ABSTRACT

Title of Document:          A TALE OF TWO GROUPS: DIFFERENCES
                            BETWEEN MINORITY STUDENTS AND
                            NON-MINORITY STUDENTS IN THEIR
                            PREDISPOSITION TO AND ENGAGEMENT
                            WITH DIVERSE PEERS AT A
                            PREDOMINANTLY WHITE INSTITUTION

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The purpose of this study was to examine the extent to which minority students and non-minority students differ in their predispositions to engage in campus-based diversity activities upon entering college and engagement with diverse college peers during college. These ethnicity-based interactional differences were examined under a revised version of the Transition to College Model (Locks et al., 2008). The Diverse College Student Engagement Model accounts for the joint influence of student pre-college characteristics along with collegiate experiences, in shaping engagement with racially diverse peers at a predominantly White college.

Using Structural Equation Modeling (SEM) and Latent Means Modeling (LMM), this dissertation examined direct and indirect effects of factors that influence engagement with diverse students in college. Findings indicated that engagement with diverse peers does not

take place in a vacuum; conditions and mechanisms that facilitate engagement also matter. Several pre-college variables and college variables were shown to influence predisposition to engage in diversity-related activities and engagement among diverse peers in college. Findings from testing the proposed model indicate that minority students were significantly higher in the latent factor Predisposition to Engage when entering college; however, no significant differences were found in the latent factor Engagement after the sophomore year of college. The differences appear to have been attenuated by some of the campus mechanisms the University of Maryland has in place to foster engagement among diverse students.

A TALE OF TWO GROUPS: DIFFERENCES BETWEEN MINORITY
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TO AND ENGAGEMENT WITH DIVERSE PEERS AT A PREDOMINANTLY
WHITE INSTITUTION


By


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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2009




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# Dedication

This dissertation is dedicated to my family, who has supported me throughout my entire educational journey. To my mother, Sharon Hall, thank you for providing the guidance and support from my early years—your hard work has paid off through me. To my sister, Tanisha Hall, who always paved the way for me—thank you for allowing me to compete with you while we were younger.  Although I was never able to truly compete with you, it made me better nonetheless. To my brother, Damien Radway, thank you for leading the way for us all. I will forever remember the lessons that you shared with me. To my late father, William Wendell Matthews, who passed away less than three months before the journey was completed: thank you for the lessons that you taught me and your contribution to this accomplishment will not be forgotten.

To my niece and nephews—Khary, Daejon, Damani and Cameron: continue to achieve, never give up, and most importantly, never let anyone tell you that you cannot do something. I love each of you tremendously.

Finally, to Edward L. Macintosh: you embodied what a teacher should be. If it weren't for you helping me to realize my potential, I am unsure where I would be today. R.I.P, you will never be forgotten, and your legacy lives on.

# Acknowledgements

First and foremost I would like to thank my Lord and Savior Jesus Christ for allowing me the opportunity to live and experience the goodness of his grace, daily. There have been multiple people that have played a crucial role this process, and thus deserve the credit for this accomplishment. I would first like to thank my advisor, Dr. Alberto Cabrera for the guidance that he has given me throughout the process. Without the support from Dr. Cabrera, this accomplishment would not have been possible. To my committee members—thank you for providing the necessary support before and during the dissertation phase. Each of you has contributed tremendously to my personal, professional and academic development. I would like to thank Sharon Fries-Britt for exposing me to the University of Maryland. It is because of you that I have truly immersed myself in the field of higher education. You have exposed me to research, practice and scholarship that will prove beneficial no matter where I go next. Thanks also for being my financial expert!

I would like to thank Dr. Robert E. Waters for being a tremendous support throughout this process. Thank you for being a mentor, advisor, committee member and friend. I want to thank Dr. Cordell Black for the expertise and advice that he always provided me. Thank you for being a mentor and friend, and for allowing me the chance to meet the lovely Lola Black. I would like to thank Dr. Tammy Kolbe for exposing me to policy research, and for being a source of advice as I learned to be a quantitative scholar. A huge debt of gratitude also goes to the entire EDPL office, especially Clarissa, Stephanie and Dr. Weible. Their encouraging words never went

family deserve a great deal of credit as well. Thanks for always believing in me. To the Stallworth family: thanks for always believing in me, and keeping my passion for education alive.

To my friends and Hampton family, especially Reagen Price, Mark A. Brown, Camille V. Harris, Serenity Bush Moore, and Cidra Sebastien: thanks for all of your support while at Hampton and throughout this journey. A special thanks to my partner and very special friend: Yevonessa M. Clarke, for your support during the proposal and dissertation stage was unmatched. Thank you for your patience and understanding.

# Table of Contents

APPENDICES

# List of Tables

# List of Figures

# Chapter 1: Introduction

Engagement matters (Astin, 1993; Chang, 1999; Kuh, 1996, 2001, 2003; Milem, Chang, & Antonio, 2005). Student engagement in college is key to fostering positive interactions between peers and integrating them into the life and culture of a college campus (Braxton, Hirschy & McClendon, 2004; Kuh, 2001). Student engagement during the first year of college correlates with advances in critical thinking in the classroom, persistence to the second year, and improvements in student learning (Kuh, Cruce, Shoup, Kinzie & Gonyea, 2008). The benefits of engagement also extend outside of the classroom. Astin (1999) finds that engaging in academic and social aspects of the campus environment can influence student learning and development. Students who engage with faculty inside and outside of the classroom also show learning gains (Pascarella & Terenzini, 2005). In lieu of the importance of engagement, Laird and associates (2006) stress the need for colleges and universities to find ways whereby students can engage with one another inside and outside of the classroom. This is especially true for engaging with diverse peers.

Engaging with racially diverse peers during college has additional benefits per se. Interacting with racially diverse peers in college is positively correlated with social, academic, and non-academic gains (LaNasa, Cabrera, Transgrud & Alleman, 2007; Hurtado, Dey, Gurin, & Gurin, 2003; Hurtado, Milem, Clayton-Pederson & Allen, 1998), increased levels of civic engagement and cultural awareness (Milem, 1994), and a sense of belonging to an institution (Cabrera, Nora, Terenzini, Pascarella & Hagedorn, 1999; Locks, Hurtado, Bowman, & Oseguera, 2008). In addition, as students enter a diverse workforce after college,

their experiences engaging with peers from different racial groups can prove to be beneficial (Carini, Kuh & Klein, 2006; Jayakumar, 2008).

Engagement with diverse peers does not take place in a vacuum; conditions and mechanisms that foster engagement must be in place (Hurtado et al., 1998; Jayakumar, 2008; Locks et al, 2008; Milem & Umbach, 2003). Also, a student's history interacting with diverse peers, their predispositions to engage with diversity upon entering college, and campus contexts matter in explaining engagement.

College environments can affect student engagement with diverse peers by addressing diversity from several levels: structural (racial composition of the student body); curricular (addressing diversity within campus programs and the curriculum; interactional (providing opportunities for students to interact with ethnically diverse peers inside and outside of the classroom); and through the racial campus climate (Chang, 2000, 2002; Gurin, 1999; Gurin et al., 2002; Hurtado et., al, 1998; Jayakumar, 2008; Pike, Kuh & Gonyea, 2007). The impact of each type of diversity is enhanced in the presence of the others, or diminished in their absence (Milem & Umbach, 2003).

Our knowledge of the process underscoring engagement with diverse peers has been greatly enhanced particularly due to the work of Gurin and colleagues (2002) and Hurtado and associates (Hurtado et., al, 1998; 2003; Locks, Hurtado, Bowman & Oseguera, 2008). Still, little is known about the extent to which minority students and non-minority students differ in their engagement levels on campuses, and what factors influence those differences. Particularly missing is information as to how these differences in predispositions and interactions take place under a context that jointly takes into account the influence of student pre-college characteristics along with collegiate experiences

2

Engagement with diverse peers has enrollment management ramifications as well. Attending college in itself may present the first and best opportunity for many students to have positive contacts with racially diverse peers (Hurtado et al., 2002). Approximately 90 percent of White students and 50 percent of Black students grew up in racially homogeneous neighborhoods and attended racially homogeneous high schools (Gurin, 2004; Milem & Umbach, 2003). These students arrive on college campuses having experienced few opportunities to engage with ethnically diverse students (Gurin et al., 2002; Hurtado et al., 2002; Jayakumar, 2008; Locks et al., 2008; Saenz, 2005). The University of Maryland has long recognized the importance of diversity initiatives to foster such interactions. These diversity initiatives include organizational mechanisms such as the Office of Diversity and Inclusion, Provost's Conversations on Equity, Diversity and Higher Education, and the President's Commission on Ethnic Minority Issues. Programmatic initiatives on campus include Intergroup Dialogue: Words of Engagement and the CORE Diversity Requirement for undergraduate students. This study can answer the question as to whether these collegiate experiences as a whole translated itself into positive interactions among diverse peers.

Engagement with diverse peers has also received attention from the courts. Whether increasing diversity in college actually produces educational benefits and how students acquire these benefits has been the focus of intense legal scrutiny (Chang, Astin & Kim, 2004; Milem et al., 2005). To comply with the rulings of *Gratz* and *Grutter,* universities are compelled to document the educational benefits of diversity initiatives. In doing so, colleges and universities have a unique opportunity to bridge a gap between court rulings and scholarship, in a manner in which inquire moves beyond *whether* structural diversity produces benefits toward understanding *how* colleges facilitate engagement (Antonio, 2001;

Astin, 1993; Chang, 1999; Chang et al., 2005; Gurin et al., 2002; Milem, Chang, & Antonio, 2005;Milem et al., 2005).

Defining Engagement

Engagement among diverse peers can be defined in several ways. For the purpose of this study, engagement is defined as the level of positive interactions students experience with diverse peers. Positive interactions are measured using six Likert-items. These items assess the extent to which students interact with peers outside of their racial group in the following activities:

1. Dining or sharing a meal

2. Had meaningful and honest discussions about race/ethnic relations outside of the class

3. Shared personal feelings and problems

4. Studied or prepared for class

5. Socialized or partied

6. Had intellectual discussions outside of class

Statement of the Problem

Despite the contribution of research on diversity, it falls short in explaining the *extent* to which pre-college variables influence engagement among racially diverse peers in college. Moreover, the extant research (Antonio, 1998; Chang, 1999; Gurin, 1999; Hurtado et al., 2002; Locks et al., 2008; Milem & Umbach, 2003; Saenz, 2005; Slavin & Madden, 1979) provides little information on exactly *how* pre-college characteristics combined with

initiatives on a college campus jointly influence engagement among racially diverse peers. The bulk of literature on engagement examines initiatives that occur on college campuses (Antonio, 1998; 2001; Chang, Astin & Kim, 2004; Chang, Denson, Saenz & Misa, 2005; Engberg, 2004). This body of literature rarely explores the interaction between the high schools and colleges (Hurtado et al., 2002; Jayakumar, 2008; Locks et al., 2008; Milem & Umbach, 2003; Saenz, 2005), and fails to describe how pre-college and college related variables jointly influence engagement among racially diverse peers in college.

Despite the dearth of research in this area, there is one model, the *Transition to College Model* proposed by Locks, Hurtado, Bowman & Oseguera (2008) that does in fact explore the joint influence of pre-college and college experiences on engagement among diverse peers. This is the most comprehensive model examining these factors. However, the Transition to College Model has several shortcomings. The model I propose in this study, the Diverse College Student Engagement Model addresses those deficiencies. It does so by incorporating three variables not considered by the Transition to College Model. These variables include: Frequency of Interaction with Diverse Peers Prior to College (PINT), Structural Diversity of the College Classroom (CLASS), and Peer Pressure *Not* to Engage with Diverse Peers in College (PPRES). It also extends findings from the Transition to College Model by testing several hypotheses on a single-institution campus.

Purpose of the study

This study examines the extent to which minority students and non-minority students at a predominantly White institution differ in their predisposition to engage in campus-based diversity activities upon entering college, as well as in their engagement levels during the

sophomore year. These ethnicity-based interactional differences are examined under a revised version of the Transition to College Model (Locks et al., 2008).

The Diverse College Student Engagement Model (see figure 4 in Chapter 2) posits that structural diversity prior to college enables students to increase levels of interaction with racially diverse peers. Accordingly, increased interaction prior to college predisposes students to engage in diversity-related activities upon entering college, and engage with diverse peers throughout college. The Transition to College Model, although comprehensive, omits an important pre-college factor shown to influence college engagement: *pre-college interaction with diverse peers*. Instead, the Transition to College Model focuses *solely* on structural diversity in the pre-college environment. The Diverse College Student Engagement model also posits that hours spent per week socializing, along with living in campus residence halls, campus racial climate, and the structural diversity of the college classroom influence engagement levels on campus.

Accordingly, the following three research questions guided this study:

1. To what extent do the variables considered in the Diverse College Student Engagement Model predict levels of student predisposition to engage in diversity-related activities upon entering college, and engagement with diverse peers throughout college?

2. To what extent are students of color more predisposed to participate in diversity-related activities compared to their White counterparts?

3. To what extent are students of color more prone to report positive interactions among diverse peers during the sophomore year of college?

*Significance of the Study:*

Understanding student engagement within the context of an individual institution may help to explain *what* activities or programs implemented help to facilitate engagement between diverse populations. Examining the campus context might also give insight into *why* students with varied predisposition levels engage their racially diverse peers. Therefore, a single institution study was best suited for this inquiry. Multi-campus studies can hide or suppress the effect an institution's culture has on engagement (Hurtado et al., 1998). Accordingly, I limited the analysis of my study to White students and students of color enrolled at the University of Maryland College Park. The need for this study is also justified by Pascarella (2006), who calls for an increase in study replication. Replicated studies allow for previous studies to be verified or discredited. Successful replication and affirmation of previous findings increases the likelihood that recommendations will be implemented (Pascarella, 2006).

*Conceptual Model: Diverse College Student Engagement Model*

Figure 4 (see Chapter 2) provides an illustration of the Diverse College Student Engagement Model. The model posits that pre-college factors and collegiate experiences jointly influence student engagement. It also postulates that engagement between diverse college students is the result of a longitudinal process extending back to the high school and pre-college environment.

Literature review

This section summarizes the literature that guided me in developing the Diverse College Student Engagement Model. The literature is broken into two sections: Precollege and College. A thorough review of this literature is presented in Chapter 2.

*Pre-College Factors that Influence Engagement.*

Locks and associates' (2008) findings support the notion that students do not enter college as blank slates. A student's history of engaging with diverse peers is one of many factors that influence their dispositions. Additional pre-college factors also affect later engagement decisions (Braddock, 1980; Hurtado et al., 2002; Locks et al., 2008; Slavin, 1980; Shimahara, 1983; Slavin & Cooper, 1999; Saenz, 2005; Saenz, Ngai, Hurtado, 2007). Structural diversity in the pre-college environment is one such factor (Jayakumar, 2008; Locks et al., 2008; Saenz, 2005). Several researchers have reported that the structural diversity of student pre-college environments influence positive interactions with diverse peers while in college (Jayakumar, 2008; Locks et al., 2008; Saenz, 2005). Additionally, Hurtado, Engberg, Ponjuan and Landreman (2002) find that the level of engagement students have with diverse peers prior to college predisposes them to hold diverse viewpoints and perspectives.

Mechanisms employed by K-12 schools also affect engagement. High school practices such as teacher pedagogy can dictate student interactions, and affect their level of engagement with diverse peers (Khmelkov & Hallinan, 1999; Moody, 2001; Slavin, 1980). One teacher technique used to facilitate engagement is cooperative learning groups. These

groups encourage positive interaction among racially diverse peers and positively impact

student learning (Slavin & Cooper, 1999). Organizational structures of the high school also

matter (Braddock & Slavin, 1993). Several K-12 researchers find that the organizational

structure of a high school's academic system correlates with the amount of classroom

interactions students have with racially diverse peers (Khmelkov & Hallinan, 1999; Slavin &

Madden, 1979). Their findings suggest that schools that are divided into academic tracks and

ability groups not only limit interaction among diverse peers, but possibly increase racial

tension (Braddock & Slavin, 1993; Khmelkov & Hallinan, 1999; Slavin & Madden, 1979).


*College Factors that Influence Engagement.*

College environments also matter, as conditions and mechanism on college campuses

help to facilitate engagement among diverse students. Gurin (1999) posits three ways that

campuses address diversity in order to facilitate engagement—structural, interactional, and

curricular. Structural diversity has been the focus of a substantial amount of literature

(Chang, 1996; Gurin, 2002; Gurin, 1999; Hurtado et al., 1998). This focus is understandable;

however increasing structural diversity alone does not produce benefits (Chang et al., 2005;

Jayakumar, 2008). Diverse student engagement does not occur *solely* because an institution is

diverse. The second method posited by Gurin (1999), termed interactional diversity, extends

beyond structural diversity. It captures the frequency and quality of diverse interactions

(Antonio, 1998; 2001; Chang, 1996, 1999). Interaction among diverse peers, mediated

through a presence of structural diversity has been linked to numerous benefits, including

cognitive growth (Gurin et al., 2002), and sense of belonging to a university (Cabrera et al.,

1999; Locks, Hurtado, Bowman & Oseguera, 2008). The third method Gurin (1999)

addresses is curricular diversity, or the presence of diversity within the college classroom. Curricular diversity specifically examines the impact of pedagogical techniques used by professors to increase engagement within the classroom, as well as programs implemented on campuses to influence engagement among diverse student groups.

Hurtado and associates (1998) note the importance of a fourth dimension to studying diversity—the campus racial climate. They note that an institution's history of segregation can affect how students perceive the racial climate of the institution. Jayakumar's (2008) and Locks and associates (2008) also examine the influence of racial climate on student behaviors and attitudes. Locks and associates (2008) find that student perceptions of their campus climate as well as their sense of belonging are affected by the extent to which they experience anxiety when interacting with diverse peers. Jayakumar (2008) adds that a positive campus climate can even overcome the effects of having lived in a segregated pre-college environment.

Summary of Methods

This quantitative longitudinal study follows 927 undergraduate students who attended the University of Maryland College Park during Fall 2000 to Spring 2002. These undergraduates completed two surveys. The first survey, titled *Preparing Students for a Diverse Democracy: First Year Student Views and Experiences* (Hurtado, 2003; Locks et al., 2008; Saenz, 2005) was administered during freshman orientation in August 2000; it captured information about student pre-college experiences, their predisposition to engage with diverse peers in college, and the nature of relationships with diverse peers inside and outside the high school setting.

The second survey, *Preparing Students for a Diverse Democracy: Second Year Survey of Student Views and Experiences*, was applied at the end of the sophomore year in 2002; it focused on changes in student cognitive, social and democracy outcomes; it assessed student views and attitudes since enrolling in college. It also captured the extent to which students engaged with diverse peers in a variety of campus-based settings. Both the baseline and follow-up survey were used to perform the analysis of this study.

*Constructs and Measures in the Diverse College Student Engagement Model*

The Diverse College Student Engagement Model is made up of three constructs and five manifest variables. Table 2 (see Chapter 3) summarizes the latent constructs and the corresponding indicators. The latent constructs are Pre-College Structural Diversity (HSSD), Predisposition to Participate in Diversity-Related Activities upon Entering College (PENG), and Engagement with Diverse Peers in College (ENG). The five variables include: 1) Interactions with Diverse Peers Prior to College (PINT), 2) Classroom Diversity (CLASS), 3) Living in Campus Residence Halls (LIV), 4) Time Spent Socializing (SOC), and 5) Peer Pressure (PPRES) *Not* to Engage Diverse Peers. Construct definitions and selection of variables were drawn from themes that emerged from the Transition to College Model (Locks et al., 2008). Discussion of the constructs and measures are provided in Chapter 3.

*Analyses*

I performed an initial data exploration to serve several purposes: first, to allow me to examine the demographic makeup of my participant profile; second it allowed me to make certain that assumptions of homogeneity were met. Next, I explored the data to check for

missing values, and to assess how best to impute those data. I then checked whether the data were normally distributed and corrected the data for their ordinal nature (Hancock & Mueller, 2008).

My initial study sample included 927 students who were surveyed at two time periods. I screened out the seven Native American students due to potential participant identification. Data screening revealed that several students indicated belonging to multiple ethnic groups. A "biracial" category was created for these students. Next, I performed listwise deletion, which deletes the record of participants with missing data on study variables. Listwise deletion procedures lowered my sample size to 730 students. Although substantially reduced, the sample still has enough power to test the hypothetical connections in my model. Using procedures discussed in Hancock (2006), I estimated a minimum sample of 309 subjects to answer research questions two and three. My sample of 730 students more than satisfied this threshold.

Next, I analyzed the power of my data to determine if I had adequate sample size to test for each racial group independently (Hancock & Mueller, 2008a). The power analysis determined that the sample size of each racial group was not adequate to test the model. I conducted several ANOVA tests to inquire if students of color (biracial, Black, Asian, Hispanic) significantly differed from one another on the study variables (see Appendix B). Because they did not differ significantly, they were combined to form a "students of color" group. The final analytic sample consists of 63.4% White students and 36.6% "students of color".

