Predictors of Thriving in Students of Color:
Differential Pathways to College Success

Laurie A. Schreiner
Azusa Pacific University

Rebecca Kammer
Southern California College of Optometry

Bruce Primrose
Life Pacific College

Donna Quick
Columbia College

In the face of economic challenges in higher education, institutions are increasingly interested in research and interventions that can enhance student retention and thereby reflect positively on institutional effectiveness. Data collected from the National Center for Educational Statistics (Aud, et al., 2010) demonstrate the loss of human potential represented in the 43% of students who do not complete a bachelor's degree within six years of beginning college for the first time. Among these first-time college students, Asian and White students experience the highest success rates (67% and 60%, respectively), while Hispanic, African American, and Native American students continue to lag significantly behind with 6-year graduation rates of 48%, 42%, and 40%, respectively (Aud, et al.). These rates have remained stable for almost three decades (Hennessy, 2010); such disparity across ethnic groups is a reminder that much remains to be accomplished to ensure that access to higher education is translated into success.

The gap in degree attainment across ethnic groups is one of the major challenges represented by the changing future of higher education. In 2001, Carnevale and Fry projected that students of color would comprise over 80% of the growth in new students entering higher education by 2015. As that date nears, the striking lack of progress in closing the achievement gap presents higher education with not only a significant challenge, but an opportunity to explore

new pathways to student success that will enable greater numbers of students to reach their educational goals.

Student Success

Traditional definitions of student success have focused primarily on academic performance and graduation rates, but researchers are beginning to expand this definition to include engagement and personal development. Kuh, Kinzie, Shuh, Whitt, and associates (2005) suggest that student success includes "satisfaction, persistence, and high levels of learning and personal development" (p. xiv). Using this broader definition, the disparity in the success of ethnic minority college students expands to include all non-majority students, as Asians report the lowest levels of psychological well-being and personal development while in college (Bowman, 2010).

The current approaches to student success tend to focus on either the behaviors that lead to learning outcomes (NSSE, 2006), the institutional supports for engagement in those behaviors (Kuh, Kinzie, Schuh, Whitt, & associates, 2005), or the programs and services that are available to students (Kramer, 2007). Although such research has significantly advanced higher education's understanding of student success, a component largely missing is the individual motivation and psychological processes that lead students to engage and fully benefit from the opportunities presented in the college environment (Bean, 2005). Such processes are malleable (Robbins, Lauver, Le, Langley, Davis, & Carlstrom, 2004), meaning that strategically-developed interventions at the individual, classroom, and programmatic levels could enable a greater percentage of entering students to not simply survive, but thrive in the college environment.

Student Thriving

Thriving in college implies not only academic performance and graduation, but also vital engagement and deriving optimal benefits from the college experience. Thriving students are engaged in the learning process, invest effort to reach important educational goals, manage their time and commitments effectively, connect in healthy ways to other people, are optimistic about their future and positive about their present choices, are appreciative of differences in others, and are committed to enriching their community (Schreiner, 2010a). Empirical evidence suggests that each of these qualities is amenable to intervention and connected to academic success and persistence to graduation (Schreiner, Pothoven, Nelson, & McIntosh, 2009). As higher education researchers seek to address the challenges of a changing student demographic, attention to such malleable processes within students and exploring the differential pathways to student success outcomes across types of student populations offer opportunities for new insights into the issue of student departure within higher education (Braxton, 2000).

College student thriving forms the conceptual framework grounding this study. The construct of thriving was developed as a perspective of student success that transcends graduation rates and academic performance (Schreiner, 2010a). Derived from the psychological factors most predictive of college student persistence (Bean & Eaton, 2000; Berger & Milem, 1999) and the elements of flourishing in adults that researchers in the field of positive psychology have determined are predictive of vital engagement and optimal functioning in life (Keyes, 2003; Keyes & Haidt, 2003), thriving is defined as being "fully engaged intellectually, socially, and emotionally in the college experience" (Schreiner, 2010a, p. 4). These three arenas in which college students may thrive expand the definition of student success beyond behaviors to encompass a more holistic perspective of engagement.

Each area of thriving consists of multiple psychological constructs that combine to embody a well-rounded, high-functioning individual. *Academic thriving* encompasses constructs that have been linked to student learning and academic success, such as engaged learning (Schreiner & Louis, 2011), self-regulated learning (Pintrich, 2004), environmental mastery (Ryff & Keyes, 1995), hope (Snyder, 1995), and investment of effort (Pintrich et al., 1993; Robbins et al., 2004). *Intrapersonal thriving* is conceptualized as a combination of optimism (Carver, Scheier, Miller, & Fulford, 2009) and subjective well-being (Diener, 2000), both of which are predictive of student satisfaction with the college experience and with their institutional fit and likelihood of persisting. The elements of *interpersonal thriving* include positive relationships (Ryff, 1989), openness to diversity (Miville, Gelso, Pannu, Liu, Touradji, & Holloway, 1999), and citizenship (Tyree, 1998), aspects also predictive of satisfaction, institutional fit, and student persistence (Schreiner, Pothoven, Nelson, & McIntosh, 2009). The academic, interpersonal, and intrapersonal aspects of students' experiences in college form the core of how they respond to and interact with the programs, services, and personnel of the institution.

Based on this conceptualization of college student thriving, the Thriving Quotient was developed as a valid and reliable measure of students' academic, intrapersonal, and interpersonal engagement and well-being (α = .89; Schreiner, McIntosh, Nelson, & Pothoven, 2009). Literature on student characteristics and campus experiences associated with college student success formed the basis for the original model predictive of students' college grades and intent to persist, with scores on each scale of the Thriving Quotient incorporated into the model as a predictor variable. The results from this initial study in 2009 indicated that thriving explained an additional 12-18% of the variation in such student success outcomes as intent to graduate, college grades, institutional fit, learning gains, and satisfaction, after controlling for demographic

characteristics, institutional features, student-faculty interaction, and campus involvement (Schreiner, Pothoven, et al.).

Because these initial studies indicated that students' levels of thriving were significant predictors of many student success outcomes, further work by Schreiner, Vetter, Kammer, Primrose, and Quick (2011) explored the extent to which thriving differed across ethnic groups on predominantly white campuses. Significant differences in thriving across ethnic groups then led to a predictive model with thriving as the ultimate endogenous variable. Using structural equation modeling, Schreiner, Vetter, et al. (2011) tested a model in which student demographic characteristics, institutional features, student-faculty interaction, spirituality, campus involvement, and a psychological sense of community were predictor variables of thriving (see Figure 1). Once the model was determined to be an adequate fit for the sample data, the researchers then examined the degree to which the model fit each ethnic group. The multiple group comparison resulted in significant differences in the degree to which the model fit each ethnic group, indicating that the pathways to thriving were substantially different for Asian, African American, and Hispanic students, when compared to Caucasian students. These findings led to the current study, in which separate models of thriving are developed for Asian, African American, Hispanic, and Caucasian students in order to more thoroughly determine the factors of a student's college experience that contribute to academic, social, and psychological engagement.

