop their own educational aspirations across time. Below, studies that support the links between parental educational aspirations to youth’s academic competence, intrinsic motivation, and educational aspirations and youth’s individual level domains to educational aspirations are discussed.
Parental Educational Aspirations: Promoting Youth educational Aspirations, Academic Competence, and Intrinsic Motivation

The main goal of the study is to understand the process by which Mexican-origin parents’ educational aspirations influence Mexican-origin youth educational aspirations. Parental educational aspirations stimulate youth’s internalization of their own educational aspirations by shaping youth’s higher value for education (Coleman, 1988). In support of this idea, a recent study indicated that parents’ goals and values around education directly influenced children’s own academic values and goals during pre-adolescence (Hayes et al., 2015). Other studies also provide support for the direct link between parental educational aspirations and youth educational aspirations (Benner & Mistry, 2007; Kirk, Lewis-Moss, Nilsen, & Colvin, 2011), however less is known about longitudinal associations between these two variables, especially among Mexican-origin samples. Therefore, the current study explored this association longitudinally and expanded on past work by examining how the parental educational aspirations—youth educational aspiration link was mediated by academic competence and intrinsic motivation.

Scholars also note that parents’ educational aspirations are key in promoting not only youth educational aspirations but a range of behaviors that are conducive of tangible positive academic outcomes (Carranza, You, Chhuon, & Hudely, 2009; Froiland & Davison, 2014).

Parents serve as socializing agents that transmit their educational values through their educational aspirations for their youth and affirmation of youth’s academic abilities, such as competence (Raty & Kasanen, 2010). Parents’ role as socializing agents includes the behaviors they employ when communicating the importance of future educational attainment, which can contribute to youth internalizing beliefs about their academic competence. EVT posits that
parents’ beliefs and perceptions (e.g. educational aspirations) can directly foster youth’s academic competence (Wigfield & Eccles, 2000) and research demonstrates the existence of this association (Benner & Mistry, 2007; Bouchey & Harter, 2005; Simpkins, Fredricks, & Eccles, 2012). For instance, a study with Latino children found that parental educational aspirations promoted youth’s academic self-efficacy (a construct that measures youth’s perceptions and beliefs of how well they can do in school, similar to competence) (Chun & Dickson, 2011). Past findings also illustrate how parental beliefs and values have a noteworthy influence on youth’s academic competence (Benner & Mistry, 2007; Bouchey & Harter, 2005). Parents positive messages about educational aspirations may help youth feel academically competent and also promote intrinsic motivation.

Intrinsic motivation is another individual level domain that is influenced by parental educational aspirations. Scholars note that intrinsic motivation is an internal domain that is fostered through external reinforcement from resources such as social connections and relationships (Ryan & Deci, 2000). Parents, one of youth’s main sources of social connectedness, can provide youth with positive values for education via parental educational expectations and promote an environment where youth are more likely to naturally enjoy education (Ryan & Deci, 2000; Wigfield & Eccles, 2000). Therefore, by this theoretical mechanism, parents’ educational aspirations messages about education can influence youth’s development of internal enjoyment (i.e. intrinsic motivation) for their education. As such, in line with previous studies (Fan & Williams, 2010; Vitoroulis, Schneider, Vasquez, de Toro, & Gonzáles, 2012), it was hypothesized that parents’ educational expectations would be associated with adolescent intrinsic motivation.

Youth’s Academic Competence, Intrinsic Motivation, and Educational Aspirations
Youth’s positive academic outcomes are often linked with youth individual level domains such as academic competence and intrinsic motivation (Benner & Mistry, 2007; Bouchey & Harter, 2005; Fan & Williams, 2010; Simpkins, Fredricks, & Eccles, 2012; Vitoroulis et al., 2012). In the conceptual model, intrinsic motivation and academic competence are posited to be a mechanism by which parental academic expectations influence youth’s long-term perceptions and beliefs (i.e. educational aspirations). Although existing educational literature underscores the salience of academic competence and intrinsic motivation, there is surprisingly limited research focused on Latinos that recognizes the role that individual level factors can have for Latino youth’s long-term educational aspirations. This study addresses this gap in the literature, specifically within Mexican-origin youth.

Youth’s innate psychological need for competence carries just as an important role as parents’ educational aspirations because it engenders an internal belief that fosters intrinsic motivation for school related behaviors (Eccles, 2007; Ryan & Deci, 2000). Expectancy value theory posits that youth’s perception of their ability to do well solidifies their academic competence and fosters intrinsic motivation (Eccles et al., 1983; Wigfield & Eccles, 2000). Prior studies confirm a link between academic competence and motivational domains such as achievement motivation (Inbanez, Kumperminc, Jurkovic, & Perilla, 2003) and intrinsic motivation (Ferrer-Caja & Weiss, 2000; Guay, Boggiano, & Vallerand, 2000; Vansteenkiste, Lens, & Deci, 2006). In other studies, academic competence has been found to be a better predictor of intrinsic motivation than an autonomy supportive environment (Wong, Wiest, & Cusick, 2002). Altogether, these findings demonstrate that youth who believe that they are competent to do well in school are, in turn, more likely to be motivated to do well.
Further, EVT suggests that academic competence contributes directly to youth educational aspirations (Eccles, 2007). That is, when adolescents perceive self-competence, they are more likely to expect to complete higher levels of education. Research with Latino adolescent samples has found that academic competence is directly associated with positive academic outcomes, such as higher academic expectations and academic achievement (Hayes et al., 2015; Ibanez et al., 2004). These findings across studies demonstrate that individual-level factors are crucial for youth’s long-term educational aspirations.

The premise that intrinsic motivation promotes youth educational aspirations has not been commonly studied overall in Latino adolescent samples but previous research points to a process observed in related academic constructs that supports this idea. Specifically, Larson and Rusk (2011) discuss “bottom-up experiences” that adolescents practice in establishment of goals and values. According to these authors, bottom-up experiences promote youth’s intrinsic motivation through the elicitation of positive emotions and interest in particular activities. These “bottom-up experiences” encourage adolescents to find enjoyment (intrinsic motivation) in education, which inspires youth to establish educational attainment goals (Larson & Rusk, 2011).

