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Social Cognitive Predictors of First- and Non-First-Generation College Students' Academic and Life Satisfaction

Patton O. Garriott, Aaron Hudyma, Chesleigh Keene, and Dana Santiago
University of Denver

The present study tested Lent's (2004) social–cognitive model of normative well-being in a sample (N = 414) of first- and non-first-generation college students. A model depicting relationships between: positive affect, environmental supports, college self-efficacy, college outcome expectations, academic progress, academic satisfaction, and life satisfaction was examined using structural equation modeling. The moderating roles of perceived importance of attending college and intrinsic goal motivation were also explored. Results suggested the hypothesized model provided an adequate fit to the data while hypothesized relationships in the model were partially supported. Environmental supports predicted college self-efficacy, college outcome expectations, and academic satisfaction. Furthermore, college self-efficacy predicted academic progress while college outcome expectations predicted academic satisfaction. Academic satisfaction, but not academic progress predicted life satisfaction. The structural model explained 44% of the variance in academic progress, 56% of the variance in academic satisfaction, and 28% of the variance in life satisfaction. Mediation analyses indicated several significant indirect effects between variables in the model while moderation analyses revealed a 3-way interaction between academic satisfaction, intrinsic motivation for attending college, and first-generation college student status on life satisfaction. Results are discussed in terms of applying the normative model of well-being to promote first- and non-first-generation college students' academic and life satisfaction.

Keywords: academic satisfaction, life satisfaction, well-being, first-generation college students, college adjustment

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Despite rising university costs and recent debates regarding the value of higher education, obtaining a bachelor's degree remains one of the most critical pathways to economic and social mobility in the United States (U.S.). A recent national study showed that among the so-called "Millennial generation," college graduates provided higher ratings than their non-college-going peers on multiple indicators of economic and job satisfaction (Pew Research Center, 2014). Furthermore, engaging learning experiences and environmental supports have been shown to predict higher subjective well-being among college students (Gallup, Inc., 2014).

These data suggest that achieving a bachelor's degree is critically important to economic, job, and life satisfaction and that positive college experiences are associated with well-being. However, more research is needed to determine predictors of well-being among diverse college students, particularly those at higher risk of not completing postsecondary education. Indeed, due to the economic and social costs of *not* achieving a bachelor's degree, universities have seen increases in enrollments of historically underrepresented students, including first-generation college students (Engle & Tinto, 2008; Kena et al., 2014). While research points to how first-generation students are characteristically different from their peers, few studies have examined predictors of these students' academic and life satisfaction. Such research is needed given first-generation students' unique experiences and disproportionate nonpersistence rates in higher education (Chen & Carroll, 2005).

First-Generation College Students' Academic and Life Satisfaction

First-generation college students include those students whose parents or guardians have not achieved a bachelor's degree. This definition was adopted for the present study, since it is the most commonly used among admissions officers; parents completing bachelor's degrees are typically able to provide their children with more social capital related to attending and succeeding in college; and parents or guardians with bachelor's degrees tend to achieve more prestigious careers compared to those who do not (Davis, 2012). Researchers have estimated that first-generation students comprise approximately 43% to 50% of students attending postsecondary institutions (Chen & Carroll, 2005; Choy, 2001; National Center for Education Statistics (NCES), 2007; Nuñez & Cuccaro-Alamin, 1998). First-generation college students are becoming more visible on campuses and researchers have demonstrated a vested interest in understanding this unique student group given distinct challenges they may face.

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Patton O. Garriott, Aaron Hudyma, Chesleigh Keene, and Dana Santiago, Department of School and Counseling Psychology, University of Denver.

Correspondence concerning this article should be addressed to Patton O. Garriott, Department of School and Counseling Psychology, University of Denver, 201A Ruffatto Hall, Denver, CO 80208. E-mail: pat.garriott@du.edu

Many first-generation college students experience higher education differently than their non-first-generation peers (Davis, 2012). Several studies have identified unique characteristics of first-generation students that may influence their educational experience. Specifically, first-generation students tend to be: enrolled in college part-time, lower-income, less active in extracurricular activities, and less academically prepared than their peers (Bui, 2002; Nuñez & Cuccaro-Alamin, 1998; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996).

Associated challenges facing first-generation college students include: the struggle of navigating higher education without the aid of intergenerational information (Pascarella, Piersen, Wolniak, & Terenzini, 2004), managing feelings of guilt and confusion related to surpassing the educational attainment of family members and friends (Lohfink & Paulsen, 2005), ambivalence about college attendance (Davis, 2012), and cultural challenges (Lohfink & Paulsen, 2005). For example, many first-generation college students transition from communities and families that are directed by norms of interdependence. First-generation students may experience a cultural mismatch with the norms of independence that are prevalent in college environments and thus, may struggle with college curricula, institutional policies, and teaching practices (Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012). The convergence of these factors, alongside deficits in environmental (i.e., social capital) and internal resources (i.e., self-efficacy), influences first-generation students' academic and life satisfaction while attending college. Therefore, environmental supports, both on and off-campus, have been identified as critical to first-generation college students' success and overall well-being (Davis, 2012).

Theoretical Framework

Existing research indicates that first-generation college students' unique experiences in higher education may differentiate them from non-first-generation students. However, few studies have used existing theoretical frameworks to examine first-generation students' academic and life satisfaction. This is unfortunate, given the need for research that moves beyond descriptive comparisons of the characteristics of first- and non-first-generation college students and examines psychological aspects of their adjustment (Pascarella et al., 2004). To address these shortcomings in the literature, this study examined the utility of Lent's (2004) hypothesized model of normative well-being to predict the academic and life satisfaction of first- and non-first-generation college students. The model proposes that global life satisfaction is predicted by individual personality characteristics, social-cognitive variables, as well as goal pursuit and progress in specific life domains (Lent, 2004).

Personality variables in the model may include features such as trait positive and negative affect and are hypothesized to predict environmental supports and resources, self-efficacy expectations, domain-specific satisfaction, and overall life satisfaction (see paths 1 through 4 in Figure 1). Environmental supports and resources include goal-related resources, modeling, and encouragement and are hypothesized to predict self-efficacy expectations (path 5), outcome expectations (path 6), and domain-specific satisfaction (path 7). Environmental supports are also hypothesized to predict goal-directed progress (path 8). Domain-specific self-efficacy and outcome expectations are, in turn, hypothesized to predict goal-directed progress (paths 9 and l0) and domain satisfaction (paths

