Social Cognitive Predictors of Mexican American College Students’ Academic and Life Satisfaction

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In this study, we used Lent’s (2004) social cognitive model of well-being to examine the academic and life satisfaction of 457 Mexican American college students attending a Hispanic-Serving Institution. Using structural equation modeling, results indicated that the model provided a good fit to the data. Specifically, we found positive relations from positive affect to enculturation, acculturation, college self-efficacy, academic satisfaction, and life satisfaction; from enculturation to college self-efficacy; from acculturation to college self-efficacy and college outcome expectations; from college self-efficacy to college outcome expectations, academic goal progress, academic satisfaction, and life satisfaction; from college outcome expectations to academic satisfaction; from academic goal progress to academic and life satisfaction; and from academic satisfaction to life satisfaction. Findings indicated the model was invariant across gender groups, and overall, 38% and 14% of the variance in academic satisfaction and life satisfaction, respectively, were explained by the predictor variables. Implications for research and practice are discussed.

Keywords: Mexican Americans, college students, social cognitive, academic satisfaction, life satisfaction

Mexican Americans represent 64% of all Latinos, yet only 6% of Mexican Americans obtain a bachelor’s degree, and they are less likely to graduate from college than other Latino subgroups (U.S. Census Bureau, 2004). Thus, it is important to understand factors that influence their educational experiences. One variable that has an impact on student retention is life satisfaction (Frisch et al., 2005). Latino students have reported lower levels of life satisfaction than their White peers (Brown, Wallace, & Williams, 2001). In addition, Mexican American women reported lower levels of happiness—a related construct to life satisfaction—than White women, and Mexican American men reported similar levels of happiness as White men (Weaver, 2003). Given Mexican Americans’ underrepresentation in higher education and potential lower levels of life satisfaction, this study contributes to the literature by focusing on person-level factors that may influence Mexican American college students’ well-being.

Along with the positive psychology movement (Seligman & Csikszentmihalyi, 2000), the literature on subjective well-being (i.e., self-evaluation of one’s happiness; Diener, 1984) has grown rapidly (see Diener, Suh, Lucas, & Smith, 1999). One component of subjective well-being is life satisfaction (i.e., cognitive self-evaluation of one’s quality of life; Diener, 1984). Understanding the positive psychological functioning of Mexican Americans can illuminate individual and cultural strengths that can be developed and nurtured to help improve their lives. For instance, the power of familismo, the Latino cultural value of deference to the family, may contribute to higher levels of happiness among Mexican Americans (Weaver, 2003). In a study on Mexican American youths’ life satisfaction, family was the most important contributor to life satisfaction (Edwards & Lopez, 2006). Furthermore, enculturation (i.e., orientation to one’s heritage culture) and positive attitudes and perceptions of race relations predicted Latino students’ life satisfaction (Brown et al., 2001).

Academic satisfaction (i.e., satisfaction with one’s academic role; Lent & Brown, 2006) has received minimal attention, particularly with Mexican Americans. Social cognitive studies have found that positive affect, self-efficacy, perceived goal progress, and environmental supports predicted academic satisfaction (Lent, Singley, Sheu, Schmidt, & Schmidt, 2007), and academic satisfaction predicted life satisfaction among predominantly White college students (Lent, Singley, et al., 2005). Similarly, satisfaction with college life was influenced by three forms of self-efficacy (college, social, general), with college self-efficacy being the strongest predictor among predominantly White college students (DeWitz & Walsh, 2002). Another study found that academic satisfaction was positively related to academic performance.
and was negatively related to academic disengagement among predominantly White college women (Huerta, Cortina, Pang, Torges, & Magley, 2006).

Social Cognitive Model of Well Being

Lent (2004) developed a model of well being based on the principles of social cognitive career theory (SCCT), personality theories, and theories of well being. This model was chosen as this study’s theoretical framework because of its applicability to career and psychological functioning. It unites cognitive, behavioral, social, personality, and affective variables to determine well being (see Figure 1). Lent suggested that (a) personal control beliefs, (b) outcome expectations, and (c) goals are significant contributors to well being. The model proposes that (a) personality traits and affective dispositions are related to environmental supports and resources, self-efficacy, domain-specific satisfaction, and overall life satisfaction; (b) environmental supports and resources are linked to self-efficacy, outcome expectations, and goal progress; (c) self-efficacy is related to outcome expectations, goal progress, and domain-specific satisfaction; (d) outcome expectations are proposed to influence goal progress and domain-specific satisfaction; (e) goal progress is related to domain-specific satisfaction and overall life satisfaction; and (f) domain-specific satisfaction is linked to overall life satisfaction. In addition, Lent posited bidirectional paths in that overall life satisfaction would relate to domain-specific satisfaction and that goal progress would influence self-efficacy and outcome expectations. (For the purposes of the current study, bidirectional paths are not presented in Figure 1 or tested because we use cross-sectional data.) This model partially stems from SCCT by including self-efficacy, outcome expectations, and goals (Lent, Brown, & Hackett, 1994). Because SCCT research has demonstrated validity with Mexican American high school and middle school students (Flores, Navarro, & DeWitz, 2008; Navarro, Flores, & Worthington, 2007), we hypothesized that Lent’s model would also apply to Mexican American college students.