In support of this idea, a study of high school students in a college prep program for health professions demonstrated that youth who enjoyed and were interested in the program (i.e. intrinsically motivated) were more likely to pursue and succeed in a health-related field in college (Boekeloo et al., 2015). This finding suggests that intrinsic motivation in youth may be critical for promoting positive academic outcomes. Other findings also show the significance of intrinsic motivation for educational aspirations, school engagement, and GPA (Niehaus, Rudasill, & Adelson, 2012; Otis et al., 2005; Wentzel, Russell, Garza, & Merchant, 2011). For instance, with a sample of Latino youth in the Midwest, authors Niehaus, Rudasill, and Adelson
(2012) found that intrinsic motivation positively predicted students’ GPAs. Thus, the influence of intrinsic motivation on Latino youth educational expectations was examined.

Gender Differences

There is a substantial body of literature focusing on Latino youth academic-related outcomes that points to youth gender differences in academic achievement. Various studies report differences between girls and boys in grades, motivation, and educational goals (Piña-Watson, Lorenzo-Blanco, Dornhecker, Martinez, & Ngoshi, 2016; Sánchez, Colón, & Esparza, 2005). However, less is known about potential gender differences in how parental behaviors/values and youth individual factors influence youth educational outcomes. In an effort to address this gap in the literature, the current study examined gender differences in two ways. First, the independent influence of mother and father educational aspirations to youth educational aspirations was examined. Second, youth gender differences in the associations among intrinsic motivation and educational aspirations were explored.

Previous studies have included mothers’ and fathers’ educational aspirations (Ceja, 2004; Goldenberg et al., 2001), but these studies failed to differentiate and consider how parental gender may influence the transmission of parental educational aspirations to youth educational aspirations. Parental gender differences have been noted in studies focusing on parenting behaviors’ (e.g. warmth, monitoring, harshness, and academic involvement) contribution to academic-related outcomes (e.g., grades and classroom behavior) in girls and boys (Dumka, Gonzales, Bonds, & Millsap, 2009), but not in parental educational aspirations. Although past studies note that Latino mothers and fathers share consistent and strong messages about the educational aspirations for their offspring (Ceja, 2004; Goldenberg et al., 2001; Kao & Tienda, 1998), the unique influence of mother and father educational aspirations for youth’s academic
outcomes is likely to be present due to differences in mothers’ and fathers’ socialization practices (Raffaelli & Ontai, 2004; Villarruel, 1998). Thus, this study examined the separate contribution of mother and father educational aspirations on individual-level domains and ultimately youth educational aspirations.

Existing literature also notes that Latino youth’s behaviors and experiences differ as a result of youth sex/gender. For instance, studies on Latino youth educational outcomes report gender differences for grades, motivation, and educational goals (Cupito, Stein, & Gonzalez, 2014; Dumka et al., 2009; Piña-Watson, et al., 2016; Sánchez, Colón, & Esparza, 2005). Also, youth’s gender has implications for engagement in daily activities that could impact youth education (e.g., freedom to go outside the home for boys vs. activities close to home for girls) (Raffaelli & Ontai, 2004). Specific to the proposed model, the differing expectations on gender-appropriate behaviors that are guided by Latino cultural norms (Cupito, Stein, & Gonzalez, 2014; Raffaelli & Ontai, 2004) could influence motivational processes (Meece, Glienke, & Burg, 2006) and how these contribute to the educational aspirations formulated by girls and boys (Kao & Tienda, 1998). Thus, this study considered potential youth gender differences in the association between intrinsic motivation and educational aspirations.
Current Study

The goal of the current study was to test a theory-driven conceptual model based on expectancy value theory with a sample of Mexican-origin youth. The model outlined the longitudinal association between parents’ educational aspirations for their youth and youth’s own educational aspirations and explored how youth individual factors could mediate this association. The longitudinal nature of the data provided an opportunity to examine the developmental transition between pre-adolescence to mid adolescence (period between 5th and 10th grade) as it pertains to the development of educational aspirations. Further, the conceptual model allowed for insights into individual domains (i.e., academic competence and intrinsic motivation) rarely examined in the Latino adolescent academic literature as potential mediating mechanisms explaining the association between parents’ 5th grade educational aspirations and youth educational aspirations in 10th grade. Below, the aims and hypotheses of the current study are outlined.

The first aim was to examine the longitudinal association between parents’ and youth educational aspirations. There is a limited understanding of whether parents’ educational aspirations for their youth in early adolescence predict youth’s own educational aspirations later in 10th grade, a critical academic year for youth educational aspirations (“10th Grade Checklist”, 2016). It was hypothesized that parent’s educational aspirations in 5th grade would directly predict youth educational aspirations in 10th grade.

The second aim was to examine potential mediating mechanisms of influence between parents’ and youth’s educational aspirations. Based on past work, academic competence and intrinsic motivation were expected to be fostered by parental educational expectations and, in
turn, seen as potential mediating factors by which parental educational expectations 5 years earlier contributed to youth educational aspirations in 10th grade. It was hypothesized that the association between parental educational aspirations in 5th grade and intrinsic motivation in 9th grade was mediated by youth’s academic competence in 7th grade; and that the association between academic competence in 7th grade and youth educational aspirations in 10th grade was mediated by intrinsic motivation in 9th grade.

The third aim was to explore potential gender (mothers vs. fathers and girls vs. boys) differences. Generally, Latino youth literature posits that girls and boys differ in their educational outcomes due to gender differences in how mothers and fathers socialize and interact with their sons or daughters (Cupito, Stein, & Gonzalez, 2014; Dumka et al., 2009). Therefore, differences in the association between mothers’ versus fathers’ educational aspirations in 5th grade and youth educational aspirations in 10th grade were hypothesized. Further, the association between intrinsic motivation in 9th grade and youth educational aspirations in 10th grade was expected to be significant for girls and not boys.
Methods

Participants

The data were drawn from a longitudinal study of Mexican-origin families. At the initial wave, a total of 674 single and two-parent families with a child in the 5th grade participated. For the present study, only families in two-parent households (N = 549; 82% of total sample) were included. Families were randomly drawn from rosters of two school districts that serve high percentages of low-income families in two Northern California cities. School district one was comprised of 64-71% students eligible for free or reduced lunch and differed in racial/ethnic diversity in its schools (32-36% Hispanic, 18-21% White, 18-21% Asian, 18-21% African American, 5-9% other; see Hernandez, Robins, Widaman, & Conger, 2016 for description of larger project). School district two was comprised of 49-63% of students eligible for free or reduced lunch and had diverse levels of racial/ethnic demographic composition in the schools (57-63% Hispanic, 28-33% White, 5% Asian, 1% African American, 3-6% other; see Hernandez, Robins, Widaman, & Conger, 2016 for description of larger project).