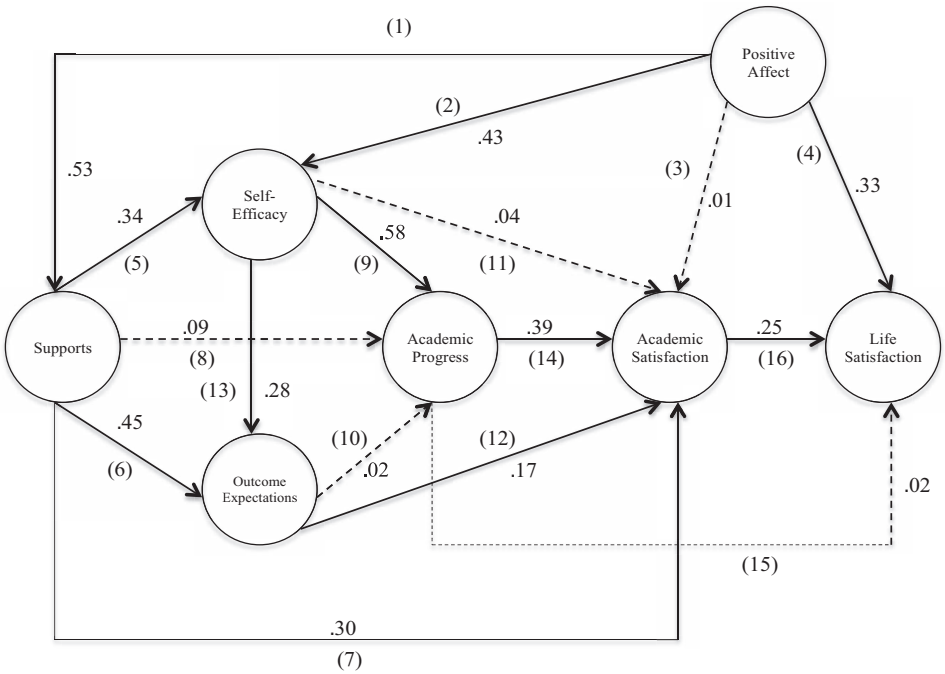

Figure 1. Results of the final structural model. Solid lines represent statistically significant paths ($p < .001$) in the model. Dashed lines represent nonsignificant ($p > .05$) paths in the model.

11 and 12). Self-efficacy is also proposed to predict outcome expectations (path 13). Goal-directed progress is hypothesized to predict domain-specific (path 14) and overall life satisfaction (path 15) while domain satisfaction is hypothesized to predict life satisfaction (path 16).

Cross-sectional research has supported hypothesized relationships in the model. Specifically, environmental supports, self-efficacy, and goal progress have been shown to predict domain-specific satisfaction and domain satisfaction has been shown to predict life satisfaction. Furthermore, positive affect has been shown to predict environmental supports, self-efficacy, domain satisfaction, and life satisfaction (Lent et al., 2005; Lent, Singley, Sheu, Schmidt, & Schmidt, 2007). Longitudinal research has also provided support for relationships in the model (Singley, Lent, & Sheu, 2010). However, support for the relationships between outcome expectations, domain progress, and domain satisfaction has been mixed. Some studies have even omitted outcome expectations from tests of the model given lack of support for its relationship with other variables in past research (Singley et al., 2010).

In addition to research that may help confirm or dispute some of the inconsistent findings of past studies testing the normative model of well-being, more research is needed that examines propositions of the full model with underrepresented and underserved groups. In studies that have tested the model, none have examined experiences of first-generation college students. However, it is possible the model could serve as an adequate representation of first-generation students' academic and life satisfaction, given its focus on variables noted in prior literature (Davis, 2012) as critical to their academic adjustment (e.g., self-efficacy, positive outcome expectations) and well-being (e.g., environmental supports). Notable exceptions in terms of examination of the model in underrepresented and understudied groups include studies with Mexican American (Ojeda, Flores, & Navarro, 2011), Portuguese (Lent, Taveira, Sheu, & Singley, 2009), Taiwanese, and Singaporean (Sheu, Chong, Chen, & Lin, 2014) college students, each of which generally provided support for the model's hypotheses. Thus, this study also served as a response to calls in the literature to test the model in more diverse samples (Sheu & Lent, 2009).

Mediators and Moderators

Lent (2004) also proposed a number of mediation and moderation hypotheses in the normative model of well-being. Hypothesized indirect effects include environmental supports to domain satisfaction through self-efficacy and outcome expectations, self-efficacy to goal progress through outcome expectations, and personality variables to domain and life satisfaction through self-efficacy and environmental supports. Studies examining these proposed indirect effects are limited; however, researchers have found support for the proposed indirect links between positive affect to domain satisfaction as well as life satisfaction through self-efficacy (Ojeda et al., 2011; Sheu et al., 2014) and environmental supports to domain satisfaction through self-efficacy and outcome expectations (Sheu et al., 2014). Given the small number of studies examining indirect effects in the model, more research with diverse samples is needed to test these hypotheses.

Lent (2004) also posited that the relationships between domain progress and satisfaction as well as domain satisfaction and life satisfaction would be moderated by an individual's perceived importance of the domain under investigation as well as intrinsic goals. To date, only one study has tested the hypothesis that perceived importance may moderate relationships between variables in the model and no studies have examined the role of intrinsic goal motivation. Research findings examining the role of perceived importance have failed to support moderation hypotheses (Lent et al., 2005).

Literature suggests first-generation college students may perceive achieving a bachelor's degree as less valuable or important compared to their peers (Davis, 2012; Higher Education Research Institute, 2007). Thus, the relationships between academic progress and academic satisfaction as well as academic progress and life satisfaction might be stronger at high levels of perceived importance for non-first-generation college students. Differences have also been found between first- and non-first-generation college students related to motivation to attend college and academic outcomes, with motivation serving as a stronger predictor for first-generation college students (Próspero & Vohra-Gupta, 2007). Thus, the relationship between academic progress and satisfaction might be stronger at high levels of intrinsic motivation for first-generation students. Researchers have also suggested that attending, and even succeeding in college, may not always result in increased life satisfaction for first-generation college students (Davis, 2012). For example, first-generation students may feel disconnected or even judged by family and friends as a result of reaching high educational aspirations (Davis, 2012). Thus, it is possible the relationship between academic and life satisfaction might be stronger at high levels of motivation for non-first-generation college students. Based on previous literature and these conceptual links, three-way interactions with first-generation student status added to moderation hypotheses in the normative model of well-being were tested.

Purpose of the Present Study

The purpose of the present study was to extend the literature on the utility of Lent's (2004) normative model of well-being in predicting the academic and life satisfaction of college students. This goal was achieved in several ways: (a) the full model was tested to replicate past findings with previous samples, (b) moderation hypotheses related to perceived importance of attending college and intrinsic motivation to attend college were tested, (c) mediation hypotheses were tested to examine proposed indirect links between variables in the model, and (d) hypotheses were tested in a sample of first- and non-first-generation college students to examine potential differences between these two groups. Hypotheses included:

Hypothesis 1: The structural model would provide an adequate fit to the data and variables would relate as hypothesized in the normative model of well-being (Lent, 2004).

Hypothesis 2: Self-efficacy and outcome expectations would mediate relationships between variables as hypothesized in the model.

Hypothesis 3a: Perceived importance of college would moderate, and specifically enhance, the relationship between academic progress and academic satisfaction as well as academic satisfaction and life satisfaction.

Hypotheses 3b: Intrinsic motivation for attending college would moderate, and specifically enhance, the relationship between academic progress and academic satisfaction as well as academic satisfaction and life satisfaction.

