



Personal and Contextual Variables Predicting College Aspirations Among Latinx High School Students

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ABSTRACT

This study used path analysis to examine personal and contextual variables that hinder or foster college aspirations in Latinx high school students in the framework of social cognitive career theory (Lent et al., 1994). A total of 247 Latinx high school students from an urban high school in Southern California completed a survey that measured self-efficacy, outcome expectations, supports, and barriers to college aspirations. The findings indicate that contextual factors (supports and barriers) were better predictors of college aspirations than personal factors (self-efficacy and outcome expectations). Barriers

were the biggest negative predictors, while academic performance was a positive predictor of college aspirations. Additionally, supports were the biggest predictor of personal factors. The results also suggest that personal and contextual variables were moderated by student gender and immigrant generation type. Environmental conditions affected the college aspirations of Latino males and first-generation immigrants more than the college aspirations of Latina students and older generations. Implications for practice and future research are also discussed.

KEYWORDS

Latinx high school students, college aspirations, self-efficacy, outcome expectations, barriers, supports.

Variables personales y contextuales que predicen las aspiraciones universitarias estudiantes latinos de secundaria

RESUMEN

Este estudio utilizó el análisis de ruta para examinar las variables personales y contextuales que dificultan o fomentan las aspiraciones universitarias en los estudiantes latinos y latinas de secundaria en el marco de la teoría profesional cognitiva social (Lent et al., 1994). Un total de 247 estudiantes de secundaria de una escuela secundaria urbana ubicada en el sur de California, USA completaron una encuesta que midió la autoeficacia, las expectativas de resultados, los apoyos y las barreras sobre las aspiraciones universitarias. Los hallazgos indicaron que los factores contextuales (apoyos y barreras) predijeron mejor las aspiraciones universitarias que los factores personales (autoeficacia y expectativas de resultados). Se encontró que las barreras eran los predictores negativos más importantes, mientras que el desempeño académico resultó ser un predictor positivo de las aspiraciones universitarias. Además, los apoyos fueron el mayor predictor de los factores personales. Los hallazgos también sugirieron que las variables personales y contextuales fueron moderadas por el género del estudiante y los tipos de generación de inmigrantes. Las condiciones contextuales afectaron las aspiraciones universitarias de los hombres latinos y los inmigrantes de primera generación más que las aspiraciones universitarias de las mujeres latinas y las generaciones mayores. Se discuten las implicaciones para la práctica y la investigación futura.

PALABRAS CLAVE:

aspiraciones universitarias, estudiantes latinos, estudiantes de secundaria, autoeficacia, expectativas de resultado, barreras y apoyos.

INTRODUCTION

Educational aspirations refer to the highest level of education that students hope or desire to achieve (Bohon et al., 2006; Hanson, 1994; Mickelson, 1990). College aspirations represent the degree to which high school students want or desire to attend college or some level of higher education (Bohon et al., 2006; McWhirter et al., 1998). These hopes or desires have considerable psychological meaning and predictive value in identifying students' future career options or college aspirations (Holland & Gottfredson, 1975, as cited in Rojewski, 2005, p. 149). Specifically, in the case of the Latinx population, roughly 85% of Latinx high school students plan to attend some form of higher education after high school graduation (McWhirter et al., 2013a; 2014; Ross et al., 2012), yet only four out of ten reach their goal (National Center for Education Statistics, 2023). The mismatch between college aspirations and college entrance has been associated with personal and contextual factors (Brown & Lent, 2006). Thus, this study aims to analyze the relationship between Latinx high school students' personal and contextual factors and their associations with college aspirations.

To better understand how personal and contextual variables interact with college aspirations in Latinx students, we chose social cognitive career theory (SCCT) as a conceptual framework (Lent et al., 1994). SCCT is "a conceptual framework that attempts to explain central, dynamic processes and mechanisms through which (a) career and academic interests develop, (b) career-relevant choices are forged and enacted, and (c) performance outcomes are achieved" (Lent et al., 1994, p. 80). According to SCCT (Lent & Brown, 2006, goals (e.g., intention to go to college and academic performance) are influenced by cognitive-person mechanisms (self-efficacy and outcome expectations) and proximal (barriers and supports) and distal contextual influences (e.g., gender, race/ethnicity, disability, etc.). Accordingly, this study examines the relationships between personal and contextual variables and college aspirations. Similarly, gender and immigration generation are intervening variables in these relationships in Latinx high school students.

Conceptual framework: social cognitive career theory

This theory depicts how people develop an interest in a particular field, how they make choices influenced by personal and vicarious experiences, and how they succeed in their goal to establish a career path (Lent et al., 1994; Brown & Lent, 2006). Linked to Bandura's (1986) social cognitive theory, SCCT focuses on the interplay between *personal level*, *contextual level*, and physical attributes to configure the course of career development (Bandura, 2006; Brown & Lent, 2006; Lent et al., 1994; 2000).

Personal level

Personal factors refer to abilities and motivational components (e.g., self-efficacy, outcome expectations, and performance goals) that allow young people to influence their own career development (Lent et al., 2002). Personal factors that negatively affect Latinx high school students'

college aspirations include low personal self-efficacy, negative outcome expectations, and unrealistic or unplanned higher education performance goals (Brown & Lent, 2006; Gushue, 2006; Pew Research Center, 2009; McWhirter et al., 2013b; Tierney et al., 2009; Lent et al., 2002). Personal factors with a positive effect are high self-efficacy, positive outcome expectations, and realistic or planned higher education performance goals to succeed on the path to college (Brown & Lent, 2006; McWhirter et al., 2013b; Tierney et al., 2009; Lent et al., 2002). This level depicts the socio-cognitive personal variables that enable people to exercise their own agency in career development (Lent et al., 2005). Those personal variables are self-efficacy, outcome expectations, and goals.

Self-efficacy

Self-efficacy “refers to context-specific, personal beliefs about an individual’s capabilities to perform particular behaviors or courses of action” (Bandura, 1986, 1997, as cited in Brown & Lent, 2006, p. 204). Brown and Lent (2006) describe that, unlike traits such as self-esteem or self-confidence, which can be indexed in generic domains, self-efficacy beliefs are dynamics and intimately tied to domain-specific aspects of human functioning (i.e., academic, social, and career decision-making self-efficacy). According to Bandura (2006), self-efficacy impacts cognitive, motivational, affective, and decisional process-making. Therefore, self-efficacy constitutes a key personal resource and determines how people conceive environmental opportunities and impediments. Self-efficacy is the social cognitive variable that more empirical attention has received (Sheu et al., 2010). A systematic literature review found a significant and positive relationship between self-efficacy and academic performance in Latinx students at all educational levels and through different types of measurement of self-efficacy and academic performance (Manzano et al., 2017).