*Data Screening*

As noted by Raykov and Marcoulides (2008), many researchers fail to examine the normality properties of their data; instead, they assume normality. Assuming normality risks the chance of reaching invalid conclusions. Hancock and Mueller (2006; 2008b) suggest using several measures to appraise departure of normality, including univariate skew, univariate kurtosis, and multivariate kurtosis (see Table 3 in Chapter 3).

I relied on SPSS 16.0 and Prelis for my initial data screening. These exploratory analyses revealed that the normality assumption was not met. Ten of the 17 items were significantly skewed. Sixteen out of 17 items departed from normality. All 17 items were both significantly skewed and non-normal. Moreover, the Mardia's normalized coefficient of 4.7, an indicator of multivariate normality (see Byrne, 2006), departed from the recommended threshold of 3 (Bentler & Wu, 2002 as cited in Hancock & Muller, 2008b) (see Chapter 3 for full description).

During the exploratory analysis phase, I also noticed that two items, 1) Classroom Diversity (CLASS) and 2) Peer Pressure (PPRES), displayed little variability (see Tables 4 and 5 in Chapter 3). Only a small proportion of students, approximately 10%, reported experiencing peer pressure *not* to engage with diverse students. Additionally, approximately 70% of students reported having college classrooms that were structurally diverse. Therefore, these two items and their corresponding constructs were omitted from model testing. Accordingly, all of my analyses are based on three constructs, three items, and the corresponding 15 variables, for an effective sample size of 730.

*Model Testing Approach*

I utilized Structural Equation Modeling (SEM) to test the patterns that link together conceptually driven constructs in explaining engagement (See Figure 4 in Chapter 2). These complex processes cannot be tested using more traditional approaches such as ANOVA or multiple regression. ANOVA and multiple regession do not allow for testing direct and indirect effects. SEM is viewed as more powerful than most commonly used statistical approaches, and has several added advantages. Byrne (2006) notes that SEM takes a confirmatory, rather than an exploratory, approach to data analysis. Furthermore, unlike exploratory procedures, relationships in SEM are specified *a priori*. SEM is also unique because it allows for the testing of multiple dependent variables. SEM conveys two aspects of modeling: 1) the causal processes being studied are represented by a series of structural equations, and 2) these structural relations can be modeled pictorially to enable a clear conceptualization of the theory being hypothesized (Byrne, 2006).

Answering research question one called for a two step strategy. First, I performed a Confirmatory Factor Analysis, followed by testing a series of structural models which assess the presumed interconnections among the predictors of student engagement. Confirmatory Factor Analysis (CFA) allowed me to validate the extent to which the three constructs with multiple indicators underlying the Diverse College Student Engagement Model, hold for the University of Maryland[1].

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[1] CFA as opposed to Exploratory Factor Analysis (EFA) is chosen for this analysis. CFA starts with a theoretically derived model, and assesses how well the data fit the model. EFA on the other hand explores the data to 'discover' underlying structures that may be present. CFA begins with theory, and allows the data to determine whether or not the theory should be rejected (Hancock & Mueller, 2008a). CFA also allows the researcher to test alternative conceptualizations of the dependent variable (Weerts & Cabrera, 2008).

Having ascertained the measurement properties of the constructs, step two consisted of testing eleven variations of structural models (see Table 24 in Chapter 4) associated with the Diverse College Student Engagement Model. The best fitting model was retained to examine the extent to which the paths connecting pre-college factors with collegiate experiences hold in accordance to my hypothetical model of student engagement. This model, then, was used as a springboard to answer research questions 2 and 3[2].

Given the lack of data normality, I relied heavily on four robust measures of fit to judge the CFA model and the different SEM models. These indices include: a) the Satorra-Bentler Maximum Likelihood estimate of chi-square (S-B$\chi^2$), b) the S-B$\chi^2$/$df$ ratio, c) the Comparative Fit Index (CFI), and d) the Root Mean Square Error of Approximation (RMSEA). I estimated the reliability of the latent factors using the Coefficient-$H$ (Hancock & Mueller, 2001), which takes into account the loadings underscoring each latent factor (see Table 21 in Chapter 4).

The best-fitting model that resulted from answering question one was retained as the baseline model to answer questions two and three. Questions two and three examine differences in predisposition to engage in campus-based diversity activities and positive interactions among minority students and non-minority students. I relied on Latent Means Modeling (LMM) to test for these differences across ethnic groups. Similar to ANCOVA, the Latent Means Modeling (LMM) approach controls for relevant independent variables when

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[2] None of the minority groups per se were large enough to conduct tests of model invariance across both CFA and structural models (African American= 59: Asian American= 119; Hispanic=31; Biracial=37). Consequently, I combined all minority groups into one group after a series of MANOVA analyses revealed no significant differences across most minority groups for most of the 15 variables under consideration.

drawing comparisons across groups in a simultaneous manner. However, LMM has the added advantage of incorporating measurement errors for both the independent and dependent variable (see Thompson & Green, 2006; Hancock & Muller, 2008b). The structural model selected in the previous stage provided the foundation to examine differences in Predisposition to Engage (PENG) and Engagement with Diverse Peers (ENG) through latent means modeling (LMM).

## Results by Research Question

This section presents the findings for the three research questions that guided this study. The results are organized by research question. Prior to this, I present the confirmatory factor analysis (CFA) results of having tested the underlying 3 factors and their corresponding 13 items.

*Confirmatory Factor Model*

The results of the CFA support the hypothesis that 3 constructs indeed underscore the Diverse College Student Engagement Model. These constructs are 1) Pre-College Structural Diversity (HSSD), 2) Predisposition to Engage (PENG) and 3) Engagement during College (ENG) (*$S$-$B\chi^2$/$df$ =2.25, *CFI =.99; *RMSEA = .041; 90% C.I. =.032, .051). Additional evidence supporting this model was found in the pattern of loadings for each construct. All loadings were above .60, meaning that most of their variance was explained by the latent factor they sought to measure. The reliability of each the constructs, as measured by Coefficient-$H$, was above .70,

indicating that the latent factor is well appraised by its corresponding measures (see

Table 21 in Chapter 4).


*Results from Question 1: Pre-College and College Factors that Influence Positive*

*Interaction in College*

Initial testing of the hypothesized Diverse College Student Engagement

Model yielded a poor fit to the data ($S$-$B\chi^2/df$ =7.96, CFI =.91; RMSEA = .097; 90%

C.I. =.091, .10). My examination of the modification indices revealed a series of

correlated errors.  Freeing the correlated errors in a series of 11 models resulted in

significant improvements of fit. The modification indices of the retained model,

model 11, indicate it falls within an acceptable range of data model fit (*$S$-$B\chi^2/df$

=2.83, *CFI =.98; *RMSEA = .05; 90% C.I. =.042, .058). (see table 22 in Chapter 4)

Overall, I found support for most of the hypothesized relationships among

constructs underscoring the Diverse College Student Engagement Model. In

opposition to my initial hypothesis, Pre-College Structural Diversity per se bears no

direct connection (-.01) with student Predisposition to Engage in Diversity-Related

Activities upon entering college.

However, pre-college structural diversity is positively associated (.34*) with

interactions with diverse peers prior to college. Those who interact with diverse peers

prior to college were more likely to be predisposed to join campus-based diversity

activities during their freshman year. The importance of past interactions with diverse

peers *extend beyond* freshman year predispositions to engage; students who interacted

17

with diverse students prior to college were also more prone to report engagement with diverse peers at the end of their sophomore year (.20*).

Freshman student attitudes also matter. Freshmen students who were predisposed to engage in campus-based diversity activities subsequently reported engaging with diverse peers during their sophomore year (.19*), a finding which is consistent with the literature (Locks et al., 2008; Milem & Hakuta, 2000).

A finding that was not consistent with the literature was the lack of effect between living in campus residence halls and engagement with diverse students (.01) (Pike, 2002; Zuniga, Williams & Berger, 2005). Living in residence halls alone, did not influence students to engage among racially diverse peers.

Time socializing was positively associated with engaging with diverse peers (.34*) during the sophomore year of college. This finding was also consistent with the findings of Locks and associates (2008).

*Results from Question 2 & 3: Do Minority Students and Non-Minority Differ in Predisposition to Engage upon Entering College and in Engagement Levels During Sophomore Year?*

*Differences in Predisposition to Engage*. I detected a moderate-size effect (.46*) in the difference between minority students and non-minority students in the latent factor predisposition to engage (see Table 24 in Chapter 4). Net of measurement error and past interactions with diverse students, I find that minority students (coded as 1) are, on average, about half of a standard deviation unit higher in

the latent predisposition to engage in diversity activities than are non-minority

students (coded as 0).

*Differences in Engagement with Diverse Peers*. I found no significant mean

differences (.11) between minority students and non-minority students in their

engagement with diverse peers while attending college (see Table 24 in Chapter 4)

after controlling for measurement error, precollege factors and collegiate

experiences. This finding is noteworthy.  Students indeed varied greatly in their

predisposition to engage in diversity activities when they arrived at the University

of Maryland, whereby Whites were less likely to engage in campus-based diversity

activities; and, yet, two-years later, both minority students and non-minority

students report similar levels of engagement.


Discussion

Earlier research found that exposure to diverse environments prior to college

motivated students to be more predisposed to, and actually engage with diverse peers

in college (Hurtado et al., 1998; Hurtado et al., 2002; Locks et al., 2008).Consistent

with this literature (Jayakumar, 2008; Milem & Umbach, 2003), descriptive statistics

indicated that the students grew up in segregated environments; this was especially

true for White students (see Appendix B). This lack of pre-college exposure may

explain why I did not find a connection between pre-college structural diversity and

predisposition to engage in diversity-related activities upon entering college.

However, the importance of exposure to structural diversity resides in creating the

necessary conditions for students to interact with diverse peers before college.  It is

this behavior, interaction with diverse peers in the pre-college environment, which predisposes the future college freshman to participate in campus-based diversity activities.

The importance of interacting with diverse peers prior to college extends beyond predisposition. Interacting with diverse peers before college also increased the likelihood of engaging with diverse peers at the end of the sophomore year of college. So it is safe to conclude that pre-college structural diversity *per se* is not sufficient to foster engagement during college. However, pre-college structural diversity provided the foundation whereby frequent interactions before entering college could occur.

In testing the Diverse College Student Engagement Model, I found several college factors that affect student engagement with diverse peers while in college. One such factor was student predisposition. Students predisposed to engage in diversity activities prior to college were significantly more likely to engage with diverse peers at the end of the sophomore year, compared with students who were less predisposed to engage. This finding is consistent with Locks and associates, (2008).

There were several hypotheses embedded within the Diverse College Student Engagement Model for which I found no support. Contrary to my initial hypothesis, living in residence halls bears no connection with positive interactions at the end of the sophomore year. This finding is both remarkable and surprising; it suggests that living in the residence hall environment alone does not foster engagement among diverse peers. It also contradicts prior research which suggests residence halls can be

pivotal for engaging diverse peers (Astin, 1993; Hughes, 1994; Pike, 2002; Zuniga, Williams & Berger, 2005). However, this finding is consistent with the University of Maryland's lack of mandatory diversity initiatives aimed at fostering diverse student interactions within residence halls. The majority of the University's diversity initiatives are campus-wide in nature. While there is a residence hall dialogue program, participation is optional.

Minority students and non-minority students also differ in the extent to which they enter college predisposed to engage in diversity-related activities. Within the pre-college environment, a student's ethnicity plays a role. The latent means model reveals a moderate-size effect associated with ethnicity (.42*). In other words, minority students are 19 percentile points more predisposed to participate in campus-based diversity activities than are Whites at the beginning of their freshman year. This finding is consistent with literature suggesting that minority students grow up in environments with more potential to recognize and engage with people of different backgrounds than are Whites (Hurtado et al., 2002; Jayakumar, 2008; Saenz, 2005; Milem & Umbach, 2003).

The latent means model revealed no ethnic-differences in engagement with diverse peers by the end of their second year. Both minority students and non-minority students report similar levels of engagement with diverse sophomore peers while controlling for the process underscoring such engagement. This is to say that the role of ethnicity seems to be lessened by the end of the sophomore year even though both groups entered college with different levels of predispositions to engage.

It is remarkable to find such pronounced differences to be attenuated by the

end of the sophomore year particularly so when one takes into account the striking differences in willingness to engage upon entering college. One cannot help but to attribute this lack of difference among racially diverse peers in part to the University of Maryland's efforts in fostering engagement. It may well be the case that these initiatives, which engage students in sustained dialogue and promote a diversity of ideas, may have helped to foster engagement for all students during such a critical time of identity development. By implementing these initiatives, campus administrators are addressing the themes that Gurin and associates (2002) posit as being necessary as students transition into unfamiliar environments. These initiatives may play themselves out in several other areas of campus as well extending to the classroom and campus climate. A majority of students reported experiencing substantial amounts of racial diversity within the classroom; moreover, they also reported not being exposed to peer pressure to avoid interacting with racially diverse peers. Altogether these findings are in sharp contract with Lock and associates (2008) who found high levels of racial tension in their multi-campus study. These findings also speak on behalf of conducting single-institution studies for fully understanding the impact of a campus context on student engagement (Hurtado et al., 1998).

## Conclusions & Implications

This study sought to examine the extent to which minorities and non-minority students differ in their predispositions to engage in campus-based diversity activities as freshman, as well as in their positive interactions with diverse peers at the end of their sophomore year. Working on an expanded version of the *Transition to College*

*Model* (Locks et., al, 2008), the Diverse College Student Engagement Model

postulated that positive interactions with diverse college students is the result of a

longitudinal process extending back to the high school. In testing this model with the

2000 freshman cohort at the University of Maryland, I found that being exposed to

structural diversity, in high school per se, has no direct relationship with a freshman's

predispositions to engage in campus-based diversity activities. The importance of pre-

college structural diversity does, however, translate itself into creating the necessary

conditions to interact with diverse pre-college peers. It is this interaction that prepares

future college freshman to be predisposed to participate in campus-based diversity

activities. In turn, being predisposed and having a history of engagement with diverse

peers, leads to positive interactions with diverse peers once in college. Remarkably,

the role of ethnicity seems to be attenuated by the end of the sophomore year. Both

minorities and non-minorities report similar levels of positive interactions with

diverse sophomore peers

  Engagement is a learned behavior. One that was shaped long before students

entered into college. My results suggest that structural diversity in the pre-college

environment created the preconditions for students to interact with diverse peers.

While the data do not allow me to explore what those preconditions were that harness

the potential of structural diversity, it is possible to assume that they emanated from

high school practices. Cooperative learning environments, which are used extensively

in the K-12 environment, are shown to increase engagement among diverse students.

  While the impetus for this study was to examine what factors predispose

students to engage prior to college and interact during college, the study validates the

wisdom of two recommendations from the literature. It confirms Pascarella's (2006) need to replicate studies in order to validate theoretical propositions while supporting Hurtado and associates' (1998) assertion that each campus context matters in facilitating engagement among diverse peers. Although valuable, multi-institutional studies may indeed mask the commitments of individual campuses to promote engagement. Moreover, this single campus-based study found support for many of the propositions made by Locks and associates (2008).

As researchers continue to examine complex phenomena, I would urge them to abandon the practice of using simple OLS regression and ANOVA techniques when testing ethnic differences. I join Jayakumar (2008) and Locks and associates' (2008) recommendations of using statistical methods that mimic the longitudinal nature of engagement with diverse peers. SEM allowed me to examine the complex process linking pre-college environments with college ones. This method also allowed me to examine the direct and indirect effects of pre-college interaction with peers in a manner that OLS and ANOVA would not be able to address. I would only add the need to incorporate Latent Means Modeling (LMM) as an additional option to examine differences among ethnically diverse students.

# Chapter 2: Literature Review

## Introduction

This chapter discusses the theoretical and conceptual frameworks that guide the Diverse College Student Engagement Model, which explains engagement behaviors among racially diverse peers. The model is used to answer three research questions regarding differences between minority students and non-minority students in predisposition to engage in campus-based activities upon entering college, and engagement throughout college.

Building upon the *Transition to College Model* (Locks et al., 2008), the Diverse College Student Engagement Model views engagement as the result of a process linking student pre-college characteristics with collegiate experiences (see figure 4). In doing so, the Diverse College Student Engagement model posits that structural diversity, or the amount of racial diversity present prior to college, leads to increased interaction among racially diverse peers. In turn, these interactions pre-dispose students to engage in diversity-related activities upon entering college, and engage with diverse peers throughout college. My model also posits that time spent socializing, along with living in campus residence halls influences engagement.

## Overview of the Literature Review

I decided to apply a holistic approach in reviewing the literature that frames this study. Utilizing a holistic approach recognizes the topic is rooted in a social and legal context that highlights the importance of engagement as a policy issue. My perspective also

25

recognizes that the topic has received considerable attention from several existing conceptual

and theoretical frameworks that guide the framing of my literature map (see Figure 1),

conceptual model (see Figure 4), and in positing the study's research questions.

Accordingly, three research questions guided this study:

1. To what extent do the variables considered in the Diverse College Student

Engagement Model predict levels of student predisposition to engage in

diversity-related activities upon entering college, and engagement with

diverse peers throughout college?

2. To what extent are students of color more predisposed to participate in

diversity-related activities compared to their White counterparts?

3. To what extent are students of color more prone to report positive

interactions among diverse peers during the sophomore year of college?

The literature review is organized into several sections (see Figure 1). The

Societal Context section of the literature review provides a legal perspective through

which diversity policies are shaped on college campuses. First, I provide a synthesis

of literature explaining factors that influence student engagement is provided. Then,

the Theoretical Frameworks section reviews the main tenets of the most widely

accepted theoretical and conceptual frameworks that explain student engagement

behaviors (Allport, 1954; Chickering & Reisser, 1993; Gurin et al., 2002; Hurtado et

al, 1998; Locks et al., 2008). These frameworks emanate from the fields of education

and social psychology; altogether they address important constructs that help to

articulate how experiences prior to college and during college influence student engagement (Jayakumar, 2008; Locks et al., 2008; Saenz, 2005).

The Theoretical Frameworks section of the literature review is organized into five subsections. The first subsection, *Dimensions of College Racial/Ethnic Diversity*, summarizes Hurtado, Milem, Clayton-Pederson, and Allen's (1998) Enhancing Campus Climates for Racial/Ethnic Diversity Framework. Their framework advances four dimensions necessary for campus environments to facilitate engagement. The next subsection, *Psychological Theories of Student Development* examines Gurin and associates' (2002) Theoretical Foundations for the Educational Value of Diversity Framework, which explains identity development experienced by young adults transitioning into college, and how identify development relates to tolerance of diverse perspectives and cognitive growth (Chickering & Reisser, 1993; Erickson, 1956). The third subsection examines theories explaining the *Conditions & Mechanisms* needed to facilitate interaction between diverse students (Allport, 1954; Astin, 1985). Allport's (1954) Intergroup Contact Theory and cooperative learning environments are detailed in this subsection. The fourth subsection details the *Consequences of Engagement,* by explaining contributions made by the Transition to College Model proposed by Locks and associates (2008). Locks and associates' (2008) model examines pre-college and college processes leading to sense of belonging in college (Locks et al., 2008). Of all of the frameworks presented, the Transition to College Model proposed by Locks and associates (2008) is the most comprehensive model. It is the only one that considers, in a simultaneous manner, the joint influence of the pre-college environment and college experiences on

27

engagement with diverse peers. Finally, the fifth subsection presents the model I

developed to answer my research questions, the *Diverse College Student Engagement*

*Model*. The model is comprised of three sections that influence student engagement:

1) pre-college factors, 2) college factors, and 3) racial context. In building this model,

I was informed by literature from the preceding four sections.