Students of Color

Students of color experience predominantly white campuses in significantly different ways from Caucasian students (Fischer, 2007; Hurtado & Ponjuan, 2005; Perna & Thomas, 2006). For example, their satisfaction and sense of belonging on campus is typically lower than

majority students report (Park, 2009), their relationships with faculty are qualitatively different and contribute differently to their learning gains (Cole, 2007; Lundberg & Schreiner, 2004), and their process of adjustment to college differs, along with the role that campus involvement plays in their success (Fischer, 2007). Stereotype threat (Aronson & Steele, 2005) also contributes to gaps in academic performance when capable students of color are burdened with the negative perceptions of their abilities that the dominant culture may convey.

Perna and Thomas (2006) note that student success is at least partially influenced by what they refer to as a student's "situated context" (p. 11), such that there may be multiple routes to success. This situated context appears to be significantly different for students of color on predominantly white campuses; as a result, it is not surprising that the model of thriving that fits Caucasian students well does not fit the experiences of students of color. Four specific contributors to thriving in majority students may be experienced quite differently by students of color. These include a psychological sense of community, campus involvement, student-faculty interaction, and spirituality.

Psychological Sense of Community. Students' sense of belonging on campus is re-emerging in retention models as an important predictor of student persistence (Hausmann, Ye, Schofield, & Woods, 2009). Although many of the early models of student retention included this psychological component, variously labeled as sense of belonging (Spady, 1971), institutional fit (Bean, 1985), and institutional commitment (Cabrera et al., 1993), the behavioral focus on involvement that gained prominence with Tinto's (1975; 1993) and Astin's (1984) models eclipsed the emphasis on students' psychological reactions to the campus environment. With Hurtado and Carter's (1997) assertion that sense of belonging was an important but

overlooked factor in the success of Latino students, this construct began to be explored again in some isolated studies (Berger, 1997; Thomas & Galambo, 2004; Walter & Cohen, 2007).

Sense of belonging is but one component, however, of a larger construct labeled a *psychological sense of community* (PSC; Lounsbury & Deneui, 1995; McMillan & Chavis, 1986). This construct was first studied by community psychologists in the early 1970's (Sarason, 1973). Defined as "a feeling that members have of belonging and being important to each other, and a shared faith that their needs will be met by their commitment to be together" (McMillan & Chavis, 1986, p. 9), a psychological sense of community encompasses not only a sense of belonging, but also feelings of ownership, emotional connections with others in the community, and interdependent partnerships. Students who report a strong sense of community on campus feel they are part of and contribute to a stable and dependable network of people who care about them, are committed to their growth and well-being, and are able to meet their needs (Lounsbury & Deneui, 1995).

As one component of PSC, sense of belonging varies across ethnic groups on campus; its correlates also vary by ethnicity (Hurtado, Han, Saenz, Espinosa, Cabrera, & Cerna, 2007; Locks, Hurtado, Bowman, & Oseguera, 2008). The ethnic variation in the ownership dimension of PSC is evidenced by differences in satisfaction (Park, 2009), differential effects in the role that validation plays in students' perceptions of the campus (Rendon, 2002), and the influence of the racial climate (Chavous, 2005; Johnson et al., 2007), as students of color report higher levels of racial hostility and lower levels of feeling that they matter to the institution and that their input is valued. The emotional connections component of PSC varies considerably across ethnic groups as well, as the influence of informal peer interactions and the frequency of positive peer interactions on campus differs by ethnicity (Fischer, 2007; Locks, Hurtado, Bowman, &

Oseguera, 2008). Finally, the ability for students of color to experience interdependent

partnerships on predominantly white campuses is more difficult than for Caucasian students,

whether in student-faculty interactions (Cole, 2010; Kim, 2010; Lundberg, 2010; Lundberg &

Schreiner, 2004) or in campus organizations (Fischer, 2007). Thus, exploring the role that PSC

plays in thriving among students of color and determining its correlates within the thriving model

is one goal of this study.

   Campus Involvement. Astin's (1984) theory of involvement has long held that active

involvement on campus produces learning gains as well as many other benefits for students.

Involvement on campus during the first year predicts not only future involvement but also

institutional commitment, social and academic integration, and persistence (Berger & Milem,

1999). Such involvement appears to be critical to the persistence of students of color, but levels

of involvement differ by ethnicity (Fischer, 2007). More importantly, the benefits of such

involvement also differ across racial groups, with African American students in particular

participating more but benefiting least in terms of learning gains (Lundberg, Schreiner,

Hovaguimian, & Miller, 2007). Fischer has documented the important contribution of both

formal involvement and informal peer interaction to the adjustment of students of color on a

predominantly white campus; thus, both variables are included in the baseline model of thriving

tested in this study.

   Student-Faculty Interaction. Regardless of the institutional type or selectivity, the

more a student interacts with a faculty member the better the chances are of success (Kuh & Hu,

2001). Student-faculty interaction is associated with higher GPAs, better communication and

critical thinking skills, and higher degree aspirations (Kim & Sax, 2009), yet once again there are

differential effects across ethnic groups (Cole, 2010; Kim, 2010; Lundberg, 2010; Lundberg &

Schreiner, 2004). For instance, Anaya and Cole (2001) discovered that both personal and academic interactions with faculty positively related to academic achievement in Latino students, yet greater interaction with faculty has not been associated with learning gains or satisfaction in African American students (Ancis, Sedlacek, & Mohr, 2000; Lundberg & Schreiner, 2004). Asian American students interact least with faculty and also experience little benefit (Kim, 2010; Kim, Park, & Chang, 2006).

Yet Cole (2007) has demonstrated that there are certain kinds of faculty interaction that do benefit students of color. Mentoring relationships, research with faculty, and interactions in which faculty refrain from personal criticism but instead adopt an incremental learning theory or *growth mindset* (Dweck, 2006) when giving feedback to students appears to boost intellectual self-concept and grades, particularly in African American students. Latino students appear to benefit most from social interaction with faculty, while Asian students' interaction with faculty is most beneficial when it focuses on academic concerns and career plans (Einarson & Clarkberg, 2010). Given the importance of student-faculty interaction as a predictor of student success, as well as the documented racial differences that exist in such interactions, this variable was placed in the model of thriving represented in this study.

Spirituality. The final contributor to student thriving that is included in the baseline model used in this study is students' levels of spirituality. Connecting intellect and spirit has not received much recognition in the higher education literature until recently (Astin et al., 2011; Bryant & Astin, 2008), yet such a connection can lead to distinct benefits for students, ranging from learning gains to satisfaction with their entire college experience (Astin et al., 2011; Kuh & Gonyea, 2006). Spirituality can often be an effective internal coping mechanism as well, as it is associated with a positive perspective on the world (Koenig, 2001).