Families were recruited to participate by telephone or by a home visit. Eligibility criteria included: families of Mexican-origin as determined by ancestry or self-identification and focal youth had to be living with biological mother. In two parent households, participant fathers had to be the biological father. Single mothers were eligible participate if no other adult was living in the household. Of the eligible families, 72.5% agreed to participate in the study. There were no families in which the mother agreed to participate and youth did not. Youth who participated were of first, second, or third generation.

For the current study, youth (50% female) were 10.86 years of age in 5th grade (Wave 1) and 16.8 years of age in 10th grade and most (70%) were born in the United States. Parents
ranged between 27-65 years of age (fathers: $M = 39.4$, $SD = 6.09$; mothers: $M = 36.7$, $SD = 5.72$) at initial wave. Most fathers (86.8%) and mothers (89.3%) were born in Mexico. Both fathers (9.2 years) and mothers (9.3 years) had 9 years of education on average. At the initial wave, interviews were conducted with the focal child, mother, and father (if present). For the current study, all biological mothers and 80% ($N = 438$) of fathers participated at initial wave.

For the current analyses, parents’ data was only included for 5th grade and youth data was included for grades 7th ($N = 448$), 9th ($N = 465$), and 10th ($N = 454$). Of the 549 youth in two-parent households in 5th grade, 82% participated in 7th grade, 85% participated in 9th grade, and 83% participated in 10th grade. These participation percentages demonstrate low attrition given that at least 82% of families were retained across all waves in this study. In terms of family composition, 92% of families remained two-parent households in 10th grade, thus indicating low rates of family decomposition.

Procedure

Trained research staff interviewed study participants in their homes using laptop computers. All interviewers were bilingual and most were of Mexican heritage. Interviewers were trained for two weeks and received supervision in the field by an interviewer coordinator. All material (e.g. surveys, consent forms) were translated by native Spanish speakers, and then an independent group of bilingual staff members back translated the measures from Spanish to English. Interviews were conducted in participants’ preferred language (i.e., Spanish or English). Overall, 78% of mothers, 80% of fathers, and 15% of youth completed the interviews in Spanish.

Measures

*Educational Aspirations.* The educational aspirations item comes from a two-item measure developed for the Iowa Youth and Families Project (Melby & Conger, 1996) to assess
what level of education youth and parents hope the youth to achieve and expect the youth to achieve. Youth reported how far they hoped to go in school with an 8-point scale (1 = 8th grade or less and 8 = Ph.D. or professional education). Parents also reported how far they hoped their child would go in school using the same scale. For this study, mother and father reports in 5th grade and youth’s reports in 10th grade were used. On average, youth aspired to attain a 4-year college degree throughout 7th grade to 10th grade and both mothers and fathers hope their children attained a master’s degree in 5th grade.

Academic Competence. Two-items were used to examine youth’s perception of their school performance in 7th grade (Conger & Elder, 1994). The two items included were “What is your current grade point average?” with responses ranging from A-F and “How are you doing in classes? Are you...” with five response choices ranging from (1) far behind to (5) ahead of most classmates. In the current study, this measure obtained a significant correlation of .49.

Intrinsic Motivation. In 9th grade, youth reported how much they were internally motivated to do well in school with a 3-item, 4-point Likert scale (e.g., “You enjoy school work very much”). Items one and two were adapted from an intrinsic motivation scale developed by Elliot and Harackiewicz (1996) and the third item was adapted from a study by Ryan & Connell (1989). A confirmatory factor analysis was conducted to ensure the accuracy of this measure. Results indicated that the three items load well onto this factor describing intrinsic motivation. In the current study, this measure obtained a Cronbach’s alpha of .72.

Plan of Analysis

The first step was the use of preliminary methods to examine the associations of interest. This included examination of changes in the sample’s characteristics (stability of educational
aspirations and family income) and correlations between all the variables included in the study.

After examining these preliminary results, the study proceeded into more substantive analysis.

Structural equation modeling (SEM) in Mplus 7 (Muthén & Muthén, 1998-2012) was utilized to test the conceptual model (see Figure 1). In addition, the joint significance test, where significant effects from both the alpha and beta effects indicate a significant mediation (Mackinnon et al., 2002), was used to test for potential mediational pathways. First, academic competence in 7th grade was examined as a mediator in the association between parental educational aspirations in 5th grade and intrinsic motivation in 9th grade. Second, intrinsic motivation in 9th grade was examined as a mediator in the association between academic competence in 7th grade and youth educational aspiration in 10th grade. Third, the double mediation by academic competence in 7th grade and intrinsic motivation in 9th grade between mother and father educational aspirations in 5th grade to youth educational aspirations in 10th grade was examined.

To account for missing data, full information maximum likelihood estimation (FIML) was used to directly fit the models to the raw data. When compared to other methods of handling missing data such as list wise or pairwise, FIML produces less biased and more reliable results (Schafer & Graham, 2002). Before testing the full SEM model, the identification status of the two latent variables in the model (e.g. academic competence and intrinsic motivation) were checked by calculating their standard error ratios and identifying if they were below a value of two (Kenny, 1979).

To assess model fit, the likelihood ratio test ($\chi^2$), the confirmatory fit index (CFI; Bentler, 1990), the Tucker–Lewis Index (TLI; Tucker & Lewis, 1973), and the root mean square error of approximation (RMSEA; Brown & Cudeck, 1993) were used. Important to note is that
for studies with large sample sizes like this study, slight changes from a perfect model can result in a significant $\chi^2$. Thus, the study relied on interpreting CFI and TLI values of 0.95 or greater (Hu & Bentler, 1995) and an RMSEA less than 0.06 (Brown & Cudeck, 1993) to indicate whether the model was a good fit for the data.