Outcome expectations

Outcome expectations are beliefs about the consequences or results of performing particular behaviors (Brown & Lent, 2006). Bandura (1986 as cited in Lent and Brown, 2006, p. 17) identified three types of outcome expectations: anticipated social (e.g., benefits to one’s family), material (e.g., financial gain), and self-evaluative (e.g., self-approval). Regardless of the direction and strength, outcome expectations are positive, negative, or neutral as a consequence of engaging in a particular activity (Lent & Brown, 2006). According to Lent & Brown (2006), people are likely to engage in behaviors that result in valued outcomes and to avoid performances that anticipate adverse results.

Outcome expectations are pivotal in socio-cognitive processes because they “enable people to transcend the dictates of their immediate environment and to shape and regulate the present to fit a desired future” (Bandura, 2001, p. 7). In career development, outcome expectations allow students to imagine their future and then establish actions that drive them to achieve those expectations.

Research on the predictability of outcome expectations in academic goals is mixed. A meta-analysis found that outcome expectations produced higher direct path coefficients than self-efficacy (Sheu et al., 2010). Similarly, outcome expectations were a stronger predictor of career goals than self-efficacy beliefs (Gore & Leuwerke, 2000; Lent et al., 2003). In addition,

a study with Latinx students found a relationship between outcome expectations and math/science interests and goals (Navarro et al., 2007). However, college outcome expectations were not related to college aspirations in a study with Latinx college students (Flores et al., 2008).

Goals

Goals represent the intention to engage in a particular activity or to produce a specific outcome (Bandura, 1986). Goals are rooted in personal values and a sense of personal identity; therefore, people invest in activities with meaning and purpose for them (Bandura, 2001). SCCT identifies two types of goals: choice-content goals, which are the kind of activities that one wishes to pursue in a particular domain, and performance goals, which are the level of performance that people aspire within a given area or field (Lent & Brown, 2006). Because goals are linked to both self-efficacy and outcome expectations, any success or failure in achieving goals confirms self-efficacy beliefs and outcome expectations regarding a particular domain (Brown & Lent, 2006).

This study defined the particular domain of career choice as college aspirations. College aspiration refers to a student's emotional disposition toward achieving the objective of going to college, given an ideal condition that drives them to the path of higher education (Rojewski, 2005). In this vein, college aspiration is a choice goal because it is a wish or a distal purpose that guides the future. College aspiration is not necessarily an indicator of attainment; however, aspiration is a cognitive process that may predict the educational future of an individual (Gottfredson et al., 1975).

Contextual level

Contextual factors refer to supports and barriers that enable or constrain the aspirations of young people during their career development (Lent et al., 2002). When considering the barriers that Latinx students face on the path to college, these include low-income household status, parents with low educational attainment, schools with limited resources, a lack of information about college entry process, and neighborhoods with limited opportunities to explore varying career experiences (Brown & Lent, 2006; Gushue, 2006; Lent et al., 2002; Pew Research Center, 2009; McWhirter et al., 2013b; Schneider et al., 2006; Tierney et al., 2009). Researchers also found that Latinx students with positive emotional, academic, economic, social, and cultural support provided by parents, teachers, and peers are more likely to go to college than Latinx students without such support (Clark et al., 2013; McWhirter et al., 2013b; Sáenz & Ponjuán, 2012). However, little is known about how personal variables interact with contextual variables in the college aspirations of Latinx high school students.

This contextual level of SCCT portrays three aspects: first, environmental variables, which are barriers and supports that students have in the family, school, and community contexts; second, physical attributes, such as gender, age, and race/ethnicity. The third aspect consists of student learning experiences. These learning experiences affect both personal variables and career development. This study focuses on the description of barriers and supports according

to SCCT. The physical attributes are related to gender, immigration generation, and learning experiences based on academic performance measured by grade point average (GPA).

Barriers

Barriers refer to negative contextual influences (Lent et al., 2000) or events or personal conditions that make career development difficult (Swanson & Woitke, 1997). Lent et al. (2000) make a distinction between generalized or pervasive barriers (e.g., permanent economic hardships, negative family influences, and toxic environments) and those that depend on the developmental task that an individual faces (e.g., lack of financial resources to go to college). SCCT also identifies temporalize barriers: those encountered in the past, those hindering in the present, and those anticipated in the future of a particular domain (Lent et al., 2000).

Financial and person-based barriers made significant contributions to college-going self-efficacy beliefs and educational aspirations in Latinx students (Gonzalez et al., 2012; McWhirter et al., 2007). However, these perceptions are different among Latinx students according to immigrant status, socioeconomic level, ethnicity, and gender. For example, recent immigrants to the United States perceived more financial concerns than those born in the US (Gonzalez et al., 2012). Similarly, Latinx high school students who anticipated immigration status problems perceived external barriers to pursuing their postsecondary plans (McWhirter et al., 2013a). Latinx high school students with a lower SES were more likely to perceive more barriers, have a lower GPA, and have lower educational goals (Berbery, 2013). While Latinas anticipated encountering more barriers associated with financing postsecondary education than Latinos (McWhirter et al., 2007), Latinos were more likely to perceive family barriers than Latinas (Inda et al., 2013). Mexican American students anticipate encountering more postsecondary education barriers (Garriott & Flores, 2013; McWhirter et al., 2007), and they expected those barriers to be more challenging to overcome than their White counterparts (McWhirter et al., 2007). However, another study found that despite Latinx students reporting higher perceptions of the likelihood of encountering barriers, they did not indicate that these barriers would prevent their academic achievement (Ali & Menke, 2014).

Supports

Supports or support systems are environmental variables that can facilitate an individual's career choice and development (Lent et al., 2000). Students need to build relationships with adults and peers that encourage their college aspirations and allow them to explore a variety of career options (Tierney et al., 2009). According to SCCT (Brown & Lent, 2006), support is not a neutral environmental condition; instead, support systems provide resources that promote career development. For instance, Tierney et al. (2009) identify that financial aid plays a significant role in college aspirations and college entrance, especially for first-generation students and those of low-income families.

Latinx students valued and benefited from caring relationships with teachers and family support in their educational achievements (Salas, 2000). For example, school support was associated directly with academic self-efficacy in low-income urban students of color (Williams et al., 2014). Higher college-going self-efficacy was linked to Latinx high school students with a high GPA and high parental

support (Berbery, 2013). Parental emotional support was a more significant predictor of academic self-efficacy than peer support in Latinx high school students (Ramirez et al., 2014). Similarly, perceived parent support predicted math/science self-efficacy (Navarro et al., 2007).