We chose the affective disposition variable of positive affect because of its relation to self-efficacy, job satisfaction, academic satisfaction, and life satisfaction among predominantly White college students and findings from a meta-analysis study (Connolly & Viswesvaran, 2000; Lent, Singley, et al., 2005; Singley, Lent, & Sheu, 2010). Positive affect reflects feelings of enthusiasm, active-ness, alertness, pleasure, high concentration, and being energetic (Watson, Clark, & Tellegen, 1988). Positive affect is expected to lead to domain-specific and life satisfaction (Lent, 2004). The limited studies conducted on Latinos demonstrate that positive affect predicted low acculturation (Nguyen, Clark, & Ruiz, 2007), bilingualism (Tran, 1995), hope, life satisfaction, and perceived support from friends (Edwards, Ong, & Lopez, 2007).

In Lent’s (2004) discussion on environmental supports and resources, he noted that positive relations with others (Ryff & Singer, 2002), the need for relatedness (Ryan & Deci, 2000), and social connectedness (Lee & Robbins, 1998) are forms of environmental resources that contribute to well being. The need for relatedness and social connectedness (i.e., sense of unity with one’s social environment; Lee & Robbins, 1998) also occurs between and within cultural groups (e.g., mainstream and Mexican cultural groups; Yoon, Lee, & Goh, 2008). When exposed to a different cultural group (i.e., people of Mexican descent exposed to the mainstream culture), oftentimes there is a need or desire to connect with the group (Yoon et al., 2008). A common avenue of social connection is through shared cultural norms (Yoon et al., 2008). Thus, to connect to a cultural group, one may undergo an acculturation process to meet one’s connectedness needs. Therefore, we proposed acculturation (i.e., orientation to the mainstream U.S. culture; Cuéllar, Arnold, & Maldonado, 1995) to be an indicator of environmental resources within Lent’s model because effective navigation of different cultural groups is an asset in managing the environment as well as having positive relations and social connectedness with other members of the cultural groups (i.e., Whites and Mexican Americans). In other words, familiarity with a specific culture’s attitudes, values, and beliefs can help facilitate one’s environmental interactions. Students in our sample attended a Hispanic-Serving Institution; thus, it may be questionable as to why acculturation would be important at this type of university. This is because institutions of higher education in the United States, regardless of their racial/ethnic composition, adhere to mainstream cultural values and beliefs (i.e., independence; Castillo, Conoley, & Brossart, 2004).

Similar to acculturation, enculturation (i.e., orientation to Mexican culture; Cuéllar et al., 1995) is a source for fulfilling social connectedness but within one’s own cultural group (Yoon et al., 2008). Thus, we also proposed enculturation to serve as a social variable of environmental supports and resources because participants in the current study attended a Hispanic-Serving Institution in which most students were Latino. Thus, we expected that

Figure 1. Proposed model of social cognitive theory of well being (Lent, 2004).
Enculturation would be an important cultural factor to consider in academic outcomes because the Mexican culture is the main culture represented on campus. If Mexican American students cannot connect with their Mexican roots, then they may not be able to develop social connections with their Latino peers, which in turn may hinder their college experience.

Research on acculturation and Mexican Americans’ career development has produced mixed findings. Whereas one study found that acculturation was positively related to educational aspirations for Mexican American high school students (Ramos & Sanchez, 1995), another study indicated no relation to career choice commitment for Mexican American college women (Caldera, Robitschek, Frame, & Pannell, 2003) and math/science goal intentions among Mexican American middle school students (Navarro et al., 2007). On the other hand, enculturation was not significantly related to match/science outcome expectations for Mexican American middle school students (Navarro et al., 2007), and it was not significantly related to college outcome expectations, college self-efficacy, and career decision-making self-efficacy among Mexican American high school students (Flores et al., 2008; Flores, Ojeda, Huang, Gee, & Lee, 2006).

We examine the effects of both acculturation and enculturation in the current study to understand their unique roles in the academic development of Mexican American students attending a Hispanic-Serving Institution—that is, an institution in which at least 25% of full-time students are Hispanic, of which at least 50% are low income (Bordes & Arredondo, 2005). The need to study the role of culture on mental health is demonstrated in the call for future studies to contribute to the limited research on the relation between acculturation and well being (San, 2000). We also respond to the recommendation that culture be included in the social cognitive model of well being (Sheu & Lent, 2009). Given the mixed research findings, more research on the application of acculturation theory to Mexican Americans’ career development is needed.

Self-efficacy (i.e., the belief that one has what it takes to perform a valued task) increases well being (Sheldon & Kasser, 1998). Among Mexican American college students, academic self-efficacy predicted academic achievement (Hackett, Betz, Casas, & Rocha-Singh, 1992), whereas college self-efficacy was related to academic persistence (Gloria, Castellanos, López, & Rosales, 2005) and personal adjustment (Solberg, O’Brien, Villareal, Kennel, & Davis, 1993). Among predominantly White college students, college self-efficacy was negatively related to physical, academic, and psychological stress, but it was positively related to social support and academic integration (Gore, Leuwerke, & Turley, 2005–2006). Because academic self-efficacy can help ameliorate distress among Mexican Americans (Solberg & Villareal, 1997), the current study examined the influence of college self-efficacy on Mexican American college students’ academic and life satisfaction.