Astin, Astin, and Lindholm's (2011) landmark national longitudinal study defines spirituality as "our sense of who we are and where we come from, our beliefs about why we are here – the meaning and purpose that we see in our work and our life – our sense of connectedness to one another and to the world around us" (p. 4). In their study, students with higher spirituality scores were more satisfied with college, received higher grades, were more likely to embrace diversity, and exhibited higher academic self-esteem.

Spirituality may serve different functions in people's lives, however, and as such differs across racial groups. For example, qualitative studies of African American students on predominantly white campuses have found that spirituality is a lens used to interpret and make sense of their identities (Stewart, 2009) and is perceived as important in overcoming life's challenges (Constantine et al., 2006). Walker and Dixon's (2002) correlational study found a significant relationship between academic success and reliance on a higher power among African American students. Latino students report greater levels of religious engagement (Campesino, Belyea, & Schwartz, 2009), and their spirituality and faith practices are linked with healthy psychological well-being (Cervantes & Parham, 2005). Levels of spirituality have been found to differ across ethnic groups (Parks, 2000); thus the contribution of spirituality to student thriving is expected to differ across ethnic groups and is included as a variable in the model of thriving tested in this study.

Demographic and Institutional Characteristics. Demographic variables are included in the model because of their differential effects across ethnic groups. Gender differences, high school grades, choice of the institution at enrollment, and degree aspirations have been found to differ by ethnicity (Crisp & Nora, 2010; Strayhorn & DeVita, 2009). Other college experience variables, such as athlete status, living on campus, and hours spent working off campus, were

also included in the various models because of their demonstrated ethnic differences and potential contribution to student thriving (Crisp & Nora, 2010; Schreiner, Vetter, et al., 2011). Institutional features included in the model were selectivity, institutional control, percent female, and percent white, as these variables contributed differentially to thriving in the earlier models (Schreiner, Vetter, et al.).

Purpose of the Study

Schreiner, Vetter, et al. (2011) established that the baseline model of student thriving that fits Caucasian students well does not fit African American, Asian, or Latino students to the same degree. The purpose of this study is to determine the specific pathways that significantly predict thriving in each of these ethnic groups. Determining the pathways to thriving within each ethnic group may enable institutions to more effectively design programs and services to better meet the needs of students of color. The research questions guiding the current study are:

1. What are the unique structural models predictive of thriving for each ethnic group?

2. In what ways are the structural pathways optimized for different ethnic groups?

Methods

Participants

A sample of 6,943 students from 51 four-year colleges and universities in the U.S. was administered an online survey that included the Thriving Quotient, demographic information, and questions about campus involvement, student-faculty interaction, spirituality, and a psychological sense of community. The sample was acquired through personal contacts at universities and through higher education online listservs. The 51 participating institutions were comprised of 33 private and 18 public four year institutions. These institutions represented a

broad range of Carnegie classifications, but most were moderately to highly selective (see Table 1).

After deleting outliers, students under age 18 and over age 24, and those with missing demographic data, the remaining missing data were determined to be missing at random. Using the Expectation Maximization process in SPSS 19.0 to replace missing values (Tabachnick & Fidell, 2006), the final sample contained 5,117 traditional-aged undergraduate students representing all class levels (see Table 2). A disproportionate number of sophomores responded to the survey, as one of the listservs used targeted institutions interested in sophomore issues. Sixty-nine percent of the sample was female and 85% was Caucasian. African American students comprised 5% of the sample, 5.6% of the sample was Asian, and 3.6% was Latino. First-generation students comprised 21% of the sample, and two-thirds of the total sample lived on campus.

Instrument

The Thriving Quotient contains 25 items indicative of aspects of student thriving that a review of the literature indicated are amenable to intervention and are connected to student success and persistence in college. Through exploratory and confirmatory factor analysis, thriving has been established as a higher-order factor comprised of five latent variables: Engaged Learning ($\alpha = .85$), Diverse Citizenship ($\alpha = .80$), Academic Determination ($\alpha = .83$), Positive Perspective ($\alpha = .83$), and Social Connectedness ($\alpha = 81$). The item responses are on a 6-point Likert scale from *1 = strongly agree* to *6 = strongly disagree.* The Thriving Quotient is internally consistent ($\alpha = .89$) and previous studies have established evidence of construct validity through confirmatory factor analysis and predictive validity connecting scores on the

instrument to persistence, institutional fit, satisfaction, learning gains, and GPA (Schreiner, McIntosh, et al., 2009; Schreiner, Pothoven, et al., 2009).

In addition to the Thriving Quotient, the online survey collected demographic data as well as student participation levels in various campus experiences; their frequency, type, and satisfaction with faculty interaction; their levels of spirituality; and their psychological sense of community on campus. The spirituality items were adapted from items on the College Student Beliefs and Values Scale (Higher Education Research Institute, 2007); the scale ($\alpha = .96$) was defined by three items reflecting a belief in a higher power beyond oneself, a reliance on spiritual or religious beliefs as a source of strength during difficult times, and spiritual or religious beliefs functioning as a foundation for making life decisions. In the baseline structural model of thriving proposed by Schreiner, Vetter, et al. (2011), participation in religious activities was also an observed indicator of the latent construct of spirituality. The psychological sense of community scale (Schreiner, 2006; $\alpha = .82$) consisted of two items reflecting the sense of belonging and need fulfillment from being a student on campus. Complete variable coding information can be found in Table 3.

Procedures

Contact persons on each of the participating 51 campuses administered the online survey to their students. These contact persons had responded to personal and listserv requests to collect student survey data. A lottery of several $25 gift cards was used as an incentive for students to participate. Follow-up reminders were sent to students over a two-week interval. Each institutional response rate varied considerably, but averaged 12%.

The baseline model of thriving had been determined to be an excellent fit (χ^2 (262) = 2956.48 (p < .001), CFI = .947, RMSEA = .045) and explained 75% of the variance in the latent

construct of thriving (see Figure 1) in previous samples (Schreiner, Vetter, et al., 2011). This measurement model of thriving was an equally good fit for both Caucasian students and students of color, based on multi-group CFA in which the factor loadings, measurement intercepts, and thresholds were constrained to be equal across Caucasian students and each ethnic group in the first model, but not in the second. Because this assumption of measurement invariance was upheld, equivalent measurement models were used for each of the ethnic groups in our study. Previous analysis had also indicated that, while the measurement model was invariant, there were significant differences in the structural model of thriving across each ethnic group (Schreiner, Vetter, et al.); thus, this study used structural equation modeling (SEM) to determine the unique structural paths to thriving for each ethnic group. A thorough review of the literature was used to construct separate theoretical structural models of thriving for African American, Asian, Latino, and Caucasian students in the sample.

Results

The structural models for each of the four ethnic groups fit their respective samples well and explained between 74% and 83% of the variance in the latent construct of thriving. Unique models were optimized for each ethnic group. However, in all models students' psychological sense of community (PSC) had the most significant contribution to the variation in thriving, with its direct effects ranging from .56 in Asian students to .75 in Latino students. Each of the ethnic group structural models is outlined below.