SCCT suggests that “supports and barriers are inversely related or reflect opposite poles on a positive-negative continuum” (Lent et al., 2000, p. 42). Some students perceive familial financial aid as a crucial support for their goal of attending college, while others perceive the lack of this economic resource as an educational barrier. Therefore, SCCT advocates for more research on the relationship between perceived supports and barriers (Lent et al., 2000).

SCCT suggests that both personal (self-efficacy and outcome expectations) and contextual (barriers and supports) variables are direct predictors of goals. However, a research study that examined these influences in college students found that personal variables are significant predictors of goals, while contextual variables are indirect predictors through self-efficacy and outcome expectations (Cardenas, 2009; Lent et al., 2005; Sheu et al., 2010). However, little is known about the conditions in which self-efficacy or outcome expectations contribute the most to predicting academic goals or in which supports foster student goals or barriers hinder them in Latinx high school students through direct or indirect paths. Therefore, this study examines this relationship, specifically in this high school population.

Latinx students in the US

In the US, Latino/Latina is a generic category used to differentiate Latino heritage from other races or ethnic groups. This categorization is employed by governmental institutions or non-profit organizations in the provision of their services or segmentations of their target population. Latinxs share the Spanish language and some socio-cultural values, such as familism, communalism, collectiveness, respect, and spirituality (Zuniga, 2001; Negroni-Rodríguez & Morales, 2001). However, inside this category, there are socio-cultural differences. For example, each country has its idiomatic expressions, types of foods and wardrobes, and spiritual rituals. In the same vein, not all Latinx youth descendants speak Spanish. Second generations have limited Spanish language or limited bilingualism, and third generations speak Spanish neither inside nor outside the home (Portes & Rumbaut, 2001).

Latinx youth face culture shocks between their family cultural heritage and mainstream American culture. Those types of culture shocks are not only related to experiencing differences in values, customs, and behaviors, but also those cultures expect young people to navigate suitably in each culture. For example, in the family environment, they have to speak Spanish, eat traditional food, and attend some social or religious rituals of their parents' culture. In the school environment, Latinx youth must adopt explicit and implicit behavioral rules. For example, they have to be fluent in the English language to avoid stereotypes of underachieving students (McKown & Weinstein, 2003).

Latinx youth who reject the cultural heritage of their families without replacing them with American cultural values display higher levels of personal and family maladjustment (Negroni-

Rodríguez & Morales, 2001). Conversely, those Latinx youths with a strong ethnic identity are positively associated with higher educational expectations (Cano et al., 2012). Portes and Rumbaut (2006) point out that embracing American values is not a guarantee of successful adaptation and economic advancement. Rather, Latinx young generations in the USA “face the paradox that assimilating to their American surroundings may derail their successful adaptation, while remaining firmly ensconced in their parents’ immigrant communities and cultures may strengthen their chances” (Portes & Rumbaut, 2006, p. 25).

An alternative to cope with this paradox is the multiculturalism movements in Latin American countries and the Latinx movements in the U.S.A. Those movements are paving the way in which Latinx youth move away from whiteness ideologies or “mestizo nation” (Wade et al., 2014) or “second man” (Mörner, 1967) to embrace multiethnic identities (Peloso, 2014). In this vein, Latinx youth are more equipped than previous generations to define their version of what it means to be Latinx in the US. They are a minority that will become a majority (Colby & Ortman, 2015), and their contributions will be pivotal in building an American society that is not only more diverse regarding cultural and ethnic settings but also more inclusive, democratic, and equal.

PURPOSE OF THE STUDY

Most studies examining self-efficacy, outcome expectations, supports, and barriers in career development have been done with college students and in STEM fields (Sheu et al., 2010). However, there is little information about perceived barriers and supports to the educational plans and attainment of Latinx high school students (Lent et al., 2002; McWhirter et al., 2007; Nora & Crisp, 2012; Sáenz & Ponjuan, 2012). In addition, the influence of supports and barriers on goals deserves more attention in Latinx students, especially when 62% of Latinx youth live in low-income families (Mather, 2016). According to Brown and Lent (2006), personal interests are bypassed for more pragmatic considerations when people live in restrictive environments. Latinx students face personal and/or environmental barriers that constrain their college aspiration goals (Pew Research Center, 2009). Given the importance of the interplay between personal and contextual factors in college aspirations, the current study tested a path analysis equation model of college aspirations of 11th-grade Latinx students. This model hypothesized that household SES and parents’ educational attainment affect students’ academic self-efficacy. In turn, self-efficacy beliefs and outcome expectations would affect the academic performance and college aspirations of Latinx youth. In the same manner, perceived barriers and supports both negatively and positively affect Latinx students’ college aspirations. The control variables of this model are gender and immigration generation.

RESEARCH DESIGN

This study used path analysis to gain a broader understanding of the personal and environmental factors that hinder or foster college aspirations in Latinx high school students. The data collected

from a survey questionnaire sought to identify how Latinx students' college aspirations are influenced by family background and personal and environmental variables. In the same vein, the survey results identified the differences by gender and immigration generation. The type of generation was measured as follows: First generation: You and your parents were born outside of the US; Second generation: Your parents were born outside of the US, and you were born in the US; Third generation: Both your parents—or, at least, one—and you were born in the US; Fourth generation and more: Your grandparents—or, at least, one—your parents or, at least, one—and you were born in the US. The Institutional Review Board at Texas A&M University approved this study: IRB2015-0289 (0/22/215).

School context

This research was conducted in an urban high school. This high school is one of the two high schools in the city school district. The two largest student ethnic subgroups are Hispanic (92.6%) and African- American (6.7%), and 90.3% of the student body are socio-economically disadvantaged (SED) students. For this reason, all current high school students qualify for free or reduced lunch. Regarding the teaching staff, 57% are female, and 43% are male. The ethnicity composition of teachers is majority Hispanic (36.8%), followed by White (27.4%), African American (14.7%), Asian (7.4%), Filipino (5.3%), two or more other races (1.1%), and unknown (7.4%). Although the number of Hispanic teachers is high compared to other ethnicities, this percentage is still small when measured against the student population. The State of California evaluates the school's academic performance through different tests and indicators. The Annual Yearly Progress (AYP) report indicates that the high school meets 9 of 17 criteria; therefore, this high school still strives to improve student development.

Participants

A convenience sample of 247 11th-grade students was recruited from an urban high school in Southern California. All participants identified themselves as Latinx. The gender distribution was slightly more female predominant (52% and 48%); 76.1% of the students were sixteen years old. The majority of students reported that they were born in the US (87.8%), with the second country of birth being Mexico (9.8%); only six students reported that they were born in other Latin American countries. Regarding immigration generation, the largest group was the second generation (67.1%), followed by third (17.5%) and first generations (13%).