Lent et al. (2003) have called for further research on goals and outcome expectations within the academic domain. One longitudinal study found that Time 1 goal progress was related to Time 2 academic and life satisfaction (Singley et al., 2010). Among rural high school students, academic self-efficacy predicted career outcome expectations (Wettersten et al., 2005), and vocational/educational self-efficacy predicted career decision outcome expectations (Ali & Saunders, 2009). In addition, outcome expectations in conjunction with self-efficacy predicted African American college students’ interest in math and intentions to enroll in math courses (Gainor & Lent, 1998). Furthermore, for students attending predominantly White and historically Black institutions, engineering self-efficacy predicted outcome expectations (Lent, Brown, et al., 2005). Nonetheless, some studies have not found a significant relation between outcome expectations and goals (Lent, Brown, et al., 2005; Lent et al., 2007). Similar research on Mexican American students has resulted in mixed findings. One study found that math/science outcome expectations predicted math/science interests and goal intentions (Navarro et al., 2007), whereas another study concluded that college outcome expectations did not predict educational aspirations and expectations (Flores et al., 2008). Among Portuguese college students, positive affect and environmental supports predicted self-efficacy, environmental supports and self-efficacy predicted goal progress, and academic adjustment predicted life satisfaction (Lent, Taveira, Sheu, & Singley, 2009). However, no significant relations between positive affect and environmental supports, academic adjustment, and life satisfaction were found. Furthermore, goal progress did not predict academic adjustment and life satisfaction. Given the mixed findings among social cognitive variables in career development, more research in this area is needed.

**Purpose of the Study**

The present study was the first to test Lent’s (2004) social cognitive model of well being with a sample of Mexican Americans attending a Hispanic-Serving Institution in response to a call to test the framework with culturally diverse samples (Lent, 2004; Sheu & Lent, 2009). The following variables were included to test the model: positive affect (personality traits and affective dispositions), enculturation and acculturation (environmental supports and resources), college self-efficacy (self-efficacy expectations), college outcome expectations (outcome expectations), academic goal progress (participation in/progress at goal-directed activity), academic satisfaction (domain-specific satisfaction), and life satisfaction (overall life satisfaction). We expected that all variables would relate positively (see Figure 1).

**Method**

**Participants**

Participants included 457 (58% female, 42% male) Mexican American college students attending a Hispanic-Serving Institution. College level consisted of 20% first-year students, 39% sophomores, 21% juniors, and 20% seniors. Students’ self-reported grade point average ranged from 0.5 to 4.0 ($M = 2.92, SD = 0.51$) on the basis of a 4.0 scale. Age ranged from 17 to 50 years ($M = 21.53, SD = 4.44$). Generation status ($M = 2.56, SD = 1.20$) consisted of 19% first generation (Mexico born), 38% second generation (U.S. born), 20% third generation (parents U.S. born), 14% fourth generation (grandparents U.S. born), and 9% fifth generation (great grandparents U.S. born).

**Instruments**

**Demographics.** A demographic questionnaire included items on race/ethnicity, gender, college level, college grade point average, and generation status.
Positive affect. The 10-item Positive Affect subscale from the Positive Affect and Negative Affect Schedule (Watson et al., 1988) assessed the degree to which participants experience positive feelings in general. It includes items such as “excited, strong, proud” to which participants respond using a Likert scale ranging from 1 (very slightly or not at all) to 5 (extremely). Items were averaged to obtain scale scores, and high scores indicate high levels of positive affect. Construct validity was demonstrated through negative correlations with distress and psychopathology (Watson et al., 1988). Research using the scale reported a coefficient alpha of .77 with a sample of Mexican American women (Bartholomew, Laffrey, Kilpatrick, & Spina, 2004). The alpha coefficient for the current study was .87.

Acculturation and enculturation. The 30-item Acculturation Rating Scale for Mexican Americans–II (ARSSMA-II; Cuellar et al., 1995) measures enculturation and acculturation. It has two subscales, the Mexican Orientation Subscale (MOS; 17 items) and the Anglo Orientation Subscale (AOS; 13 items). Sample MOS items include “I speak Spanish,” and “I like to identify myself as a Mexican American.” Sample AOS items include “I associate with Anglos,” and “My thinking is done in the English language.” Sample AOS among Mexican American women ranged from .87 to .91 for the MOS, and from .69 to .83 for the AOS among Mexican American women and other Latino samples (Singelis et al., 2006). The alpha coefficient for the current study was .94 for Mexican American college students (Flores et al., 2008). The alpha coefficient for the current study was .90.

College outcome expectations. The 19-item College Outcome Expectation Questionnaire (Flores et al., 2008) measures anticipated outcomes for receiving a college education. Participants responded to items on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). A sample item includes “A college education will give me the kind of lifestyle that I want.” Item means were averaged, and high scores indicated favorable expectations for obtaining a college education. Divergent validity estimates indicated that scores were not related to age, generation level, or social class, whereas convergent validity was supported via positive correlations with college self-efficacy and college interests (Robitschek & Flores, 2007). Internal consistency was .94 for Mexican American college students (Flores et al., 2008). The alpha coefficient for the current study was .90.

Academic goal progress. Academic goal progress was assessed using a seven-item scale developed by Lent, Singley, et al. (2005). Participants indicated how much progress they were making toward a variety of academic goals (e.g., “learning and understanding the material in each of your courses”) on a Likert scale ranging from 1 (no progress at all) to 5 (excellent progress). Responses were averaged, with high scores indicating perceived effectiveness in working toward goals. Scores were positively related to self-efficacy, outcome expectations, environmental support, and academic satisfaction (Lent, Singley, et al., 2005). Studies using this measure reported coefficient alphas of .84–.90 for predominantly White college students (Lent, Singley, et al., 2005; Lent et al., 2007). The alpha coefficient for the current study was .89.