Caucasian Model

The baseline model was optimized for Caucasian students and was the most complex model among the four ethnic groups. The confirmatory factor analysis indicated that for Caucasian students ethnic organization participation was not a significant indicator of campus

involvement, so it was a separate observed variable in the model. After reviewing modification indices, several of the demographic variables no longer significantly contributed to thriving and were trimmed from the model. The significant Chi-Square is common to large data sets, so additional fit indices were assessed (Hu & Bentler, 1999). The final model reflecting all significant pathways fit the data well ($\chi2(260) = 2105.61$ p < .001, CFI = .956, RMSEA = .040) and explained 74% of the variance in thriving.

Viewing the model from left to right (see Figure 2), demographic variables contributed directly as well as indirectly to thriving and included gender, high school grades, degree goal, first choice of the institution at enrollment, and level of certainty of major. Institutional characteristics of selectivity, percent female, public/private, and percent white also contributed directly and indirectly to thriving (see Table 4). Several college environmental factors directly or indirectly impacted thriving, including campus involvement, hours worked off campus, and involvement in religious activities and ethnic organizations; being an athlete did not contribute directly or indirectly to thriving, however. Spirituality contributed both directly and indirectly to thriving through PSC. The amount and type of interaction with faculty contributed to PSC and spirituality, and also contributed directly to thriving (see Table 5). The greatest contribution to variation in thriving was through a psychological sense of community (PSC).

African American Model

The model for African American students fit the data well ($\chi2(150) = 193.30$ p>.001; CFI = .980; RMSEA = .033) and explained 80% of the variance in thriving, although it included fewer significant paths from the demographic variables compared to the Caucasian model (see Figure 3). The demographic characteristics that remained after model trimming included first choice at enrollment, high school grades, and level of certainty of major. The only institutional

feature that remained in the model was the percentage of Caucasian students on campus. Involvement in campus activities, ethnic organizations, religious activities, and athletics were indirect contributors to thriving, with being an athlete contributing negatively to thriving. The direct pathways contributing significantly to thriving included major certainty, spirituality, student-faculty interaction, and psychological sense of community (PSC). The total effects on thriving were the greatest for PSC, spirituality, student-faculty interaction, and major certainty (see Table 4).

Asian Model

The model that was optimized for Asian students fit the sample data well ($\chi 2(159) =$ 286.17, p<.001; CFI = .946; RMSEA = .053; see Figure 4) and accounted for the highest variance of all the models, with 83% variance in thriving explained. Demographic characteristics that contributed directly or indirectly to thriving included gender, major certainty, degree goal, and first choice at enrollment (see Table 4). The percentage of female students on campus was a direct contributor to thriving, while the institution's control (public or private) was an indirect contributor. The Asian model was the only non-Caucasian model that included living on campus as a significant contributor to thriving; however, unlike the Caucasian model, it had an indirect rather than a direct effect on thriving in Asian students, mediated through student-faculty interaction. Total direct effects on thriving were highest for spirituality, PSC, and student-faculty interaction. Of all the group models, spirituality's contribution to thriving was highest in the Asian students.

Latino Model

The model optimized for Latino students fit the sample data well ($\chi 2(93) = 147.91$, p<.001; CFI = .954, RMSEA = .056; see Figure 5) and accounted for 80% of the variance in

thriving. No demographic characteristic other than major certainty was a significant contributor to thriving; however, the percentage of female students on campus had both direct and indirect effects on thriving, and attending a public institution had an indirect effect on thriving through PSC. The only direct pathways to thriving for Latino students were PSC, involvement in campus activities, and percentage of female students on campus. Involvement in religious activities, spirituality, and student-faculty interaction had only indirect effects. Unlike the other models, spirituality and student-faculty interaction had no direct effect on thriving (see Table 4).

Discussion

Because thriving is directly related to student persistence, satisfaction with college, learning gains, and academic achievement (Schreiner, Pothoven, et al., 2009), investigating the different pathways to thriving that are optimal for particular ethnic groups could be an effective approach to addressing the disparity in academic achievement and graduation rates across ethnicity. Although much research has focused on the obstacles to student success and graduation among ethnic minority students (Museus & Quaye, 2009), thriving provides a different perspective on student success by highlighting the positive psychological, intellectual, and relational patterns that enable students to gain optimal benefits from the college experience. Thriving students are engaged in learning, invested in reaching academic goals, are effective at time management and prioritizing, have a positive perspective toward their future, appreciate differences in others, and feel empowered to serve their community (Schreiner, 2010a).

Differences in thriving across ethnic groups had previously been found by Schreiner, Vetter, et al. (2011), and the model predictive of thriving in Caucasian students did not fit earlier samples of students of color. Thus, this study focused on the optimal pathways to thriving for African American, Asian, Caucasian, and Latino students. Although the nature of this cross-

sectional correlational design does not allow for the determination of causality, the use of structural equation modeling to test the hypothesized paths for thriving allowed for the examination of complex relationships between campus variables, institutional features, demographic characteristics, and levels of student thriving, while quantifying measurement error (Byrne, 2001). The primary findings of this study include the identification of critical factors influencing thriving in students across these four ethnic/racial groups.

The high percentage of the variation in thriving that was explained by each of the models, ranging from 74% to 83%, indicates that significant potential exists to enhance thriving across all ethnic groups with careful attention to the unique needs of each. The factor with the highest impact on thriving in all groups was psychological sense of community (PSC). The paths to PSC in each ethnic group were different, however, leading to implications regarding the campus climate and the role of student-faculty interactions and student life programming.

Psychological Sense of Community

Students' psychological sense of community was the strongest predictor of their levels of thriving, regardless of their ethnicity. Students who experience a strong sense of community on campus not only feel a sense of belonging, but also feel that they matter to the institution and can contribute to the campus ethos. They have positive relationships with others on campus and perceive that being a student on that particular campus fills an important need in their lives (Lounsbury & DeNeui, 1995; Schreiner, 2010b). Although Braxton, Hirschy, and McClendon (2004) posit in their concept of communal potential that this sense of community can occur in subcultures within the university, both Lounsbury and DeNeui (1995) and Cheng (2004) assert that sense of community involves more than sharing personal interests with a small group of friends. For instance, Cheng found that the largest contributor to a sense of community in his

institution was a campus ethos centered around engagement in learning, an environment in which students felt accepted and valued and were encouraged to express their own opinions and beliefs.

Although PSC was the strongest contributor to thriving across all ethnic groups, its predictive strength varied with ethnicity, and was highest among the Latino students in the sample. Hurtado and Carter (1997) had previously demonstrated that sense of belonging was particularly important in Latino student success, and our study confirmed their findings. For these Latino students, involvement in campus activities had the largest direct effect on PSC, although involvement in ethnic organizations was not a significant pathway to thriving within this group. This finding indicates that campus activities may serve to integrate Latino students into the larger campus culture in important ways that are conducive to their sense of community. Unlike other studies that have found negative effects of living at home and working off campus for Latino students (Crisp & Nora, 2010), these factors did not negatively impact thriving or a sense of community in our sample of Latino students.