Potential variation in relationships among variables in the model by first-generation student status was also explored. Given that this was the first study to test the normative model of well-being in first- and non-first-generation college students, no specific hypotheses were made regarding differences in the model between these two groups of students. Similarly, three-way interactions on academic and life satisfaction were considered exploratory.

Method

Participants and Procedure

Participants were 414 college students recruited from two 4-year universities in the Rocky Mountain (26.8%, $n = 111$) and Midwestern (73.2%, $n = 303$) regions of the U.S. Approximately 52% ($n = 215$) of the sample identified as a first-generation college student while 48% ($n = 199$) were non-first-generation. In terms of gender, 77.3% ($n = 320$) of participants identified as female, 21.5% ($n = 89$) identified as male, and 0.5% ($n = 2$) identified as transgender. Three students (0.7%) did not provide this information. By class rank, participants identified as freshman (20.3%, $n = 84$), sophomore (21.7%, $n = 90$), junior (25.1%, $n = 104$), and senior (31.4%, $n = 130$). Six participants (1.4%) did not provide this information. The sample was predominantly White (80.4%, $n = 333$), with Latina/o (10.2%, $n = 30$), Native American (5.3%, $n = 22$), Multiracial (2.4%, $n = 10$), Asian/Asian American (1.2%, $n = 5$), and African American (0.7%, $n = 3$) students also represented in the sample. Eleven (2.7%) students identified as "other." Average self-reported GPA for the sample was 3.27 ($SD = .51$).

Following institutional review board approval as well as approval from campus administrators, e-mail invitations to participate in the study were sent to campus-wide student listservs accompanied by a link to complete the survey. Surveys took approximately 15–20 minutes to complete and students were able to enter a raffle for one of 10 $25 gift cards as incentive for participation.

Measures

Demographic form. Participants completed items regarding their gender, race/ethnicity, class rank, grade point average (GPA), and parental education levels. Participants were specifically asked whether either of their parents had achieved a bachelor's degree. Those participants who responded "no" to this item were identified in later analyses as first-generation college students.

Academic goal progress. Perceived academic goal progress was assessed with a seven-item scale used in prior research (Lent et al., 2005). Participants were asked to rate their progress on academic goals using a Likert scale ranging from 1 (*no progress at all*) to 5 (*excellent progress*). A sample item is, "Excelling at your academic major." Scores are averaged with high scores indicative of high ratings of progress toward academic goals. The scale has been shown to correlate in expected directions with measures of college self-efficacy, outcome expectations, environmental supports, and academic satisfaction (Lent et al., 2005). Coefficient alphas for scale scores in past studies with college students have ranged from .84 to .90 (Lent et al., 2005). Coefficient alpha for scale scores in the present study was .87.

Academic satisfaction. Academic satisfaction was measured with a seven-item scale used in prior research (Lent et al., 2005). Participants rated their level of satisfaction with their academic experience on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is, "I am generally satisfied with my academic life." Scores are averaged with high scores indicative of high academic satisfaction. The scale has been shown to correlate in expected directions with measures of academic and life satisfaction (Lent et al., 2005). Coefficient alphas for scale scores in past studies with college students have ranged from .80 to .90 (Lent et al., 2005). Coefficient alpha for scale scores in the present study was .88.

College outcome expectations. The College Outcome Expectations Questionnaire (Flores, Navarro, & DeWitz, 2008) was used to assess participants' ratings of possible outcomes of attending college. Nineteen items are rated on a Likert scale ranging from 1 (*strongly disagree*) to 10 (*strongly agree*). A sample item is, "If I get a college education, then I will do well in life." Items are averaged with high scores indicative of positive expectations for receiving a college education. The scale has been shown to correlate in expected directions with college self-efficacy and interests (Robitschek & Flores, 2007). Internal consistency estimates for scale scores have ranged from .90 to .94 (Flores et al., 2008; Ojeda et al., 2011). Coefficient alpha for scale scores in the present study was .93.

College self-efficacy. The College Self-Efficacy Inventory (Solberg, O'Brien, Villareal, Kennel, & Davis, 1993) was used to measure participants' confidence in their ability to complete tasks and demands associated with attending college. Twenty-one items are rated on a Likert scale ranging from 0 (*not at all confident*) to 10 (*very confident*) with high averaged scores indicative of high college self-efficacy. A sample item is, "Do well on your exams." A factor analysis revealed three subscales for the measure, including course, roommate, and social efficacy. The scale has been shown to correlate with measures of academic performance and college persistence (Gore, Leuwerke, & Turley, 2005-2006). Coefficient alphas for scale scores have ranged from .90 to .93 in prior studies (Ojeda et al., 2011; Solberg et al., 1993). Coefficient alphas for scale scores in the present study were .91 for the full scale, .85 for the course subscale, .80 for the roommate subscale, and .84 for the social subscale.

Environmental supports. Perceptions of environmental supports were assessed with a nine-item scale used in prior research with college students (Lent et al., 2005). Items are rated on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is, "I feel that there are people 'like me' at this college." Items are averaged with high scores indicative of high ratings of environmental supports at, and for attending, college. The scale has been shown to correlate with measures of self-efficacy, outcome expectations, academic progress, and academic satisfaction (Lent et al., 2005). Coefficient alphas for scale scores have ranged from .81 to .84 in prior research (Lent et al., 2005, 2007). Coefficient alpha for scale scores in the present study was .81.

Intrinsic motivation. Intrinsic motivation for attending college was assessed with 16 items from the Academic Motivation Scale (AMS; Vallerand et al., 1992). Items for the AMS are anchored on a Likert scale ranging from 1 (*not at all*) to 7 (*exactly*) and are averaged with high scores indicative of high intrinsic academic motivation. Participants were asked to respond to items corresponding to, "reasons why you go to college." A sample item is, "To show myself that I am an intelligent person." The original AMS divided intrinsic motivation items into three categories: motivation to know, accomplishment motivation, and stimulation. Coefficient alphas for these subscales have ranged from .84 to .86 in prior research (Vallerand et al., 1992). The AMS has been shown to correlate with similar measures of academic motivation (Vallerand et al., 1993). For the purpose of the present study, subscales measuring intrinsic motivation on the AMS were combined to form one full-scale score for intrinsic academic motivation. This method has been used successfully in prior research with college students (Ratelle, Senécal, Vallerand, & Provencher, 2005). Coefficient alpha for scale scores on this full scale was .94.

Life satisfaction. The Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffen, 1985) assessed participants' ratings of their overall life satisfaction. Participants rated five items on a Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item is, "In most ways, my life is close to ideal." Items are summed and averaged with high scores indicative of high life satisfaction. Coefficient alpha for SWLS scores was reported as .87 in its initial validation with college students (Diener et al., 1985). The scale has been shown to correlate with other measures of subjective well-being and to be unrelated to social desirability (Diener et al., 1985). Coefficient alpha for scale scores in the present study was .89.