Academic satisfaction. Academic satisfaction was assessed using a seven-item scale developed by Lent, Singley, et al. (2005). Participants indicated the degree to which they felt satisfied with their academic experience (e.g., “I enjoy the level of intellectual stimulation in my courses”). Responses were obtained along a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Responses were averaged, with high scores indicating high satisfaction. Construct validity was determined through the scale’s positive correlation with academic satisfaction and life satisfaction (Lent, Singley, et al., 2005). Studies using this measure have reported coefficient alphas of .80–.90 for predominantly White college students (Lent, Singley, et al., 2005). The alpha coefficient for the current study was .86.

Life satisfaction. The five-item Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) assesses overall life satisfaction. Participants responded to the items (e.g., “If I could live my life over, I would change almost nothing”) on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Responses were averaged, with high scores indicating more life satisfaction. Convergent validity was supported by significant positive correlations with measures of subjective well being (Diener et al., 1985). Test–retest reliability was demonstrated with a Latino sample, and coefficient alpha estimates ranged from .82 to .84 (Singelis et al., 2006). The alpha coefficient for the current study was .88.
Procedure
Professors from behavioral and social science departments were solicited through e-mail to provide the researchers with permission to distribute surveys to their students in class. The first author attended the classes to introduce the study to students and to provide them with the informed consent. Students were told that the researcher was interested in learning about Latinos’ college experiences. Most students participated, including those students who did not identify as Latino. Data from non-Mexican Americans were not included in any analyses. Participants completed the survey within 30 min. Students were given snacks as a reward for participation.

Results
Preliminary Analyses
Data were screened for statistical assumptions of the structural equation modeling (SEM) statistical procedures used in the present study. Of the 460 cases, we detected three outliers, which were dropped. Therefore, only 457 participants were included in further analyses.

To examine potential gender differences, we conducted a one-way multivariate analysis of variance. Findings revealed significant gender differences across the variables: Wilks’ Λ = .96, F(8, 447) = 2.06 p < .05, η² = .04 (where η² represents the multivariate effect size). Specifically, there were gender differences in enculturation, F(1, 454) = 4.93, p < .05, η = .01 (where η represents the univariate effect size), and college outcome expectations, F(1, 454) = 7.72, p < .01, η = .02. This indicated that Mexican American women were more enculturated and had higher college outcome expectations than Mexican American men. Given that the Wilks’ lambda demonstrated significant gender differences in the variables taken together, we included gender in the correlation matrix. We also conducted a multigroup analysis using SEM procedures to determine whether gender moderated any of the relations among the variables in the proposed model (see Figure 1). See Table 1 for means, standard deviations, and correlations for the full sample. (Contact the first author to obtain Pearson bivariate correlations by gender.)

Testing the Social Cognitive Model of Well Being for Mexican American College Students

SEM procedures based on robust maximum likelihood estimation were conducted using EQS statistical software to test the model fit. Given our initial concerns with the reliability of AOS, we created a latent variable for this construct. In doing so, we tested a hybrid structural equation model consisting of both latent and observed variables. As suggested by Kline (2005), we first conducted a confirmatory factor analysis of the AOS, or the measurement model. We then conducted a path analysis of the relations in the structural model.

On the basis of suggestions from research and statistical literature (Hu & Bentler, 1999; Kline, 2005; Loehlin, 1998), the adequacy of the model fit for both measurement and structural models should be evaluated on the basis of the following goodness-of-fit indices: (a) a nonsignificant chi-square, (b) a comparative fit index (CFI) ≥ .90 (Loehlin, 1998), (c) a goodness-of-fit index (GFI) ≥ .95 (Kline, 2005), (d) a standardized root mean square residual (SRMR) ≤ .05 (Loehlin, 1998), and (e) a root mean square error of approximation (RMSEA) ≤ .08 (Loehlin, 1998). Although chi-square is the original fit index for structural models, its validity has been questioned because it is likely to be significant with large sample sizes and models with numerous variables and paths, such as in the present study. See Table 2 for model fit indices.

Measurement model of acculturation. To control for measurement error in items of the AOS and potential sampling error as well as to estimate fewer parameters for both the measurement and structural models (MacCallum, Widaman, Zhang, & Hong, 1999), we created four item parcels as indicators of the latent variable Acculturation. Following Little, Cunningham, Shahar, and Widaman’s (2002) Item-to-Construct Balance procedure, item parcels were created that balanced item difficulty and discrimination. We used exploratory factor analysis to restrict the model to one factor and to rank-order each item on the basis of its factor loading. We then used one of the four items with the highest factor loadings to anchor the four item parcels. Next, the four items with the next highest factor loadings were assigned to the item parcels in an inverted order. These two steps were then followed for the remaining items on the basis of their factor loading ranks until the last item was assigned to an item parcel. Thus, each parcel consisted of

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
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</thead>
<tbody>
<tr>
<td>1. Positive affect</td>
<td>—</td>
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<td>—</td>
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<td>2. Enculturation</td>
<td>.13**</td>
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<td>3. Acculturation</td>
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<td>— .04</td>
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<td>4. Self-efficacy</td>
<td>.56***</td>
<td>.11**</td>
<td>.31***</td>
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<td>—</td>
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<td>5. Outcome expectations</td>
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<td>.07</td>
<td>.26***</td>
<td>.42***</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
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<td>6. Goals progress</td>
<td>.37***</td>
<td>.00</td>
<td>.12**</td>
<td>.48***</td>
<td>.18***</td>
<td>—</td>
<td>—</td>
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<td>7. Academic satisfaction</td>
<td>.40***</td>
<td>.06</td>
<td>.17***</td>
<td>.45***</td>
<td>.34***</td>
<td>.55***</td>
<td>—</td>
<td>—</td>
<td>—</td>
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<tr>
<td>8. Life satisfaction</td>
<td>.26***</td>
<td>.07</td>
<td>.00</td>
<td>.33***</td>
<td>.16***</td>
<td>.29***</td>
<td>.32***</td>
<td>—</td>
<td>—</td>
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<tr>
<td>9. Gender</td>
<td>.08</td>
<td>.10’</td>
<td>.00</td>
<td>.00</td>
<td>.13**</td>
<td>.01</td>
<td>.04</td>
<td>.03</td>
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<tr>
<td>M</td>
<td>4.29</td>
<td>3.69</td>
<td>3.89</td>
<td>6.23</td>
<td>8.92</td>
<td>3.88</td>
<td>4.21</td>
<td>5.18</td>
<td>1.58</td>
</tr>
<tr>
<td>SD</td>
<td>.54</td>
<td>.74</td>
<td>.42</td>
<td>.99</td>
<td>.99</td>
<td>.63</td>
<td>.56</td>
<td>1.27</td>
<td>.50</td>
</tr>
</tbody>
</table>