Additionally, multigroup analyses were conducted to test whether associations in the full model differed for girls and boys and guidelines outlined by Joreskog’s (1971) hierarchy of hypotheses were used. First, the full model was tested separately for girls (Model 0a) and boys (Model 0b) to make sure that the basic factor structure was not different between groups (Joreskog, 1971). After checking the basic factor structure of Models 0a and 0b, Models 1 and 2 were tested to examine the invariance of factor loadings with both girls and boys included. Model 1 had all pathways and factors freely estimated across groups (except for the two items on the academic competence factor and the first item on the intrinsic motivation factor) while Model 2 had all pathways freely estimated, but all factor loadings constrained to be equal across groups. The chi-square difference test was used to examine whether the difference between Models 1 and 2 demonstrated invariance in the factor loadings across groups.

Next, Model 3a constrained all pathways to be equal except for the three paths that were hypothesized to be different: mother and father education aspirations in 5th grade to youth educational aspirations in 10th grade and youth intrinsic motivation in 9th grade and youth intrinsic motivation in 10th grade. Models 2 and 3a were compared to each other using the chi-square difference test to confirm that the b-weights that were not hypothesized to be different were indeed invariant. Finally, Models 3b1, 3b2, and 3b3 were examined. To test for gender differences, these models constrained the pathway that was hypothesized to be different. Model
3a was used as the model for comparison, to conduct the chi-square difference test which examined whether each hypothesized b-weight differed by gender.
Results

Preliminary Analysis

Preliminary results demonstrated that parental educational aspirations were consistent from 5th to 10th grade with parents reporting, on average, they hoped their youth would achieve at least a college degree. Family income was stable and not significantly different across waves. Table 1 displays the correlations, means, and standard deviations for all variables in the model separately for girls and boys. Results indicated that mother and father educational aspirations were only significantly correlated with girls’ educational aspirations. There were no other significant correlations between father and mother educational aspirations and youth individual-level variables. Academic competence was significantly correlated with intrinsic motivation for girls and boys. Intrinsic motivation was only significantly correlated with girls’ educational aspirations.

Table 1

Means (M), Standard Deviations (SD) and Correlations for Study Variables

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<th>4</th>
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<th>M</th>
<th>SD</th>
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<td>-0.05</td>
<td>-0.01</td>
<td>0.20**</td>
<td>----</td>
<td>0.15*</td>
<td>3.51</td>
<td>0.71</td>
</tr>
<tr>
<td>5. Youth educational Aspirations 10th</td>
<td>0.04</td>
<td>0.11</td>
<td>0.11</td>
<td>0.08</td>
<td>----</td>
<td>6.58</td>
<td>1.39</td>
</tr>
</tbody>
</table>

M                      | 7.43  | 7.51  | 3.77  | 3.44  | 6.34  |
SD                      | 1.11  | 0.95  | 0.70  | 0.65  | 1.28  |

Note. *p<0.05, **p<0.01. Girls’ correlations are above the diagonal; boys’ correlations are below the diagonal.

Full Model Results

Model identification status was performed before the full model was tested. Identification status was determined by examining the factor loadings of the latent variables in the model (i.e.,
academic competence and intrinsic motivation) and calculating their standard error ratios.

Examination of the standard error ratios indicated that the latent factors were identified because all ratios were less than two. Next, the goodness of fit for the full model was examined. In the full model, the \( \chi^2 = 12.26 \) (\( p = 0.59, df = 14 \)) was not statistically significant. Based on the fit indices (CFI = 1.00, TLI = 1.00; RMSEA = 0.00), the full model was judged to be a good fit for the data (See Table 2 for more model information).

Two total effects were tested in the full model (i.e. total effects account for the direct association between predictor variable and dependent variable excluding the mediator): mother’s educational aspirations in 5th grade to youth’s aspirations in 10th grade and fathers’ educational aspirations in 5th grade to youth’s aspirations in 10th grade. By testing the total effects of the model, the direct influence of the predictor on the outcome was determined. Both mother and father educational aspirations in 5th grade had a significant total effect on youth educational aspirations in 10th grade.
The full model tested youth’s academic competence as a potential mediator of the link between mother and father educational aspirations and youth educational aspirations. The mediated effect was tested using the joint significance test (Mackinnon et al., 2002). Findings indicated that mother and father educational aspirations in 5th grade did not have significant effects on the mediator: youth’s academic competence in 7th grade (see Figure 2), but youth’s academic competence in 7th grade (the mediator) significantly predicted intrinsic motivation in 9th grade. The joint significance test indicated no significant mediation due to the significant association of only one of the mediational paths.

The full model also tested for a second mediation. Findings demonstrated that the predictor variable, youth’s academic competence in 7th grade had a significant effect on the mediator, intrinsic motivation in 9th grade. However, the effect of the mediator, intrinsic
motivation in 9th grade on youth educational aspirations in 10th grade was not statistically significant. Thus, these findings suggest no significant mediation.

The third mediation examined in the full model was a double mediation between parental educational aspirations in 5th grade and youth educational aspirations in 10th grade. The two mediators tested were academic competence in 7th grade and intrinsic motivation in 9th grade. Results indicated that only youth academic competence in 7th grade significantly predicted intrinsic motivation in 9th grade. The remaining associations were not significant, indicating that academic competence and intrinsic motivation did not mediate the longitudinal association between parental educational aspirations and youth educational aspirations.

The model had two independent variables: mother and father educational aspirations for their youth, therefore, their residual direct effects (i.e. analyzing full model with mediating variables included) were accounted for. The residual direct effects of mother and father educational aspirations in 5th grade on intrinsic motivation in 9th grade (when the mediator, academic competence in 7th grade, was included) were not statistically significant. On the other hand, the residual direct effects of mother and father educational aspirations in 5th grade predicting youth educational aspirations in 10th grade (when the mediators, academic competence in 7th grade and intrinsic motivation in 9th grade were included) were significant. Altogether, findings suggest that academic competence and intrinsic motivation did not function as mediators. Furthermore, the full model results demonstrated no partial or full mediations that accounted for the residual direct effects.