Perceived importance of college. A four-item scale developed by the first author was used to assess perceived importance of college. Items were written and scaled based on prior literature (Hsieh, 2012; Lent et al., 2005). Because relational factors, such as family beliefs regarding college attendance, can impact first-generation college students' attitudes toward pursuing and completing a bachelor's degree (Higher Education Research Institute, 2007), items addressing personal and familial perceived importance of college were included in the measure. Items were rated on a Likert scale ranging from 1 (*not at all*) to 9 (*very much so*). A sample item is, "Going to college is important to me." High scores are indicative of high perceived importance of attending and completing college. A parallel analysis suggested one factor best represented items on the scale. Coefficient alpha for scale scores on this measure in the present study was .75.

Positive affect. The Positive Affect subscale of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) was used to assess experiences of positive emotions. Participants rated 10 items on a Likert scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). A sample item is, "Enthusiastic." Scores are summed and averaged with higher scores indicative of more frequent general experiencing of positive emotions. The scale has been shown to correlate in expected directions with other measures of psychological distress and psychopathology (Watson et al., 1988). Coefficient alphas for the Positive Affect subscale have ranged from .86 to .90 in prior research with college students (Watson et al., 1988). Coefficient alpha for scale scores in the present study was .88.

Plan of Analysis

Structural equation modeling (SEM) was used to test the fit of measurement, and hypothesized structural models. AMOS 22.0 (Arbuckle, 2013) statistical package and the maximum likelihood (ML) method were used to estimate models. The comparative fit index (CFI), root mean square error approximation (RMSEA), and standardized root-mean-square residual (SRMR) were examined to evaluate the fit of measurement and structural models. Researchers have suggested that CFI $\geq$ .95, RMSEA $\leq$ .06, and SRMR values $\leq$.05 represent very close model-to-data fit, while CFI $\geq$ .90, RMSEA $\leq$ .08, and SRMR values $\leq$.08 represent adequate model-to-data fit (Kline, 2005).

To better account for measurement error, latent variables were created for the unidimensional constructs of positive affect, environmental supports, outcome expectations, academic progress, academic satisfaction, and life satisfaction. The three subscales comprising the college self-efficacy scale were used as indicators of the self-efficacy latent variable. Item parceling was conducted to establish observed indicators for all other latent variables (Russell, Kahn, Spoth, & Altmaier, 1998). Maximum-likelihood exploratory factor analyses and prior research (Lent et al., 2005) suggested unidimensional factor structures for each scale subjected to parceling procedures. Items with high, medium, and lower factor loadings were paired to balance loadings on each latent variable (Little, Cunningham, Shahar, & Widaman, 2002). Confirmatory factor analyses were conducted to ensure item parcels significantly loaded onto their respective factors (Hagtvet & Nasser, 2004).

Following confirmation that the measurement model adequately fit the data and all factors significantly loaded onto latent variables, a hypothesized structural model, which included all paths originally proposed by Lent (2004), was tested. A multiple group analysis was conducted to explore whether first-generation student status might moderate relationships between variables in the final structural model. The final model was fit across first- and non-first-generation college students with parameters allowed to vary (i.e., unconstrained model). Next, the model was fit across both groups with parameters constrained to be equal (i.e., fully constrained model). A two-index strategy was used for model comparisons. Specifically, significant chi-square difference values as well as ΔCFI values $>$ .01 between models were used, as the chi-square difference test tends to be overly sensitive to sample size and model complexity (Cheung & Rensvold, 2002).

Mediation hypotheses were tested using the bootstrapping statistical method. A total of 10,000 random samples were generated in AMOS with 95% bias-corrected confidence intervals examined for statistical significance. Indirect paths through multiple possible mediators were explored using the RMediation program (Tofighi & MacKinnon, 2011). Confidence intervals not including zero were indicative of a mediation effect (Mallinckrodt, Abraham, Wei, & Russell, 2006). Moderation hypotheses were tested using the procedures outlined by Frazier, Tix, and Barron (2004).

Results

Preliminary Analyses

Data screening. Of the 1,718 e-mail invitations sent to students, a total of 600 students completed the online survey for a

response rate of 34.92%. An additional 160 students either did not complete at least 80% of the items on each scale or did not indicate whether they were a first- or non-first-generation college student and were eliminated from the final sample. The full information maximum likelihood method was used to address additional instances of missing values.

Tests for univariate and multivariate normality revealed that three cases had *z*-scores that exceeded the critical value of 3.29, while 23 cases exceeded the critical chi-square value of 26.12. These cases were removed from the dataset leaving a final sample of $N = 414$. Individual variables met acceptable levels of skewness <3 and kurtosis <10 for SEM (Weston & Gore, 2006) as well as assumptions of linearity and homoscedasticity. Mardia's coefficient (20.08) was outside the range (>5) recommended for multivariate normality in SEM (Bentler, 2004). Thus, robust ML estimation was used in all subsequent SEM analyses.

Measurement model. A test of the measurement model revealed close model-to-data fit ($\chi^2 = 370.79$, $p < .001$; CFI = .95; RMSEA = .07 [90% CI = .06, .08]; SRMR = .03). Furthermore, all indicators significantly loaded onto latent variables (Table 1).

Primary Analyses

Means, standard deviations, and intercorrelations among main study variables are included in Table 2. A table with correlations disaggregated by generation status is available in the online supplemental materials. Multivariate analyses of variance (MANOVA) indicated there were no differences on any of the main study variables between students from the two universities serving as sites for data collection, Wilk's $\lambda = .96$, $F(1, 413) = 1.01$, $p = .438$, $\eta^2 = .03$; by class rank, Wilk's $\lambda = .87$, $F(4, 410) = 1.11$, $p = .297$, $\eta^2 = .04$; gender, Wilk's $\lambda = .96$, $F(1, 413) = .80$, $p = .699$, $\eta^2 = .01$; or race/ethnicity, Wilk's $\lambda = .69$, $F(6, 408) = 1.14$, $p = .151$, $\eta^2 = .04$. A MANOVA with first-generation student status entered in the model was statistically significant, Wilk's $\lambda = .94$, $F(1, 413) = 2.47$, $p = .009$, $\eta^2 = .05$. Univariate tests indicated the only significant difference was on the perceived importance variable, $F(1, 413) = 4.45$, $p = .031$, $\eta^2 = .01$. Specifically, non-first-generation college students provided higher ($M = 8.28$) mean scores on this variable compared to first-generation students ($M = 8.07$).

Table 1
Means, Standard Deviations, and Factor Loadings of Observed Variables

Variable	*M*	*SD*	Score range	Factor loading
Academic progress				
Parcel 1	4.11	0.63	1–5	0.86
Parcel 2	4.19	0.61	1–5	0.90
Academic satisfaction				
Parcel 1	4.27	0.60	1–5	0.88
Parcel 2	4.20	0.62	1–5	0.93
College outcome expectations				
Parcel 1	8.37	1.17	0–9	0.82
Parcel 2	8.04	1.37	0–9	0.96
Parcel 3	8.16	1.37	0–9	0.93
College self-efficacy				
Course	8.15	1.26	0–10	0.79
Roommate	8.33	1.33	0–10	0.69
Social	8.02	1.43	0–10	0.88
Environmental supports				
Parcel 1	4.36	0.58	1–5	0.77
Parcel 2	4.24	0.60	1–5	0.81
Parcel 3	4.18	0.62	1–5	0.98
Life satisfaction				
Parcel 1	4.92	1.42	1–7	0.82
Parcel 2	5.22	1.22	1–7	0.98
Positive affect				
Parcel 1	3.96	0.64	1–5	0.83
Parcel 2	3.77	0.64	1–5	0.84
Parcel 3	3.76	0.71	1–5	0.84

Note. All factor loadings are statistically significant at the $p < .001$ level.