The contributors to a sense of community varied across ethnic groups, however. For Latino students, involvement in campus activities was the strongest contributor to their sense of community, while for African American students it was spirituality, for Asian students it was certainty of their major, and for Caucasian students it was interaction with faculty. These different pathways to sense of community, in addition to the different pathways for thriving, indicate that there are particular areas of campus programming that can be targeted to enhance the connection that students feel to the university, thereby impacting their institutional commitment.

Campus Involvement

Our findings that involvement in campus activities was predictive of thriving in all racial groups correlates well with Kuh et. al. (1991) and Astin's (1984) findings that student involvement on campus is predictive of success due to increased motivation, time management, and energy directed toward scholarly activities. It is important to note, however, that the current single item measure of involvement in campus activities did not allow for differentiation between various types of activities. Although multiple items reflective of campus involvement were initially included in the model, the various indicators of campus involvement did not adequately reflect the latent construct, so only one item regarding involvement in campus activities remained in the final model.

In African American students, being involved in campus activities, although statistically significant, was not highly predictive of thriving or PSC. However, if students interacted with faculty—and especially those faculty affiliated with ethnic organizations in which the students were involved—their PSC was higher. It could be that the faculty advisors to these organizations are building more constructive and mentoring types of relationships with African American students, thereby impacting both their PSC and ultimately their thriving, as Cole (2007) has hypothesized.

For Asian students, involvement in campus activities had a direct effect on thriving, consistent with the literature (Fischer, 2007). Such involvement was also predictive of their interaction with faculty, but had only a small effect on their sense of community. Asian students' certainty of their major was the strongest contributor to sense of community, indicating that perhaps for these students their primary identification is within the academic arena and particularly within their major, where they find connections with faculty (Kim & Sax, 2009).

Spirituality

Spirituality in the thriving model is closely related to the definitions used by Love and Talbot (1999) and Astin, Astin, and Lindholm (2011). These definitions attempt to capture student responses to difficult life situations, to understand the role that spirituality plays in their foundational beliefs, and to assess their reliance on a power outside of themselves. Because higher levels of spirituality are related to improved academic performance (Astin et al., 2011) and overall satisfaction with college (Kuh & Gonyea, 2006), understanding the role that spirituality plays in the thriving levels of students of color could provide additional strategies for enhancing their success.

Although spirituality was predictive of thriving in all ethnic groups, its largest direct effect on thriving was among African American students, and its largest total effect was for Asian students, mediated through their relationships with faculty and their sense of community. This description of spirituality does not directly equate to a student's frequency of participation in religious activities, although there is an influential relationship between the two (Lee, 2002; Gehrke, 2008). Our findings indicate that being involved in religious activities contributes to levels of spirituality in all students, but to a lesser extent among African American students. Similar ethnic differences in student spirituality have been documented in the work of Benson (2009) and Parks (2000). Stewart (2009) and Sanchez and Carter (2005) suggest that spirituality in African American students is a form of meaning making and potentially a coping mechanism for students and not necessarily a representation of how actively they pursue religious activities.

These findings could mean that institutional efforts to support the religious activities of students may not have as great an impact on African American students as they might for other students. Spirituality as a pathway to thriving opens possibilities for campus programming and

relationships focused on meaning making, transcendence, and a positive worldview that can become an important coping resource (Astin et al., 2011; Chickering, Dalton, & Stamm, 2006).

Student-Faculty Interaction

One of the most consistent findings in the existing literature is that student-faculty interaction can enhance students' academic performance, personal development, and professional development (Kuh & Hu, 2001). Anaya and Cole (2001) found that interactions with faculty can positively influence Latino students, in particular. However, the type of interaction seems to be critical (Cole, 2007, 2010; Fischer, 2007; Kim, 2010; Lundberg & Schreiner, 2004). For example, interactions focused on remediation or personal critique do not contribute in a positive manner to student success.

Student-faculty interaction contributed significantly to thriving in all students, indicating that the more students interact with faculty, the greater their level of engagement in learning, investment of effort in academics, satisfaction with life, and optimism about the future, regardless of the type of student and their life circumstances. Although student-faculty interaction positively contributed to thriving in all students, it contributed least among the Latino students in our sample, which is of concern in light of findings that such interaction is highly predictive of retention (Anaya & Cole, 2001; Hernandez, 2000). For Latino students, involvement in campus activities appeared to play a more significant role, not only in their thriving, but even in their satisfaction with their interactions with faculty.

Contrary to other research (Lundberg & Schreiner, 2004), student-faculty interaction contributed most positively to thriving in African American students as well as Caucasian students. In exploring these findings more thoroughly, we found that participation in ethnic organizations contributed to student-faculty interaction in African American students, indicating

that faculty involvement with these organizations can be an important access point for positive student-faculty interactions. Among Caucasian and Asian students, the connection to faculty was more likely to occur through their major, a connection not evident in the models of African American and Latino students. Again, this finding is of some concern and may indicate that the types of relationships that African American and Latino students have with faculty are not as likely to reinforce their intellectual self-concept as is the case for Asian and Caucasian students (Cole, 2007).

In addition to the positive contribution to thriving, student-faculty interaction also played a positive role in students' spirituality and sense of community, except among Latino students. The literature confirms that faculty can enhance student spiritual development, although researchers have typically noted Asian students are not as impacted by this relationship and do not respond as positively on spirituality measures (Bowman, 2010; Lindholm & Astin, 2008). However, our model contradicted this literature in that interaction with faculty contributed positively to Asian students' spirituality, a finding worth further exploration with a broader sample.

Limitations

There are a number of limitations to this study which limit its generalizability and necessitate further replication of its results. The major limitation is that the number of students in each ethnic group model was at the minimum level necessary to conduct structural equation modeling (N = 200). A larger and more diverse sample will be necessary to replicate the models. A second limitation also concerns the nature of the sample, as about 30% of the 51 institutions were faith-based , and sophomores and women students were disproportionately represented. The cross-sectional nature of the data collection also limits our ability to determine direction in

causal relationships. Finally, we did not assess racial climate, socioeconomic status, or family support in the models, all of which could deepen our understanding of thriving among students of each ethnic group.

Implications for Practice

There are three major implications for practice that arise from this study. The first is that institutional policies and practices tailored to the unique needs of students from different ethnic groups are likely to foster greater levels of thriving than a "one size fits all" approach to student success. For example, knowing that spirituality is a major contributor to thriving for some ethnic groups but less so for others enables institutions to tailor their approach to meeting students' different needs for spiritual development.