Table 2

<table>
<thead>
<tr>
<th>Results of Full Structural Equation Model of Parental Educational Aspirations and Youth Individual Level Domains Predicting Youth's Long-term Educational Aspirations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parameter Estimate</strong></td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Factor Loadings for Latent Variables

<table>
<thead>
<tr>
<th>Latent Variable</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Error X1</th>
<th>Error X2</th>
<th>Error X3</th>
<th>Error X4</th>
<th>Error X5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Competence (1) → X1</td>
<td>1.00(0.00)</td>
<td>0.65(0.03)</td>
<td>0.00</td>
<td>0.44(0.04)</td>
<td>0.24(0.03)</td>
<td>0.27(0.06)</td>
<td>0.35(0.05)</td>
<td>0.33(0.02)</td>
</tr>
<tr>
<td>Academic Competence (2) → X2</td>
<td>1.00(0.00)</td>
<td>0.76(0.03)</td>
<td>0.00</td>
<td>0.76(0.04)</td>
<td>0.43(0.05)</td>
<td>0.30(0.07)</td>
<td>0.43(0.06)</td>
<td>0.78(0.04)</td>
</tr>
<tr>
<td>Intrinsic Motivation (1) → X3</td>
<td>1.00(0.00)</td>
<td>0.84(0.04)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Intrinsic Motivation (2) → X4</td>
<td>0.85(0.08)</td>
<td>0.76(0.04)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Intrinsic Motivation (3) → X5</td>
<td>0.39(0.05)</td>
<td>0.47(0.04)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Covariance Mother & Father Educational Aspirations

<table>
<thead>
<tr>
<th>Correlation</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covariance Mother &amp; Father Educational Aspirations</td>
<td>0.13(0.05)</td>
</tr>
</tbody>
</table>

Structural Model

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Parameter</th>
<th>Confidence Interval</th>
<th>p-value</th>
<th>df</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother aspirations 5th → Academic competence 7th</td>
<td>-0.01(0.03)</td>
<td>-0.02(0.06)</td>
<td>0.71</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Father aspirations 5th → Academic competence 7th</td>
<td>0.05(0.04)</td>
<td>0.09(0.07)</td>
<td>0.20</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Mother aspirations 5th → Intrinsic motivation 7th</td>
<td>0.01(0.04)</td>
<td>0.01(0.06)</td>
<td>0.81</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Father aspirations 5th → Intrinsic motivation 7th</td>
<td>0.01(0.05)</td>
<td>0.01(0.06)</td>
<td>0.92</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Mother aspirations 5th → Youth aspirations 10th</td>
<td>0.13(0.06)</td>
<td>0.10(0.05)</td>
<td>0.04</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Father aspirations 5th → Youth aspirations 10th</td>
<td>0.21(0.08)</td>
<td>0.15(0.05)</td>
<td>0.01</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Academic competence 7th → Intrinsic motivation 9th</td>
<td>0.43(0.10)</td>
<td>0.30(0.06)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Academic competence 7th → Youth aspirations 10th</td>
<td>0.41(0.15)</td>
<td>0.17(0.06)</td>
<td>0.01</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Intrinsic Motivation 9th → Youth aspirations 10th</td>
<td>0.11(0.09)</td>
<td>0.06(0.06)</td>
<td>0.26</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Note: $\chi^2 = 12.264$ (p = 0.585, df = 14); CFI = 1.00, TLI = 1.00; RMSEA = 0.00. Note: Second academic competence item is constrained to be equal to eliminate identification issues.

Multi Group Models: Testing Gender Differences

Model 0a & 0b. The analysis to examine group differences began by testing separate models for girls (Model 0a) and boys (Model 0b). For Models 0a and 0b, the factor structure for girls and boys, separately, was judged to be good based on fit indices (girls: CFI: 1.00, TLI: 1.00, RMSEA: 0.00; boys: CFI: 0.97, TLI: 0.94, RMSEA: 0.04). Therefore, Models 0a and 0b provide justification to test subsequent models.

Model 1 & 2. Models 1 and 2 tested for invariance in factor loadings in order to adequately examine b-weight invariance between girls and boys in subsequent models. In Model
1, all parameters and factors loadings were freely estimated, except for the second item in the academic competence as noted in Table 2. This factor loading was constrained in the full model and subsequent models to eliminate identification issues given that this factor only had two items. Fit indices indicated that the fit of Model 1 was a good fit to the data (CFI: 0.99, TLI: 0.99, RMSEA: 0.01; $X^2 = 28.14$ ($df = 27, p = 0.40$). In Model 2, all factor loadings were constrained to be equal across groups, while the rest of the parameters remained freely estimated. Fit indices indicated that the model was good a fit to the data (CFI: 0.99, TLI: 0.97, RMSEA: 0.03; $X^2 = 35.75$ ($df = 29, p = 0.18$). The chi-square difference test comparing Models 1 and 2 was statistically significant, $X^2 = 7.61$ ($df = 2, p = 0.02$). In studies with large sample sizes, small differences in model fit are deemed statistically significant when conducting the chi-square difference test. Therefore, the model fit indices were closely examined to determine if the changes in model fit indices (see Table 4) between Models 1 and 2 are actually significant. As noted in Table 4 the differences in model fit indices are trivial ($\leq 0.02$) therefore we can conclude that the factor loadings are invariant between groups. Given that the changes in model fit were trivial, the study was justified in proceeding to test the invariance of the b-weights between girls and boys.

Model 2 and Model 3a. The chi-square comparison of Models 2 and 3a allowed for the confirmation that the b-weights constrained to be equal across groups (all, except mother and father educational aspirations and intrinsic motivation to youth education aspirations, which were all hypothesized to be different across groups) were not significantly different across groups. Model 2 (b-weight unconstrained model) fit indices indicated that it was good a fit to the data (CFI: 0.99, TLI: 0.97, RMSEA: 0.03; $X^2 = 35.75$ ($df = 29, p = 0.18$). Model 3a (partially unconstrained model with non-hypothesized b-weights constrained) was also a good fit to the
data CFI: 0.98, TLI: 0.97, RMSEA: 0.03; \( \chi^2 = 44.60 \) (df = 36, \( p > 0.13 \)). The chi-square difference test comparing Models 2 and 3a was not statistically significant, \( \chi^2 = 8.85 \) (df = 7, \( p = 0.26 \)) indicating that the b-weights of the constrained paths were invariant for girls and boys.