Fit statistics for the structural model suggested adequate fit to the data ($\chi^2 = 428.26$, $p < .001$; CFI = .94; RMSEA = .05 [90% CI = .07, .08]; SRMR = .05). A depiction of the structural model along with significant paths is represented in Figure 1. A figure depicting the structural model with path coefficient disaggregated by generation status is available in the online supplemental materials. Positive affect significantly predicted environmental supports, college self-efficacy, and life satisfaction, but did not significantly predict academic satisfaction. Environmental supports significantly predicted college self-efficacy, college outcome expectations, and academic satisfaction, but did not predict academic progress. College self-efficacy predicted outcome expectations and academic progress, but did not predict academic satisfaction, whereas outcome expectations did not significantly predict academic progress, but did predict academic satisfaction. Academic progress significantly predicted academic, but not life satisfaction, and academic satisfaction significantly predicted life satisfaction. The model accounted for 44% of the variance in academic progress, 56% of the variance in academic satisfaction, and 27% of the variance in life satisfaction.

Multiple group analysis. Invariance tests were conducted to explore whether first-generation student status might moderate relationships between variables in the model. A model with first- and non-first-generation students constrained to be equal on all parameters was compared to a model in which paths between the two groups were allowed to vary. For the fully unconstrained model, fit statistics suggested adequate fit to the data ($\chi^2 = 582.10$, $p < .001$; CFI = .93; RMSEA = .05 [90% CI = .05, .06]; SRMR = .06). A test of the structural model with constraints placed on the parameters for indicators of the latent variables (i.e., constrained measurement model) also suggested adequate fit to the data ($\chi^2 = 588.06$, $p < .001$; CFI = .93; RMSEA = .05 [90% CI = .05, .06]; SRMR = .06). The chi-square difference test between the completely unconstrained and constrained measurement models was nonsignificant, $\Delta\chi^2(11) = 5.96$, $p > .05$, and the ΔCFI was < .01, suggesting measurement invariance. Fit statistics for the fully constrained model, with all parameters constrained to be equal across groups, indicated this model was also an adequate fit to the data ($\chi^2 = 629.42$, $p < .001$CFI = .93; RMSEA = .05 [90% CI = .04, .06]; SRMR = .06). The chi-square difference test comparing this model with the constrained measurement model was nonsignificant, $\Delta\chi^2(34) = 41.36$ $p > .05$, and the ΔCFI was < .01 indicating first-generation student status did not moderate relationships between variables in the model.

Tests of mediation and moderation. Results of bootstrapping analyses showed that self-efficacy mediated the relationship between positive affect and academic satisfaction (CI = [.168, .383]) as well as environmental supports and academic progress (CI = [.049, .369]). Furthermore, outcome expectations mediated

Table 2
Means, Standard Deviations, and Correlations Among Variables

Variable	1	2	3	4	5	6	7	8	9
1. Academic progress		.54	.36	.26	.33	.35	.24	.46	.55
2. Academic satisfaction			.53	.40	.36	.50	.29	.43	.47
3. Environmental supports				.31	.45	.51	.48	.43	.48
4. Intrinsic motivation					.19	.55	.37	.36	.34
5. Life satisfaction						.39	.20	.43	.42
6. Outcome expectations							.48	.47	.46
7. Perceived importance								.26	.24
8. Positive affect									.52
9. Self-efficacy									
M	4.15	4.24	4.26	5.40	5.10	7.86	8.17	3.82	8.01
SD	0.60	0.58	0.52	1.04	1.24	1.24	0.97	0.60	1.22

Note. All correlations are statistically significant at the $p < .001$ level.

the relationship between environmental supports and academic satisfaction (CI = [.033, .158]). No additional indirect effects were statistically significant.

Moderation analyses were next conducted to test two and three-way interactions among variables. Continuous predictors were first centered to reduce multicollinearity (Frazier et al., 2004). Next, multiple regressions with the standardized predictors and moderators in Step 1, two-way interactions in Step 2, and three-way interactions in Step 3 were conducted. For the first two regressions, with academic and life satisfaction as the criterion variables and perceived importance as the moderator, the second and third steps of the regressions did not result in a significant increase in variance explained. Thus, it was determined that perceived importance and the interaction between perceived importance and first-generation student status did not moderate the relationship between academic progress and academic satisfaction nor academic and life satisfaction. For the next two regressions, with intrinsic motivation as the moderator, only the third step of the regression with life satisfaction as the criterion variable was significant. Specifically, in Step 1 of the regression, academic satisfaction, intrinsic motivation, and first-generation student status accounted for 38% of the variance in life satisfaction. In Step 2, none of the two-way interactions added significant incremental variance to the equation. However, in Step 3, the three-way interaction between academic satisfaction, intrinsic motivation, and first-generation student status did add significant incremental variance, $\Delta R^2 = .01$, $F(1, 406) = 6.80$, $p = .009$.

Simple slope and simple interaction analyses were next conducted to further explore the nature of the significant three-way interaction (Aiken & West, 1991). Results of these analyses (see Panel A in Figure 2) indicated that when academic satisfaction was low, the slope of intrinsic motivation on life satisfaction was not significantly different from zero for first-generation ($b = .13$, $\beta = .06$, $p = .224$) or non-first-generation college students ($b = .11$, $\beta = .05$, $p = .278$). A simple interaction analysis showed that at low levels of academic satisfaction, the slopes for first- and non-first-generation college students were not significantly different ($p = .632$). However, at high levels of academic satisfaction (see Panel B in Figure 2), analyses indicated that while the slope for intrinsic motivation on life satisfaction was not significant for first-generation college students ($b = -.02$, $\beta = -.01$, $p = .782$), the slope was significant for non-first-generation college students ($b = .29$, $\beta = .14$, $p = .007$). A simple interaction analysis showed that for students with high academic satisfaction, the slopes for first- and non-first-generation college students were significantly different ($p = .023$). That is, at high levels of academic satisfaction, the relationship between intrinsic motivation and life satisfaction was positive and stronger for non-first-generation college students.

Discussion

The present study was the first to test Lent's (2004) model of normative well-being in a sample of first- and non-first-generation college students. Additionally, this was one of a select few studies to examine mediation and moderation hypotheses in the model and the only one to examine the moderating role of intrinsic motivation for attending college. Findings extend literature on the normative model of well-being as well as the academic and life satisfaction of first-generation college students.

The first hypothesis—that the model would provide an adequate fit to the data and variables would relate as expected—received partial support. Fit statistics suggested the model provided an adequate fit to the data across first- and non-first-generation college students.