Procedures

Before starting the survey questionnaire, study participants were provided with a parental permission form and a minor assent form. Four teachers allowed the administration of the

anonymous survey in their 11th-grade English class. Although students were given the option to take the survey in English or Spanish, all students completed it in English. The survey took approximately 20 to 30 minutes, on average, to complete.

Measures

Self-efficacy

Self-efficacy was measured using a 12-item instrument. Five items measured self-efficacy for academic milestones, and seven items evaluated coping efficacy. This instrument was adapted from the self-efficacy for academic milestone measure and barrier coping efficacy measure elaborated by Lent et al. (2005). The original milestone measure asked students to indicate their confidence in their ability to successfully perform a variety of academic tasks required for success in science and engineering majors (Lent et al., 2005, p. 86). The adaptation involved items referring to the perceived ability to perform academic tasks required for college entry (e.g., “How much confidence do you have in your ability to: “Complete a rigorous curriculum for college work”; “Complete all the steps for college entry”). The original coping efficacy items (Lent et al., 2005) asked participants to indicate their confidence in their ability to cope with a variety of barriers or problems that engineer students could potentially experience (86). The adaptation focused on barriers and problems that hinder college aspirations (e.g., “Cope with a lack of support from teachers, counselors, or parents”; “Go to college despite financial pressures”). Both self-efficacy ratings used a 10-point scale ranging from 0 (no confidence) to 9 (complete confidence). Following Lent et al. (2005), self-efficacy scores are calculated “by dividing the summed item responses by 11, producing a possible score range of 0-9, with higher scores reflecting stronger efficacy percepts” (p. 87). The coefficient alpha value of the self-efficacy scale in Lent et al.’s study (2005) was 0.91, while it was 0.89 in the present study.

Outcome expectations

The outcome expectations were measured using a 12-item instrument. This instrument was adapted from the vocational outcome expectations-revised scale (VOE-R) (Metheny & McWhirter, 2013). The VOE-R measured both career-related (items 1 to 6) and non-career-related choices (items 7 to 12). The last items correspond to Bandura’s three types of outcome expectations associated with career choices: self-evaluation or satisfaction (e.g., “I will get the job I want in my chosen career”), physical (e.g., “My career/occupation choice will allow me to have the lifestyle I want), and social (e.g., “My family will approve my career/occupation choice”). The measurement used a 9-point Likert-type scale with response options ranging from strongly disagree (scored as 0) to strongly agree (scored as 9). Higher scores indicate more positive outcome expectations. Outcome expectations-efficacy scores were calculated by dividing the summed item responses by 12, producing a possible score range of 0-9, with higher scores reflecting positive outcome expectations perceptions. The coefficient alpha value of the VOE-R (McWhirter et al., 2000) was 0.54 in a sample of high school students, while it was 0.92 in the present study.

Social supports

Perceptions of support for college aspirations were assessed using a 9-item scale adapted from Lent et al. (2005) entitled social environmental supports and barriers measures (SESB). Participants were asked to indicate how likely they would be to experience supports from family, teachers, peers, and adults (e.g., “Get encouragement from your friends for pursuing this major”). The scale had a score range of 1-5, with higher scores reflecting stronger positive social support in their college aspirations. Lent et al. (2005) reported a coefficient alpha value of 0.90 for supports items in college students. Supports scores were calculated by dividing the summed item responses by 9, producing a possible score range of 0-5, with higher scores reflecting stronger support perceptions. The coefficient alpha value of the supports scale in the present study was 0.88.

Personal and contextual barriers

Perceptions of barriers to college aspirations were assessed using the perceptions of educational barriers (PEB) scale (McWhirter et al., 2007). The PEB presented 24 potential barriers (e.g., “Not enough money,” “Friends don’t support me,” “Racial/ethnic discrimination,” etc.). It was measured on a 5-point Likert-type scale with response options ranging from not at all likely (scored as 1) to extremely likely (scored as 5). McWhirter et al. (2007) presented an internal scale consistency with a coefficient alpha value of 0.91 for high school students. Barriers efficacy scores were calculated by dividing the summed item responses by 24, producing a possible score range of 0-5, with higher scores reflecting stronger barriers perceptions. The coefficient alpha value of the PEB scale in the present study was 0.88.

College aspirations

The aspiration to continue in postsecondary education was measured by asking participants to respond to the following question: “After completing high school, what additional type of education (if any) do you expect that you will complete?” The participants were asked to select one of these options: (1) I will not continue to study; (2) I will not continue to study at least during the next year; (3) I will study in a technical school; (4) I will study in a two-year college; and (5) I will study in a four-year college. This question was adapted from the immediate postsecondary plans measurement in McWhirter et al. (2007).

RESULTS

Model specification

The fit of the data of the hypothesized model was tested for the full sample. The structural equation modeling (maximum likelihood) procedures of LISREL and covariance matrices

were used to assess the model fit. The hypothesized model included six measured variables: SES, parents' education, self-efficacy, outcome expectations, supports, and barriers. It is hypothesized that SES and parents' education predict self-efficacy and outcome expectations. In turn, self-efficacy and outcome expectations predict GPA. Subsequently, GPA, supports, and barriers predict plans to go to college. The model also predicts indirect relationships. Self-efficacy and outcome expectations mediate the relationship between parents' education and plans to go to college. Self-efficacy and outcome expectations mediate the relationships between SES and plans to go to college. The relationship between self-efficacy and plans to go to college is mediated by GPA, and the relationship between outcome expectations and plans to go to college is mediated by GPA.