Table 3

<table>
<thead>
<tr>
<th>Parameter Estimate</th>
<th>Unstandardized</th>
<th>Standardized</th>
<th>( P )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structural Model</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Girls</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother aspirations 5(^{th}) ( \rightarrow ) Academic competence 7(^{th})</td>
<td>0.00(0.04)</td>
<td>-0.01(0.07)</td>
<td>0.92</td>
</tr>
<tr>
<td>Father aspirations 5(^{th}) ( \rightarrow ) Academic competence 7(^{th})</td>
<td>0.06(0.04)</td>
<td>0.09(0.07)</td>
<td>0.19</td>
</tr>
<tr>
<td>Mother aspirations 5(^{th}) ( \rightarrow ) Intrinsic motivation 9(^{th})</td>
<td>0.01(0.04)</td>
<td>0.01(0.05)</td>
<td>0.89</td>
</tr>
<tr>
<td>Father aspirations 5(^{th}) ( \rightarrow ) Intrinsic motivation 9(^{th})</td>
<td>0.00(0.05)</td>
<td>0.00(0.06)</td>
<td>0.96</td>
</tr>
<tr>
<td>Mother aspirations 5(^{th}) ( \rightarrow ) Youth aspirations 10(^{th})</td>
<td>0.24(0.09)</td>
<td>0.18(0.07)</td>
<td>0.01</td>
</tr>
<tr>
<td>Father aspirations 5(^{th}) ( \rightarrow ) Youth aspirations 10(^{th})</td>
<td>0.28(0.11)</td>
<td>0.18(0.07)</td>
<td>0.01</td>
</tr>
<tr>
<td>Academic competence 7(^{th}) ( \rightarrow ) Intrinsic motivation 9(^{th})</td>
<td>0.41(0.10)</td>
<td>0.34(0.10)</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Figure 3. Statistical results for Model 3a: with hypothesized paths freely estimated and the remaining paths constrained. Solid lines represent significant pathways. Note: \( p<0.001*** \), \( p<0.01** \), \( p<0.05* \) and the structure for presentation of values is as follows: girls (boys).
Models 3b1, 3b2, 3b3. The following set of models followed two steps to test for invariance in the hypothesized b-weights between girls and boys. In the first step, Models 3b1, 3b2, and 3b3 constrained one of the three paths that were hypothesized to be different for girls and boys. In the second step, Models 3b1, 3b2, and 3b3 were compared with Model 3a (partially unconstrained path model) using the chi-square difference test to determine whether b-weights in the tested associations differed for girls and boys (see Table 5 for model comparison values).

Models 3a and 3b1 explored whether there was a gender difference in the mother educational aspirations in 5th grade → youth educational aspirations in 10th grade b-weight. Fit indices indicated that Model 3b1 (constrained path model) was a good fit to the data CFI: 0.98, TLI: 0.97, RMSEA: 0.03; $X^2 = 44.38$ ($df = 35, p > 0.13$). The chi-square difference test between Models 3a and 3b1 was not statistically significant $X^2 = 3.076$ ($df = 1, p = 0.08$), indicating that there was no differences for girls and boys in the association between mother educational aspirations in 5th grade predicting youth educational aspirations in 10th grade.

Models 3a and 3b2 explored whether there was a gender difference in the father educational aspirations in 5th grade → youth educational aspirations in 10th grade b-weight. Fit
indices indicated that Model 3b2 (constrained path model) was a good fit to the data CFI: 0.98, TLI: 0.97, RMSEA: 0.03; $X^2 = 45.15$ ($df = 37, p = 0.17$). The chi-square difference test between Models 3a and 3b2 was not statistically significant $X^2 = 0.55$ ($df = 1, p = 0.48$), indicating that there was no differences for girls and boys in the association between father educational aspirations in 5th grade predicting youth educational aspirations in 10th grade.

Models 3a and 3b3 tested the hypothesis that the intrinsic motivation in 9th grade $\rightarrow$ youth educational aspirations in 10th grade b-weight would differ across the two groups. Fit indices indicated that Model 3b3 (constrained path model) was a good fit to the data CFI: 0.98, TLI: 0.97, RMSEA: 0.03; $X^2 = 46.37$ ($df = 37, p = 0.14$). The chi-square difference test between Models 3a and 3b3 was not statistically significant $X^2 = 1.77$ ($df = 1, p = 0.20$), indicating that there was no difference for girls and boys in the association between intrinsic motivation and educational aspirations.

Table 4

<table>
<thead>
<tr>
<th>Model</th>
<th>$X^2$</th>
<th>df</th>
<th>P</th>
<th>CFI</th>
<th>TLI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-Group Models</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 0a</td>
<td>6.98</td>
<td>14</td>
<td>0.94</td>
<td>1.00</td>
<td>1.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Model 0b</td>
<td>21.33</td>
<td>14</td>
<td>0.09</td>
<td>0.97</td>
<td>0.94</td>
<td>0.04</td>
</tr>
<tr>
<td>Model 1</td>
<td>28.14</td>
<td>27</td>
<td>0.40</td>
<td>0.99</td>
<td>0.99</td>
<td>0.01</td>
</tr>
<tr>
<td>Model 2</td>
<td>35.75</td>
<td>29</td>
<td>0.18</td>
<td>0.99</td>
<td>0.97</td>
<td>0.03</td>
</tr>
<tr>
<td>2-1</td>
<td>7.61</td>
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<td>0.02</td>
<td>0.00</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Model 3a</td>
<td>44.60</td>
<td>36</td>
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<td>0.98</td>
<td>0.97</td>
<td>0.03</td>
</tr>
<tr>
<td>3ª-2</td>
<td>8.85</td>
<td>7</td>
<td>0.26</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 3b1</td>
<td>47.66</td>
<td>37</td>
<td>0.11</td>
<td>0.98</td>
<td>0.97</td>
<td>0.03</td>
</tr>
<tr>
<td>3b1-3ª</td>
<td>3.06</td>
<td>1</td>
<td>0.08</td>
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<tr>
<td>Model 3b2</td>
<td>45.15</td>
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<td>0.17</td>
<td>0.98</td>
<td>0.97</td>
<td>0.03</td>
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<tr>
<td>3b2-3ª</td>
<td>0.55</td>
<td>1</td>
<td>0.48</td>
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<tr>
<td>Model 3b3</td>
<td>46.37</td>
<td>37</td>
<td>0.14</td>
<td>0.98</td>
<td>0.97</td>
<td>0.03</td>
</tr>
<tr>
<td>3b3-3ª</td>
<td>1.77</td>
<td>1</td>
<td>0.20</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Note. This table outlines the chi-square results and difference across all the models that were tested. Full sample model = model with no constraints. Models 0a and 0b are measurement
models. Model 0a = sample only contains girls, no constraints. Model 0b = sample only contains boys, no constraints. Model 1 = full sample, grouping variable: gender introduced, no constraints (except first and second item on the academic competence factor and first item on intrinsic motivation factor). Model 2 = full sample, grouping variable: gender introduced, all factor loadings are constrained. Model 3a = all pathways constrained, except for mother aspirations 5\textsuperscript{th} \rightarrow youth aspirations in 10\textsuperscript{th}, father aspirations in 5\textsuperscript{th} \rightarrow youth aspirations in 10\textsuperscript{th}, and intrinsic motivation 9\textsuperscript{th} \rightarrow youth’s aspirations 10\textsuperscript{th}. Model 3b1 = constrained path: mother aspirations 5\textsuperscript{th} \rightarrow youth aspirations 10\textsuperscript{th}. Model 3b2 = constrained path: father aspirations 5\textsuperscript{th} \rightarrow youth’s aspirations 10\textsuperscript{th}. Model 3b3 = constrained path: intrinsic motivation 9\textsuperscript{th} \rightarrow youth’s aspirations 10\textsuperscript{th}.