While a number of path coefficients were significant, not all hypothesized relationships in the model were supported. Contrary to expectations, positive affect and self-efficacy did not predict academic satisfaction, outcome expectations did not predict academic progress, and academic progress did not predict life satisfaction. The nonsignificant relationships between variables in the model replicate findings from previous cross-sectional research with college students (Lent et al., 2005). Another study found statistically significant, but relatively small coefficients between some of these variables in a test of the full model (Ojeda et al., 2011). It may be that the relatively high and restricted range of scores on academic progress and satisfaction in this study diminished the amount of variance that could be predicted for these variables.

Contrary to prior research (i.e., Lent et al., 2005), environmental supports predicted self-efficacy and outcome expectations predicted academic satisfaction in the present study. This latter finding replicates research with Mexican American college students (Ojeda et al., 2011). It should be noted that Lent et al. (2005) found

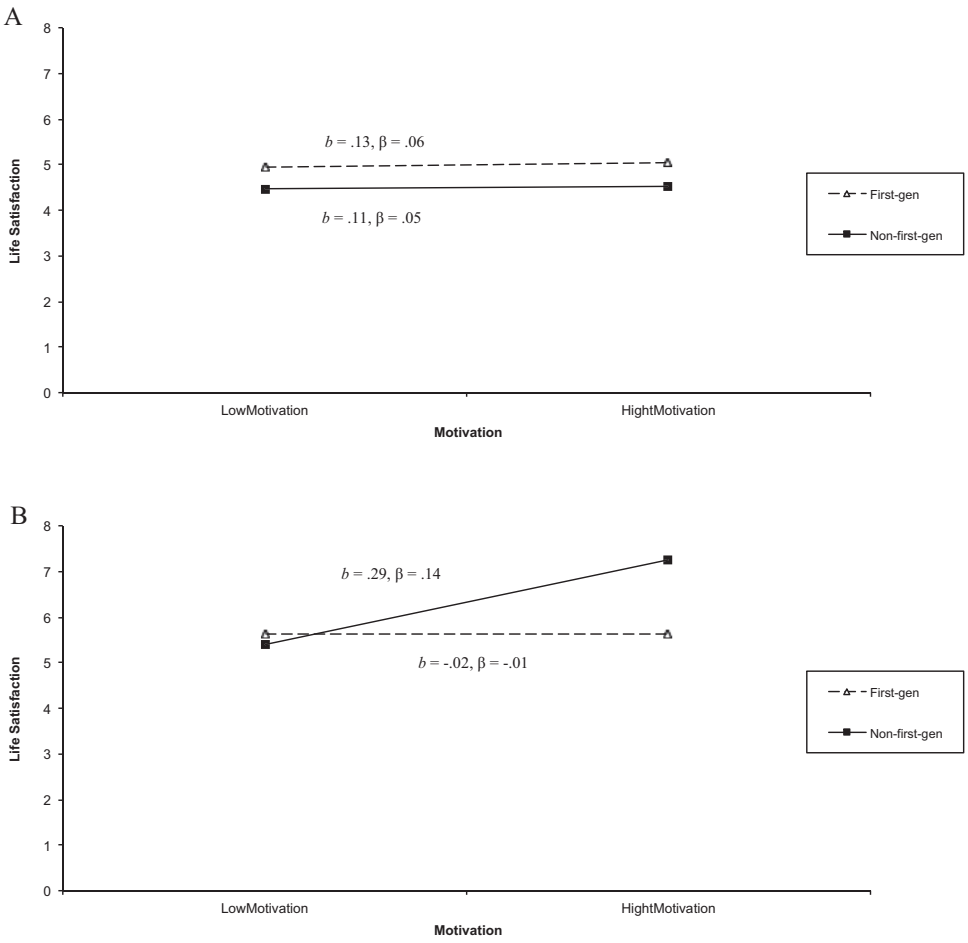

Figure 2. Three-way interaction between academic satisfaction, intrinsic motivation, and first-generation student status on life satisfaction. Panel A shows low levels of academic satisfaction. Panel B shows high levels of academic satisfaction. First-gen = first-generation college students. Non-first-gen = non-first-generation college students.

no support for the relationship between environmental supports and *academic* self-efficacy, but did observe a significant positive relationship between these two variables when *social* self-efficacy in the college context was assessed. The inclusion of social elements of college self-efficacy in our assessment of this construct may explain the positive relationship between these two variables in the present study. The finding regarding outcome expectations may reflect the possibility that positive expectations for attending college are stronger predictors of academic satisfaction when assessed among students underrepresented in higher education. Given the measure used in the present study was used in the Ojeda et al. (2011) study, instrumentation issues could also explain the disparate findings.

The second hypothesis—that college self-efficacy and outcome expectations would mediate relationships between variables in the model—was supported. Self-efficacy mediated the relationship between positive affect and academic satisfaction as well as environmental supports and academic progress, while outcome expectations mediated the relationship between environmental supports and academic satisfaction. Contrary to expectations, outcome expectations did not mediate the relationship between self-efficacy and goal progress, self-efficacy did not mediate the relationship between positive affect and life satisfaction, outcome expectations did not mediate the relationship between environmental supports and goal progress, and environmental supports did not mediate the relationship between positive affect and domain or life satisfaction.

The finding regarding self-efficacy as a mediator of positive affect and academic satisfaction replicates prior research (Ojeda et al., 2011; Sheu et al., 2014) and suggests that as general positive affect increases among first- and non-first-generation college students, feelings of confidence related to the tasks and demands of college also increase, leading to higher academic satisfaction. Longitudinal findings have shown that positive affect may have a bidirectional relationship with self-efficacy and environmental supports (Lent et al., 2009). Thus, there may be reciprocal relationships between these variables over time not captured by the cross-sectional design of this study. It may be that self-efficacy and outcome expectations mediated relations between personal, environmental, and academic variables but not life satisfaction due to their domain specificity. Contrary to prior research (Lent et al.,

2005), this study suggests the relationship between environmental supports and academic progress is fully explained by self-efficacy.

Hypotheses 3a and 3b proposed that perceived importance of college and intrinsic motivation for college would each moderate the relationships between academic progress and academic satisfaction as well as academic and life satisfaction. While no two-way interactions were significant in moderation analyses, a three-way interaction between academic satisfaction, intrinsic motivation, and first-generation student status was observed. Specifically, at high levels of academic satisfaction, the relationship between intrinsic motivation and life satisfaction was stronger for non-first-generation college students. Among non-first-generation students, for whom attending and succeeding in college is often socialized, valued, and expected, feeling intrinsically motivated to attend college while also feeling highly satisfied academically may present an ideal state, thus leading to high levels of life satisfaction. However, for first-generation college students, attending and succeeding in college can sometimes come with personal costs such as geographical and psychological distancing from friends and family, feelings of being an imposter, and significant financial debt (Davis, 2012). It is possible that because of these associated costs of attending and even succeeding in college, first-generation students do not necessarily experience higher life satisfaction when academic satisfaction and intrinsic motivation to attend college are high. It should be noted that these interpretations must be tempered by the fact that although the ΔR^2 in the three-way interaction was statistically significant, the amount of change (.01) was small in a practical sense. This could imply that the moderating influences of motivation and first-generation status on the relationship between academic and life satisfaction are relatively weak.