The second implication is that there are multiple pathways to thriving in college, consistent with Perna and Thomas' (2006) assertion that success arises out of a student's situated context. For some students, the pathway lies through greater campus involvement, which can be emphasized during orientation as students begin their college experience and can continue through residence life programming and specific opportunities tailored for commuter students. For others, the pathway to thriving lies in their spirituality, which can be nurtured through campus programming, creation of sacred space on campus, and university acknowledgement of the different traditions and religious holidays represented by their students of color in particular (Bowman & Small, 2009). Ethnic minority students who may also be religious minority students on campus may particularly need help locating mentoring communities (Parks, 2000) or in establishing ''safe spaces'' similar to those described by Magolda and Gross (2009).

For many students, a significant contributor to their thriving is their interaction with faculty. Again, the pathways that lead to such rewarding interaction look different across ethnic groups, as Asian and Caucasian students tend to interact with faculty through their major and focus on academic issues, while African American students benefit most by interacting with faculty through ethnic organizations and Latino students benefit through their social interaction in campus activities. Faculty understanding of these different pathways, along with an encouragement for faculty to approach their relationships with African American and Latino students in ways that encourage their intellectual self-concept and academic confidence could provide enhanced pathways to thriving for these students (Cole, 2007).

The final implication is that institutions could do much to enhance thriving in all students, and particularly students of color, by creating a campus environment that is conducive to a psychological sense of community. More than any other factor, developing a strong sense of community on campus has the potential to enable all students to thrive. At a time when commuting students represent almost 85% of all college students in the U.S. (Horn & Nevill, 2006), the classroom is the primary place for building a sense of community. Equipping faculty to use active and collaborative learning techniques and to capitalize on diverse students' strengths and learning styles can ensure that the classroom becomes a place where students feel a sense of belonging and connection. Beyond the classroom, building community can occur in ways that capitalize on the pathways to PSC in each ethnic group. For African American students the major pathway is through their spirituality, while for Asian students it is through their major, and for Latino students it is through campus activities. Carefully attending to institutional communication with students can build a sense of community on campus, as well.

Messages of welcome, inclusion, seeking student feedback, and responding to student input convey that all students are valued members of the campus community.

Conclusion

The purpose of this study was to ascertain the optimal pathways to thriving for students from four ethnic groups: African American, Asian, Caucasian, and Latino. Structural equation modeling results indicated that each ethnic group had its own unique predictive model for thriving, although a psychological sense of community was foundational across all students. The role of spirituality offers an often-overlooked pathway to thriving, particularly for African American and Asian students, while the role that campus involvement plays can lead to a customization of such programming to appeal to a wider variety of students. Adding to the literature on student-faculty interaction, findings that African American and Latino students benefit most from their social interactions with faculty, through ethnic organizations and campus activities, can provide new opportunities to enhance such interaction, while encouraging faculty to interact more frequently with these students in ways that encourage their intellectual self-concept. From these initial findings, institutions can begin to tailor programming and services to meet the unique needs of their ethnic minority students so that every student on campus has the opportunity to thrive.

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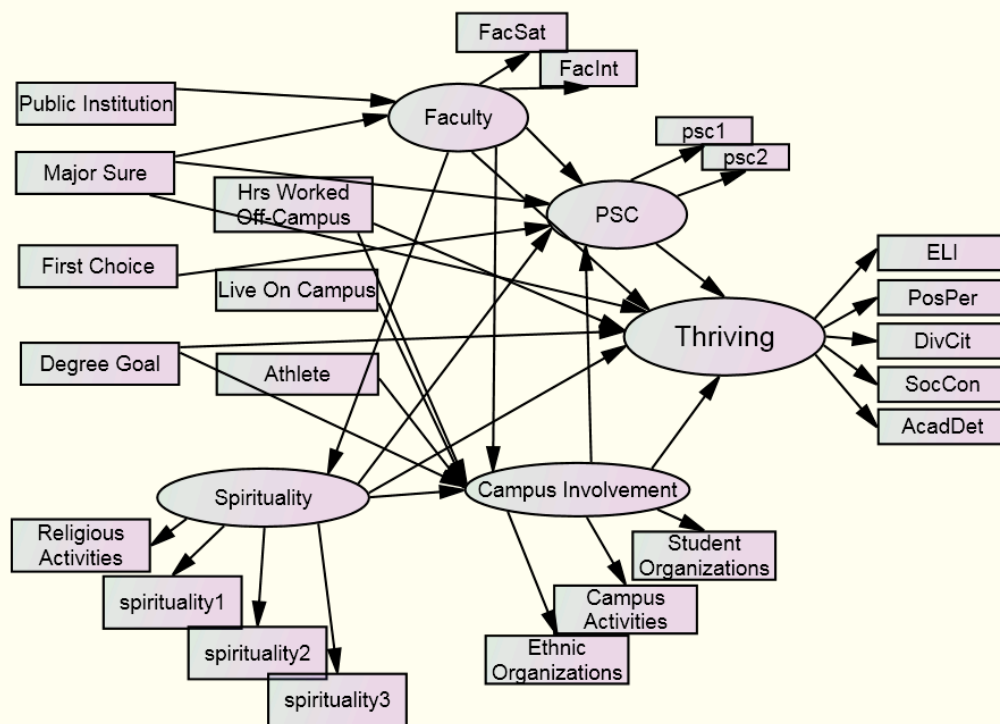
Figure 1: Baseline Model

Table 1

Institutional Characteristics

	N	%	M
Institution Type			
Public	18	33.96	
Private	35		
Selectivity			
Majority admitted from lowest quartile	4	7.84	
Majority admitted in lowest 50%	25	49.02	
Majority admitted from top quartile	17	33.33	
Majority admitted from top 10% of class	5	7.84	
Missing information	2	1.96	
Carnegie Classification			
BA-AS	15	29.41	
BA-Diverse	5	9.80	
Dr-High	8	15.69	
Dr-Very High	5	9.80	
MA-Large	8	15.69	
MA-Medium	6	11.76	
MA-Small	4	7.84	
Religious Affiliation			
No Religious Affiliation	29	43.14	
Faith-Based	22	56.86	
Institution: Percent Female			.59
Institution: Percent White			.71
Institution: Percent Residential			.57
Institution: Undergrad Enrollment			6,202