Figure 1: Literature Map



```
+-------------------------------------------------+
|              Theoretical Frameworks             |
+-------------------------------------------------+
                         |
         +---------------+---------------+
         |                               |
+------------------------+      +------------------------+
| a) Dimensionality of   |<---->| b) Psychological       |
| College Racial/Ethnic  |      | Theories of Student    |
| Diversity              |      | Development            |
+------------------------+      +------------------------+

+------------------------+      +------------------------+
| c) Conditions/         |<---->| d) Consequences of     |
| Mechanisms that Foster |      | Engagement             |
| Engagement             |      |                        |
+------------------------+      +------------------------+
                         |
         +-------------------------------+
         | e) Diverse College Student    |
         | Engagement Model              |
         +-------------------------------+
                         |
+------------------------+      +------------------------+
| i) Pre-College         |<---->| ii) Campus Context     |
| Dimension              |      |                        |
+------------------------+      +------------------------+
                         |
              +-------------------------+
              |   iii) Racial Climate   |
              +-------------------------+
                         |
              +-------------------------+
              |    Societal Context     |
              +-------------------------+
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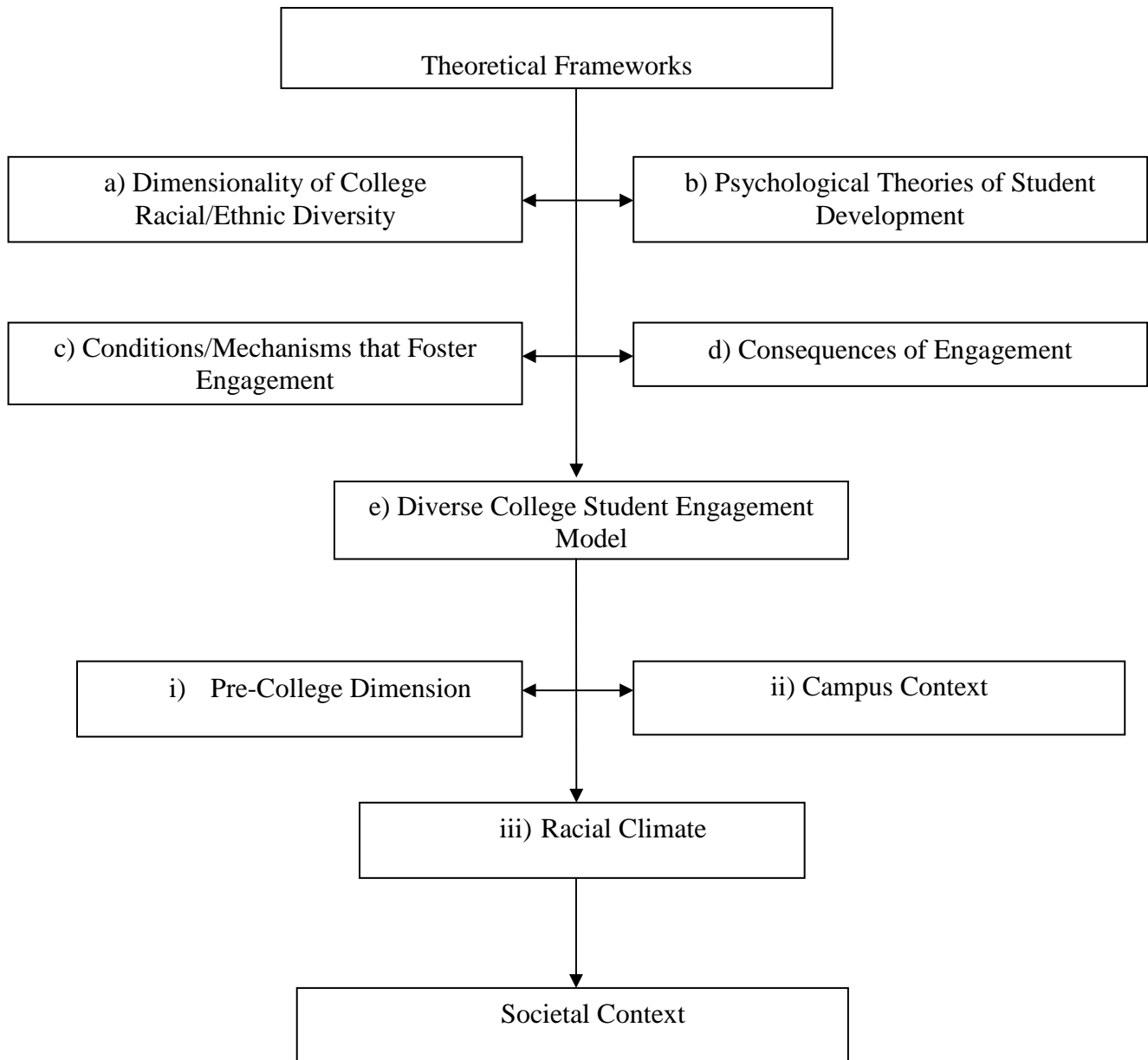
Concept of Engagement

Engagement matters (Astin, 1993; Chang, 1999; Kuh, 2001; Milem, Chang, & Antonio, 2005). Student engagement in college is key to fostering positive interactions between peers and integrating them into the life and culture of a college campus (Braxton, Hirschy & McClendon, 2004; Kuh, 2001). The level at which students engage during college matters more for learning than where they attend school (Astin, 1993; Laird, Chen & Kuh, 2006; Pascarella & Terenzini, 2005). Student engagement during the first year of college correlates with advances in critical thinking in the classroom, persistence to the second year, and improvements in student learning (Astin, 1993; Kuh, 2001; Kuh, Cruce, Shoup, Kinzie & Gonyea, 2008; Pascarella & Terenzini, 2005). Moreover, students who engage with faculty inside and outside of the classroom also show learning gains (Pascarella & Terenzini, 2005). Consequently, Laird and associates (2006) posit that it is imperative for colleges and universities to find ways to engage students inside and outside of the classroom. This is especially true for engaging students with diverse peers.

Engaging with racially diverse peers during college has additional benefits. Interacting with racially diverse peers in college is positively correlated with social, academic, and non-academic gains (LaNasa, Cabrera, Transgrud & Alleman, 2007; Hurtado, Dey, Gurin, & Gurin, 2003; Hurtado, Milem, Clayton-Pederson & Allen, 1998), increased levels of civic engagement and cultural awareness (Milem, 1994), and a sense of belonging to an institution (Cabrera, Nora, Terenzini, Pascarella & Hagedorn, 1999; Locks, Hurtado, Bowman, & Oseguera, 2008).

This study hypothesizes that for engagement to occur among racially diverse peers in college, students undergo a logical sequence of processes that influence

engagement decisions. These processes begin during late adolescence, as students transition from high school into college (Gurin et al., 2002). Many students encounter racial diversity for the first time during this critical stage of identity development (Gurin et al., 2002). Therefore, the 'discontinuity' they experience harnesses the potential to develop into a level of tolerance of diverse peers and perspectives (Chickering & Reisser, 1993). When campus conditions such as those posited in Allport's (1954) Intergroup Contact Theory are met, tolerance of diversity develops into openness to diverse peers and perspectives. Tolerance, serves as a precondition to openness. Subsequently, through various campus-based mechanisms, such as cooperative learning environments, intergroup dialogue programs, and teacher pedagogy, this period of openness to diverse peers and perspectives translates into engagement among diverse peers.

Theoretical Frameworks

The Theoretical Frameworks section of the literature review features conceptual frameworks and theories that underscore diverse student engagement. Taken together, these frames offer a perspective on how pre-college and college experiences jointly influence engagement among diverse students. Implicit in the conceptualization of how the theoretical frameworks relate (see Figure 2), tolerance of diverse perspectives, under certain conditions, leads to openness to diversity; openness to diversity creates conditions whereby students are more likely to engage with diverse peers. Each of these sequential processes is facilitated by conditions and mechanisms; many of which are not directly addressed within the frameworks guiding this study. Altogether, these frameworks, along with the conditions and mechanisms

missing from them, help to inform the proposed Diverse College Student Engagement
Model.

Figure 2: Maps of Concepts Linking the Theoretical Frameworks that Inform the Diverse
College Student Engagement Model
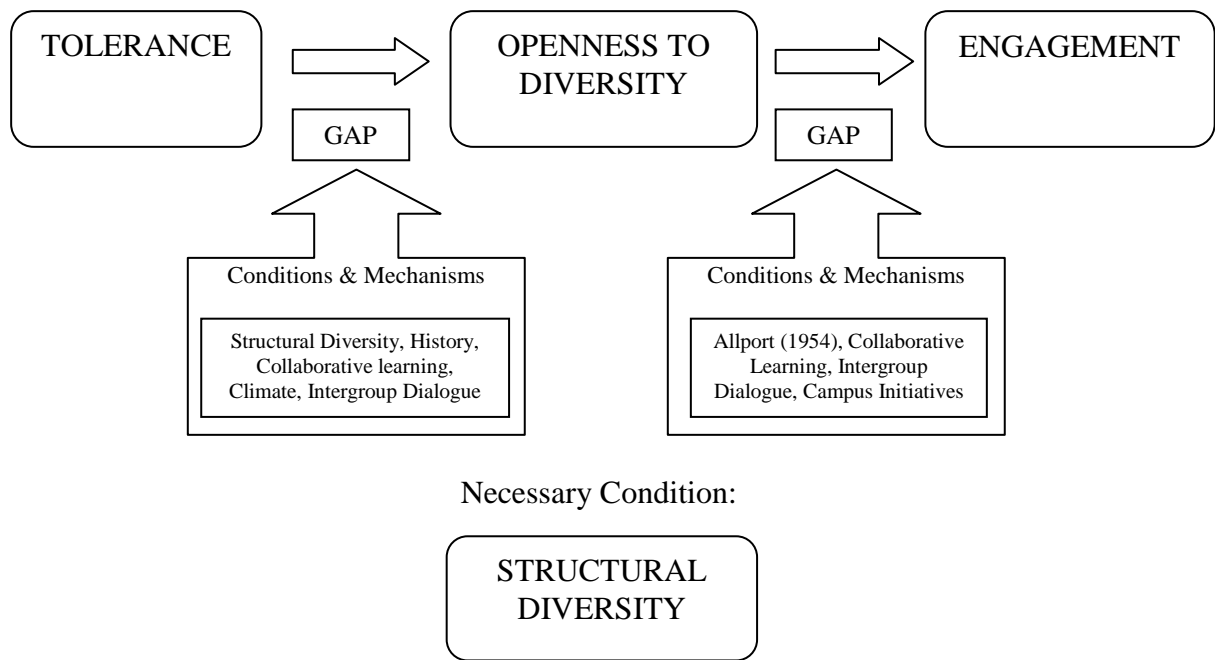


*Dimensions of College Racial/Ethnic Diversity*

Hurtado and associates (1998) provide a widely accepted framework for examining
diversity on college campuses. This monograph, named the Enhancing Campus Climates for
Racial/Ethnic Diversity Framework, views student behavioral and psychosocial attitudes
within the context of an individual campus climate. It also provides a framework to examine
the extent to which the history of inclusion or exclusion of minority students on campus
affects campus diversity efforts. The four dimensions included in this framework are: 1)
Institutional Structural Diversity, 2) an Institution's Historical Legacy of Inclusion or

Exclusion, 3) The Psychological Dimension of Campus Climate, and 4) The Behavioral

Dimension of Climate.  A schematic representation of the model is provided in figure 3.

Figure 3

Hurtado, Milem, Clayton-Pederson, & Allen's Enhancing Campus Climates for

Racial/Ethnic Diversity Framework
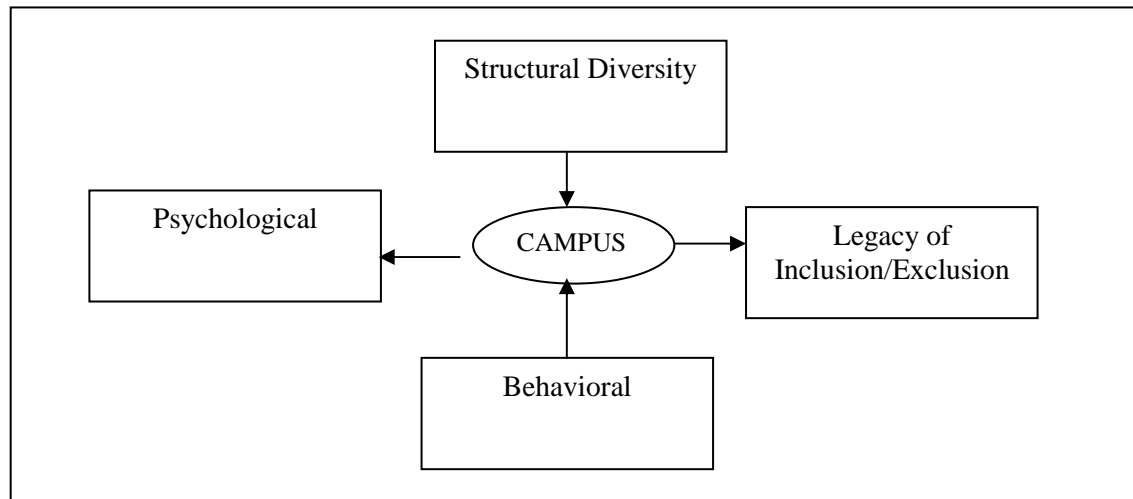


Structural diversity in Hurtado and associates' (1998) model has received

considerable attention in the literature (Antonio, 1998; Chang, 1999; Gurin, 1999; Hurtado,

Dey, & Trevino, 1994; Hurtado et al., 2002; Jayakumar, 2008; Locks et al., 2008; Milem &

Hakuta, 2000; Saenz, 2005). This emphasis is understandable. Without the presence of

structural diversity, interaction among diverse peers is impossible. While structural diversity

*alone* is not sufficient for facilitating engagement, it is indeed a necessary prerequisite for

engagement among racially diverse students (Antonio, 2001; Chang, 1999; Chang, et al.,

2004; Chang et al., 2005; Gurin et al., 2002).

Understanding engagement behaviors among diverse peers can also be explained by

Hurtado and associates' (1998) model. Their model views student behaviors as the outcome

of the four frames included in their model. Central to this model is how a campus' history of

inclusion or exclusion can affect campus diversity efforts. The authors note the importance of examining individual campus contexts, and posit that a campus' history can affect current student behaviors. Subsequent to this study, Locks, Hurtado, Bowman, & Oseguera (2008) revisit a similar model for its use on multiple campuses.

The third dimension Hurtado and associates' (1998) framework highlights, is the impact of the psychological climate on campus diversity. This dimension details how students view or perceive the campus climate and the impact of these perceptions. Several studies have examined how students perceive their campus racial climate and how this perception influences student behaviors (Allen, 1992; Cabrera & Nora, 1994). Overall, these studies find that White and minority students typically perceive the same campus climate very differently (Cabrera & Nora, 1994; Loo & Roolison, 1986).  Student perceptions of a campus climate not only affect their thoughts, but also their actions (Cabrera et al., 1999; Nora & Cabrera, 1996). Perceptions of campus climate have been found to alienate students of color from the mainstream campus environment and affect levels of engagement on the campus (Cabrera & Nora, 1994; Hurtado et al., 1998; Nettles, 1988; Pascarella & Terenzini, 2005).

The fourth dimension in Hurtado and associates' (1998) framework addresses the behavioral dimension of campus climate. This dimension focuses on the interactions that take place among diverse peers. The peer group is shown to influence student behaviors and actions (Astin, 1993). The behavioral dimension posits that, if campus race relations are poor, diverse students will not willingly engage among one another. The converse is true when the behavioral dimension is inviting to all students (Jayakumar, 2008). The racial

tension of a campus is seen to affect student attitudes and sense of belonging to an institution (Locks et al., 2008).

Hurtado and associates (2008) provide a comprehensive framework for understanding the influence of the campus racial climate on student behaviors. Their framework addresses four dimensions of a campus that can affect a student's tolerance levels, openness to diversity and engagement with diverse peers. However, this framework does not specifically address the campus factors that influence diverse student engagement. It does not take into account the unique nature that a campus climate plays as students transition from high school to college, nor does it address the influence of conditions and mechanisms that influence student engagement. Gurin and associates' (2002) Psychological Theories of Student Development builds upon this framework to offer a more comprehensive view of factors influencing engagement.

*Psychological Theories of Student Development*

The college environment plays a crucial role in shaping student attitudes and behaviors toward diverse peers. The environment is especially important during the period in which students transition from high school into college (Gurin et al., 2002; Jayakumar, 2008; Locks et al., 2008; Saenz, 2005). Erickson (1946; 1956) calls this stage 'psychological moratorium'. Piaget (1985) termed this stage 'disequilibrium'. Nevertheless, this critical transition stage provides a prime opportunity for students to be challenged and learn from others. As students evolve and develop during this stage of transition, they are more prone to develop tolerance of diverse perspectives and ideas (Chickering & Reisser, 1993; Hurtado et al., 2002). Gurin and colleagues (2002) postulate a conceptual framework that examines the

connection between engagement with diverse peers and cognitive growth. Their framework is informed by Erickson (1946; 1956), Piaget (1971; 1975; 1985) and Newcomb's (1943) earlier findings that the late adolescent stage is crucial for identity development. Gurin and associates (2002) also examine Ruble's (1994) findings, which link developmental change in late adolescence to life transitions. Gurin and associates' (2008) framework posits that the transition from high school into college constitutes such a transition.

During this transition period from high school to college, Ruble (1994) posits that students ask questions and make sense of their new environment. As this occurs, students are likely to seek meaning through interaction. Institutions can seek to foster interaction during this time of identity development in several ways. Gurin and associates (2002) stress the potential of the campus environment in creating conditions to foster engagement among diverse students. Their framework posits that, as students transition onto diverse college campuses, they experience a 'discontinuity' from the home environment. Because the freshman college experience is unique, this period allows students to mature from previously held beliefs, and become tolerant of ideas and perspectives of those different from them. This interaction only occurs when conditions are met (Allport, 1954).

The research literature supports a link between tolerance of diverse peers and openness to diverse peers and perspectives (Astin, 1993; Chang, 1999; Flowers & Pascarella, 1999; Hurtado, 1997). Gurin and associates (2002) build upon this connection. They note that engaging with diverse peers during this time presents a prime opportunity for openness to diversity and cognitive growth. Gurin and associates (2002) conclude that the potential of a diverse college campus operates through student experiences. The authors urge colleges to

provide opportunities for students to experience disequilibrium and discomfort, so that openness can lead to engagement.

The framework presented by Gurin and associates (2002) is lauded as one of the most comprehensive frameworks that explain the complex psychological and behavioral processes related to diverse student engagement. It takes in account the state of mind of students, and underscores the importance of informal interaction on campus during a critical time of identity development in order to attenuate attitudes. While the framework presented by Gurin and associates (2002) focuses on the psychological aspects of identity development and its link to cognitive growth, it does not, however, focus on specific environmental conditions and mechanisms needed for engagement to occur.

*Conditions & Mechanisms of Engagement*

The abovementioned frameworks presented by Hurtado and associates (1998) and Gurin and associates (2002) focus on the processes needed for students to successfully engage their diverse peers. Engagement does not occur in a vacuum. Conditions and mechanisms that foster engagement also matter. Conditions that foster student engagement have been studied extensively in the literature (Allport, 1954; Kuh, 2001; Moody, 2001; Slavin, 1980, 1985; Slavin & Cooper, 1999). Allport's (1954) Intergroup Contact Theory and Astin's (1999) Theory of Student Involvement offer two of the most widely accepted frameworks examining these conditions.

Allport's Intergroup Contact Theory suggests that interactions, or contact among diverse individuals takes place under four conditions: Equal Status between Individuals; Common Goals; Intergroup Contact; and Support from Authorities. The first condition is one

that facilitates equal status between individuals. In other words, Allport posits that successful intergroup contact should take place in a context where explicit or implicit hierarchy among relational patterns within groups is absent. The second condition is "common goals"; this is to say that individuals share a group goal that they must achieve. The third condition, "intergroup contact", focuses on the significance of actual contact or engagement between group members in order to reduce prejudice, while the fourth condition, "support from authorities", focuses on the need to gain support from those in power in order for engagement to occur. Allport's (1954) contact conditions are used often in the K-12 environment, and are increasingly used in higher education settings.

Campus conditions that involve students in activities are another way to foster engagement, and are directly tied to educational outcomes. Astin's (1984; 1993) Theory of Student Involvement details conditions necessary for student engagement to occur; he posits that the time students spend involved in campus-based activities relates to levels of engagement and learning.  His theory details multiple facets of engagement on campus, including living in residence halls, participating in student clubs and organizations, interacting with faculty and socializing with peers. Astin's (1993) work also finds that students who engage in ethnic studies and diversity awareness programs show cognitive gains and a commitment to an institution, while these activities also increase tolerance and acceptance of diversity (Abrahmowicz, 1988). Colleges and universities must facilitate campus activities to foster engagement.

Mechanisms, whereby interaction with diverse peers can occur, also matter for engaging peers. Cooperative learning environments, which can occur inside or outside of the classroom and other campus initiatives, are two ways for campuses to facilitate engagement

among diverse peers. Collaborative learning environments, studied more heavily in the K-12 environment (Slavin, 1980, 1981; Slavin & Madden, 1979), now receive attention from higher education scholars and practitioners (Cabrera, Crissman, Bernal, Nora, Terenzini & Pascarella, 2002). Vogt (1997) posits that in addition to its effect on cognitive development, cooperative learning environments may also play a role in increasing tolerance among diverse peers. Vogt also believes that cooperative learning environments are successful because they meet the conditions outlined in Allport's (1954) Intergroup Contact Theory.

Several types of cooperative learning techniques are often used on college campuses (Cabrera et al., 2002); including Freshman Interest Groups (FIGS), where students live in close proximity and enroll in similar courses, and student affairs orientation programs. Cabrera and associates (2002) provides an overview of various types of programs, and assert that while different, each can be linked to benefits such as cognitive development. The results of their study indicate that after controlling for several variables, collaborative learning had the strongest relationship with openness to diversity. Campus mechanisms that facilitate engagement extend beyond the classroom environment. Student living arrangements during college can also serve as a mechanism to foster engagement, are can be directly related to student openness to diversity (Astin, 1993; Hughes, 1994; Pascarella, Terenzini, & Blimling, 1994; Pascarella & Terenzini, 2005; Pike, 2002).

*Consequences of Engagement*

Each of the frameworks and studies examined thus far helps to explain the complex nature of pre-college and college experiences that influence engagement with diverse students in college. Together, they seek to explain the developmental processes associated

with engagement. However, each of the frames contributes to the understanding of factors affecting collegiate engagement in a piecemeal fashion. A more recent body of empirical literature (Jayakumar, 2008; Locks et al., 2008; Saenz, 2005) suggests that the process that links these factors together takes place long before the student enters into college.

Locks and associates' (2008) Transition to College Model posits that both pre-college experiences and college experiences influence engagement among racially diverse peers. The model posits that structural diversity, or the proportion of White students in the pre-college environment, influences students to be predisposed to engage when entering college and engage with diverse peers in college. Their model also suggests that pre-college predisposition to engage influences later engagement decisions while in college. Locks and associates (2008) clearly view engagement with diverse peers as a consequence of pre-college experiences and collegiate experience.

As such, Locks and associates' (2008) Transition to College Model builds upon each of the frameworks presented in the literature review. It incorporates Hurtado and associates' (1998) framework and Gurin and associates' (2002) framework by considering the psychological and behavioral processes students encounter as they transition from high school to college. Lastly, the model attempts to incorporate Allport's (1954) Intergroup Contact Theory, by taking into account the presence of diverse peers as a preamble to diverse interactions.

*Diverse College Student Engagement Model*

This dissertation seeks to answer questions that examine the extent to which minority students and non-minority students differ in their predisposition to engage in campus-based

40

diversity activities, as well as in their interactions with ethnically diverse college peers. Information from the preceding sections lead to the development of my model, which takes into account conditions of engagement and the institutional context as suggested by Hurtado and associates (1998). A review of the literature supports the conclusion that these ethnicity-based interactional differences are examined best when considering the process that links together pre-college and collegiate experiences (Jayakumar, 2008; Locks et al., 2008). In response, the Diverse College Student Engagement Model was developed. Accordingly, I examine these ethnicity-based interactional experiences under a revised version of the Transition to College Model (Locks et al., 2008).

The Diverse College Student Engagement Model takes into account the joint influence of student pre-college characteristics along with collegiate experiences in shaping engagement with racially diverse peers at a predominantly White college (see figure 4). In doing so, the model posits that structural diversity, or the amount of racial diversity present prior to college, leads to increased interactions among racially diverse peers before entering college. In turn, these interactions will pre-dispose students to continue interacting with racially diverse peers once they enter college and throughout. The model also puts forth that hours spent socializing per week, along with living in campus residence halls, influence engagement with diverse peers. The Diverse College Student Engagement Model is divided into two domains; namely: pre-college and college.

Figure 4: Diverse College Student Engagement Model
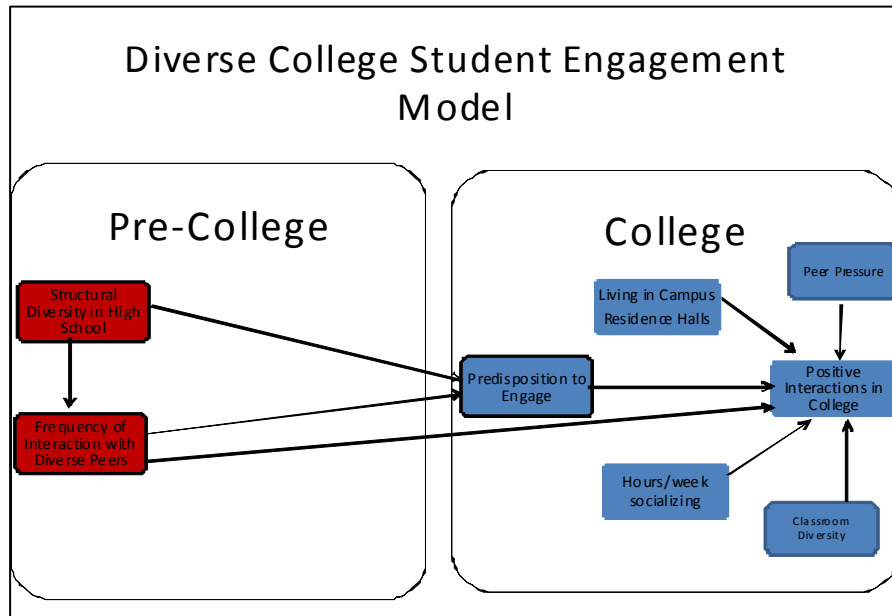


*Pre-College Factors and Interactions.* This subsection examines dimensions of the pre-college environment, as identified by the research literature, that influence engagement between racially diverse peers in college. This section also identifies pre-college factors that were omitted from the Transition to College Model, but are included in the Diverse College Student Engagement Model.

Several pre-college factors influence levels of student interaction with diverse peers in college (Hurtado et al., 2002; Locks et al., 2008; Saenz, 2005). Segregated neighborhoods and community structures are two major influences. High schools within segregated neighborhoods often times have markedly low levels of racial diversity among students (Braddock, 1980; Jayakumar, 2008; Saenz, 2005). Without adequate levels of racial diversity within the high school, students are not likely to experience the contact conditions that

42