Note. For the gender variable, 1 = male, 2 = female.
* p < .05. ** p < .01. *** p < .001.
three items from the AOS as follows: (a) Item Parcel 1 included Items 2, 30, and 15; (b) Item Parcel 2 included Items 16, 4, and 23; (c) Item Parcel 3 included Items 7, 19, and 25; and (d) Item Parcel 4 included Items 9, 10, and 27. Once the item parcels were created, the measurement model of acculturation could be tested. As can be seen in Table 2, the goodness-of-fit indices indicated that the data adequately fit the latent variable of acculturation, which explained 22%, 55%, 63%, and 20% of the variances in the four item parcels, respectively, with standardized beta weights ranging from .45 to .79.

Testing the hypothesized structural model of academic and life satisfaction. After determining the adequacy of the latent variable of acculturation, we tested the hypothesized structural model of Mexican American college students’ well being (i.e., academic and life satisfaction), which indicated adequate model fit. We then tested an alternative model in which we trimmed the nonsignificant paths from the original hypothesized model. This consisted of dropping the following six paths: (a) acculturation and enculturation to academic goals and satisfaction, (b) enculturation to college outcome expectations, and (c) college outcome expectations to academic goals. By simply dropping these paths, we were able to create a nested model that we could directly compare with the original hypothesized model via the chi-square test of difference. That is, we compared the original hypothesized model, $\chi^2(29) = 120.99$, $p < .001$, with the trimmed model, $\chi^2(35) = 124.67$, $p < .001$. The chi-square comparison was not significant, $\chi^2_{\text{diff}}(6) = 3.68$, $p > .05$, suggesting that the trimmed model neither improved upon nor diminished the original model fit. Thus, we retained the original hypothesized model. We then used a nonparametric bootstrap approach to address the sample dependency of the model. A total of 1,000 samples were randomly taken from the data with replacement and were tested with the original model. The average findings associated with all 1,000 samples determined adequate model fit (see Table 2). Path coefficients included nonsignificant, small, medium, and large effects. (See Figure 2 for the structural coefficients.)

Table 2
Goodness-of-Fit Indicators for the Hypothesized Social Cognitive Model of Well Being

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>CFI</th>
<th>GFI</th>
<th>SRMR</th>
<th>RMSEA</th>
<th>90% CI for RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement$^a$</td>
<td>17.60***</td>
<td>2</td>
<td>.95</td>
<td>.98</td>
<td>.04</td>
<td>.08</td>
<td>[.058, .089]</td>
</tr>
<tr>
<td>Hypothesized structural$^a$</td>
<td>120.99***</td>
<td>29</td>
<td>.92</td>
<td>.95</td>
<td>.05</td>
<td>.08</td>
<td>[.068, .099]</td>
</tr>
<tr>
<td>Trimmed structural$^a$</td>
<td>124.67***</td>
<td>35</td>
<td>.92</td>
<td>.95</td>
<td>.05</td>
<td>.08</td>
<td>[.063, .092]</td>
</tr>
<tr>
<td>Hypothesized structural$^b$</td>
<td>121.90***</td>
<td>29</td>
<td>.92</td>
<td>.95</td>
<td>.05</td>
<td>.08</td>
<td>[.068, .099]</td>
</tr>
</tbody>
</table>

Note.  CFI = comparative fit index; GFI = goodness-of-fit index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation; CI = confidence interval. $^a$ Full sample ($n = 457$). $^b$ Bootstrap samples (1,000).

$*** p < .001$. 

![Figure 2](image-url). Hypothesized social cognitive model of well being. Dashed lines indicate nonsignificant paths. $^* p < .05$. $^{**} p < .01$. $^{***} p < .001$. 

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Testing the significance of indirect effects. Along with direct effects between constructs, the hypothesized social cognitive model of well being tested in the present study also contains 129 indirect effects (see Figure 2). To test the significance of these indirect effects, we followed recommendations by Shrout and Bolger (2002) that have been supported for use in counseling psychology research by Mallinckrodt, Abraham, Wei, and Russell (2006). Specifically, Shrout and Bolger explained that bootstrapping data-resampling procedures produce estimates of the indirect effects as well as measures of standard error and confidence intervals across a large number of samples. Hence, the estimates, standard errors, and confidence intervals are not sample dependent, resulting in more confidence in the findings produced.