Model estimation and preliminary evaluation

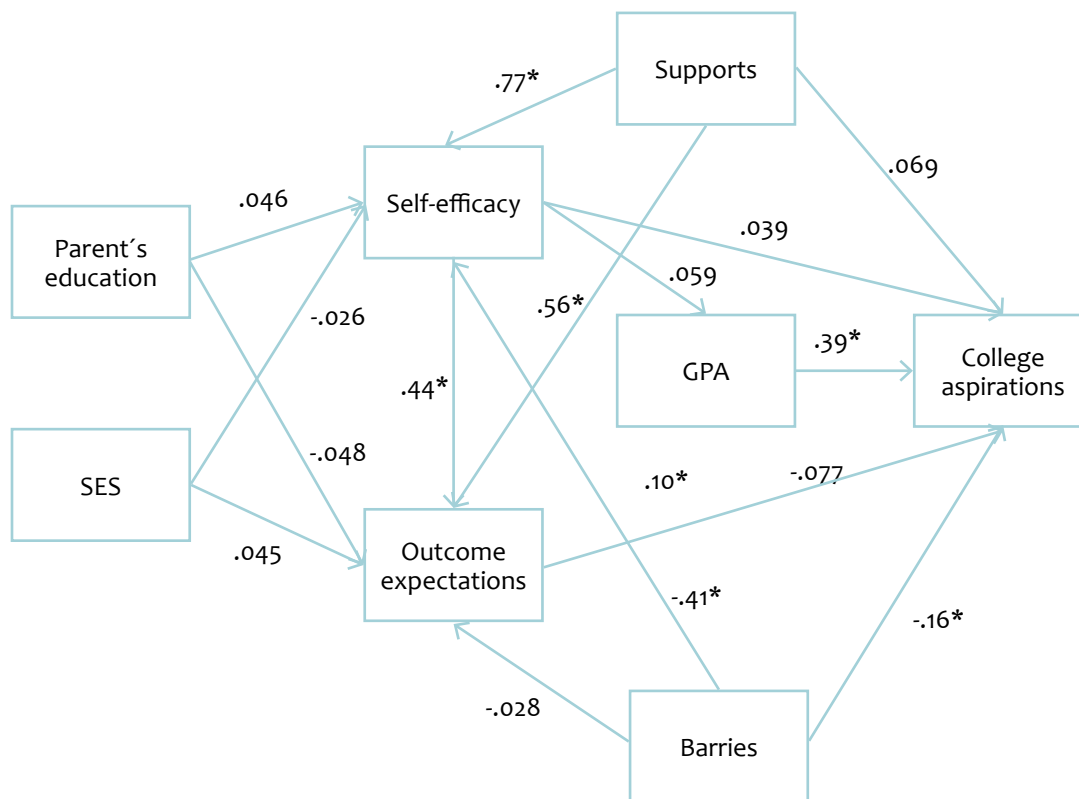
Maximum likelihood estimation was performed to evaluate all models. The independence model tested the hypothesis, and variables uncorrelated with one another were rejected: χ^2 (28, N=247)=447.34, $p=0.0$. The hypothesized model was tested next, finding only a marginal support: χ^2 (9, N=247)=187.65, $p=0.0$, with confirmatory fit index (CFI) of 0.95, normed fit index (NFI) of 0.93, and root mean square error of approximation (RMSEA) of 0.097. A chi-square difference test indicated a significant improvement in fit between the independence model and the hypothesized model: χ^2 is (447.34-187.65)=259.69 with (28-9)=19 degrees of freedom.

The hypothesized model did not fit the data as well as the independence model: χ^2_{diff} (19, N=247)=259.69, $p=0.0$, suggesting that the hypothesized model did not fully explain the relations among the analyzed factors. The modification indices suggested that outcome expectations were related to self-efficacy, supports, and barriers. Thus, SCCT provides considerable evidence for these relationships between outcome expectations and self-efficacy, supports, and barriers (Brown & Lent, 2006; Sheu et al., 2010).

Model modification

The modified model includes three new paths: outcome expectations predicted by self-efficacy, supports, and barriers. The modified model (Figure 1) produced a good fit: χ^2 (6, N=247)=14.26, $p<0.027$, Satorra-Bentler scaled chi-square = 2.15, $p<0.91$, CFI=1.0, NFI=1.0, RMSEA=0.00. The χ^2 difference test between the hypothesized model and the modified model was 27.19. These results suggest that the modified model more accurately represents the data.

Figure 1. Modified college aspiration model of Latinx high-school students.



Model fit by gender

Latina college aspiration model

The Latina model was run without including the SES variable because 127 participants belonged to the working class, one to the middle class, and one to the upper class. Therefore, SES was a constant for the female model (98.4%). This model produced a good fit: χ^2 (4, $N=129$)=1.76, $p<0.78$, CFI=1.0, NFI=0.99, and RMSEA=0.0. These results suggest that the female model accurately represents the data. The Latina model considered 14 paths, 9 of which were significant. GPA and self-efficacy were positive predictors of college aspirations, whereas supports, barriers, and outcome expectations were negative predictors (coefficients of 0.25, 0.10, -0.17, -0.14, and -0.10, respectively). These variables together accounted for 3.8% of the variation in Latina participants' college aspirations. Supports and barriers were predictors of self-efficacy; while supports increased self-efficacy, barriers decreased it (coefficients of 0.71 and -0.58, respectively). Supports, barriers, and parents' educational attainment accounted for 47% of the variation in self-efficacy. Supports and self-efficacy were primarily predictors of outcome expectations (coefficients of 0.52 and 0.43, respectively). These variables, in addition to parents' educational attainment and barriers, accounted for 47% of the variation in outcome expectations. Parents' educational attainment and self-efficacy were not predictors of outcome expectations. In a similar way, self-efficacy and outcome expectations were not predictors of GPA.

Latino college aspiration model

The Latino model was run with all variables of the modified model, and it produced a moderate fit: χ^2 (6, N=118)=18.05, $p<0.0061$, CFI=0.93, NFI=0.91, and RMSEA=0.13. These results suggest that the male model partially represents the data. The Latino model considered 16 paths, 12 of which were significant. GPA and supports were positive predictors of college aspirations (coefficients of 0.38 and 0.28, respectively), and barriers were a negative predictor (coefficient of 0.19). Outcome expectations were the only significant predictor of academic performance (coefficient of 0.17). Supports were a significant predictor of self-efficacy (coefficient of 0.78), and SES and barriers were negative predictors (coefficients of -0.35 and -0.20, respectively). Supports, SES, barriers, and parents' educational attainment accounted for 25% of the variation in self-efficacy. All predictors of outcome expectations were significant; supports, self-efficacy, and SES were positive predictors (coefficients of 0.51, 0.45, and 0.26, respectively), and parents' educational attainment and barriers were negative predictors (coefficients of -0.15 and -0.12, respectively). All predictors accounted for 57% of the variation in outcome expectations.

Model fit by immigration generation

The analysis of variance (ANOVA) test was conducted to identify mean differences in the eight variables of the model among immigration generations. There was a significant difference in parents' educational attainment at $p<0.05$ among generations: F (3, N=243)=11.685, $p=0.000$. There was a small significant difference in GPA at $p<0.05$ among generations: F (3, N=243)=2.735, $p=0.044$. There was no significant statistical difference in college aspirations, self-efficacy, outcome expectations, SES, supports, and barriers among immigration generations.

Scheffé post hoc comparisons showed that parents' educational attainment was higher in the third generation ($M=3.1395$) than in the first ($M=1.8750$; $p=0.000$) and second generations ($M=2.3464$; $p=0.000$). Therefore, third-generation parents were more educated than those from the first and second generations. The post hoc test did not establish mean differences in the students' GPA among immigration generations.