Limitations

While this study advances research on the academic and life satisfaction of first- and non-first-generation college students, several limitations should be noted. The racial/ethnic and gender diversity of the sample in the present study was limited, with White and female students constituting a substantial majority of participants. Given that students of color tend to be overrepresented among first-generation college students, their lack of representation in the current sample limits generalizability of the findings. The overrepresentation of females may also limit generalizability of our findings to the general population of college students. Similarly, participants in the present study were recruited from two universities that serve higher than average percentages of first-generation college students. Thus, the unique qualities of these universities and their ability to serve first-generation students may have obscured potential differences between first- and non-first-generation students not captured in this investigation. For example, first-generation students in the present study may have reported equivalent levels of environmental supports compared to their peers due to their increased university presence and associated attention to their unique needs. While efforts were made to provide a more complete assessment of students' perceived importance of college, results of moderation analyses were nonsignificant. Although results provided some support for the reliability and validity of this instrument, more rigorous procedures associated with scale development studies were not conducted to create the measure. Furthermore, given the exploratory nature of three-way interactions between academic satisfaction, intrinsic motivation, and generation status in this study as well as complexities involved in testing latent interactions in SEM, these analyses were conducted using observed variables and regression. Future research might examine latent interactions using these variables within the context of the full normative model of well-being.

It should also be noted that the self-efficacy and outcome expectation measures used in this study referenced broader (i.e., social life) aspects of the college experience, compared to measures of academic progress and satisfaction. It is possible that these inconsistencies in measurement affected the strength of predictor-criterion relationships observed in this study. Regarding the self-efficacy scale, it is also possible that some students did not have roommates or were living alone. This may have affected responses to this subscale and the magnitude of relationships between self-efficacy and other variables in the model. Finally, item parceling was used to establish latent variables, resulting in potentially incomplete assessment of constructs in this study. Thus, creation of additional measures and cross-validation of our findings would benefit future literature.

Implications

Results from this study suggest that the normative model of well-being may be a useful theoretical framework from which to predict the academic and life satisfaction of first- and non-first-generation college students. Given the number of positive relationships between environmental supports and other variables in the model, counselors may consider focusing on availability of various supports for first- and non-first-generation students as they adjust to the demands of college. Access to mentors, supportive friends and family, as well as helpful teachers may be useful to explore. Colleges and universities may also develop or ensure adequate funding for systems-level plans and resources to connect students with supportive persons on campus or reach out to important people in students' lives. Clinicians may also assess students' confidence in their ability to succeed with the various tasks and demands of college as well as what they expect to get out of college, since our findings suggest that these variables may predict academic progress and satisfaction. Results of moderation analyses suggest that generation status should be accounted for when assessing how academic satisfaction and intrinsic academic motivation together inform a student's life satisfaction. In particular, intrinsic academic motivation may be a point of focus when working with academically satisfied non-first-generation students on issues related to overall life satisfaction. In contrast, intrinsic academic motivation may be less important when addressing life satisfaction with academically satisfied first-generation students.

In terms of future research, our findings suggest the social-cognitive model of normative well-being (Lent, 2004) is a promising theoretical framework from which to examine the academic and life satisfaction of first-generation college students. Future studies could examine actual (e.g., participation in university clubs or mentorship programs) as opposed to perceived environmental supports for first-generation students, since these have been noted as particularly important to their academic success in the literature (Engle & Tinto, 2008). Future research would also benefit from longitudinal studies of the relations between environmental supports, self-efficacy, outcome expectations, and academic progress

among first-generation students—particularly in the first year of study when many of these students make nonpersistence decisions (Choy, 2001). Finally, future research on interventions designed to support first-generation students could utilize the normative model as a theoretical framework to examine variables (e.g., self-efficacy and outcome expectations) that may explain effects of interventions on outcomes (e.g., academic progress).

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage.

Arbuckle, J. (2013). Amos (Version 22.0) [Computer program]. Chicago, IL: SPSS.

Bentler, P. M. (2004). *EQS 6 structural equations program manual*. Encino, CA: Multivariate Software.

Bui, K. V. T. (2002). First-generation college students at a four-year university: Background characteristics, reasons for pursuing higher education and first-year experiences. *College Student Journal, 36,* 3–9.

Chen, X., & Carroll, C. D. (2005). *First-generation students in postsecondary education: A look at their college transcripts (NCES 2005-171)*. Washington, DC: U. S. Department of Education, National Center for Education Statistics, U.S. Government Printing Office. Retrieved from http://nces.ed.gov/pubs2005/2005171.pdf

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling, 9,* 233–255. http://dx.doi.org/10.1207/S15328007SEM0902_5

Choy, S. (2001). *Students whose parents did not got to college: Postsecondary access, persistence, and attainment*. Washington, DC: U. S. Department of Education, National Center for Educational Statistics.

Davis, J. (2012). *The first generation student experience: Implications for campus practice, and strategies for improving persistence and success*. Sterling, VA: Stylus Publishing.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment, 49,* 71–75. http://dx.doi.org/10.1207/s15327752jpa4901_13

Engle, J., & Tinto, V. (2008). *Beyond access: College success for low-income, first-generation students*. Washington, DC: Pell Institute.

Flores, L. Y., Navarro, R. L., & DeWitz, S. J. (2008). Mexican American high school students' post-secondary educational goals: Applying social cognitive career theory. *Journal of Career Assessment, 16,* 489–501. http://dx.doi.org/10.1177/1069072708318905

Frazier, P. A., Tix, A. P., & Barron, K. E. (2004). Testing moderator and mediator effects in counseling psychology research. *Journal of Counseling Psychology, 51,* 115–134. http://dx.doi.org/10.1037/0022-0167.51.1.115

Gallup, Inc. (2014). *Great jobs, great lives: The 2014 Gallup-Purdue index report*. Washington, DC: Author.

Gore, A., Jr., Leuwerke, W. C., & Turley, S. E. (2005). A psychometric study of the college self-efficacy inventory. *Journal of College Student Retention: Research, Theory and Practice, 7,* 227–244. http://dx.doi.org/10.2190/5CQF-F3P4-2QAC-GNVJ

Hagtvet, K. A., & Nasser, F. M. (2004). How well do item parcels represent conceptually defined latent constructs? A two-facet approach. *Structural Equation Modeling, 11,* 168–193. http://dx.doi.org/10.1207/s15328007sem1102_2

Higher Education Research Institute. (2007, May). *First in my family: A profile of first-generation college students at four-year institutions since 1971*. Los Angeles, CA: University of California, Los Angeles.

Hsieh, C.-M. (2012). Importance is not unimportant: The role of importance weighting in QoL measures. *Social Indicators Research, 109,* 267–278. http://dx.doi.org/10.1007/s11205-011-9900-z

Kena, G., Aud, S., Johnson, F., Wang, X., Zhang, J., Rathbun, A., . . . Kristapovich, P. (2014). *The condition of education 2014* (Report No. NCES 2014–083). Washington, DC: U.S. Department of Education, National Center for Education Statistics. Retrieved from http://nces.ed.gov/pubsearch

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York, NY: Guilford Press.