Allport (1954) suggests are needed in order for engagement to occur. Moreover, schools that are not racially diverse are less likely to implement mechanisms to foster engagement between diverse students. Literature shows that students from segregated high schools and communities are subsequently less likely to engage with racially diverse peers once in college (Hurtado et al., 2002; Locks et al., 2008; Saenz, 2005).

The pre-college literature also explores school-based practices that increase engagement among racially diverse peers. The most widely addressed school-based practice that impacts engagement has been cooperative learning groups (Slavin & Madden, 1979; Slavin & Oickle, 1981; Klmelkov & Hallinan, 1999). Cooperative learning environments, which groups together students from different ability levels to solve problems, have the ability to encourage interaction and positively impact student learning. When mechanisms such as cooperative learning environments are implemented, they not only facilitate learning, but often times improve race relations (Slavin & Cooper, 1999).

Cooperative learning opportunities as a mechanism for engagement can also be explained using the conditions put forth by Allport's (1954) Intergroup Contact Theory. Allport's (1954) theory posits that certain conditions are needed for peers to learn from those who are different from themselves. These environmental conditions (e.g. equal status, cooperation, common goals, and support from authorities), include many of the elements needed for successful cooperative learning groups and extracurricular activities to function. Extracurricular activities, which are forms of cooperative learning, also serve as a mechanism to promote interaction and team work. Moody (2001) found that schools that successfully mix diverse students during extracurricular activities have more students with interracial friendship groups and increased cooperation among students.

High school practices that increase interaction among diverse peers are important, and the literature shows that the extent to which students engage diverse peers in high school can influence the levels at which they engage diverse peers later in college and throughout life (Jayakumar, 2008; Locks et al., 2008; Saenz, 2005). Simply stated, students are more likely to engage with racially diverse peers in college if they have a history of interacting with diverse peers.

The Transition to College Model posited by Locks and associates (2008) fails to address a major component of the pre-college environment—the high school. While they take into take into account the structural diversity of a student's high school, they do not address high school mechanisms that facilitate or suppress engagement between diverse students. Instead, they assume that structural diversity in the high school leads students to interact with racially diverse peers once in college. In accordance with Allport's (1954) Intergroup Contact Theory, the frequency of contact under certain conditions is a key factor in whether students interact. The Diverse College Student Engagement Model incorporates more of Allport's (1954) Intergroup Contact Theory, by measuring reported frequency interacting with diverse peers. The revised model hypothesizes that the frequency of interaction students have with racially diverse peers prior to college occurs in the high school environment. Implicit in the revised model is the assumption that the conditions that foster interaction prior to college are mediated through mechanisms such as cooperative learning groups; these interactions are then hypothesized to predispose students to engage in diversity-related activities once in college (see Figure 4).

Provided a diverse student body is present, a high school's organizational structure also has the potential to counter some effects of segregated communities. Studies show that

teacher practices such as cooperative learning groups and active learning create conditions

and serve as mechanisms whereby students from racially diverse backgrounds interact more

frequently and learn from one another. The Diverse College Student Engagement Model does

not directly measure the impact of these high school practices; however it is assumed that

these high school practices serve as an avenue for students to interact with diverse peers prior

to entering college.

While the above-mentioned practices create engaging situations for racially diverse

peers, other high school activities have the effect of limiting positive contact situations. Two

of the most studied high school organizational structures that limit frequency of interaction

among racially diverse peers include academic tracking and ability grouping (Khmelkov &

Hallinan, 1999). The purpose of academic tracking and ability grouping are to aid teachers in

effectively teaching content to similarly prepared students. However, the demographic

makeup of academic tracks is highly correlated with socioeconomic status and race

(Khmelkov & Hallinan, 1999; Hallinan, 1992). The subsequent racial segregation of classes

can have a negative influence on racial attitudes among diverse populations of students

(Allport, 1954; Khmelkov & Khallinan, 1999).


*College Factors and Interaction.* The second domain underscored in the Diverse

College Student Engagement Model details college factors that affect engagement. As stated

earlier, many students are likely to encounter diverse populations of students for the first time

once they enter college (Gurin et al, 2002; Hurtado et al., 2002; Orfield, Bachmeier, James,

& Eitle, 1997). During this transition period, new experiences may challenge the students'

preconceived beliefs and attitudes. This time period creates a prime opportunity for student

learning to occur, as their long held ideals may be challenged (Gurin et al., 2002; Gurin,

Nagda, & Lopez, 2004; Piaget, 1985). Learning during this period occurs because students

begin to develop mature and interpersonal relationships, and are at a point in their

development where they are more open to accept and tolerate the ideas of diverse peers

(Chickering & Reisser, 1993). Chickering and Reisser (1993)'s seminal work introduces this

developmental stage as a 'tolerance' vector. It is during this tolerance stage, when the

potential of environmental conditions and mechanisms are harnessed to produce openness to

diversity.

Gurin (1999) posited three ways that openness to diversity can be addressed by

individual campuses. The framework suggests three mechanisms whereby diversity on

campus can be addressed, including 1) increasing the racial diversity of students on campus,

2) increasing the level of interaction among diverse peers on campus, and 3) by introducing

curricular and classroom diversity experiences. Gurin argues that in order for the

mechanisms that campuses have in place to be effective in engaging diverse students, each

form of diversity must be addressed simultaneously.

Gurin's (1999) first method of addressing diversity, increasing the number of students

of color on campus has been the focus of much of the literature (Gurin, 2002; Hurtado et al.,

1998). It is a widely held view that the presence of a diverse population of students is a

prerequisite for diversity to produce benefits (Chang, 1996, 1999; Hurtado et al., 1998;

Jayakumar, 2008; Milem et al., 2005). However, it is also noted within the literature that the

mere presence of diversity does not extend benefits to students (Chang et al., 2005). Colleges

must do more. Conditions to foster engagement and mechanism through which engagement

can occur must also be present. Gurin's second method of addressing diversity on campuses

is through interaction with diverse peers. The work of Chang and several colleagues (1996; 1999; 2004; 2005) has confirmed this assertion. Chang and colleagues have shown that interaction with diverse peers, mediated through the structural diversity present on campus, produces several outcomes, including openness to diversity. Increased interaction has also been linked with cognitive development, increased cultural understanding (Antonio, 2001; Chang, 1999; Gurin et al., 2002; Hurtado, 2001) and sense of belonging to an institution (Cabrera et al., 1999; Locks et al., 2008). These mechanisms that foster engagement can take place inside or outside of the classroom environment.

Gurin's third method of addressing diversity, curricular diversity, posits that student experiences inside the classroom also matter for increasing interaction and openness to diversity. Terenzini, Cabrera, Colbeck, Bjorklund and Parente (2001) found that structural diversity in the classroom was associated with various measures of student learning. Gudeman's (2000) study results find that the presence of diverse students increases the amount of interactions between students. These interactions, facilitated through classroom discussions and other active learning techniques help to maximize the learning potential of all students. They also posit that such learning outcomes would not occur without the presence of a diverse classroom. Emphasis on increasing or sustaining structural diversity detracted attention from the potential of classroom mechanisms to bring about engaging opportunities. Cabrera's (2002) study on the impact of cooperative learning environments found out that cooperative learning environments account for a majority of student openness to diversity. Curricular diversity also consists of non-traditional activities that take place in a learning-setting, such as Intergroup Dialogues, which are a mechanism used to promote

meaningful discussion among groups with histories of racial tension (Gurin, 2006; Zuniga, Nagada & Sevig, 2002).

Despite the importance of curricular diversity in enhancing the diversity experience of students, the Transition to College Model does not incorporate any aspect of the classroom environment or curricular diversity in the model. The Diverse College Student Engagement Model includes an indicator of classroom diversity in its model and is examined under a campus context where other mechanisms are assumed to influence engagement.

*Campus Racial Context.* As Hurtado and associates note (1998) a campus racial climate also influences engagement among diverse students. The Transition to College Model identifies the campus racial context as a crucial element in engaging students. The campus racial climate affects student tolerance levels, openness to diversity levels, and impacts the extent to which students engage with diverse peers. In particular, a negative campus climate can dampen student relationships (Hurtado et al., 1998). Negative climates occur when students perceive hostility from campus policies, faculty or students (Hurtado et al., 1998). How students view themselves within the college environment will influence their behaviors (Hurtado et al., 1998). Racial tension on campus can affect student grades, increase perceptions of alienation and negatively affect student's psychological adjustment to college (Cabrera & Nora, 1994; Hurtado, Carter & Spuler, 1996; Nettles, 1988). While Locks and associates' (2008) Transition to College Model measures aspects of a campus' racial climate (racial tension and anxiety interacting with diverse peers), the model itself is not situated within a campus context. The Diverse College Student Engagement Model, in addition to being situated within a campus context, adds an indicator that seeks to measure the racial

climate of a particular institution. In other words, while the literature informed Locks and associates' model, it does not distinctly take into account an institution's context.

In studying one campus context, the peer pressure indicator that is tested in the Diverse College Student Engagement Model can prove beneficial in helping to explain student behaviors. Multi-institution studies, such as those used to test the Transition to College Model presented in Locks and associates (2008), potentially lose the impact of the peer group and the racial context. The Diverse College Student Engagement Model seeks to build upon previous frameworks, namely the Transition to College Model in order to best capture the pre-college and college experiences that jointly influence engagement among diverse peers at a single institution.

*Societal Context: Seminal Court Cases*

Engagement has also received considerable attention from the court system. *Regents of the University of California v. Bakke* is often lauded as the precursor of current legislation espousing diversity (Gurin et al., 2002; Terenzini et al., 2001). In rendering his favorable decision allowing the use of race as a factor in admissions, Justice Powell enumerates several benefits that stem from diversity in higher education settings. They include improved classroom discussion, the breaking down of stereotypes, and the preparation of students for a global workforce.

Whether increasing diversity in college actually produces educational benefits and how students acquire these benefits has been the focus of intense legal and public debate (Chang, Astin & Kim, 2004). Arguments questioning diversity's educational benefits resonated in two key U.S. Supreme Court cases in June 2003 (*Grutter v. Bollinger, 2003;*

49

*Gratz v. Bollinger, 2003).* In *Gratz v. Bollinger*, the U.S. Supreme Court disallowed the University of Michigan's undergraduate automatic-point system. The point system, which awarded points to underrepresented groups, was deemed not 'narrowly tailored', since points were automatically bestowed upon racial minority candidates. The *Grutter v. Bollinger* case challenged the University of Michigan Law School's admission policy, which used race, among other factors in its admissions process. The U.S. Supreme Court ruled in favor of the university, since the use of race was deemed 'narrowly tailored' to help the Law School meet its needs of enrolling a diverse cohort of students.

Although the point system in the *Gratz* case was ruled unconstitutional, the U.S. Supreme Court ruled that in both cases, diversity was a compelling governmental interest which justifies the narrow use of race in admissions (Chang, Denson, Saenz, & Misa, 2005; Milem, Chang, & Antonio, 2005). The court recognized the belief that diverse student bodies further the mission of institutions by preparing students to work and live in an increasingly diverse society (Milem et al., 2005). The rulings in the *Grutter* and *Gratz* cases were in part due to an increasing body of scholarship, linking a more diverse student body with educational outcomes (Hurtado, Milem, Clayton-Pederson, & Allen, 1998; 1999; Milem & Hakuta, 2000). While a diverse student body does not automatically translate to benefits, several researchers believe a racially diverse student body is a necessary condition for students to benefit from diversity (Chang, Astin & Kim, 2004; Chang et al., 2005; Hurtado, Milem, Clayton-Pederson, & Allen, 1998; Milem et al., 2005).

In her deciding vote during the *Grutter* case, Justice O'Connor noted that while affirmative action is needed in today's society, it should be revisited within the next 25 years. To comply with the rulings of *Gratz* and *Grutter,* and to address statements by several

justices on the future of affirmative action, universities are mandated to document their impact on students. In documenting student outcomes, colleges and universities have a unique opportunity to bridge a gap between court rulings and scholarship. Literature suggests the best way to bridge this gap is through creating conditions and mechanisms for diverse students to engage, and then documenting the outcomes of such engagement (Antonio, 2001; Astin, 1993; Chang, 1999; Chang et al., 2005; Gurin et al., 2002; Milem, Chang, & Antonio, 2005). A scholarly focus that moves beyond *whether* structural diversity produces benefits, and toward documenting *how* colleges facilitate engagement will help to bridge this gap (Milem et al., 2005).

Chapter Summary

The 2003 U.S. Supreme Court rulings in *Gratz* and *Grutter* have changed the way that researchers and policy makers view the 'diversity rationale' as serving a compelling state interest. Prior research focused its attention on the influence of structural diversity as a serving a compelling interest for student diversity in higher education. Chang et al. (2005) and Gurin (1999) posit that more than structural diversity is needed to produce benefits. Gurin et al. (2002) posited that in light of pending court decisions that challenge the use of diversity in college admissions, researchers must present evidence that shows *whether* and *how* diversity produces educational benefits.

In order to examine Gurin et al.'s (2002) assertion, two major gaps that remain within current literature must be addressed. Chief among them is the joint influence of pre-college factors and student predisposition attitudes toward diverse

student engagement. Next, the conditions and mechanisms that colleges and universities have in place to facilitate such engagement needs further examination. Several theoretical frameworks (Allport, 1954; Gurin et al., 2002; Hurtado et al., 1998) and conceptual models (Locks et al., 2008) independently seek to answer the questions posed in Gurin and associates' (2002) study. The Diverse College Student Engagement Model seeks to examine the joint influence of pre-college factors and college experiences on diverse student engagement. The methods used to address the research questions are explained in Chapter 3.

# Chapter 3: Methods

## Introduction

This chapter provides an overview of the methods used to answer the three research questions guiding this study. Following a statement of the purpose of the study, a description of the model used in framing my research questions is provided, followed by a description of the Diverse College Student Engagement Model. This model examines the joint impact of pre-college factors and college experiences that influence engagement among diverse peers in college (see Figure 4). The model recognizes positive interactions among racially diverse peers in college as a by-product of both student experiences in high school and student experiences during college. Consequently, this subsection is divided into two parts: 1) pre-college variables and 2) college experiences.

After explaining the Diverse College Student Engagement Model, I provide justification for the study: major differences between the Transition to College Model (Locks et al., 2008) and the Diverse College Student Engagement Model are detailed. The Transition to College Model (2008) has served as the most comprehensive model examining pre-college and college influences on student engagement.

Following the model overview, the University of Maryland's campus context is described, as well as the database used and demographics of my analytic sample. Finally, the quantitative methods used in calculating the Confirmatory Factor Analysis (CFA), direct and indirect effects, and Latent Means Modeling (LMM) results are discussed.

Purpose of the study

This study examines the extent to which minority students and non-minority students at a predominantly White institution differ in their predisposition to engage in campus-based diversity activities as well as in their engagement with ethnically diverse peers at a predominately White institution. These ethnicity-based interactional differences are examined under a revised version of the Transition to College Model (Locks et al., 2008). The Diverse College Student Engagement Model takes into account the joint influence of student pre-college characteristics, along with collegiate experiences, in shaping engagement with racially diverse peers at a predominantly White institution (see figure 4).

The Diverse College Student Engagement Model posits that structural diversity prior to college enables students to increase levels of interaction with racially diverse peers. In turn, increased interaction predisposes students to engage in diversity-related activities upon entering college, and engage with diverse peers throughout college. The Transition to College Model, although comprehensive, fails to address an important pre-college factor shown to influence predisposition to engage: *interaction among diverse peers*. Instead, the Transition to College Model focuses *solely* on structural diversity in the pre-college environment. The Diverse College Student Engagement model also posits that hours spent per week socializing, along with living in campus residence halls, peer pressure, and classroom diversity in college influence engagement levels on campus.

Accordingly, the following three research questions guided this study:

1. To what extent do the variables considered in the Diverse College Student Engagement Model predict levels of student predisposition to engage in

diversity-related activities upon entering college, and engagement with

diverse peers throughout college?

2. To what extent are students of color more predisposed to participate in

diversity-related activities compared to their White counterparts?

3. To what extent are students of color more prone to report positive

interactions among diverse peers during the sophomore year of college?

*Justification: Transition to College Model & Single Institution Study*

The Transition to College Model is the most comprehensive model examining how

pre-college and college influences jointly affect student engagement; however, the model has

several shortcomings. The Diverse College Student Engagement Model addresses those

deficiencies by incorporating three variables consistent with the literature, but not considered

by the Transition to College Model. These conceptual linkages were identified after an extant

review of the literature (Allport, 1954; Antonio, 1999; Chang, 1996; Hurtado et al., 1998;

Hurtado et al., 2002; Maruyama et al., 2002; Pike, 2002; Saenz, 2005; Slavin, 1980; Slavin,

1980; Slavin & Cooper, 1999; Slavin & Oickle, 1981; Zuniga et al., 2005). These variables

include: Interaction with Diverse Peers Prior to College (PINT), Classroom Diversity

(CLASS), and Peer Pressure not to Engage among Diverse Peers in College (PPRES).

The results of this study will primarily benefit to the University of Maryland, by

providing admissions officers and administrators in both academic and student affairs with

information about the importance of encouraging meaningful interaction among racially

diverse peers prior to and during college. These results are especially relevant for the

institution under study, as engagement among racially diverse peers is correlated with

55

increases in student learning and other cognitive and social benefits (LaNasa et al., 2007). Furthermore, the study results have implications for teachers and administrators at local high schools whose students commonly matriculate at the University of Maryland.