Multiple-group analyses were conducted to identify differences among immigration generations in the modified model of college aspirations. The first-, third-, and fourth-generation models were run without the SES variable because the majority of the participants belonged to the working class. The second-generation model was the only model with 166 participants; the other generation models had a sample size less than 50. Consequently, the results of these analyses should be read cautiously. The first-generation model produced a moderated fit: χ^2 (4, N=32)=9.14, $p<0.058$, CFI=0.93, NFI=0.9, and RMSEA=0.19, while the second-generation model produced a good model fit: χ^2 (6, N=166)=5.59, $p<0.47$, CFI=1, NFI=0.98, and RMSEA=0. The third-generation model also produced a good fit: χ^2 (4, N=43)=5.6, $p<0.21$, CFI=0.97, NFI=0.94, and RMSEA=0.099, whereas the fourth-generation model produced an inadequate model fit: χ^2 (4, N=6)=5.6, $p<0.00013$, CFI=0, NFI=0.21, and RMSEA=0.37. An overview of each model is presented in the next section.

College aspirations through immigration generations

College aspiration was the ultimate variable and there were hypothesized direct effects between this variable and self-efficacy, outcome expectations, supports, barriers, and academic performance (GPA). The results of these relationships through immigration generations presented the following patterns. Self-efficacy was a positive predictor of college aspirations in the first and fourth generations. Outcome expectations were negative predictors of college aspirations in the third and fourth generations. Supports were a negative predictor of college aspirations in the first generation. Barriers were positive predictors of college aspirations in the first generation, while they were negative predictors in the other generations. GPA was a positive predictor of college aspirations in the second, third, and fourth generations. A summary of the goodness-of-fit for all models of college aspirations of Latinx high school students is presented in Table 1.

Table 1. Goodness-of-fit for all models of college aspirations of Latinx high school students

Model	Chi-square	df	p-value	Chi-square for independent model	df	CFI	NFI	RMSEA
Hypothesized	187.65	9	0.0001	447.34	28	0.95	0.93	0.097
Modified	14.26	6	0.027	447.34	28	1	1	0
Latina	1.76	4	0.78	249.17	21	1	0.99	0
Latino	18.05	6	0.0061	209.19	28	0.93	0.91	0.13
First generation	9.14	4	0.058	90.67	21	0.93	0.9	0.19
Second generation	5.59	6	0.47	283.12	28	1	0.98	0
Third generation	5.6	4	0.21	93.62	21	0.97	0.94	0.099
Fourth generation	23.01	4	0.00013	29.21	21	0	0.21	0.37

Notes: df = differential frequency; CFI = confirmatory fit index;
NFI = normed fit index; RMSEA = root mean square error of approximation.

DISCUSSION

Personal factors and college aspirations of Latinx students

This study found that self-efficacy was a significant predictor of college aspirations in the first- and fourth-generation models and the Latina model. The role of self-efficacy in academic

performance was also found to be related to the third- and fourth-generation models. This finding is in accordance with the abundant literature in which self-efficacy is a significant predictor of academic performance (Boroch & Hope, 2009; Brown & Lent, 2006). Particularly to Latinx students, “college self-efficacy predicted positive anticipated outcomes for pursuing a college education, progress toward academic goals, and academic satisfaction in Mexican American college students” (Ojeda et al., 2011, p. 68).

Additionally, self-efficacy seems to play a better role in older generations than in recent generations. This finding suggests that self-efficacy may play a significant role in more acculturated than less acculturated Latinxs. This result is similar to a study about post-secondary educational goals in which Latinx high school students more oriented toward the Anglo culture had a higher level of self-efficacy in postsecondary educational goals than students less oriented toward the Anglo culture (Flores et al., 2008). Meanwhile, this study found that outcome expectations were a predictor of college aspirations in the third- and fourth-generation models and the female model. Additionally, outcome expectations were the biggest predictor of academic performance (in the general, male, and first- and fourth-generation models). In this vein, outcome expectations seem to play a more significant role in academic pursuits than self-efficacy. This finding is in line with previous research in which outcome expectations play a better role in explaining academic pursuits than self-efficacy (Sheu et al., 2010). However, this finding is different from Flores et al. (2008), who found that college outcome expectations were not related to educational aspirations and educational expectations.

Contextual factors and college aspirations in Latinx students

Contextual factors (supports and barriers) were stronger predictors than background factors (SES and parents' educational attainment) in Latinx high school students. This finding confirmed the theoretical assumptions of SCCT (Brown & Lent, 2006) that proximal contextual variables directly affect student career choices, i.e., college aspirations. However, this finding was unable to confirm the impact of distal background contextual factors on career choices through self-efficacy and outcome expectations (Brown & Lent, 2006; Lent et al., 2000). Barriers were the biggest predictor of college aspirations and the direct one established in this study. However, this predictor did not operate similarly across immigration generations. First and fourth Latinx generations were triggered to go to college by barriers. Conversely, in mid-generations (second and third), barriers hindered their college aspirations. The difference between immigration generations may suggest that some Latinx students perceived barriers as difficult to overcome, whereas more resilient Latinx students perceived barriers as temporary situations possible to overcome on the path to college (Lent et al., 2002; McWhirter et al., 2007).

These findings also support different modes of assimilation experienced by children of immigrants through generations. According to the framework of paths of mobility across generations formulated by Portes and Rumbaut (2006), one explanation is that the first

and fourth generations experience segmented assimilation, while the second and third generations undergo downward assimilation. In our study, the first generation may have had low social capital and negative modes of incorporation, but they perceived positive self-efficacy toward college aspirations. This condition allowed them to be resilient and cope with difficulties on the path to college. The fourth generation also perceived positive self-efficacy and, additionally, their parents displayed better levels of social capital. In this study, the parents of this generation were more educated than parents from the other generations. In this case, personal beliefs about their capabilities and the resilient influence of parental human capital were strategies that encouraged them to achieve high educational and occupational outcomes. The second generation was more at risk of downward assimilation than the others because barriers not only affected their college aspirations negatively but also mediated the relationships between college aspirations and the other variables. The third generation was also at risk of downward assimilation, given that barriers and outcome expectations were negative predictors of college aspirations. However, self-efficacy might alleviate these negative influences when self-efficacy positively affects college aspirations through high academic performance.

Supports were the biggest predictor of personal factors (self-efficacy and outcome expectations) for Latinx high school students in all models. This finding is similar to a qualitative study in which social supports (particularly in high school) play a critical role in supporting Latinx students' postsecondary plans (McWhirter et al., 2014).