Shrout and Bolger (2002) highlighted three steps associated with the bootstrapping data-resampling procedures. Using Mplus statistical software, we generated 1,000 bootstrap samples by random sampling with replacement from the original data set. Second, we tested the hypothesized model 1,000 times with these bootstrap samples. Finally, estimations of the indirect effects were calculated by multiplying the 1,000 pairs of path coefficients, and the significance of these effects was determined. Indirect effects are significant if the 95% confidence intervals do not include zero (Shrout & Bolger, 2002). Of the 129 indirect effects tested, only 24 are significant if the 95% confidence intervals do not include zero.

Multiple group analysis between Mexican American men and women. To address whether gender moderated the relations among the variables in the hypothesized model, we conducted a multiple group analysis using separate covariance matrices derived from separate bivariate correlation matrices for Mexican American men and women (Kline, 2005). This procedure involves analyzing the social cognitive model of well being across both gender samples at the same time and testing restrictive parameter sets (Kline, 2005). To conduct this procedure, we ran the analyses by comparing both samples on the same model parameters without any constraints. Next, the analysis was conducted on the same model while constraining the 37 parameters (i.e., 24 path coefficients, 12 variances, and 1 covariance) to be equal for both samples. We then compared the nonconstrained chi-square statistic for the multiple group analysis, \( \chi^2(58) = 153.71, p < .001 \), with the equality-constrained chi-square statistic for the multiple group analysis, \( \chi^2(95) = 188.65, p < .001 \). The chi-square comparison was not significant, \( \chi^2_{diff}(37) = 34.95, p > .05 \). Given this finding, we retained the equality-constrained path model. In addition, an adequate fit of the constrained model was determined (i.e., CFI = .92, GFI = .95, SRMR = .05, RMSEA = .05; 95% CI [.037, .056]). These findings demonstrated that gender did not moderate the relations among the variables in the hypothesized model, indicating that the model is a good fit for both Mexican American men and women.

For the full sample of Mexican American college students, (a) 2% of the variance in enculturation was accounted for by positive affect; (b) 10% of the variance in acculturation was accounted for by positive affect; (c) 34% of the variance in college self-efficacy was accounted for by positive affect, enculturation, and acculturation; (d) 23% of the variance in college outcome expectations was accounted for by enculturation, acculturation, and college self-efficacy; (e) 25% of the variance in academic goal progress was accounted for by enculturation, acculturation, college self-efficacy, and college outcome expectations; (f) 38% of the variance for academic satisfaction was accounted for by positive affect, enculturation, acculturation, college self-efficacy, college outcome expectations, and academic goals progress; and (g) 14% of the variance in life satisfaction was accounted for by positive affect, academic goal progress, and academic satisfaction.

**Discussion**

This study was the first to test the validity of Lent’s (2004) social cognitive model of well being with a sample of Mexican American college students. A bootstrap analysis of the magnitude and statistical significance of indirect effects for the total sample is presented in Table 3.

<table>
<thead>
<tr>
<th>IV</th>
<th>Mediator variable</th>
<th>DV</th>
<th>( \beta ) (standardized indirect effect)</th>
<th>( B ) (mean indirect effect)(^a)</th>
<th>SE of mean(^a)</th>
<th>95% CI mean indirect effect(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affect</td>
<td>ACC →</td>
<td>CSE</td>
<td>.31 × .18 = .06</td>
<td>.10</td>
<td>.004</td>
<td>[.04, .22]</td>
</tr>
<tr>
<td>Affect</td>
<td>CSE →</td>
<td>COE</td>
<td>.49 × .36 = .18</td>
<td>.32</td>
<td>.062</td>
<td>[.16, .49]</td>
</tr>
<tr>
<td>Affect</td>
<td>ACC → CSE →</td>
<td>COE</td>
<td>.31 × .18 × .36 = .02</td>
<td>.04</td>
<td>.013</td>
<td>[.01, .08]</td>
</tr>
<tr>
<td>ACC</td>
<td>CSE →</td>
<td>COE</td>
<td>.18 × .36 = .07</td>
<td>.19</td>
<td>.068</td>
<td>[.06, .43]</td>
</tr>
<tr>
<td>Affect</td>
<td>CSE →</td>
<td>Goals</td>
<td>.49 × .49 = .24</td>
<td>.28</td>
<td>.042</td>
<td>[.18, .39]</td>
</tr>
<tr>
<td>Affect</td>
<td>ACC → CSE →</td>
<td>Goals</td>
<td>.31 × .18 × .49 = .03</td>
<td>.03</td>
<td>.011</td>
<td>[.01, .08]</td>
</tr>
<tr>
<td>ACC</td>
<td>CSE →</td>
<td>Goals</td>
<td>.18 × .49 = .09</td>
<td>.17</td>
<td>.055</td>
<td>[.01, .08]</td>
</tr>
<tr>
<td>Affect</td>
<td>CSE → COE →</td>
<td>ACSAT</td>
<td>.49 × .36 × .17 = .03</td>
<td>.03</td>
<td>.010</td>
<td>[.01, .06]</td>
</tr>
<tr>
<td>Affect</td>
<td>CSE → Goals →</td>
<td>ACSAT</td>
<td>.49 × .49 × .43 = .10</td>
<td>.11</td>
<td>.020</td>
<td>[.06, .16]</td>
</tr>
<tr>
<td>Affect</td>
<td>ACC → CSE → Goals →</td>
<td>ACSAT</td>
<td>.31 × .18 × .49 × .43 = .01</td>
<td>.01</td>
<td>.004</td>
<td>[.004, .03]</td>
</tr>
<tr>
<td>ACC</td>
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<td>ACSAT</td>
<td>.18 × .49 × .43 = .04</td>
<td>.06</td>
<td>.022</td>
<td>[.02, .14]</td>
</tr>
<tr>
<td>CSE</td>
<td>COE →</td>
<td>ACSAT</td>
<td>.36 × .17 = .06</td>
<td>.03</td>
<td>.011</td>
<td>[.01, .07]</td>
</tr>
<tr>
<td>CSE</td>
<td>Goals →</td>
<td>ACSAT</td>
<td>.49 × .43 = .21</td>
<td>.12</td>
<td>.017</td>
<td>[.08, .17]</td>
</tr>
<tr>
<td>Affect</td>
<td>CSE → Goals → ACSAT→</td>
<td>LIFESAT</td>
<td>.49 × .49 × .43 × .20 = .02</td>
<td>.05</td>
<td>.016</td>
<td>[.02, .10]</td>
</tr>
<tr>
<td>CSE</td>
<td>Goals → ACSAT→</td>
<td>LIFESAT</td>
<td>.49 × .43 × .20 = .04</td>
<td>.05</td>
<td>.016</td>
<td>[.02, .11]</td>
</tr>
<tr>
<td>Goals</td>
<td>ACSAT →</td>
<td>LIFESAT</td>
<td>.43 × .20 = .09</td>
<td>.17</td>
<td>.053</td>
<td>[.05, .33]</td>
</tr>
</tbody>
</table>