The lack of research examining factors that influence racially diverse student engagement at a single college creates an opportunity to provide practical recommendations for an individual institution. Understanding student engagement within the context of an individual university helps to provide clarification about the activities or programs colleges might implement in order to facilitate engagement among racially diverse populations on campus. Examining college context also provides insight into why college students on a particular campus choose to engage with their racially diverse peers. Most importantly, the study results will aid campus administrators at the University of Maryland in documenting the effectiveness of campus diversity programs.

Examining factors that influence student interaction at a single institution is vital to understanding why students from racially diverse backgrounds engage one another. Multi-institutional studies can hide the effect that an individual institutional culture has on student engagement. Situating this study within the context of a single institution also reveals immediate findings and recommendations that may serve to build upon current diversity initiatives at the institution of study.

Supporting these hypotheses, Pascarella (2006) calls for an increase in study replication, because such studies allow for previous studies to be verified or discredited. Successful replication and affirmation of previous findings increases the likelihood that recommendations will be implemented (Pascarella, 2006). As such, replicating the Transition to College Model, with modifications, can enable recommendations for policy and practice at

the University of Maryland and its feeder high schools to be implemented. The addition of several pre-college factors and college factors to the replicated model also serves as a way to strengthen the findings from the original Transition to College Model and provide more information to directly address pre-college efforts. Moreover, Hurtado and associates (1998) urge researchers to examine the distinctiveness of individual campus contexts when studying diversity. Accordingly, this study incorporates the suggestions of these scholars.

*University of Maryland College Park*

The University of Maryland was selected as the study institution because of its purported commitment to diversity and because of the structural diversity within the student body (See Table 1). Currently, the undergraduate population at the University is composed of 33% minority students (13% Black, 14.1% Asian, 5.9% Hispanic and .4% Native American). The University of Maryland also touts the diversity of its staff, faculty, and students as one of its major strengths, and a major component of its excellence (UM Mission and Goals Statement, 2006). The racial composition of the survey data (27% minority), is similar to that of the university (33% minority).

Table 1: University of Maryland and Sample Demographics (2007)

|  | Sample Data | Institutional Data |
|---|---|---|
| African American/Black | 7.6% | 13% |
| Asian | 14.3% | 14.1% |
| Hispanic/Latino | 5% | 5.9% |
| White | 63.4% | 67% |

*University of Maryland: Current Diversity Initiatives.*

The University of Maryland celebrates diversity in all of its activities and programs (UM Mission and Goals Statement, 2006). It offers an array of diversity initiatives aimed at increasing engagement and dialogue among diverse undergraduate students on campus. Diversity initiatives include:

- OFFICE OF DIVERSITY AND INCLUSION (ODI): ODI is committed to proactive educational programs in multicultural education.

- PROVOST'S ADVISORY COMMITTEE ON DIVERSITY POLICY: A group of administrators and staff on campus that oversee campus diversity policies.

- WORDS OF ENGAGEMENT INTERGROUP DIALOGUE: Words of Engagement brings together groups from various social identities that have historically had tension.

- DIVERSITY TRAINING: Workshops for faculty, staff, and students with a mission to help to understand complex issues surrounding race, gender, and multicultural organizational development.

- CONSORTIUM ON RACE, GENDER AND ETHNICITY: An association of academic units on campus whose mission is to promote, advance, and conduct research that examines the intersection of race, gender, and ethnicity with other dimensions of difference.

- THE MULTIVERSITY PROJECT: A Multi-university research evaluation of the educational benefit of intergroup dialogues.

- THE EQUITY DIRECTORY: A campus directory of equity, diversity, and conflict resolution initiatives.

- THE EQUITY COUNCIL: Serves as an advisory group to the President in an effort to recruit and retain a diverse community of faculty, staff, and students.

- PRESIDENTS COMMISSION ON ETHNIC MINORITY ISSUES (PCEMI): Addresses the concerns of ethnic minority groups on campus.

- CORE GRADUATION REQUIREMENT (CORE): Each undergraduate student is required to take a diversity requirement as a part of the CORE curriculum.

*University of Maryland: Racial History.*

The University of Maryland campus has not always been amenable to diversity. In fact, the University has come a long way. Black students were excluded from the University until the late 1940s, and not until the 1950s did the institution produce its first Black graduate. In 1968 the African American Studies Department was developed. Despite these major developments, racial tensions on campus were far from over. The late 1960s and early 1970s were periods of transition for the University, as groups previously excluded finally gained a voice. The early 1970s brought about a Women's Studies Department, a diversity office called the Office of Human Relations Programs (later renamed the Office of Diversity and Inclusion), the Office of Multi-Ethnic Student Education, the Nyumburu Cultural Center, and two Presidential Commissions (Ethnic Minority and Women's). This era clearly marked a turning point for the University and how it celebrated diversity.

The 1980s thrust the University of Maryland into the spotlight, as the first African-American chancellor of a major state university, John B. Slaughter, was hired. Slaughter's focus on increasing multiculturalism and diversity was evident during his tenure. Slaughter's successor, William E. Kirwin, noted that the University of Maryland's efforts to become excellent are directly tied to its increase in diversity on campus.

In 1994, the University adopted a diversity requirement into its CORE curriculum that requires all undergraduate students to take at least one diversity-related course. Not long after this mandate, the University established the Office of LGBT Equity, the Consortium on Race, Gender, & Ethnicity, and a protocol for reporting hate crimes. In an attempt to engage students from groups with a history of tension, the university also created the Office of Human Relations Program's Words of Engagement: An Intergroup Dialogue Program. This

program provides an opportunity for engagement through sustained dialogue in an effort to quell tension among groups. At this time, the University of Maryland's Intergroup Dialogue Program has been recognized as one of the best in the country. All of the aforementioned developments contribute to an understanding of the racial context of this institution, while explaining the history of inclusion and exclusion of diverse individuals on this campus.

*Conceptual Model: Diverse College Student Engagement Model*

Figure 4 (see Chapter 2) provides an illustration of the Diverse College Student Engagement Model. The model posits that pre-college factors and collegiate experiences jointly influence student engagement. It also postulates that engagement among diverse college students is the result of a longitudinal process extending back to high school and pre-college environment. Pre-college experiences such as Frequency of Interaction with Diverse Peers (PINT) and Living in Diverse Environments (HSSD) are both hypothesized to influence student Predisposition to Engage in Diversity-Related Activities (PENG) upon entering college, and later Engagement Behaviors in college (ENG). Predisposition to Engage among Diverse Peers (PENG) is also hypothesized to affect Engagement with Diverse Peers during college (ENG).

*Constructs and Measures*

The Diverse College Student Engagement Model is made up of three constructs and five manifest variables. Table 2 summarizes the constructs and the corresponding indicators. The constructs are Pre-College Structural Diversity (HSSD), Predisposition to Participate in Diversity-Related Activities upon Entering College (PENG), and Positive Interactions with

Diverse Peers in College (ENG). The five variables include: Interactions with other Diverse Peers Prior to College (PINT), Classroom Diversity (CLASS), Living in Campus Residence Halls (LIV), Time Spent Socializing (SOC) and Peer Pressure (PPRES) Not to Engage Diverse Peers.

Construct definitions and selection of variables were drawn from themes that emerged from the Transition to College Model (Locks et al., 2008). Discussion of the constructs and measures are organized in terms of pre-college and college experiences.

Table 2: Constructs and Indicators used in the Diverse College Student Engagement Model

| Construct | Indicators |
|---|---|
| **Positive Interactions with diverse peers in college (ENG):** This variable measures frequency of students engaging with diverse peers at the end of the sophomore year of college. | 1. Had intellectual discussions outside of class<br>2. Shared personal feelings and problems<br>3. Dined or shared a meal<br>4. Socialized or partied<br>5. Had meaningful and honest discussions<br>6. Studied or prepared for class |
| **Predisposition (PENG):** This variable measures likelihood of students engaging in diversity-related activities during their freshman year of college. | 1. Join an organization that promotes cultural diversity<br>2. Take a course devoted to diversity issues in first year<br>3. Participate in groups reflecting own cultural background |
| **Structural Diversity Prior to college (HSSD)** variable measures the amount of diverse individuals in the students' pre-college environment | 1. Neighborhood where you grew up<br>2. High school that you graduated from<br>3. Your friends in high school |
| **Single Items** | |

| | |
|---|---|
| **Interactions with Diverse Peers prior to college** | |
| **Hours per week socializing during college (SOC)** | |
| **Living situation during college (LIV)** | |
| **Classroom diversity in college (CLASS)** | |
| **Peer pressure not to interact with racially diverse peers in college (PPRES)** | |

*Pre-college Constructs: HSSD & PINT.*

My model shows one construct and one item in the pre-college domain: 1) Structural Diversity (HSSD) and 2) Interaction with Diverse Peers Prior to College (PINT). Structural Diversity (HSSD) was appraised by three items capturing incoming freshmen reports of the racial composition of their high school, neighborhood, and friendship group. Each item is assigned one of three codes (high diversity, some diversity, and low diversity). Prior studies measure pre-college structural diversity by the proportion of Whites present in the pre-college environment (Locks et al., 2008). In Locks and associates (2008), an absence of White students appears to be equated with diversity. Utilizing their diversity measurement, students growing up in environments composed of all "students of color" would be categorized as living in diverse environments. I argue that these are not diverse environments. The absence of Whites cannot be equated with diversity. Therefore, I believe

62

that the measure of "diverse pre-college environments" used by Locks and associates is misleading.

I re-coded this variable to create a diversity index, similar to Terenzini, Cabrera, Colbeck, Bjorklund & Parente (2001). Students indicating their pre-college environments were composed of "all-White" or "all-student of color" were categorized as growing up in environments with "low diversity". Students indicating their pre-college environments were composed of "mainly all-White" or "mainly all-students of color" were categorized as growing up in environments with "some diversity". Finally, students indicating their pre-college environments were composed of "half White" and "half students of color" were categorized as growing up in "diverse" environments. This measure of "diversity" recognizes varying levels of diversity, and is more consistent with the diversity index presented by Terenzini and associates (2001).

Frequency of interaction among diverse peers in the pre-college environment (PINT) was measured by a single scale capturing the frequency at which students interacted with peers from different ethnic backgrounds. This composite scale ranged from 3 to 16. Similar to Saenz' (2005) scale, my interaction scale excluded the racial group being measured. The final interaction level for each racial group was calculated using the mean of interactions students reported having with diverse peers (Asian, biracial, Black, Hispanic, White). Chang, Denson, Saenz, & Misa (2005) and Saenz (2005) developed similar scales to gauge the level at which students interact with diverse peers during college. Saenz's (2005) scale also captured the frequency of interaction students had with diverse peers prior to college.

*College Constructs: PENG, CLASS, LIV, SOC, PPRES & ENG.*

The college domain includes two constructs and four single items. The constructs are 1) Predisposition to Engage in Diversity-Related Activities upon Entering College (PENG) and Positive Interaction with Diverse Peers (ENG) during college. The single items include: 3) Classroom Diversity (CLASS), 4) Living in Campus Residence Halls (LIV), 5) Time per Week Spent Socializing (SOC) and 6) Peer Pressure *Not* to Engage with Diverse Peers (PPRES).

Predisposition (PENG) was assessed by three items whereby students reported during freshman orientation planning to: a) join a cultural organization, b) enroll in courses promoting diversity, and c) participate in activities that reflect ethnic backgrounds different from their own. I reverse-coded the "participate in activities of my own culture in college" question in order to make the item consistent with the corresponding items.

Positive Interactions with Diverse Peers in College (ENG), the outcome variable, was measured via six items capturing students' appraisal of their interaction with diverse peers in the following areas: a) having an intellectual discussion outside of class, b) studying or preparing for class, c) talking honestly about race, d) dining, e) sharing personal feelings or problems, and f) partying or socializing. These items were selected because Locks and associates (2008) showed they underscore a single construct that predicted a sense of belonging to the university.

Classroom diversity (CLASS) was appraised by a Likert-item assessing the presence of diverse peers in their classrooms. Students were asked to "strongly disagree", "disagree somewhat", "agree somewhat", or "strongly agree" with whether or not they feel their classrooms are racially diverse.

Living in Campus Residence Hall (LIV) was measured by a dummy variable signifying whether the student resides in a residence hall on campus (coded as 1), or not in a residence hall on campus (coded as 0). Literature suggests that living on-campus versus off-campus greatly benefits students socially and academically (Astin, 1993; Hughes, 1994; Pascarella & Terenzini, 1991). However, the literature also suggests that living on-campus in residence halls has a special effect on student engagement with diverse peers (Pike, 2002; Zuniga, Williams & Berger, 2005). Therefore, my study examines the impact of residing in a campus residence hall on student engagement.

Time Socializing (SOC) measures student time spent socializing on campus. It was measured via five categories: 1 (0-5 hours), 2 (6-10 hours), 3 (11-15 hours), 4 (16-20 hours) and 5 (over 20 hours). Locks and associates (2008) found that the time spent socializing during the week impacts positive interactions with diverse peers in college. In measuring (SOC), Locks and associates (2008) consider six categories; I truncated those into five categories because exploratory analysis reported low dispersion of cases within the "0 hours socializing" category.

Peer pressure (PPRES) was appraised by a single Likert item gauging whether the student felt pressure from his or her ethnic peer group *not* to engage with students of other racial groups.

Research Design

The remainder of this chapter describes the research methodology used to answer the three research questions guiding this study. First, an overview of the survey instrument is provided. Statistical analyses employed to answer each of the three questions are then given.

The three research questions guiding this study are as follows:

1. To what extent do the variables considered in the Diverse College Student Engagement Model predict levels of student predisposition to engage in diversity-related activities upon entering college, and positively engage with diverse peers throughout college?

2. To what extent are students of color more predisposed to participate in diversity-related activities upon entering college compared to their White counterparts?

3. To what extent are students of color more prone to report positive interactions among diverse peers during the sophomore year of college?

*National Survey Instrument: Preparing Students for a Diverse Democracy*

My study utilized data gathered from undergraduate students enrolled at the University of Maryland. This cohort of students participated in a national study entitled *Preparing Students for a Diverse Democracy* lead by Dr. Sylvia Hurtado. *Preparing Students for a Diverse Democracy* is a collaboration involving ten institutions, each chosen because of campus commitment to diversity in curricular and co-curricular activities, and success at diversifying their respective institutions (Saenz, 2005; Hurtado, 2003; Locks et al., 2008). The ten institutions that participated in the study are: Arizona State University; University of California-Los Angeles; University of Maryland; University of Massachusetts-Amherst; University of Michigan; University of Minnesota; University of New Mexico; Texas Southern University; University of Washington; and University of Vermont.

The goals of the *Preparing Students for a Diverse Democracy* study are to 1) examine how campuses are creating diverse learning environments and actively preparing students to live and work in an increasingly diverse society, 2) examine the role of the diverse peer group in the acquisition of cognitive and social outcomes, and 3) examine student outcomes that can best be achieved through initiatives designed to increase student engagement with diverse peers.

*University of Maryland: Preparing Students for a Diverse Democracy Survey*

My study employs a longitudinal research design, in which 927 students from the University of Maryland were surveyed at two points in time. The initial survey, *Preparing Students for a Diverse Democracy: First Year Student Views and Experiences* was administered in August, 2000 of the freshman year. It captured information about student pre-college experiences, predisposition to engage with diverse peers in college, and the nature of relationships with diverse peers inside and outside the high school setting (see Appendix A).

The second survey*, "Preparing Students for a Diverse Democracy: Second Year Student Views and Experiences"* focuses on changes in student cognitive, social, and democracy outcomes, and assesses student views and attitudes since enrolling in college (Appendix A). The follow-up survey was administered during the spring of the students' second year of college in 2002. Both the baseline and follow-up survey were used to perform the analysis of this study.

*Analysis.*

I performed an initial data exploration to serve several purposes: first, to allow me to examine the demographic makeup of my participant profile; second it allowed me to make certain that assumptions of homogeneity were met. Next, I explored the data to check for missing values, and to assess how best to impute those data. I then checked whether the data were normally distributed and corrected the data for their ordinal nature (Hancock & Mueller, 2008).

My initial study sample included 927 students who were surveyed at two time periods. I screened out the seven Native American students due to potential participant identification. Data screening revealed that several students indicated belonging to multiple ethnic groups. A "biracial" category was created for these students. Next, I performed listwise deletion, which deletes the record of participants with missing data on study variables. Listwise deletion procedures lowered my sample size to 730 students.  Although substantially reduced, the sample still has enough power to test the hypothetical connections in my model. Using procedures discussed in Hancock (2006), I estimated a minimum sample of 309 subjects needed to answer research questions two and three. My sample of 730 students more than satisfied this threshold.

Next, I analyzed the power of my data to determine if I had adequate sample size to test for each racial group independently (Hancock & Mueller, 2008a). The power analysis determined that the sample size of each racial group was not adequate to test the model. I conducted several ANOVA tests to inquire if students of color (biracial, Black, Asian, Hispanic) significantly differed from one another on the study variables (see Appendix B). Because they did not differ significantly, they were combined to form a "students of color"

group. The final analytic sample consists of 63.4% White students and 36.6% "students of color". In addition to MANOVA tests, evidence showing that students of color and White students grow up in segregated contexts provides justification for students of color being analyzed separate from Whites (Braddock, 1985; Gurin, 1999; Jayakumar, 2008; Milem & Umbach, 2006).

*Data Screening.*

As noted by Raykov and Marcoulides (2008), many researchers fail to examine the normality properties of their data; instead, they assume normality. Assuming normality risks the chance of reaching invalid conclusions. Hancock and Mueller (2006; 2008b) suggest using several measures to appraise departure of normality, including univariate skew, univariate kurtosis, and multivariate kurtosis (see Appendix C).

I relied on SPSS 16.0 and Prelis for my initial data screening. These exploratory analyses revealed that the normality assumption was not met. Ten of the 17 items were significantly skewed. Sixteen out of 17 items departed from normality. All 17 items were both significantly skewed and non-normal (see Appendix C). Moreover, the Mardia's normalized coefficient of 4.7, an indicator of multivariate normality (see Byrne, 2006), departed from the recommended threshold of 3 (Bentler & Wu, 2002 as cited in Hancock & Muller, 2008b) (see Appendix C).

During the exploratory analysis phase, I also noticed that two items, Classroom Diversity (CLASS) and Peer Pressure (PPRES), displayed little variability. Only a small proportion of students, approximately 10%, reported

experiencing peer pressure *not* to engage with diverse students. Additionally,

approximately 70% of students reported having college classrooms that were