Discussion

With a sample of Mexican-origin youth, the current study examined the importance of parents’ educational aspirations in early adolescence for youth educational aspirations during a critical high school year (10\textsuperscript{th} grade) and the role of individual domains in predicting youth educational aspirations. Specifically, the longitudinal association between parental educational aspirations in 5\textsuperscript{th} grade and youth educational aspirations in 10\textsuperscript{th} grade and whether this association was mediated by youth’s academic competence in 7\textsuperscript{th} grade and intrinsic motivation in 9\textsuperscript{th} grade was examined. Below findings for overall model and later for gender model are discussed.

Parental Educational Aspirations

In line with expectations, findings indicated a direct longitudinal association between parents’ educational aspirations in 5\textsuperscript{th} grade and youth educational aspirations in 10\textsuperscript{th} grade, which supports past cross-sectional research showing how parents’ educational aspirations are important for youth’s academic-related outcomes (Ceja, 2004; Goldenberg et al., 2001; Kao & Tienda, 1998). It is important to note that these findings extend existing research by stressing the existence of this association across the span of five years (i.e. early adolescence to mid...
adolescence). This finding points clearly to the salient role that early parents’ educational values and goals have for their youth’s own educational aspirations even with 5 years in between.

The current study also contributes to existing literature by including mother and father educational aspirations separately. In examining the contribution of mothers and fathers’ educational aspirations, significant direct associations were found from both mother and father educational aspirations in 5th grade to youth educational aspirations in 10th grade which demonstrated that both what mothers and fathers anticipate academically from their children has long-term ramifications by contributing to girls’ and boys’ educational aspirations. This finding is critical for two important reasons. First, this finding promotes the idea that both mothers and fathers are equally important for their youth educational aspirations, even when they may have different socialization styles and interactions with their youth. Second, this finding indicates that both mothers and fathers should be considered in research studies that aim to further understand educational influences in Mexican-origin youth.

The association between parental educational aspirations in 5th grade predicting both academic competence in 7th grade and intrinsic motivation in 9th grade demonstrated to be non-significant. Also academic competence and intrinsic motivation did not mediate the relationship between parental and youth aspirations. These null findings are surprising because theoretically, EVT supports the notion that parental socialization behaviors (such as parental educational aspirations) can promote youth’s academic competence and intrinsic motivation and that these individual level factors are more direct mechanisms through which youth educational aspirations develop (Eccles & Wigfield, 2002). Given the lack of a significance influence by parental educational expectations in promoting academic competence and intrinsic motivation, future
research should explore additional parenting factors that may promote these individual domains in Mexican-origin youth such as parenting behaviors (e.g., supportive parenting).

Youth’s Academic Competence, Intrinsic Competence, and Educational Aspirations

Another goal of the study was to examine the influence of individual factors (i.e., youth’s academic competence in 7th grade and intrinsic motivation in 9th grade) on educational aspirations in 10th grade and the association between academic competence in 7th grade and intrinsic motivation in 9th grade. In the overall model, findings indicated that youth’s academic competence was a significant predictor of youth’s intrinsic motivation and educational aspirations prospectively. These findings are in line with the process outlined in Ryan’s and Deci’s (2000) self-determination theory, which suggests that the fulfillment of individuals’ psychological needs, such as academic competence, promotes intrinsic motivation in youth (Guay, Boggiano, & Vallerand, 2001; Wong, Wiest, & Cusick, 2002). Consistent with past work, this finding underscores academic competence as key in promoting youth’s intrinsic motivation and educational aspirations because academic competence is the behavior through which youth value and develop an interest for education (Harter, 1988; Eccles & Wigfield, 2002; Wong, Wiest, & Cusick, 2002). Based on the revealed significant links, future research needs to better understand the development and role these individual level variables play in the promotion of academic-related goals and behaviors.

Surprisingly, the association between intrinsic motivation and youth educational aspirations was not significant. Expectancy value theory (EVT) supports the link between intrinsic motivation and youth educational aspirations by hypothesizing that youth’s interest/enjoyment for education will lead to their expectations for success (Eccles & Wigfield, 2002; Eccles, 2007). Also previous research demonstrates how “bottom experiences” parallel the
association between intrinsic motivation and educational aspirations that was tested in this study. Bottom up experiences suggest that in order for youth to establish educational goals (i.e. educational aspirations), they must experience intrinsic motivation (Larson & Rusk, 2011).

This null finding suggests that for Mexican-origin youth the establishment of educational aspirations requires another individual level domain other than intrinsic motivation. This individual level domain could be extrinsic motivation. Mexican-origin youth in this study demonstrated to have, on average, college degree educational aspirations. These high educational aspirations could possibly be driven not by youth’s intrinsic motivation, but by extrinsic forces fueling these educational goals. An example of an extrinsic force would be the need to fulfill family obligations (i.e. youth feel in debt to family for their sacrifices) (Urdan, Solek, & Schoenfelder, 2007), which research suggests are stronger in youth’s whose parents were born in another country (Fuligni, Tseng, & Lam, 1999). For the current sample with 89% of the parent sample being Mexico born, this explanation is plausible. Another plausible explanation for the null finding is that Mexican-origin youth’s educational aspirations could potentially predict intrinsic motivation instead of the order the conceptual model proposed. EVT suggests that expectation of success can foster intrinsic motivation and vice versa (Eccles, 2007). Future research should explore bidirectional associations between intrinsic motivation and educational expectations.