\(^a\) Values are based on unstandardized path coefficients. All indirect effects \( p < .01 \).
American college students. Results support the validity of the tested hypothesized model, which demonstrates the need for theory to consider the unique cultural and academic experiences of more favorable expectations for completing college. Furthermore, we did not find any gender differences among the relations of the study’s variables, and findings indicated good model fit for both genders. Prior to discussing our findings, it is important to consider the context of the institution from which data were collected. The university is 10 miles from the Texas–Mexico border, and about 90% of the student population and 35% of the faculty are Latino.

As hypothesized, positive feelings were positively related to enculturation, acculturation, college self-efficacy, and both academic and life satisfaction. These findings demonstrate that when students experience strong levels of positive affect, they feel more connected to their culture and are more likely to have positive academic experiences. Research supports the importance of positive affect on environmental supports and resources, self-efficacy, and life satisfaction (Lent, Singley, et al., 2005; Singley et al., 2010).

In the model we tested, enculturation was positively related to college self-efficacy. This is consistent with other research that found that closeness to one’s ethnic group predicted mathematics self-efficacy (O’Brien, Martinez-Pons, & Kopala, 1999). Perhaps adapting to the customs of the Mexican culture among students at a Hispanic-Serving Institution would be beneficial in navigating the university environment because most students would have a similar cultural background. Our findings on the relations between enculturation and self-efficacy contradict those reported with a sample of Mexican American high school students from the same community (Flores, Ojeda, et al., 2006). The relations between these variables warrant further investigation with other samples in similar settings and across developmental stages.

In addition, results suggested nonsignificant effects of enculturation on outcome expectations, academic goal progress, and academic satisfaction. In their work on cross-cultural considerations for Lent’s (2004) model, Sheu and Lent (2009) mentioned that the significance of paths may vary by culture, which appears to be the case in the present study. Research has found that Mexican American college students who were enculturated perceived alienation from the Latino community for having educational goals because they may be viewed as elitists (Niemann, Romero, & Arbona, 2000), “acting White,” or a “sell out” (Castillo & Caver, 2009). Thus, enculturation might not relate to the academic constructs to avoid intragroup marginalization (i.e., alienation from one’s heritage group for adhering to the mainstream culture; Castillo, 2009) because Mexican Americans may view pursuing college as a “White thing.” Our results further contribute to the mixed findings in the literature on the role of enculturation on academic and career outcomes. Thus, future research should continue to examine the unique role of enculturation to Mexican Americans’ career development.

Acculturation was associated with strong beliefs about performing well in college and positive expectations related to obtaining a college education. Consistent with these findings, research has found that acculturation predicted nontraditional career self-efficacy (Flores, Navarro, Smith, & Ploszaj, 2006) and self-efficacy for careers dominated by women (Rivera, Chen, Flores, Blumberg, & Ponterotto, 2007) among Latino student samples. These findings add validity to claims that Mexican American students’ familiarity with the attitudes, values, practices, and beliefs of the White culture, but not Mexican culture, are critical in the formation of academic-related self-efficacy and helping them to recognize the benefits of college (Flores, Ojeda, et al., 2006).

Findings demonstrate that despite students attending a Hispanic-Serving Institution, acculturation plays an important role in these students’ education. Despite research showing a strong relation between acculturation and educational/career outcomes, our findings indicate that acculturation was not related to academic goal progress and academic satisfaction. It is possible that the moderately low reliability for acculturation (.70) in the present study may have contributed to these nonsignificant relations.

The findings also indicate that college self-efficacy predicted positive anticipated outcomes for pursuing a college education, progress toward academic goals, and academic satisfaction. This is supported by Singley et al.’s (2010) work, which concluded that goal self-efficacy predicted goal progress among predominantly White college students. Other studies reported that math/science self-efficacy predicted math/science outcome expectations and math/science goal intentions of Mexican American middle school students (Navarro et al., 2007) and that Latino high school students with high career decision-making self-efficacy had more positive career outcome expectations (Gushee, 2006). Similarly, rural Appalachian high school students who felt confident in their ability to complete tasks pertaining to attending college, vocational/technical training, and/or finding employment reported high vocational/educational expectations (Ali & Saunders, 2006). Among the several significant indirect effects that emerged, college self-efficacy was one of the strongest mediators, playing a role on the relations between positive affect and college outcome expectations and between positive affect and academic goal progress.