structurally diverse. Therefore, these two items and their corresponding constructs

were omitted from model testing. Accordingly, all of my analyses are based on three

constructs, three items, and the corresponding 15 variables, for an effective sample

size of 730.

Table 3: Univariate Normality for the 15 Variables Included in Testing the Diverse College
Student Engagement Model

| Variable | Z-score | P-value | Z-score | P-value | Chi-square | P-value |
|----------|---------|---------|---------|---------|------------|---------|
| PINT | -.3770 | 0.00 | -.533 | .594 | 14.495 | .001 |
| HSSD1 | 1.865 | .062 | -16.272 | .000 | 268.253 | 0.00 |
| HSSD2 | -1.567 | .117 | -14.949 | .000 | 225.927 | 0.00 |
| HSSD3 | .453 | .651 | -14.666 | 0.00 | 215.309 | 0.00 |
| PENG1 | 1.028 | .304 | -14.700 | 0.00 | 217.156 | 0.00 |
| PENG2 | 1.438 | .151 | -9.365 | 0.00 | 89.771 | 0.00 |
| PENG3 | 3.133 | .002 | -4.833 | 0.00 | 33.177 | 0.00 |
| ENG1 | -4.235 | .000 | -9.571 | 0.00 | 109.551 | 0.00 |
| ENG2 | 1.433 | .152 | -10.079 | 0.00 | 103.632 | 0.00 |
| ENG3 | -3.029 | .002 | -9.610 | 0.00 | 101.537 | 0.00 |
| ENG4 | -3.282 | .001 | -7.468 | .000 | 66.546 | 0.00 |
| ENG5 | -5.593 | .000 | -4.007 | .000 | 47.340 | .000 |
| ENG6 | -2.401 | .016 | -6.921 | .000 | 53.664 | .000 |
| SOC | -2.186 | .029 | -25.521 | .000 | 656.097 | .000 |
| LIV | -8.263 | .000 | -33.889 | .000 | 1217.711 | .000 |

Table 4: Percentages of Students Reporting Structurally Diverse Classrooms
(CLASS)

|  | Cumulative % |
|---|---|
| Strongly disagree | 36.5 |
| Disagree somewhat | 30.9 |
| Agree somewhat | 16.5 |
| Strongly agree | 7.4 |

Table 5: Percentage of Students Reporting Peer Pressure not to Engage with Diverse
Peers (PPRES)

|  | Cumulative % |
|---|---|
| Never | 72.9 |
| Seldom | 17.0 |
| Sometimes | 7.4 |
| Often | 2.4 |
| Very Often | .3 |

In lieu of the non-normal data properties, I selected Structural Equation

Modeling (SEM) methods to handle categorical and continuous variables in LISREL

version 8.8 (Jöreskog & Sörbom, 2006). It is important to note that this lack of

normality, along with the ordinal properties of the variables, prevented me from using

modern methods to handle missing data, such as Full Information Maximum

Likelihood (FIML).

Model Testing Approach

This section outlines the analytic approach used to answer each of the three

research questions in the study.

*Analytic Approach to Research Question 1: To what extent do the variables*

*considered in the Diverse College Student Engagement Model predict levels of*

*student predisposition to engage in diversity-related activities upon entering college,*

*and positively engage with diverse peers throughout college?*

Answering research question one calls for a two step strategy. Step one consists of

performing a Confirmatory Factor Analysis (CFA), followed by testing a series of structural

models which assess the presumed interconnections among the predictors of student

engagement. Confirmatory Factor Analysis allowed me to validate the extent to which the

three constructs with multiple indicators underlying the Diverse College Student Engagement

Model hold for the focus institution[3].

Having ascertained the measurement properties of the constructs, step two consists of

testing 11 variations of structural models associated with the Diverse College Student

Engagement Model using Structural Equation Modeling (SEM). The best fitting model,

model 11, was retained in order to examine the extent to which the paths connecting pre-

college factors with collegiate experiences hold in accordance to my hypothetical model of

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[3] CFA as opposed to Exploratory Factor Analysis (EFA) is chosen for this analysis. CFA starts with a theoretically derived model, and assesses how well the data fit the model. EFA on the other hand explores the data to 'discover' underlying structures that may be present. CFA begins with theory, and allows the data to determine whether or not the theory should be rejected (Hancock & Mueller, 2008a). CFA also allows the researcher to test alternative conceptualizations of the dependent variable (Weerts & Cabrera, 2008).

student engagement. This procedure also allowed to me to examine the direct and indirect effects of pre-collegiate factors on positive interactions while in college.  This model, then, was used as a spring board to answer research questions two and three[4].

In conducting Structural Equation Modeling (SEM), Finney & Distefano (2006) note that researchers often ignore the categorical nature of ordinal data. They apply Maximum Likelihood (ML) estimation procedures instead. When doing so, the model fit indices, parameter estimates, and standard errors can be biased (Finney & Distefano, 2006; Hancock & Mueller, 2008). In view of the lack of normality and the ordinal nature of the variables used in this study, I selected the robust maximum likelihood procedures contained in LISREL 8.8 (Jöreskog & Sorborn, 2006) to conduct both the confirmatory factor analysis and the structural equation modeling. I was guided in the selection of this method by Finney and DiStefano (2006) and Hancock and Mueller (2008b), who advanced recommendations to handle non-normal data and categorical data in structural equation modeling.

Jöreskog and Sörbom (1993) and Hancock and Mueller (2008) detail several goodness-of-fit indices to assess the overall fit of models. Each of the measures offered are functions of chi-square tests, and determine if models should be accepted or rejected (Hancock & Mueller, 2008b). There is no consensus on which goodness of fit indices to report and value ranges vary by discipline. Goodness of fit indices are categorized into three groups: absolute, parsimonious and incremental (Hancock & Mueller, 2008b). In the

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[4] None of the minority groups per se were large enough to conduct tests of model invariance across both CFA and structural models (African American= 59: Asian American= 119; Hispanic=31; Biracial=37). Consequently, I combined all minority groups into one group after a series of MANOVA analyses revealed no significant differences across most minority groups for most of the 15 variables under consideration.

Absolute group, testing the power of indices compares the observed vs. the model-implied variance/covariance matrix. Indices included in this category include: Model chi-square statistic, Standardized Root Mean Square Residual and Goodness-of-Fit Index. Parsimonious fit indices adjust for the complexity of models. Indices in this category include Akaike Information Criterion, Root Mean Square Error of Approximation, and Adjusted Goodness-of-Fit Index. Testing the power of Incremental indices include comparing the target model vs. the baseline model. Incremental indices include the Comparative Fit Index, Normal Fit Index, and the Non-normed Fit Index.

The fit indices chosen for this study are detailed below. Hancock and Mueller (2008b) suggest choosing a fit index from each of the categories to represent a diverse assessment of the model. To assess the overall confirmatory factor model, I used several common estimation methods (Hancock & Mueller, 2008b). As suggested by Hancock and Mueller (2008b), the goodness of fit indices used for this analysis will measure 1) overall fit, 2) incremental fit and 3) parsimony.

The Satorra-Bentler Maximum Likelihood Estimate is a method recommended for non-normal data (Hancock & Mueller, 2008a). This method incorporates a scaling technique that more closely approximates chi-square values. The Comparative Fit Index (CFI), measures the extent to which the proposed model fit the data. A CFI value that approaches .95 indicates a good fit between the model and data. The Root Mean Square Error of Approximation (RMSEA) suggests a .05 value as an indicator of acceptable fit (Hancock & Mueller, 2008b). Values less than .05 are considered a region of 'close fit', while values above .05 are considered a

region of 'not close fit'. I documented the reliability of the constructs using Coefficient-*H* (Hancock & Mueller, 2008).

*Model Fit Indices.*

Given the lack of data normality, I relied heavily on four robust measures of fit to judge the CFA model and the different SEM models. These indices include: a) the Satorra-Bentler Maximum Likelihood estimate of chi-square (S-B$\chi^2$), b) the S-B$\chi^2$/*df* ratio, c) the Comparative Fit Index (CFI), and d) the Root Mean Square Error of Approximation (RMSEA). The CFI assesses the extent to which the model provides a reasonable fit to the data in relation to a model assuming independence among the variables. CFI values close to or higher than 0.95 signify a good fit. The RMSEA indexes the extent to which the model reproduces the correlation matrix. Values ranging from 0 to .05 are considered good fit, while values ranging from .08 to .10 represent a poor or mediocre fit (Byrne, 2006; Hancock & Mueller, 2008a). Also, *S-B$\chi^2$/df* ratios yielding values 3.00 and below are considered a good fit. In addition, I examined changes in S-B$\chi^2$ and CFI when judging the extent to which alternative models of engagement with diverse students were feasible. I estimated the reliability of the latent factors using the Coefficient-*H* (Hancock & Mueller, 2001), which takes into account the loadings underscoring each latent factor.

*Analytic Approach to Research Question 2: To what extent are students of color more predisposed to participate in diversity-related activities compared to their White counterparts upon entering college?*

*Analytic Approach to Research Question 3: To what extent are students of color more prone to report positive interactions among diverse peers during the sophomore year of college compared to their White counterparts, after controlling for factors the literature suggest matters for student engagement?*

The best-fitting model that resulted from answering question one, model 11, was retained as the baseline model to examine differences between minority students and non-minority students in Predisposition to Engage in Campus-Based Diversity Activities upon Entering College (PENG), and Engagement during College (ENG). I relied on Latent Means Modeling (LMM) to test for these differences across ethnic groups.

Compared with MANOVA and ANCOVA, Hancock and Mueller (2006) find the Latent Means Modeling (LMM) approach to be more powerful. Similar to ANCOVA, the latent means modeling approach controls for relevant independent variables when drawing comparisons across groups in a simultaneous manner. However, LMM has the added advantage of incorporating measurement errors for both the independent and dependent variable. In this manner, the coefficient capturing the difference in the latent factor, *say* Positive Interactions with Diverse Peers, is net of both measurement and covariates (see Thompson & Green, 2006; Hancock & Muller, 2008b).

## Chapter Summary

The extant research on the benefits associated with engagement among diverse peers is overwhelmingly from a collegiate perspective (Antonio, 1999; Chang, 1999; Chang, 1996; Chang, Denson & Misa, 2005; Hurtado et al., 1998; Milem & Umbach, 2003). Therefore, the extent to which pre-college experiences

facilitate diverse student engagement remains to be answered. Drawing upon the literature, this study seeks to fill this void by advancing and testing hypothesized relations that consider both pre-college and collegiate factors in a simultaneous manner. In doing so, the Diverse College Student Engagement Model posits the hypothesis that positive engagement in college underscores a process linking pre-college and collegiate environments. This chapter describes the procedures seeking to answer the three research questions.

I selected methods that were best aligned to both the nature of the question and the nature of the data. Accordingly, the process envisioned in research question one was examined using structural equation modeling. Latent means modeling techniques examined the extent to which differences in Predisposition (PENG) and actual Engagement (ENG) took place between minority students and non-minority students while also taking into account the process by which these predisposition and engagement behaviors unfold.

Prior to answering these research questions, I examined the extent to which departures of normality were present; I then adjusted the selection of methods accordingly. The next chapter provides a full account of the findings corresponding to each research question.

# Chapter 4: Results

## Introduction

This chapter presents the findings from the three research questions guiding this study. The first question examines the extent to which pre-college factors predispose students to engage with diverse students in college; as a corollary, it asks if, in tandem with pre-collegiate factors, collegiate experiences also distinctly influence students' positive interactions with peers during their sophomore year of college. The second research question addresses the extent to which minority and non-minority students arrive at college with similar levels of predisposition to engage diverse peers. Finally, the third research question asks whether or not minority and non-minority students differ in their levels of engagement with diverse peers during their sophomore year.

The chapter results are organized by research question. The first subsection details the methods used in answering the research question. The second subsection provides results, which are organized by the constructs and variables that inform the Diverse College Student Engagement Model. These constructs and variables include Pre-College School Structural Diversity (HSSD), Predisposition to Engage (PENG), Positive Interactions (ENG), Socializing in College (SOC), and Living in Residence Halls (LIV).

Accordingly, the three research questions guiding the study are:

1. To what extent do the variables considered in the Diverse College Student Engagement Model predict levels of student predisposition to engage in diversity-related activities upon entering college, and positively engage with diverse peers throughout college?

2. To what extent are students of color are more predisposed to participate in diversity-related activities compared to their White counterparts upon entering college?

3. To what extent are students of color more prone to report positive interactions among diverse peers during the sophomore year of college?

As an introduction to the findings, I first offer a descriptive analysis of the students included in the sample. This analysis is organized into two subsections: Pre-College Experiences and College Experiences.

*A Profile of the Sample and Their Experiences*

   *Pre-College Experiences.*

Pre-college experiences appear to be consistent with the literature: students grow up in segregated environments and attend segregated schools (Braddock, 1985; Gurin, 1999; Hurtado et al., 2002; Jayakumar, 2008; Milem & Umbach, 2003; Saenz, 2005). White students overwhelmingly experience pre-college segregation when compared with students of color. Over 60% of White students indicate the racial composition of their high school was all-White or mostly White. Less than 30% of students of color indicate attending a high

school comprised mainly of students of color. This pattern of pre-college segregation is also consistent with student friendship choices. Over 75% of the White students have friendship groups composed of all or nearly all White students. Less than 40% of the students of color in the data sample report friendships composed mainly of students of color.

Segregation is also apparent in neighborhoods of White students. Almost 80% of White students grew up in all or nearly all White neighborhoods. Neighborhood segregation is less apparent for students of color. Approximately 25% of students of color grew up in neighborhoods that were all or nearly all people of color. These findings are also consistent with the literature (Jayakumar, 2008; Milem & Umbach, 2003). Jayakumar (2008) notices that White students are more likely than students of color to report growing up in segregated pre-college environments. Additionally, White students engage less with diverse individuals before coming to college (10.89). On a scale from 3-16 that captures how often students interact with racially diverse peers, Hispanic (13.82) and Asian students (13.31) interact with diverse peers most frequently, followed by biracial students (12.83) and Black students (12.59).  This finding is consistent with Jayakumar's (2008) study on pre-college segregation, and Saenz's (2005) study that measures frequency of interaction among diverse students prior to college. Whites have little contact with students of color prior to college.

| Table 6: Racial composition of the high school attended | | | | | |
|---|---|---|---|---|---|
| Ethnicity | All-near White | Mostly White | Half and Half | Mostly people of color | All-near people of color |
| White | 20.9% | 42.0% | 29.7% | 6.3% | 1.1% |
| Students of Color | 9.5% | 24.3% | 37.4% | 19.8% | 9.1% |

| Table 7: Racial composition of friends in high school | | | | | |
|---|---|---|---|---|---|
| Ethnicity | All-near White | Mostly White | Half and Half | Mostly people of color | All-near people of color |
| White | 27.9% | 49.0% | 19.3% | 2.7% | 1.1% |
| Students of Color | 9.9% | 13.6% | 38.0% | 26.4% | 12.0% |

| Table 8: Racial composition of the neighborhood you grew up in | | | | | |
|---|---|---|---|---|---|
| Ethnicity | All-near White | Mostly White | Half and Half | Mostly people of color | All-near people of color |
| White | 34.1% | 44.0% | 17.8% | 3.1% | 1.1% |
| Students of Color | 11.4% | 32.5% | 30.9% | 12.2% | 13% |

| Table 9: Frequency of interaction with diverse peers prior to college | | | | | |
|---|---|---|---|---|---|
| Ethnicity | Asian | Black | Hispanic | Bi-Racial | White |
| Scale 3-16 | 13.31 | 12.59 | 13.82 | 12.83 | 10.89 |

*College Experiences.*

The disparate findings from student pre-college experiences also appear in student predisposition levels to engage in diversity-related activities (PENG) upon entering college. The majority of White students are unlikely to join culturally diverse organizations, take a diversity course, or participate in activities reflecting other ethnicities. Approximately 70% of White students indicate they are unlikely or very unlikely to join an organization that promotes cultural diversity (see Table 10). On the other hand, over 60% of students of color indicate their likelihood to join such organizations. Moreover, over 60% of White students indicate their hesitancy to take any diversity courses during the freshman year of college.

Over 50% of students of color indicate their willingness to take such courses (see Table 12).

More than 60% of White students are unlikely to participate in activities of another culture in

college, and over 60% students of color indicate their likelihood to participate in such

activities.

| Table 10: Join Cultural diversity Organization in College | | | | |
|---|---|---|---|---|
| Ethnicity | Very Unlikely | Unlikely | Likely | Very Likely |
| White | 19.2% | 51.9% | 22.8% | 6.1% |
| Students of Color | 9.5% | 28.9% | 37.6% | 24.0% |

| Table 11: Participate in Activities of Another Culture in College | | | | |
|---|---|---|---|---|
| Ethnicity | Very Unlikely | Unlikely | Likely | Very Likely |
| White | 28.6% | 38.1% | 23.3% | 10.0% |
| Students of Color | 7.8% | 18.0% | 42.6% | 31.6% |

| Table 12: Take Diversity Course my First Year in College | | | | |
|---|---|---|---|---|
| Ethnicity | Very Unlikely | Unlikely | Likely | Very Likely |
| White | 25.3% | 35.8% | 27.9% | 11.0% |
| Students of Color | 10.7% | 35.5% | 38.4% | 15.3% |

| Table 13: Living in Residence Halls | |
|---|---|
| Ethnicity | Campus Housing |
| White | 70.9% |
| Students of Color | 66.5% |

Descriptive statistics suggest that minority students and non-minority students do not appear to be very different in their levels of engagement with diverse peers during sophomore year of college (ENG). Over 65% of students of color dine with diverse students often or very often; just over 50% of White students do so. Approximately 50% of students of color and 45% of White students report intellectual discussion with diverse peers outside of the classroom. Moreover, just fewer than 40% of students of color and over 30% of White students report discussing race/ethnicity outside of the classroom setting with diverse peers.

Approximately 75% of White students and about 75% of students of color report sharing personal feelings or problems with students from different ethnicities. The majority of minority students and White students report socializing or partying with peers from different races. Over 60% of White students report socializing/partying with diverse peers, while 55% of students of color report doing so. Students also study or prepare for class with diverse peers. Over 80% of students of color and almost 75% of White students report doing so. The majority of students lived on campus in residence halls during their sophomore year. Just below 70% of students of color, and just over 70% of White students do so.

| Table 14: Dined or shared a meal with diverse peers | | | | | |
|---|---|---|---|---|---|
| Ethnicity | Never | Seldom | Sometimes | Often | Very Often |
| White | 2.3% | 15.5% | 28.8% | 26.5% | 26.8% |
| Students of Color | 2.9% | 11.4% | 19.2% | 24.1% | 42.4% |

| Table 15: Had intellectual discussions outside of class with diverse peers | | | | | |
|---|---|---|---|---|---|
| Ethnicity | Never | Seldom | Sometimes | Often | Very Often |
| White | 7.3% | 16.4% | 31.5% | 26.7% | 18.2% |
| Students of Color | 2.1% | 18.7% | 29.0% | 28.6% | 21.6% |

| Table 16: Had racial/ethnicity discussions outside of class | | | | | |
|---|---|---|---|---|---|
| Ethnicity | Never | Seldom | Sometimes | Often | Very Often |
| White | 11.2% | 28.7% | 29.2% | 18.6% | 12.3% |
| Students of Color | 9.5% | 22.2% | 29.2% | 19.8% | 19.3% |

| Table 17: Shared personal feelings or problems with diverse peers | | | | | |
|---|---|---|---|---|---|
| Ethnicity | Never | Seldom | Sometimes | Often | Very Often |
| White | 8.3% | 17.5% | 31.0% | 22.7% | 20.5% |
| Students of Color | 5.8% | 14.4% | 22.6% | 27.6% | 29.6% |

| Table 18: Socialized or partied with diverse peers | | | | | |
|---|---|---|---|---|---|
| Ethnicity | Never | Seldom | Sometimes | Often | Very Often |
| White | 3.6% | 10.9% | 25.5% | 33.2% | 26.8% |
| Students of Color | 6.2% | 14.4% | 25.1% | 23.9% | 30.5% |

| Table 19: Studied or prepared for class with diverse peers | | | | | |
|---|---|---|---|---|---|
| Ethnicity | Never | Seldom | Sometimes | Often | Very Often |
| White | 8.0% | 16.3% | 31.5% | 23.7% | 20.6% |
| Students of Color | 2.1% | 11.5% | 23.9% | 29.6% | 32.9% |

| Table 20: Hours/Week Socializing | | | | | |
|---|---|---|---|---|---|
| Ethnicity | 0-5 | 6-10 | 11-15 | 16-20 | Over 20 |
| White | 8.0% | 16.3% | 31.5% | 23.7% | 20.6% |