Overall, these findings are a starting point to understand the influence of individual-level domains as it pertains to academic-related outcomes. Additional research is needed to produce more conclusive support in two important ways. First, studies that examine the development of academic competence and intrinsic motivation in adolescence among Latino samples is necessary. Second, future research needs to better understand the role that academic competence
and intrinsic motivation play for Latino youth’s academic achievement and the processes set in place that contribute to evoking intrinsic motivation and ultimately academic achievement.

Gender Differences: Mother versus Fathers and Girls versus Boys

In line with the third aim of this study, potential gender differences in the full model were examined for mother and father educational aspirations in 5th grade to youth educational aspirations in 10th grade and the path between youth intrinsic motivation in 9th grade and educational aspirations in 10th grade. In the full model, both mother and father educational aspirations demonstrated to significantly predict youth educational aspirations. Therefore, the gender models specifically tested whether there were differences between mother and father educational aspiration in predicting youth educational aspirations due to youth gender.

The associations between parental educational aspirations and youth’s educational aspirations were in some ways in line with previous research. When comparing the gender model where the path was set to be equal to the model where paths were freely estimated, the chi-square difference did not significantly differ, but there was a trend level pattern suggesting that the association between mother educational aspirations and youth educational aspirations was only present for girls. On the other hand, the model comparison for the associations between father educational aspirations and youth educational aspirations show no significant differences suggesting that the association was similar for boys and girls. Thus, these findings suggest that there may be a difference in how mother educational aspirations influence their youth, with their educational aspirations being more influential for daughters’ educational aspirations across five years more so than for sons. Therefore, future studies should continue to examine potential gender differences by parent (i.e., mothers and fathers) and youth gender (i.e., girls and boys) for the educational aspirations across time in order to reach conclusive findings.
The third path hypothesized to be different by youth gender was youth intrinsic motivation in 9th grade to educational aspirations in 10th grade. First, this association was not significant and gender model comparisons indicated no significant differences for girls and boys indicating that gender did not modify the non-significant association between intrinsic motivation and youths’ educational aspirations. This non-significant finding is surprising because many studies examining motivation in Latino and non-Latino samples note that there are gender differences in youth’s motivation (Alfaro & Umana-Taylor, 2015; Meece, Glienke, & Burg, 2006), which guided the hypothesis that these gender differences in motivation could likely influence youth educational aspirations differently for girls and boys. Although intrinsic motivation was not significant for this sample of Mexican-origin youth, future research should not discard the theoretical importance of motivation processes for education and should examine other forms such as extrinsic motivation. By exploring other forms of motivation, future education research can begin to better understand the role of motivation in academic outcomes and whether motivation is key for the gender disparities on Latino’s educational attainment, where more females are obtaining a college degree than males (Saenz & Ponjuan, 2009).

Although the hypothesized path of youth intrinsic motivation in 9th grade to educational aspirations in 10th grade was not significant, there was a path to highlight within the gender models. The path between academic competence in 7th grade and intrinsic motivation in 9th grade was the only association that was significant for both girls and boys. Although, this finding does not show significant gender differences, the salience of this path for both groups supports self-determination theory premise that academic competence is one of the three psychological needs that promotes intrinsic motivation in all individuals (Ryan & Deci, 2000). This study unveiled the importance of this association over time given that academic competence and intrinsic
motivation were measured at different time points. In sum, this finding supports the idea that the association between academic competence and intrinsic motivation is present for all individuals regardless of gender and that the association was present longitudinally.

The results from the gender models demonstrated that there is still much to be learned about potential gender differences. Although this study did not specifically find gender differences in the hypothesized pathways, it did show that individual level processes do not differ by gender. This finding is important because individual level domains are possessed by all individuals and in some ways this study highlights that these are assets that can help Latino youth, regardless of their gender. Yet, the reality remains that current statistics on educational attainment among Mexican-origin youth are dismal and gender disparities are part of this story. Therefore, future research must continue to investigate why there are major gender disparities in Latino youth’s high school graduation and college attendance rates (Mcfarland et al., 2017; Saenz & Ponjuan 2009).

Limitations and Future Directions

This study is not without limitations. First, the study focused on Mexican-origin youth in a predominately Latino area of California. Therefore, findings may not generalizable to Mexican-origin youth who reside in areas with a less prominent Mexican-origin population. Discrepancies in the tested associations can exist for Mexican-origin youth residing in areas where they are a “true” minority, such as new immigrant destinations. Related, the study’s findings cannot be generalized to other Latino sub-groups due to the sole focus on Mexican-origin youth in the current study. The study’s model would need to be tested with other Latino sub-groups in order to further understand the generalizability of findings for all Latino youth. Third, the included measure for academic competence is limited due to the narrow understanding
it provides on this construct. The ideal measure would assess youth’s self-perception of school related skills and abilities using more than 2 items. For example, the necessary additional items would ask youth about how fast they are able to learn things at school, how well youth generally do in most school subjects, and how youth feel about taking school exams to gain an understanding of youth’s self-perception of their academic competence.

Despite the aforementioned limitations, the study findings provide useful future directions to push forward the fields of education and human development focusing on Latinos. Future studies focusing on Latino youth should examine in depth the salience of individual level domains within longitudinal research designs. A majority of Latino youth developmental and educational literature has focused on cultural and familial influences with less attention given to whether individual characteristics of Latino youth contribute to their educational and developmental trajectories. The current study sheds light on the role of individual-level domains and brings attention to the importance of longitudinal research designs for a deeper understanding of Latino youth academic outcomes.

Results from this study also suggest that the inclusion of mothers and fathers separately is important for future educational interventions. Specifically, trend findings suggested that mothers’ educational aspirations appeared to be associated with girls’ educational aspirations, but not with boys’. Thus, a further understanding of parental differences by gender in how they interact with girls versus boys is necessary. Also current and future interventions need to consider longitudinal programs because many of youth’s academic outcomes require time to evolve and improve. This study demonstrated the influence and importance of parental educational aspirations for youth across the span of 5 years. Thus, it is critical for current and
future intervention programs to invest time into youth in order to see positive educational outcomes emerge and be sustained.
References


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