Regarding contextual variables (supports and barriers) and background variables (SES and parents' educational attainment) as predictors of personal variables (self-efficacy and outcome expectations) among gender models, some differences deserve to be analyzed. In the Latina model, supports and barriers were predictors of self-efficacy but not predictors of outcome expectations. The only predictor of outcome expectations was self-efficacy. Parents' educational attainment was not a predictor of self-efficacy or outcome expectations. In plain terms, supports and barriers were predictors of Latina students' self-efficacy; self-efficacy beliefs predicted outcome expectations, and, in turn, both self-efficacy and outcome expectations predicted Latina students' college aspirations. Unlike the female model, in the Latino model, both contextual and background variables were predictors of personal variables; in turn, personal variables were predictors of Latino students' college aspirations mediated by GPA. In sum, Latino students' college aspirations are more influenced by environmental than personal factors. This finding partially confirmed the theoretical assumption that distal background and contextual factors affected career choices through self-efficacy and outcome expectations (Lent et al., 2000; Brown & Lent, 2006). The explanation for this finding is that men may be more influenced by their context (i.e., lack of family financial support, gender stereotypes, role socialization, not asking for help, etc.) than females. Similar to this finding, Sáenz and Ponjuán (2012) found that misguided perceptions of masculinity, the complex influence of peers and Latino families, and academic underachiever stereotypes affect Latino male success in the educational system.

SES and parents' educational attainment played a small role in the development of self-efficacy and outcome expectations in Latinx high school students as well as in college

aspirations. SES was a predictor of self-efficacy in the Latino model. Similarly, Perry et al. (2012) found that low SES was a predictor of low science self-efficacy in sixth-grade boys. SES was also a predictor of outcome expectations in the Latino and second-generation models in this study. Again, these results confirmed the impact of contextual factors on the college aspirations of male students. The positive relationships between SES and outcome expectations in the second-generation model indicated that expectations about the college path were directly related to family financial support. It was impossible to determine the relationships between SES, self-efficacy, and outcome expectations in Latina student, first-, third-, and fourth-generation models because of the homogeneity of the sample size associated with SES. The relationships between parents' educational attainment, self-efficacy, and outcome expectations were visible, though, when the analysis focused on immigration generations. Parents' educational attainment was related to self-efficacy in all generational models. This finding was partially related to another study that found a significant correlation only between the father's education level and academic self-efficacy (Chandler, 2006). The difference was the direction of the effect (first and third generations were negative, whereas second and fourth generations were positive). Parents' educational attainment was negatively related to outcome expectations in Latino students and in the second, third, and fourth generations. The only positive relationship was found in the fourth generation. This finding showed that parents' educational level did not operate in the same way in both socio-cognitive variables through immigration generations and that special attention might be brought to the experience of acculturation of each generation. The relationships between parents' educational attainment, self-efficacy, and outcome expectations were only positive in the fourth generation. This means that parents with high levels of education were associated with high levels of student self-efficacy and positive outcome expectations in college aspirations. The relationships were negative in the third generation. It reflects that low parental education levels motivated students to increase their self-efficacy. Besides that, it might project positive outcome expectations related to college aspirations. In other words, the lack of parental education drove them to believe in their capabilities and the positive consequences of access to higher education.

Predictors of college aspirations

The biggest predictors of college aspirations were barriers and academic performance. These findings are consistent with the theoretical assumptions of SCCT about the relationships among academic performance, career choices, and how proximal contextual variables affect career choices (Brown & Lent, 2006). Barriers were the biggest negative predictor of college aspirations, which is not surprising in low-income racial/ethnic minority populations. According to Tierney et al. (2009), low-income students had the lowest college enrollment rates. Roughly, 36% of young Latinxs are poor compared to 15% of young White, and young Latinxs are almost two-and-a-half times as likely as White children to live in extreme poverty (Chindren' Defense Fund, 2012). However, this study found that barriers did not operate in the same way across immigration generations. In the first and fourth generations, high-level barriers triggered

high college aspirations. The first generation had positive relationships between self-efficacy, positive outcome expectations, and college aspiration. This situation might suggest that these students have unrealistic expectations that underestimate the negative impact of barriers on the path to college. Unrealistic academic goals and the underestimation of the effect of barriers to college aspirations create conditions where failure and discouragement are likely (Brown & Lent, 2006).

Fourth-generation students had positive relationships between self-efficacy and college aspirations and negative relationships between outcome expectations and college aspirations. These relationships suggest that these students had more realistic expectations of their aspirations and the strategies to cope with barriers they might find on their way to college.

The other models (general modified model, gender models, second- and third-generation models) also presented negative relationships between barriers and college aspirations. These relationships were more realistic according to the low-income areas in which they live and the lack of resources in their community to face those barriers (Brown & Lent, 2006). These findings confirmed that proximal contextual variables directly affected career choices (Brown & Lent, 2006). Similarly, difficulties in overcoming these barriers on the path to college in the second and third generations might be associated with experiences of stigmatization and negative stereotypes that Latinxs face daily (Padilla, 2006).

These differences among immigration generations related to the relationships between contextual and personal variables may be explained by the improvement of each generation in their educational attainment and SES (Smith, 2003; Pew Research Center, 2013). However, those improvements are uneven in Latinx generations. For example, the wage difference between the first and second generations is narrow, while the gap between the second and third generations is insignificant (Smith, 2003). Another factor affecting differences among generations is the assimilation process they face. Portes and Rumbaut (2001) have identified three types of assimilations: dissonant, consonant, and selective. For instance, dissonant assimilation is characterized by high levels of racial/ethnic discrimination and low levels of social support. Historically, Latinx immigrants have faced high levels of discrimination; however, these arguments cannot be generalized for all Latinxs because the arrival and context of reception, types of networks, and access to resources and support define the road of assimilation (Portes & Rumbaut, 2001). Although this study found differences among generations, it was unable to provide an explanation beyond the scope of the data.

Another difference among the models was related to gender. All the hypothesized predictors of college aspirations (self-efficacy, outcome expectations, GPA, supports, and barriers) were significant in the female model. Conversely, in the male model, only supports and barriers were predictors of college aspirations. These findings suggest that women take into account both personal and contextual factors when they consider the decision to go to college. Meanwhile, men emphasize contextual factors; they think about supports that encourage their aspirations or barriers or family background that might hinder their aspirations. This difference between Latina and Latino students is similar to previous research in which environmental factors—family and peer contexts—were predictors of college aspirations for males, while variables associated with personal factors, academic preparation, and

external aspects were most salient for females (Chenoweth & Galliher, 2004). As stated earlier, traditional male gender roles may explain why Latinos give more importance to environmental conditions, especially family income, than personal interests when deciding on their college aspirations (Sáenz & Ponjuán, 2012). Subsequently, Brown and Lent (2006) reported studies in which family interests play a more significant role in related career choices than personal interests in racial/ethnic minority groups.