| Students of Color | 2.1% | 11.5% | 23.9% | 29.6% | 32.9% |

*Conclusions from descriptive analysis*

Overall, the descriptive statistics show that the pre-college experiences of White students and students of color appear to be different. They especially differ in their levels of interaction with diverse peers prior to college. These differences appear in the high schools as well as in student neighborhoods. These findings of pre-college segregation are consistent with the literature (Gurin, 1999; Jayakumar, 2008; Locks et al., 2008; Milem & Umbach, 2008; Saenz, 2005).

The pattern of segregation seen in student pre-college experiences also appears in student behaviors, as shown in the predisposition to engage in diversity-related activities upon entering college. Compared with Whites, students of color were more likely to engage in diversity-related activities during the freshman year of college (Locks et al., 2008).

The sophomore year experiences of White students and students of color do not appear to be very different. Students engage one another in-and-outside the

classroom environment. More than 50% of students of color and over 50% of White students report engaging in social activities with diverse peers outside of the classroom environment (socializing/partying, dining).

The next subsection provides results from the first research question guiding this study. This research question examines the influence of pre-college variables (HSSD, PINT) and collegiate variables (PENG, SOC, LIV) on positive interactions with diverse peers (ENG) in college.

Results Presented by Research Question

This section presents the findings for the three research questions that guided this study. The results are organized by research question. Prior to this, I present the confirmatory factor analysis (CFA) and structural model results of having tested the underlying 3 factors and their corresponding 12 items.

*Research Question 1: To what extent do the variables considered in the Diverse College Student Engagement Model predict levels of student predisposition to engage in diversity-related activities upon entering college, and positively engage with diverse peers throughout college?*

The first research question focuses on pre-college factors the literature suggests influence predisposition to engage upon entering college and positive interaction with diverse peers during college. In addressing this question, I formulated a model hypothesizing that the structural diversity of a student's pre-

college environment influences predisposition toward engaging with diverse peers upon entering college.

This model expands the Transition to College Model (Locks et al., 2008) by incorporating additional pre-college and college experiences that influence engagement while in college. Specifically, the model hypothesizes that frequency of interaction in the pre-college environment directly influences student predisposition to engage in diverse activities. Moreover, the model hypothesizes that frequency of interaction in the pre-college environment impacts positive interactions with diverse peers through the sophomore year.

*Research Question 1: Overview of methods followed.*

For answering research question one, I used two statistical methods. I first used Confirmatory Factor Analysis (CFA) to examine the extent to which the items selected measure the latent constructs embedded in the Diverse College Student Engagement Model. Then, I used Structural Equation Modeling (SEM) to identify the best-fitting model associated with the Diverse College Student Engagement Model. This method provides structural linkages among the various constructs shown to influence engagement with diverse peers at the end of the sophomore year.

*Confirmatory factor analyses results.*

I examined the extent to which the items contained within the Diverse College Student Engagement Model reliably measure the corresponding latent factor via CFA. To account for the categorical nature of the survey data, polychorical

correlation matrices were developed (see Appendix C). The goodness of fit

indicators support the hypothesis that the hypothetical constructs and their

corresponding items hold for this particular model. All fit indices ($S\text{-}B\chi^2/df$ =2.25,

*CFI =.99; *RMSEA = .041; 90% C.I. =.032, .051) fall within acceptable ranges.

     Additional evidence supporting this model was found in the pattern of

loadings for each construct. Each of the loadings for the Confirmatory Factor

Analysis was above .60, meaning that the majority of the variance was explained by

the latent factor they sought to measure (see Table 21). In addition to the factor

loadings, the reliability of each of the constructs, as measured by Coefficient-*H*,

was above .70. This *Coefficient-H* reliability indicates that the latent factor is well

appraised by its corresponding measures (see Table 21).

Table 21: Confirmatory Factor Analysis Results: Loadings and Reliability of the

Latent Factor

| Construct | Factor Loading | H-Coefficient |
|---|---|---|
| Pre-College Structural Diversity | | 0.742 |
| HSSD1 | .66 | |
| HSSD2 | .70 | |
| HSSD3 | .73 | |
| | | |
| Predisposition to Engage in Diversity Activities | | 0.833 |
| PENG1 | .68 | |
| PENG2 | .64 | |
| PENG3 | .84 | |
| | | |
| Positive Interactions with Diverse Peers in College | | 0.900 |
| PENG1 | .79 | |
| PENG2 | .78 | |
| PENG3 | .84 | |
| PENG4 | .70 | |
| PENG5 | .76 | |
| PENG6 | .83 | |

*Structural Modeling Testing.*

Initial testing of the hypothesized Diverse College Student Engagement

Model yielded a poor fit to the data ($S\text{-}B\chi^2/df$ =7.96, CFI =.91; RMSEA = .097;

90% C.I. =.091, .10). My examination of the modification indices revealed a series

of correlated errors.  Freeing the correlated errors in a series of 11 models resulted

in significant improvements of fit. The modification indices of the retained model,

model 11, indicate it falls within an acceptable range of data model fit (*$S\text{-}B\chi^2/df$

=2.83, *CFI =.98; *RMSEA = .05; 90% C.I. =.042, .058). (See table 22).

Table 22: Goodness of Fit Indices for Alternative Models of the Diverse College

Student Engagement Model

Robust measures of goodness of fit

| Model | | S-B $\chi^2$ | df | CFI | RMSEA | CI_{90} | $\Delta$ S-B$\chi^2$ | p-value | $\Delta$ df |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Model 1 | 684.69 | 86 | 0.91 | 0.097 | .091, .100 | - | - | - |
| 2 | Freeing pi6-pi2 | 561.43 | 85 | 0.93 | 0.087 | .080,.094 | 123.26 | <.05 | 1 |
| 3 | Freeing pi6-pi4 | 489.42 | 84 | 0.94 | 0.081 | .074,.088 | 72.01 | <.05 | 1 |
| 4 | Freeing pi2-pi1 | 435.19 | 83 | 0.95 | 0.076 | .069, .083 | 54.23 | <.05 | 1 |
| 5 | Freeing pi5-pi1 | 373.22 | 82 | 0.96 | 0.069 | .062, .077 | 61.97 | <.05 | - |
| 6 | Freeing pi6-pi5 | 346.44 | 81 | 0.96 | 0.067 | .060, .074 | 26.78 | <.05 | - |
| 7 | Freeing Sd3-int | 294.04 | 80 | 0.97 | 0.06 | .053, .068 | 52.4 | <.05 | 1 |
| 8 | Freeing Pi5 –pi4 | 270.35 | 79 | 0.97 | 0.057 | .050, .065 | 23.69 | <.05 | - |
| 9 | Freeing Sd3-sd1 | 249.56 | 78 | 0.97 | 0.055 | .047, .062 | 20.79 | <.05 | - |
| 10 | Freeing Sd1-int | 224.68 | 77 | 0.98 | 0.051 | .043, .059 | 24.88 | <.05 | 1 |
| 11 | Freeing Social-pi3 | 214.26 | 76 | 0.98 | 0.05 | .042, .058 | 10.42 | <.05 | - |

*Structural Modeling Results.*

Table 23 provides an overview of total, direct, and indirect effects found

among the constructs embedded in the Diverse College Student Engagement

Model. Table 23 also reports the variance explained by each construct. Figure 5

presents a graphic depiction of the relationships hypothesized in the Diverse

College Student Engagement Model. The results presented in Figure 5 and Table 23

are standardized to allow for accurate comparisons between effects.

Figure 5: Structural Testing Results of the Diverse College Student Engagement
Model



Diverse College Student Engagement
Model

Pre-College

Structural
Diversity in High
School

-.01

.34*

Frequency of
Interaction with
Diverse Peers

.20*

.20*

Predisposition to
Engage

College

Living on Campus

.01

19*

Positive
Interactions in
College

Hours/week
socializing

.34*
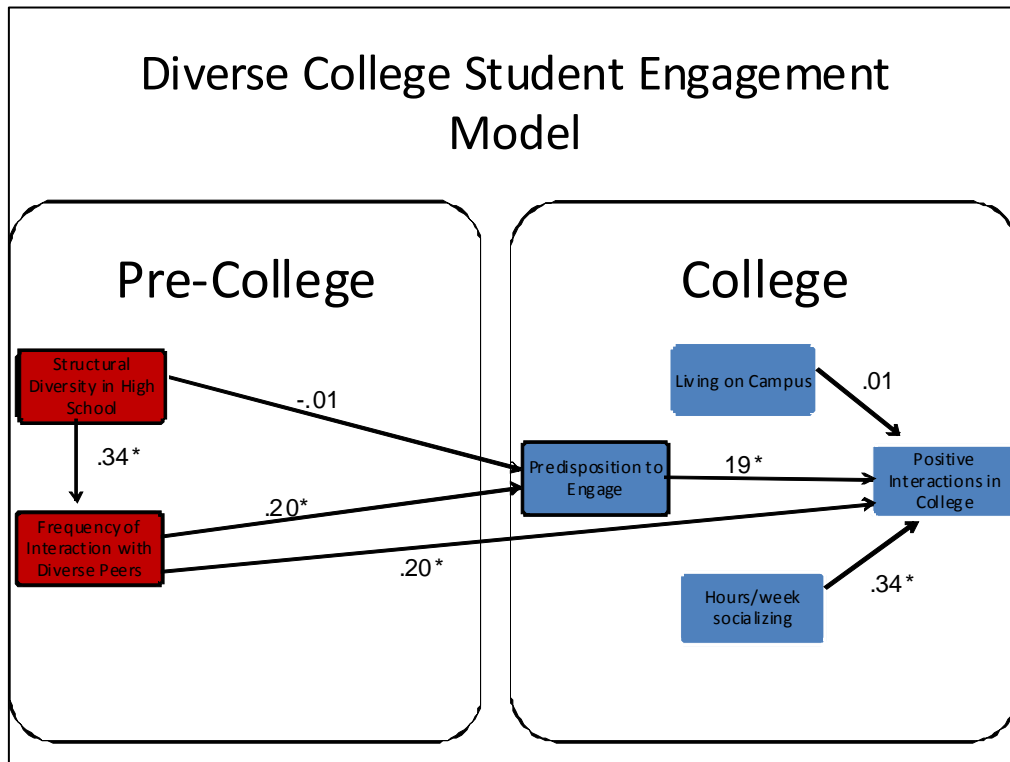
Table 23: Total, Direct and Indirect Effects on Pre-College Positive Interactions, Predisposition to Engage and Engagement

| Construct | Frequency of Pre-College Interactions (PINT) | | | Predisposition to Engage in Diversity Activities (PENG) | | | Engagement with Diverse Peers (ENG) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Direct | Indirect | Total | Direct | Indirect | Total | Direct | Indirect | Total |
| Pre-College Structural Div (HSSD) | 0.34* | -- | 0.34* | -.01 | 0.07* | 0.06 | -- | 0.08* | 0.08 |
| Positive Pre-College Interactions (PINT) | | | | 0.2* | -- | 0.2* | 0.2* | 0.04 | 0.24* |
| Predisposition to Engage in College (PENG) | | | | | | | 0.19* | -- | 0.19* |
| Engagement with Diverse Peers in College (ENG) | | | | | | | | | |
| Social (SOC) | | | | | | | 0.31* | -- | 0.31* |
| Living in Campus Residence Halls (LIV) | | | | | | | .01 | -- | 0.01 |
| | | | | | | | | | |
| | | R²= 12 | | | R²= 3.9 | | | R²= 18 | |
| | | | | | | | | | |
| *P< 0.05 | | | | | | | | | |
| | | | | | | | | | |

92

*Pre-College Results*

*Pre-College Structural Diversity (HSSD).*

My hypothesis, as shown in the Diverse College Student Engagement Model, is that Pre-College Structural Diversity (HSSD) directly influences Frequency of Interaction with Diverse Peers (PINT) and Predisposition to Engage in Diversity Activities once in college (PENG).

Results show that Structural Diversity (HSSD) has no direct effect on Predisposing Students to Engage in Diversity-Related Activities (PENG) upon entering college (-.01). This lack of connection between pre-college structural diversity (HSSD) and predisposition to engage (ENG) was not consistent with my initial hypothesis. Pre-College School Structural Diversity (HSSD) does have a moderate effect (.34*) on Positive Pre-College Interactions (PINT). Allport's (1954) Contact Theory stresses contact between diverse individuals, not just the presence of diverse individuals in order to facilitate engagement; however, prior research has hypothesized that structural diversity is sufficient (Locks et al., 2008). In lieu of structural diversity, the theme of interaction in the pre-college environment has not been extensively examined in the literature.

While there is no direct effect between Pre-College Structural Diversity (HSSD) and Predisposition to Engage in Diversity-Related Activities (PENG), there is, however, a significant indirect effect (.07*). This indirect effect is seen to be mediated through frequency of interactions in the pre-college environment (PINT). In other words, structural diversity alone does not predispose students to engage in diversity-related activities once in college; *interactions do*. Pre-College Structural Diversity also has a significant indirect

effect (.08*) on Engagement (ENG). This indirect effect is mediated through Predisposition to Engage (PENG).

These findings were not consistent with the literature. Locks and associates (2008) find that pre-college structural diversity has a direct effect on predisposition to engage in diversity activities and later engagement during college.

*Frequency of Interactions with Diverse Peers Prior to College (PINT).*

The frequency with which students interact with diverse peers prior to college (PINT) has a significant small effect (.20*) on Pre-College Predisposition to Engage in Diversity-Related Activities (PENG) (see Table 23).

The importance of Frequent Pre-College Interaction (PINT) extends *beyond* the pre-college environment to impart a significant small effect (.20*) on engagement with diverse peers during college (ENG). Frequency of Pre-College Interaction (PINT) also has an indirect effect (.04) on Engagement (ENG). The total effect of Pre-College Interaction (PINT) on Engagement (ENG) once in college is moderate (.24*).

Furthermore, Pre-College Interaction (PINT) explains 12% of the variance explaining Engagement (ENG) with diverse peers once in college. This finding is consistent with the research literature that suggests positive interaction prior to college or predisposition to engage upon entering college increases the likelihood of students engaging later in life (Jayakumar, 2008; Locks et al., 2008; Saenz, 2005).

*College Results*

     *Predisposition to Engage in Diversity Activities (PENG).*

     Predisposition to Engage in Diversity-Related Activities (PENG) has a small direct effect (.19) on Engagement (ENG) with Diverse Peers at the end of the sophomore year. Predisposition to Engage (PENG) also explains 4% of the variance of why students Engage (ENG) among diverse peers in college (see Table 23). This finding is consistent with my hypothesis presented in the Diverse College Student Engagement Model, that Predisposition to Engage (PENG) affects later engagement behaviors. It is also consistent with other research literature (Locks et al. 2008).

     *Socializing on Campus (SOC).*

     Socializing on campus (SOC) has a moderate direct effect (.31*) on Engagement with Diverse Peers (ENG) (see Table 23). The effect of socializing on campus is consistent with my hypothesis, as well as the research literature (Astin, 1993; Kuh, 2001; Locks et al., 2008)

     *Living in Campus Residence Halls (LIV).*

     Living in campus residence halls (LIV) does not have an effect (.01) on Engaging with Diverse Peers in College (ENG). This finding is not consistent with research literature that found living on campus to be a significant influence on student engagement (Locks et al., 2008; Pike, 2002). This finding was also inconsistent with several studies that find living in residence halls increases engagement among diverse college peers (Pike, 2002; Zuniga, Williams & Berger, 2002).

*Results from Research Question 2: To what extent are students of color are more predisposed to participate in diversity-related activities compared to their White counterparts upon entering college?*

*Results from Research Question 3: To what extent are students of color more prone to report positive interactions among diverse peers during the sophomore year of college compared to their White counterparts, after controlling for factors the literature suggest matters for student engagement?*

The key findings from testing research question one using the Diverse College Student Engagement Model are used as a spring board to answer research questions two and three. I relied on Latent Means Modeling (LMM) for ascertaining: a) whether minority students (coded as 1) and non-minority students (coded as 0) differ in 1) predisposition to engage at the outset of their freshman year, and 2) whether minority students and non-minority students differ in their self-reported positive interactions with peers during their sophomore year.

Figure 6 provides a graphic representation of results found from testing research questions two and three. Table 24 provides differences in levels of latent Predisposition (PENG) and Engagement (ENG) between minority students and non-minority students, as well as effect sizes and standard deviations of the latent constructs.

*Differences in Predispositions to Engage* (PENG).

The structural model selected in the previous stage provided the foundation to examine differences in Predisposition to Engage (PENG) and Engagement with Diverse Peers (ENG) through latent means modeling (LMM). I detected a medium-sized effect (.46) in the difference between minority students and non-minority students in the latent factor Predisposition to Engage (see table 24). Net of measurement error and past interactions with diverse students, I find that minority students (coded as 1) are, on average, about half of a standard deviation unit higher in the latent Predisposition (PENG) to participate in campus-based activities than are non-minority students (coded as 0).

*Differences in Positive Interactions with Diverse Peers (ENG).*

On the other hand, I found no significant mean differences (.11) among minority students and non-minority students in their positive interactions with diverse peers while attending college (see table 24). It appears that both groups report similar levels of engagement with diverse peers after controlling for Pre-College Structural Diversity (HSSD), Frequency of Interaction Prior to College (PINT), Predisposition to Engage in Diversity-Related Activities (PENG), Time Socializing (SOC) and Living in Campus Residence Halls (LIV). This finding is remarkable. Students varied greatly in predisposition to engage two years prior, and no significant variance is seen in level of engagement during the sophomore year.

This finding demonstrates that the institutional context plays a role in attenuating these differences. An institution's commitments to diversity can influence

97

the levels at which students engage (Hurtado et al., 1998; Zuniga, Nagada, Sevig, 2002).  A more thorough analysis of the institution's role in this finding is discussed in Chapter 5.

| Table 24: Differences between Minority Students and Non-Minority Students in the Latent constructs Pre-dispositions to Engage and Positive Interactions | | | |
|---|---|---|---|
| Construct | Difference | Standard deviation of the latent construct | Size Effect |
| Predisposition to Engage | .42* | .82 | .46 |
| Positive Interactions | .11 | .82 | .12 |

Figure 6: Results of Latent Means Testing of the Diverse College Student

Engagement Model
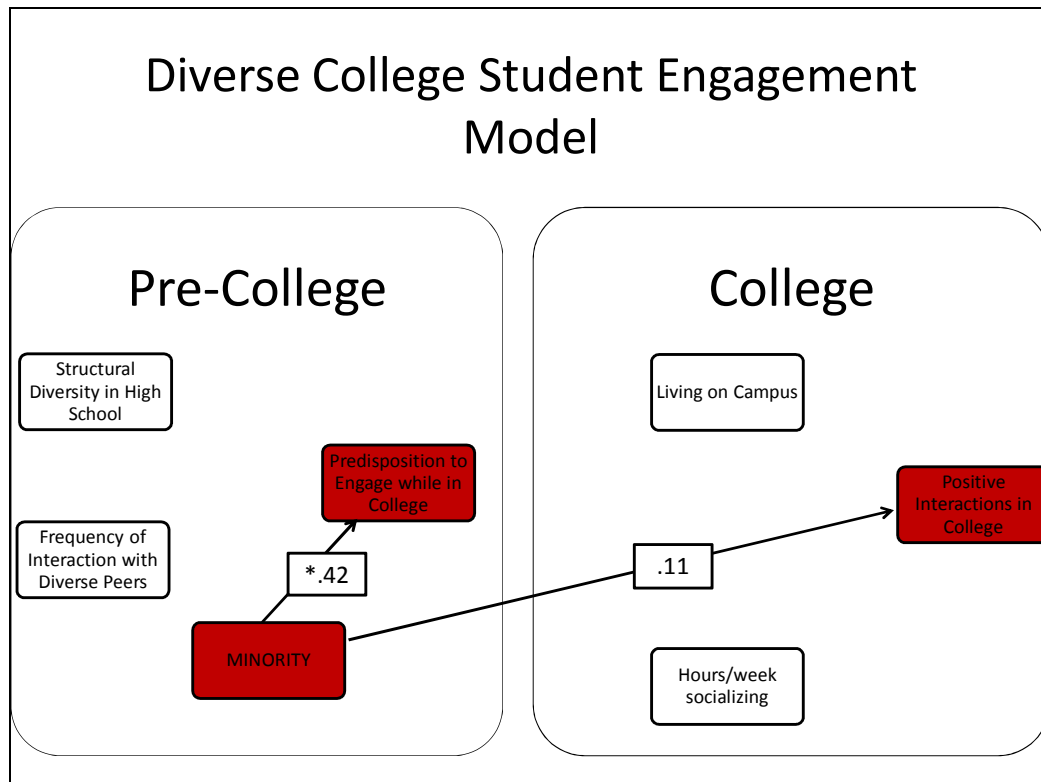
Chapter Summary

It is evident from the descriptive profile that White students grew up in more segregated pre-college environments and experience less engagement with diverse students prior to college. White students are also less predisposed to engage in diversity-related activities upon entering college. This findings is consistent with research literature (Hurtado et al., 2002; Jayakumar, 2008; Locks et al., 2008; Milem and Umbach, 2003; Saenz, 2005). It appears that pre-college experiences, such as high school structural diversity and interaction with diverse peers, help to shape student predisposition levels upon entering college and student attitudes (Hurtado et al., 2002; Locks et al., 2008; Milem & Umbach, 2003).

Student attitudes entering college appear to matter. Levels of predisposition to engage in diversity-related activities affect engagement levels later in college (Locks et al., 2008). Latent Means Model testing shows that minority students are more likely than White students to be predisposed to engage in diversity-related activities upon entering college. This appears to make sense, since students of color grew up in less segregated environments. However, during the sophomore year of college, no significant difference is found between minority students and non-minority students in their self-reported levels of engagement with diverse peers. The attitudes that and segregated pre-college environments of White students do not appear consistent with their levels of engaging during the sophomore year of college. Converging factors appear to influence student attitudes during their transition from high school to college. This finding is remarkable. Potential explanations for this finding are offered in more detail in Chapter 5.

# Chapter 5:  Conclusions and Discussion

## Introduction

*"If diversity is to be viewed as an asset to be built upon in schools, rather than a problem to be solved, we must learn more about how schools can foster positive social relationships among students of different racial and ethnic backgrounds"*
*(Slavin & Cooper, 1999, pg. 648).*

This chapter summarizes and discusses the findings regarding the three research questions guiding this study. In doing so, the findings are framed in relation to the extant literature, namely, research focusing on factors that influence engagement among diverse peers in the pre-college environment and on college campuses.

Several frameworks were used in framing the Diverse College Student Engagement Model. Hurtado and associates' (1998) Enhancing Campus Climates for Racial/Ethnic Diversity framework provided an overarching view of themes that are prevalent in literature focused on diverse student engagement. Gurin and colleagues' (2002) Theoretical Foundations for the Educational Value of Diversity framework examines the major psychosocial dimensions of student engagement. In doing so, their model provides an opportunity to examine the unique situation student encounter as they enter college. Allport's (1954) Intergroup Contact theory examines conditions necessary to foster student engagement. The Transition to College Model put forth by Locks and associates (2002) served as a conceptual framework in examining the joint influence of pre-college, college, and campus factors that influence diverse student engagement. Together, these models served as guiding frameworks to test differences in predisposition

to engage in diversity-related activities and positive engagement with diverse peers at the University of Maryland. The findings and conclusions of the three research questions are also framed in relation to the statistical techniques used to answer them.

Later in this chapter I also offer a conclusion and discussion of the three research questions guiding this study. A discussion of limitations found within the literature follows. To complete and integrate the analysis, sections on implications for theory and research are presented. Afterward, implications for future research are described. However, before presenting the conclusions and study results, I will first provide an overview of the theoretical assumptions that guided this study.

*Theoretical Assumptions Guiding This Study*

Several studies suggest reasons that students tend *not* to engage with diverse peers during college (Gurin, 1999; Locks et al., 2008; Saenz, 2005). They find that campus environments can be racially balkanized and filled with racial tension (Chang, 1996; D'Souza, 1991; Hurtado, 1992). A review of the literature suggests that one reason for such campus hostility and segregation is due to students growing up in segregated neighborhoods and attending segregated high schools (Hurtado et al., 1998; Jayakumar, 2008; Locks et al., 2008; Saenz, 2005. These segregated environments present limited opportunities for engagement (Saenz, 2005). Jayakumar (2008) finds that limited contact due to segregated pre-college environments is most pronounced for Whites, as they often times grow up in segregated environments and frequently reach adulthood without significant engagement with diverse others.

The new environment presented by college campuses can often-times conflict with student preconceptions. This transition period presents a prime opportunity for colleges. Hurtado and associates (1998) outline four dimensions (Institutional Context: Historical Legacy of Inclusion or Exclusion, Structural Diversity, Psychological Dimension of Climate, and the Behavioral Dimension of Climate) that colleges must account for when implementing diversity policies on campus. Building upon several psychosocial theorists, Gurin and colleagues (2002) add another dimension (Psychological Transition), and posit that college environments present an opportunity for students to experience a setting different from their home environment. When the conditions put forth by Allport are present and mechanisms such as cooperative learning environments are present during this transition period, engagement among diverse peers can lead to numerous benefits, including increased learning for all students.