N = 51 institutions

Table 2

Demographic Characteristics by Percentage within each Ethnicity

	Asian (*n = 289)*	African American (*n = 273)*	Caucasian (*n = 4368)*	Hispanic (*n = 187)*
Gender				
Male	43.3	23.8	29.4	33.7
Female	56.7	76.2	70.6	66.3
First generation				
Yes	26.3	30.4	19.0	38.5
No	73.7	69.6	81.0	61.5
First choice				
Yes	51.6	37.7	66.1	61.0
No	48.4	62.3	33.9	39.0
Live on-campus				
Yes	62.3	72.5	67.7	70.1
No	37.7	27.5	32.3	29.9
Athlete				
Yes	5.5	12.8	10.4	7.0
No	94.5	87.2	89.6	93.0
H. S. grades				
Mostly A's	33.2	18.7	46.0	27.3
A's and B's	41.9	49.5	38.1	43.3
Mostly B's	13.1	14.7	9.1	16.6
B's and C's	10.4	15.8	5.8	11.8
Mostly C's	1.0	1.5	.8	1.1
C's and D's	.3		.2	
Work hours off-campus				
None	73.0	69.9	67.6	64.7
5 or less	7.6	2.9	7.1	9.6
6-10 hours	7.6	6.2	8.2	8.6
11-15 hours	4.5	5.5	6.0	5.3
16-20 hours	3.5	6.6	5.4	5.9
21-25 hours	1.7	5.1	3.3	3.2
26-30 hours	1.0	1.5	1.2	2.1
More than 30	1.0	2.6	1.3	.5
Class Level				
Freshman	6.2	5.5	4.6	9.6
Sophomore	78.9	85.7	82.8	77.5
Junior	5.9	2.2	3.9	5.9
Senior	9.0	6.6	8.7	7.0

Table 3

Description of Variables

Dependent Variable (Thriving):	Definition
Academic Determination	Factor score of seven items: (1) When course work is difficult, I give up or only study the easy parts (reverse scored), (2) Even when course materials are dull and boring, I manage to keep working until I finish, (3) I am good at managing the many responsibilities of my daily life, (4) I am good at managing my time so that I can fit everything in that needs to be done, (5) I am motivated to do well in school, (6) I actively pursue my educational goals, (7) When I become confused about something I'm reading for class, I go back and try to figure it out. Each item is measured on a 6-point scale: 1=strongly disagree, 6=strongly agree.
Diverse Citizenship	Factor score of eight items: (1) I give time to making a difference for someone else, (2) I have the power to make a difference in my community, (3) I value opportunities that allow me to contribute to my community, (4) I am willing to act for the rights of others, (5) Knowing how a person differs from me greatly enhances our friendship, (6) I can best understand someone after I get to know how he/she is both similar and different from me, (7) I would like to join an organization that emphasizes getting to know people from different cultures, and (8) No matter what kind of person you are, you can always change substantially. Each item is measured on a 6-point scale: 1=strongly disagree, 6=strongly agree.
Engaged Learning	Factor score of nine items: (1) I often discuss with my friends what I'm learning in class, (2) I regularly participate in class discussions, (3) I feel as though I am learning things in my classes that are worthwhile to me as a person, (4) It's hard to pay attention in many of my classes (reverse scored), (5) I can usually find ways of applying what I'm learning in class to something else in my life, (6) I ask my professors questions during class if I do not understand something, (7) I am bored in class a lot of the time (reverse scored), (8) I find myself thinking about what I'm learning in class even when I'm not in class, and (9) I feel energized by the ideas I'm learning in most of my classes. Each item is measured on a 6-point scale: 1=strongly disagree, 6=strongly agree.
Positive Perspective	Factor score of five items: (1) When things are uncertain for me, I usually expect the best, (2) I always look on the bright side of things, (3) I'm optimistic about what will happen to me in the future, (4) I am satisfied with my life, and (5) The conditions of my life are excellent. Each item is measured on a 6-point scale: 1=strongly disagree, 6=strongly agree.
Social Connectedness	Factor score of three items, all of which are reverse-scored: (1) Other people seem to have more friends than I do, (2) I often feel lonely because I have few close friends with whom to share my concerns, and (3) I don't have many people who want to listen when I need to talk. Each item is measured on a 6-point scale: 1=strongly disagree, 6=strongly agree.
Institutional Variables	**Definition**
Percent female	The percentage of female students in the undergraduate student body
Percent white	The percentage of Caucasian students in the undergraduate student body
Selectivity	Categorical variable assessing the percentage of the entering class with high school GPA in the bottom 75% (1), bottom 50% (2), top 25% (3), or top 10% (4)

Student Background Variables	Definition
First-generation	First in immediate family to attend college=1; not first to attend college=0
First choice of college	Dummy variable coded 1=yes 0=no for institution was first choice at enrollment
Gender	Female=1, male=0
High school grades	Self-reported variable with response options on a 6-point scale where 1=mostly A's 2= A's and B's 3=mostly B's, 4= B's and C's 5=mostly C's 6=below a C average. Reverse scored.
On-campus	Live on campus, coded 1=yes, 0=no
Major Certainty	Response to item: "How sure are you of major?" Measured with a 6-point scale: 1=very unsure, 6=very sure.
Athlete	Response to item: "Are you a student athlete?" coded 1=yes, 0=no
Off-Campus	Response to item: "How many hours per week do you work OFF campus?"

Independent Variables (Factors)	Definition
Campus Involvement	Factor score of 3 items: How often do you participate in (1) student organizations on campus, (2) campus events or activities, (3) Campus ethnic organizations (such as Black Student Association). Each item is scored on a 6-point scale: 1=never, 6=frequently.
Faculty	Factor score of 2 items: "Rate your satisfaction with the kinds of interaction you have had with faculty on this campus." Measured with a 6-point scale, 1=very dissatisfied, 6=very satisfied "Rate your satisfaction with the amount of interaction you have had with faculty on this campus." Measured with a 6-point scale, 1=very dissatisfied, 6=very satisfied.
Spirituality	Factor score of 4 items: (1) "My spiritual or religious beliefs provide me with a sense of strength when life is difficult".(2) "My spiritual or religious beliefs are the foundation of my approach to life", (3) "I gain spiritual strength by trusting in a higher power beyond myself". Measured with a 6-point scale, 1=strongly disagree, 6=strongly agree. (4)" How involved are you in: Religious activities". Scored on a 6-point scale: 1=never, 6=frequently.
Psychological Sense of	
Community	Factor score of 2 items: (1) "Being a student here fills an important need in my life", and (2) "I feel like I belong here". Measured with a 6-point scale, 1=strongly disagree, 6=strongly agree.

Table 4: Standardized Indirect, Direct, and Total Effects on Thriving

	African American (N=273)			Asian (N=289)			Caucasian (N=4368)			Latino (N=187)		
	Indirect	Direct	Total	Indirect	Direct	Total	Indirect	Direct	Total	Indirect	Direct	Total
Campus activities	.095		.095	.152	.234	.386	.206	.112	.318	.314	.217	.531
Ethnic organizations	.072		.072				-.020		-.020			
Religious	.154		.154	.269	-.111	.158	.177		.177	.118		.118
Degree goal				.084		.084	.053	.086	.139			
High school grades	-.053		-.053					-.057	-.057			
Athlete	-.079		-.079									
First choice	.066		.066	.067	-.150	-.083	.116	-.051	.065			
Gender				.030		.030	.014		.014			
Major sure	.192	.168	.360	.098	.214	.313	.177	.090	.267	.140		.140
Hours worked off-campus							-.028	.052	.024			
Living on-campus				.036		.036		-.032	-.032			
Institution selectivity							.016		.016			
Institution percent female				.124	-.132	-.008	.068	-.031	.037	.027	.180	.207
Institution public							-.001		-.001	.130		.130
Institution percent white	.051		.051					-.057	-.057			
Faculty involvement	.251	.183	.434	.125	.219	.344	.195	.240	.434	.182		.182*
Spirituality	.254	.242	.496	.391	.142	.533	.106	.161	.267	.187		.187
PSC		.599	.599		.565	.565		.585	.585		.745	.745