This shows that positivity alone is not enough in predicting academic outcomes, but that it is also necessary for students to feel competent in their abilities. In essence, the findings demonstrate the importance of feeling academically confident in making progress toward academic goals and expectations for attending college, and in turn being satisfied with academic life.

Having favorable expectations for getting a college education was not related to making progress toward academic goals. As in the current study, studies by Lent and colleagues (Lent, Brown, et al., 2005; Lent, Singley, et al., 2005; Lent et al., 2007) did not find a significant relation between outcome expectations and goal progress. In contrast, the path between outcome expectations and academic satisfaction resulted in a significant positive finding. However, researchers found that outcome expectations for receiving a college degree did not explain unique variance in academic satisfaction (Lent et al., 2007). Participants in Lent et al.’s (2007) study were predominantly White, which may indicate that ethnic group affiliation may moderate this relationship. Our findings demonstrate that when Mexican American students expect favorable outcomes for going to college they are more likely to be satisfied with their academic life. In addition, reaching academic goals was related to satisfaction with academics and life in general.

The relation between goals and academic satisfaction has also been found in research (Lent et al., 2007). In contrast, however, goals were not significantly related to life satisfaction in a study on predominantly White college students (Lent, Singley, et al., 2005).

As expected and consistent with research (Lent, Singley, et al., 2005; Verbruggen & Sels, 2010), Mexican American college stu-
dents’ satisfaction with academic life was significantly related to life satisfaction.

The limitations of this study should be noted. First, the cultural context of these students’ academic environment is crucial to understanding the findings. The university’s student population was predominantly Mexican American, and students had daily exposure to the Mexican American culture. Therefore, future research should replicate this study in less Mexican-populated regions and universities to determine whether these findings can be generalized to other academic contexts. Second, given the diversity among Latino subgroup, the generalizability of the results to other Latino subgroups should be done with caution. Caveats with the measures used should also be noted. To better understand participants’ affective dispositions, a scale of negative affect should be included in future studies. As in previous studies (Betendorf & Fisher, 2009; Cuéllar, & Roberts, 1997; Flores, Ojeda, et al., 2006), the alpha coefficient for the ARSMA-II AOS is relatively low. Although the ARSMA-II is the most frequently used measure of bilinear acculturation among Latinos in the career development literature (Miller & Kerlow-Myers, 2009), researchers may want to use other measures with more adequate internal reliability, such as the Bidimensional Acculturation Scale, as it has been shown to have high internal consistency among Latinos (Marín & Gamba, 1996). Finally, this study was cross-sectional and thus cannot imply causation. Researchers may assess for causal links between the variables by applying a longitudinal methodology, and they can also test the reciprocal relations among the variables in Lent’s (2004) model.

Implications and Future Research

Our study tapped into behavioral acculturation (e.g., language usage, food, and music choices) and demonstrates the importance for Mexican American college students to be familiar with behavioral aspects of White culture (e.g., speaking, reading, writing in English) to excel in college. For instance, acculturation was positively related to college outcome expectations. This may indicate that it is important for Mexican American college students to focus on future goals and set future expectations, which are behaviors typically performed by individualistic, future-oriented cultures. Ruiz (1990) stated that Latinos often have the erroneous belief that economic, social, and personal success is possible only by becoming “White” and by shedding one’s cultural heritage. Thus, as an environmental resource, counseling personnel may help Mexican American college students adopt a bicultural identity to debunk the belief that they must abandon their heritage culture to succeed in the mainstream culture (Ruiz, 1990). Workshops that teach Mexican American students about the academic culture and strategies used by successful college students may also be helpful. In addition, college personnel may establish programs geared toward helping students transition from high school to college. Mexican American college students may benefit from developing goals in career counseling and learning about academic student services. Interventions that orient students to services available to them and that develop problem-solving and coping skills may help students deal with barriers to their academic goals.

There are several directions for future research. As the first study to apply Lent’s (2004) social cognitive model of well being with a Mexican American population, more studies are needed to assess the applicability of the model with other Latino samples. Future research can focus on samples of immigrant Latino students, students attending community and technical/vocational colleges, and special populations (e.g., students on academic probation). Gender differences should be examined given that there are more Latina women enrolled in college than Latino men (Saenz & Ponjuan, 2009). Including measures of Latino gender roles such as the Marianismo Beliefs Scale (Castillo, Perez, Castillo, & Ghosheh, 2010) to assess the Latina gender roles and the Traditional Machismo and Caballerismo Scale (Arciniega, Anderson, Tovar-Blank, & Tracey, 2008) to assess Latino men’s gender roles may also help understand the gender disparity. In addition, we used acculturation and enculturation as indicators of environmental supports and resources—constructs not explicitly theorized as such indicators by Lent. Given that only the behavioral component of acculturation was measured, cognitive acculturation that assesses cultural values such as familismo should be examined. Thus, more research is needed to determine whether such cultural factors are indeed good indicators of environmental supports and resources. Furthermore, other indicators of environmental supports and resources, such as social support and perceived barriers, should be examined. Another suggestion is to assess students’ academic and life satisfaction as they advance through college. This may help determine whether satisfaction levels shift as college standing progresses. It is also recommended that personality characteristics be considered, as recommended by Lent. In addition, the bidirectional paths proposed by Lent need to be tested, as this was not done in our study. Other domains of satisfaction (e.g., satisfaction in a particular major) should be studied. This is particularly relevant for nontraditional academic domains for Mexican Americans, such as science, technology, engineering, and mathematics fields.

References