Lent, R. W. (2004). Toward a unifying theoretical and practical perspective on well-being and psychosocial adjustment. *Journal of Counseling Psychology, 51,* 482–509. http://dx.doi.org/10.1037/0022-0167.51.4.482

Lent, R. W., Singley, D., Sheu, H.-B., Gainor, K. A., Brenner, B. R., Treistman, D., & Ades, L. (2005). Social cognitive predictors of domain and life satisfaction: Exploring the theoretical precursors of subjective well-being. *Journal of Counseling Psychology, 52,* 429–442.

Lent, R. W., Singley, D., Sheu, H.-B., Schmidt, J. A., & Schmidt, L. C. (2007). Relation of social-cognitive factors to academic satisfaction in engineering students. *Journal of Career Assessment, 15,* 87–97. http://dx.doi.org/10.1177/1069072706294518

Lent, R. W., Taveira, M. D. C., Sheu, H.-B., & Singley, D. (2009). Social cognitive predictors of academic adjustment and life satisfaction in Portuguese college students: A longitudinal analysis. *Journal of Vocational Behavior, 74,* 190–198. http://dx.doi.org/10.1016/j.jvb.2008.12.006

Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling, 9,* 151–173. http://dx.doi.org/10.1207/S15328007SEM0902_1

Lohfink, M. M., & Paulsen, M. B. (2005). Comparing the determinants of persistence for first-generation and continuing-generation students. *Journal of College Student Development, 46,* 409–428. http://dx.doi.org/10.1353/csd.2005.0040

Mallinckrodt, B., Abraham, W. T., Wei, M., & Russell, D. W. (2006). Advances in testing the statistical significance of mediation effects. *Journal of Counseling Psychology, 53,* 372–378. http://dx.doi.org/10.1037/0022-0167.53.3.372

National Center for Education Statistics. (2007). *Digest of education statistics 2006*. Washington, DC: U. S. Department of Education.

Nuñez, A. M., & Cuccaro-Alamin, S. (1998). *First-generation students: Undergraduates whose parents never enrolled in postsecondary education* (Report No. NCES 98–082). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Ojeda, L., Flores, L. Y., & Navarro, R. L. (2011). Social cognitive predictors of Mexican American college students' academic and life satisfaction. *Journal of Counseling Psychology, 58,* 61–71. http://dx.doi.org/10.1037/a0021687

Pascarella, E. T., Pierson, C. T., Wolniak, G. C., & Terenzini, P. T. (2004). First-generation college students: Additional evidence on college experiences and outcomes. *The Journal of Higher Education, 75,* 249–284. http://dx.doi.org/10.1353/jhe.2004.0016

Pew Research Center. (2014). *The cost of not going to college*. Retrieved from http://www.pewsocialtrends.org/2014/02/11/the-rising-cost-of-not-going-to-college/

Próspero, M., & Vohra-Gupta, S. (2007). First generation college students: Motivation, integration, and academic achievement. *Community College Journal of Research and Practice, 31,* 963–975. http://dx.doi.org/10.1080/10668920600902051

Ratelle, C. F., Senécal, C., Vallerand, R. J., & Provencher, P. (2005). The relationship between school-leisure conflict and educational and mental health indexes: A motivational analysis. *Journal of Applied Social Psychology, 35,* 1800–1822. http://dx.doi.org/10.1111/j.1559-1816.2005.tb02196.x

Robitschek, C., & Flores, L. Y. (2007, August). *Multigroup comparisons of SCCT: Mexican American students' educational plans*. Paper presented at the 115th Annual Convention of the American Psychological Association, San Francisco, CA.

Russell, D. W., Kahn, J. H., Spoth, R., & Altmaier, E. M. (1998). Analyzing data from experimental studies: A latent variable structural equation modeling approach. *Journal of Counseling Psychology, 45,* 18–29. http://dx.doi.org/10.1037/0022-0167.45.1.18

Sheu, H.-B., Chong, S. S., Chen, H.-F., & Lin, W.-C. (2014). Well-being of Taiwanese and Singaporean college students: Cross-cultural validity of a modified social cognitive model. *Journal of Counseling Psychology, 61,* 447–460. http://dx.doi.org/10.1037/cou0000018

Sheu, H.-B., & Lent, R. W. (2009). A social cognitive perspective on well-being in educational and work settings: Cross-cultural considerations. *International Journal for Educational and Vocational Guidance, 9,* 45–60. http://dx.doi.org/10.1007/s10775-008-9147-7

Singley, D. B., Lent, R. W., & Sheu, H.-B. (2010). Longitudinal test of a social cognitive model of academic and life satisfaction. *Journal of Career Assessment, 18,* 133–146. http://dx.doi.org/10.1177/1069072709354199

Solberg, V. S., O'Brien, K. M., Villareal, P., Kennel, R., & Davis, B. (1993). Self-efficacy and Hispanic college students: Validation of the College Self-Efficacy Instrument. *Hispanic Journal of Behavioral Sciences, 15,* 80–95. http://dx.doi.org/10.1177/07399863930151004

Stephens, N. M., Fryberg, S. A., Markus, H. R., Johnson, C. S., & Covarrubias, R. (2012). Unseen disadvantage: How American universities' focus on independence undermines the academic performance of first-generation college students. *Journal of Personality and Social Psychology, 102,* 1178–1197. http://dx.doi.org/10.1037/a0027143

Terenzini, P. T., Springer, L., Yaeger, P. M., Pascarella, E. T., & Nora, A. (1996). First-generation college students: Characteristics, experiences, and cognitive development. *Research in Higher Education, 37,* 1–22. http://dx.doi.org/10.1007/BF01680039

Tofighi, D., & MacKinnon, D. P. (2011). RMediation: An R package for mediation analysis confidence intervals. *Behavior Research Methods, 43,* 692–700. http://dx.doi.org/10.3758/s13428-011-0076-x

Vallerand, R. J., Pelletier, L. G., Blais, M. R., Brière, N. M., Senécal, C., & Vallières, E. F. (1992). The Academic Motivation Scale: A measure of intrinsic, extrinsic, and amotivation in education. *Educational and Psychological Measurement, 52,* 1003–1017. http://dx.doi.org/10.1177/0013164492052004025

Vallerand, R. J., Pelletier, L. G., Blais, M. R., Brière, N. M., Senécal, C., & Vallières, E. F. (1993). On the assessment of intrinsic, extrinsic, and amotivation in education: Evidence of the concurrent and construct validity of the academic motivation scale. *Educational and Psychological Measurement, 53,* 159–172. http://dx.doi.org/10.1177/0013164493053001018

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54,* 1063–1070. http://dx.doi.org/10.1037/0022-3514.54.6.1063

Weston, R., & Gore, P. A. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist, 34,* 719–751. http://dx.doi.org/10.1177/0011000006286345

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