*Latent construct for student-faculty interaction in Latino Model simplifies to a single item, "Satisfaction with amount of contact with faculty this year."
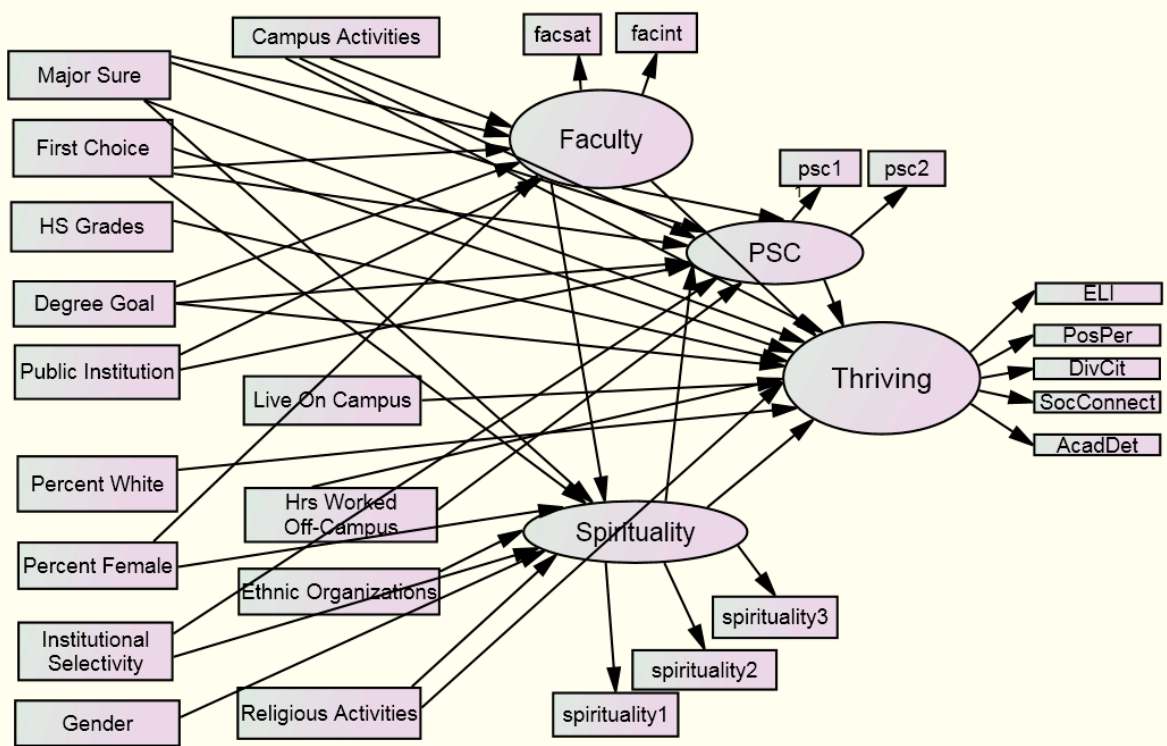
Figure 2: Caucasian Model

Table 5

Total Effects on Latent Variables

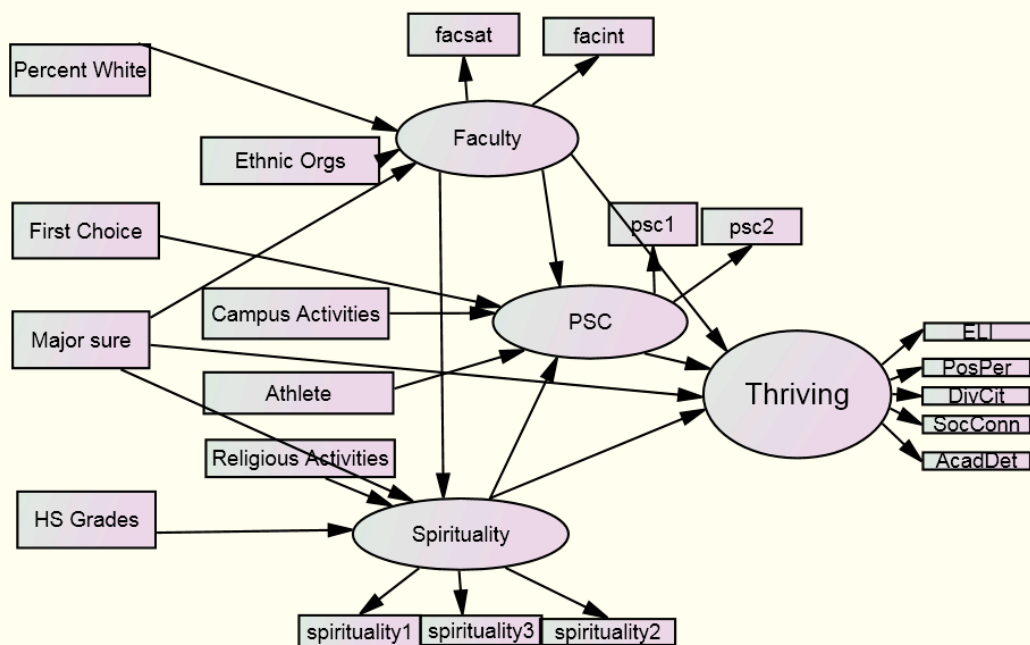|	Student-Faculty Interaction				Spirituality				PSC			
	Asian	African American	Caucasian	Latino*	Asian	African American	Caucasian	Latino	Asian	African American	Caucasian	Latino
Athlete										-.132		
Campus activities	.232		.130	.139	.038		.009		.192	.158	.297	.422
Ethnic organizations		.165				.028	-.073			.058	-.013	
Religious					.504	.311	.662	.631	.128	.132	.120	.158
Degree goal			.088				.006		.149		.053	
First choice			.088		.103		.068		.026	.111	.143	
Gender	.120				.020		.052		.033		.009	
Live on-campus	.142				.023				.039			
High School Grades						.167				-.045		
Major Sure	.303		.210		.050		.047	.138	.280	.159	.203	.188
Hours worked off campus											-.048	
Institutional Selectivity							-.082				.050	
Institutional % Female			.143		.178		.033	.144	.045		.049	.036
Institutional % White		.117				.020				.041		
Institution Public			-.142		-.090		-.010		-.023		.059	.175
Spirituality							.072		.254	.424	.314	
Faculty					.164				.276	.351	.182	
Faculty Interaction												.245

*Not a latent construct for Latino students.

Figure 3: African American Model

Figure 4: Asian Model

Figure 5: Latino Model