CONCLUSIONS

These findings are consistent with prior studies indicating that SCCT variables (personal and contextual) are predictive of career-related goals in Latinx students (McWhirter et al., 2007; McWhirter et al., 2014; Metheny & McWhirter, 2013). Nevertheless, in this study, contextual factors are more predictive than personal factors in Latinx students' college aspirations; particularly, barriers and academic performance were shown to be the biggest predictors in the general model. Additionally, these findings suggest that student gender and immigration generation have moderated the predictive utility of the SCCT variables. In other words, Latinx students pursue different paths to college according to the varying experiences they face as a determinate of their gender identity and the immigration generation they belong to.

When examining the specific roles of contextual (supports and barriers) and personal (self-efficacy and outcome expectations) variables in college aspirations through gender and immigration generations, this study found nuances that allow for a unique understanding of the effects manifested by social constructs in Latinx students. For instance, while the mentioned contextual factors were significant predictors in almost all models, the female and fourth-generation models took more into account the personal ones.

A similar pattern was found for academic performance; self-efficacy was a predictor of academic performance in the third and fourth generations, and outcome expectations were a predictor of academic performance in the general, male, first-, and fourth-generation models. Latino and first-generation students engage in academic activities they perceive in advance to have a positive utility. Concurrently, Latina students' academic performance is influenced more by previous learning experiences and relational and attitudinal factors than by motivational factors.

Regarding the impact of contextual factors on personal factors, this study found that supports were predictors of personal factors (self-efficacy and outcome expectations) in all models. This finding suggests that suitable support plays a pivotal role in increasing motivational factors that directly and/or indirectly contribute to Latinx students' college aspirations. Barriers were predictors of self-efficacy in the general model, between genders, and in the first and second generations. Also, barriers were predictors of outcome expectations in males and the first and fourth generations. These results suggest that barriers mainly affect the motivational factors of Latino male and first-generation students. Female

students and those from the other generations experience the effect of barriers differently due to their motivational factors. While Latinas identify more barriers that affect their self-efficacy beliefs, each generation has a particular way in which barriers affect either self-efficacy or outcome expectations. Therefore, gender and immigration generations are social constructs that affect how Latinx students experience both social support and educational barriers on the path to college. In a similar way, these environmental factors—social support and educational barriers—affect students' confidence in their academic capabilities and expectations of college aspirations.

The impact of parents' educational attainment in personal factors was mediated by the characteristics of gender and immigration generation. While the parents' educational level did not affect Latina students' motivational factors, it did influence outcome expectations in male Latinx students. Subsequently, the influence of parental educational levels was perceived differently by each immigrant generation. While parents' educational level affected both self-efficacy and outcome expectations in the second and fourth generations, it only affected self-efficacy in the first generation and outcome expectations in the third generation.

Implications for practice

Based on this study's findings, schools and families should create strategies to help students on the path to college.

- High schools should develop partnerships with organizations that foster a college-going culture. Schools have a significant role in assisting students in making smoother transitions from high school to higher education. However, schools are unable to do this task alone. Schools need partnerships to identify the particular needs of Latinx students related to college readiness and design programs that fit these requirements and the characteristics of Latinx students. Establishing community partnerships is a suitable way to coordinate and mobilize public and private resources, reduce competition among organizations, and decrease the duplication of services (Outley et al., 2011). The findings of this study revealed that Latinx high school students not only need information about college preparation and entry; they also need mentors/advisors who are willing to assist them in navigating the path to college through caring relationships. Similarly, the findings of this study show that most Latinx students lack professional role models in their family and community contexts. Therefore, they need opportunities to visit professionals in their work environment to explore potential career paths through job shadowing experiences (McCarthy & McCarthy, 2006).
- High schools should stimulate parental engagement in college readiness. School administrators should emphasize appropriate communication with Latinx parents to engage them in a college-going culture. Although Latinx parents are willing to support their children on the path to college, their knowledge about college preparation is insufficient. For this reason, they need useful information about college preparation and entry, financial aid, scholarships, and deadlines to apply for those requirements. In this way, parents may

complement the emotional support they already give to their children with informational and appraisal support. As a result, Latinx parents become actively involved in their children's paths to college.

- Counselors and teachers should establish caring relationships with students. Relationships between cognition and emotion play a significant role in Latinx students (Rojewski, 2005), just as connections between Latinx heritage and academic success (Ogbu & Simons, 1998). Therefore, counselors and teachers who foster caring relationships and provide a safe place for Latinx students to express their ethnic identity can significantly contribute to these students' academic performance and success.

Implications for SCCT

According to this study, contextual factors are potent predictors of Latinx high school students' college aspirations.

- These findings confirm the theoretical assumptions of SCCT that, under unsuitable environmental conditions, personal factors are compromised for more pragmatic considerations or aspirations (Lent & Brown, 2006). As an implication for the SCCT choice model, future research should consider particular types of barriers (i.e., financial, demographic, relational, ability, and preparation motivation) and how these variables affect career choices in Latinx students. Similarly, identifying specific supports (i.e., emotional, informational, instrumental, and appraisal) that Latinx students receive from parents, siblings, relatives, teachers, and counselors can help them to overcome obstacles on the path to college.
- As another implication for SCCT, gender identity was found crucial in the college aspirations of Latinx students. This study used gender as a dichotomous variable (female-male); however, future studies may consider other categories for this variable to accommodate different gender identities and how those identities shape career decisions and college aspirations.
- Research in SCCT uses "Hispanic" or "Latino" as a generic category without considering differences in ethnic identities and acculturation processes inside this ethnic group (Gushue, 2006). Future studies may consider variations within this category to recognize the influence of these factors on college aspirations and career decisions. The findings of this study suggest that personal and contextual factors behave differently in each immigration generation, and some patterns might be found with larger sample sizes for each generation. For example, while contextual factors seem to be strong predictors in young generations, personal factors are relevant in older-generation Latinx students.
- These results confirm SCCT efforts to conceptualize, catalog, and assess barriers and supports (Lent et al., 2002). As an implication of this result for SCCT, future classifications of barriers and supports may consider parents, siblings, relatives, peers, friends, teachers, and counselors as a source of social support and an educational barrier.

Limitations of the study

Due to the non-probability nature of the sampling, external validity was limited to study participants. The cross-sectional design used in this study considers that the identified relationships are consistent with SCCT hypotheses; nevertheless, it cannot conclude that SCCT predictors are “causally” related to career choices. The study used self-report measures and narratives, which are susceptible to response bias and social desirability bias. The SES variable had two limitations. First, participants were not asked to report their family income, given that it was inferred by the type of meal plan in the school (free, reduced, or paid). Second, 95.5% of the participants came from low-income families. This situation did not allow for finding SES variation in four of the seven models (female, first, third, and fourth generation).

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