Slavin & Cooper (1999) theorize the same to be true for high school environments that are conducive to engagement. They argue that high schools have an opportunity to help students to make sense of difference and provide them an opportunity to engage with those who experience the world differently.

Gurin and associates' (2002) framework, Hurtado and colleagues' (1998) framework, and Locks and associates' (2008) model, in conjunction with a thorough review of the research literature that examines conditions and mechanisms necessary for engagement, lead to the development of the Diverse College Student Engagement Model. This model examines the joint influence of pre-college experiences and college factors impacting engagement behaviors among diverse peers on a single campus.

This study sought to answer three research questions regarding engagement with diversity at the University of Maryland. The first question asked about the process underlying predisposition to engage with diversity upon entering the university. The other two questions examined the extent minority students differ from non-minority students in their predispositions to engage in campus-based diversity activities as freshman, as well as how they differ in their positive interactions with diverse peers at the end of their sophomore year. The conclusions and discussions for each of the three research questions are discussed in subsequent sections.

Research Question One: Conclusion and Discussion

The discussion of research question one is divided into three subsections. The first subsection details the statistical procedures used in testing the process underscoring predisposition to engage in diversity-related activities upon entering college, and engage with diverse peers during college. The second subsection details findings and conclusions of factors from the pre-college environment shown to affect predisposition and engagement, while the third subsection provides findings and conclusions offered for college factors shown to influence engagement during college.

*Research Question One:*

Research question one examines the process underscoring predisposition to engage in diversity-related activities and engagement among diverse students. I developed the Diverse College Student Engagement Model to better understand differences in predisposition to engage, and actual engagement, between minority

103

students and non-minority students, which is the subject of research questions two and three.  Working on an expanded version of the *Transition to College Model* (Locks et., al, 2008), the Diverse College Student Engagement Model postulates that positive interactions among diverse college students are the result of a longitudinal process extending back to the pre-college environment, namely the high school.  In so doing, this study extends prior research that examines the joint influence of pre-college and in-college factors that influence levels of engagement among diverse peers in college (Locks et al., 2008; Pike et al., 2008; Saenz, 2005; Slavin & Cooper, 1999).

In particular, this study looks at the direct and indirect effects of pre-college factors that influence students to be predisposed to engage in diversity-related activities once in college (HSSD and PINT), and in-college factors that influence positive interactions at the end of the sophomore year of college (PENG, LIV, SOC). For a full description of constructs and variables contained in the Diverse College Student Engagement Model see table 2 in Chapter 3.

In testing this model, I relied on Confirmatory Factor Analyses (CFA) and Structural Equation Modeling (SEM). CFA allowed me to examine the extent to which the constructs and their corresponding measures are reliable for the sample under consideration; they are. Each of the factor loadings and *H*-Coefficient measures show that the variables are well aligned to appraise the construct (see Table 21 in Chapter 4 for CFA results).

Structural Equation Modeling (SEM), on the other hand, allowed me to test the patterns that link together conceptually driven constructs in explaining engagement. These complex processes cannot be tested using more traditional approaches such as ANOVA or multiple

regressions. SEM is viewed as more powerful than most commonly used statistical approaches, and has several added advantages. Byrne (2006) notes that SEM takes a confirmatory, rather than an exploratory, approach to data analysis. Furthermore, unlike exploratory procedures, relationships in SEM are also specified *a priori*. SEM is also unique because it allows for the testing of multiple dependent variables.

SEM conveys two aspects of modeling: 1) the causal processes being studied are represented by a series of structural equations, and 2) these structural relations can be modeled pictorially to enable a clear conceptualization of the theory being hypothesized (Byrne, 2006).

My findings in testing this model with the freshman cohort of 2000 at the University of Maryland can be grouped into two environments underscoring engagement: pre-college and college. As you may recall, the pre-college environment includes high school structural diversity (HSSD), and frequency of interactions with diverse high school peers (PINT). The college environment is made up of predisposition to engage in diversity-based activities in college (PENG), and positive interaction with diverse peers (ENG).

*Pre-College Environment.*

Earlier research found that exposure to diverse environments prior to college motivated students to be more predisposed to, and actually engage with diverse peers in college (Hurtado et al., 1998; Locks et al., 2008; Milem & Umbach, 2003). In this respect, my findings indicate that White students in particular have limited pre-college exposure to diversity. Only 37% of students of color report attending racially mixed high schools, and even fewer White students report doing so (29.7%). Additionally, over 75%

of White students grew up in neighborhoods that are all or nearly all White, and 25% of students of color live in neighborhoods dominated by people of color. This lack of exposure may explain why I did not find a connection between pre-college structural diversity (HSSD) and predisposition to engage among diverse students while in college (PENG).

However, the importance of exposure to structural diversity prior to college (HSSD) resides in creating the necessary conditions to interact with diverse pre-college peers (PINT). It is this behavior, interaction with diverse peers in the pre-college environment, which predisposes the future college freshman to participate in campus activities that would subsequently expose them to diverse peers. Such campus-based activities include joining culturally diverse organizations, taking diversity courses during the freshman year, and joining organizations different from one's own culture.

The importance of having experienced interaction with diverse peers prior to college (PINT) extends beyond predispositions. Results indicate that interacting with diverse peers before college (PINT) also increases the likelihood of engaging with diverse peers at the end of the sophomore year of college (ENG). So it is safe to conclude that structural diversity *per se* is not sufficient to foster engagement during college. However, pre-college structural diversity (HSSD) provides the foundation whereby positive interactions (PINT) before entering college can occur.

It is also safe to assume that high school mechanisms in the pre-college environment exposed students to practices that engage diverse peers and facilitated interactions. In other words, these behaviors exhibited during college were learned. Pre-college activities that facilitate engagement include cooperative learning groups,

extracurricular activities and other teacher pedagogical strategies (Slavin & Cooper, 1999). If these practices do increase engagement through contact, they are consistent with Allport's (1954) Intergroup Contact Theory. His theory posits that interaction under certain conditions can reduce prejudice. Studies that have implemented Allport's contact conditions also show that increased learning can occur (Banks, 2006; Bullock, 1978; Tropp & Bianchi, 2006).

*College Environment.*

Collegiate factors also matter for engagement. These factors can include the structural diversity of the college and how often students experience cross-racial interaction. Campus residence hall programs, the time students spend socializing on campus, student predispositions toward engaging in diverse activities, and the campus racial climate all matter. Prior research (Antonio, 1999; Astin, 1993; Chang, 1999; Chang et al., 2005; Locks et al., 2008; Zuniga et al., 2005) suggested that these collegiate factors influence student engagement.

In testing the Diverse College Student Engagement Model, I found several factors that affect student engagement with diverse peers while in college. One such factor was student predisposition. Students predisposed to engage in diversity activities prior to college (PENG) were significantly more likely to engage with diverse peers at the end of the sophomore year, compared with students who were less predisposed to engage. This finding is consistent with the findings of Locks et al., (2008). It also makes sense. Engaging appears to be a behavior which is learned before students enter college, and becomes apparent in student behaviors.

107

Another factor that was found to influence engagement was prior interactions. Having maintained interactions with diverse peers prior to entering college significantly influenced engagement during sophomore year. In that respect, it is important to note that students who frequently interacted with diverse peers prior to college were not only more predisposed to engage upon entering college, but were also more likely to report positive engagement with diverse peers at the end of the sophomore year of college. This finding suggests that engaging with diverse peers may be a learned behavior, one that is shaped long before students enter college.

College environments also facilitate the process of diverse student engagement. Students who spend more time socializing on campus are much more likely to engage with diverse peers during college than students who rarely socialize. This finding is consistent with Locks et al. (2008), who found that a student's level of interaction while on campus was significantly related to positive interaction with diverse peers on campus.

Student engagement on campus matters (Astin, 1993; Kuh, 2001). Studies find that the level at which students engage on campus directly translates to cognitive and social benefits (Pascarella & Terenzini, 2005). Astin (1993) specifically stresses the importance of the peer group in fostering student engagement on campuses. The University of Maryland notes several initiatives meant to engage students in activities that promote diversity and dialogue while on campus. These initiatives include the Words of Engagement Intergroup Dialogue Program, the Provost's Conversation on Diversity, Democracy and Higher Education, the Undergraduate CORE Diversity Requirement, and the Office of Diversity and Inclusion. One student is quoted in reference to their participation in the Words of Engagement Intergroup Dialogue as saying "These

dialogue sessions should be mandatory. I learned more in my 2 hours each week that I did in any functional skills or upper-level class" (Campus Assessment Working Group, Alumni Perceptions of Diversity, 2007 Report).

There were several hypotheses embedded within the Diverse College Student Engagement Model for which I found no support. Contrary to my initial theory, living on campus in residence halls (LIV) bears no connection with positive interactions at the end of the sophomore year (ENG). This lack of support is remarkable and surprising, because it suggests that living in the residence hall environment alone does not foster engagement among diverse peers.

This finding may be explained by a lack of mandatory college initiatives aimed at facilitating engagement *within* residence halls. The University of Maryland notes the use of the Common Ground Multicultural Dialogue Program, which engages students in dialogue on issues important to them. These dialogues are peer-led and voluntary. The majority of initiatives offered are campus-wide. Because residence halls tend to be diverse settings, they sometimes have the effect of engaging diverse peers. However, without mandatory initiatives, just the mere presence of diverse students can actually increase tension and not achieve intended results (Chang, Denson & Misa, 2005; Pike, 2002). This finding also contradicts prior research suggesting residence halls can be pivotal for engaging diverse peers (Astin, 1993; Hughes, 1994; Pike, 2002; Zuniga, Williams & Berger, 2005). Hughes (1994) posited that residence hall environments provide prime opportunities for students to interact with students and staff to promote engaging opportunities in order for all students to learn. Zuniga et al. (2002) focus specifically on activities that students participate in while staying in residence halls, and

find that student actions while in residence halls (attending residence hall socials and social awareness events), are correlated with motivation to promote inclusion and justice. My findings echo Pike's (2002) suggestion that universities create opportunities for positive and sustained interaction among diverse peers.

Research questions 2 & 3: Conclusions and Discussion

The conclusion and discussion for research questions two and three are organized into three subsections. The first subsection discusses the procedures used to answer both research questions. The second subsection details the pre-college influence on student predisposition to engage in diversity activities, while the third subsection describes the pre-college factors and college factors that influence engagement during the sophomore year of college. The main tenets of each question are detailed below.

Research question two addresses the extent to which minority students and non-minority students differ in their levels of predisposition to engage in diversity-related activities when entering college. The technique controls for other factors contained in the model. These campus-based activities include taking diversity courses during the freshman year, joining organizations that promote cultural diversity, and joining organizations that reflects the individual's culture.

Question three asks whether minority students and non-minority students differ in levels of engagement with diverse peers at the end of the sophomore year. Engaging in college includes socializing, dining, having intellectual discussions and discussion about race. In framing these questions, I was guided by Locks and associates' (2008) study,

whose findings suggest that different ethnic groups vary in predisposition to, and actual engagement with, diverse individuals.

*Testing for Research Questions 2 & 3*

Unlike past research that relies heavily on Analysis of Variance (ANOVA), simple t-tests, or even Ordinary Least Squares regression (OLS), I tested for ethnic-based differences within the context of an innovative technique called Latent Means Modeling (Hancock & Mueller, 2008b). This technique takes into account connections among latent factors and measurement properties when testing differences. In this way, the differences are net of measurement error while controlling for the complex patterns underscoring engagement with diversity. The next subsections reports differences for pre-college and college factors that influence predisposition to engage in diversity-related activities and engagement during college.

*Pre-College Environment & Ethnicity.*

The pre-college environment consists of the joint effects of high school structural diversity and frequency of interaction with diverse peers; this pre-college environment was presumed to shape student predisposition to engage (PENG). Within the pre-college environment, a student's ethnicity played a role. The latent means model displays a moderate-size effect associated with ethnicity (.42). This finding, which is net of measurement error and past interaction with diverse students, estimates that minority students are about half of a standard deviation unit higher in the latent predispositions to participate in campus-based activities (PENG) than are non-minority students. This

111

finding is consistent with literature and my descriptive statistics, which suggest that

minority students enter college from environments that appear to be more conducive to

facilitating engagement with diversity (Jayakumar, 2008; Milem & Umbach, 2003;

Saenz, 2005).

*Pre-College & College Environments & Ethnicity.*

In testing for ethnic differences in engagement with diverse college peers (ENG),

the latent means model strategy I relied upon considered the joint effect of pre-college

and college environments.  Remarkably, I found that the role of ethnicity seems to be

lessened by the end of the sophomore year. While minority students enter college

significantly more predisposed to engage, by the end of the of the sophomore year no

differences are detected in their actual engagement with diverse peers.  Both minority

students and non-minority students report similar levels of positive interactions with

diverse sophomore peers while controlling for the process underscoring such

engagement.

This finding is not consistent with literature that examines student engagement

levels on campus. Literature reports that, often, minority students feel alienated from

non-minority students on campus (Loo & Roolison, 1986). These feelings of alienation

from other cultures on campus play themselves out as students tend to separate

themselves on campus and fail to engage with diverse peers (Chang, 2001; D'Souza,

1991; Duster, 1991). Campuses subsequently become racially balkanized.

For such pronounced differences to be attenuated by the end of the sophomore

year on this campus is remarkable. The lack of difference among racially diverse peers

112

may be attributed in part to the initiatives the University of Maryland has enacted to foster engagement. It may well be the case that these initiatives (Intergroup Dialogue Program; Provost's Conversations on Diversity, Democracy and Higher Education; CORE education requirement), which engage students in sustained dialogue to counter past racial tension and expose them to a diversity of ideas, may have helped to foster engagement for all students during such a critical time of identity development. These efforts made by campus administrators may help to explain the leveling-off in ethnic-based differences in engagement among diverse peers during the sophomore year of college. By implementing these initiatives, campus administrators are addressing the themes that Gurin and associates (2002) posit as being necessary as students transition into unfamiliar environments. The themes put for by Gurin and colleagues (2002) are well grounded in literature, as several educational psychologists cite the transition into young adulthood as a critical time for identity development (Chickering & Reisser, 1993; Erickson, year; Piaget, 1975; 1985). During this transition, students develop a sense of social awareness, tolerance of other cultures and an acceptance of diverse ideas and thoughts (Gurin et al., 2002).

These initiatives may play themselves out in several other areas of campus as well. A majority of students report experiencing substantial amounts of racial diversity within the classroom and low amounts of peer pressure to refrain from interacting with racially diverse peers. Compared with the racial tensions reported in Locks et al. (2008), this finding also speaks volumes about how well the University of Maryland engages racially diverse students who enter campus with varying levels of predisposition to

113

engage. This finding also speaks to the importance of single-institution studies for examining the impact of a campus context (Hurtado et al., 1998).

## Conclusions

This study sought to examine the extent to which minority students and non-minority students differ in their predispositions to engage in campus-based diversity activities as freshman, as well as in their positive interactions with diverse peers at the end of their sophomore year. Working on an expanded version of the *Transition to College Model* (Locks et., al, 2008), the Diverse College Student Engagement Model postulated that positive interactions with diverse college students is the result of a longitudinal process extending back to the high school. In testing this model with the 2000 freshman cohort at the University of Maryland, I found that being exposed to structural diversity, in high school per se, has no direct relationship with a freshman's predispositions to engage in campus-based diversity activities. The importance of pre-college structural diversity does, however, translate itself into creating the necessary conditions to interact with diverse pre-college peers. It is this interaction that prepares future college freshman to be predisposed to participate in campus-based diversity activities. In turn, being predisposed and having a history of engagement with diverse peers, leads to positive interactions with diverse peers once in college.  It is noteworthy that the role of ethnicity seems to be attenuated by the end of the sophomore year. Both minority students and non-minority students report similar levels of positive interactions with diverse sophomore peers. It is also important to note, that living on campus in residence halls bears no connection with experiencing positive interactions. This result is

also surprising, since the finding suggests that living in the residence hall environment

alone does not foster positive interactions between diverse peers; a result that contradicts

prior research suggesting residence halls can be pivotal for engaging diverse peers

(Zuniga, Williams & Berger, 2005; Pike, 2002; Gilbert, 2004). It is also counter to the

mission of the Intergroup Dialogue Program currently taking place in University of

Maryland residence halls.

Engagement is a learned behavior. One that was shaped long before students

entered into college. My results suggest that structural diversity in the pre-college

environment created the preconditions for students to interact with diverse peers. While

the data do not allow me to explore what those preconditions and mechanism in the pre-

college environment were, it is safe to assume that these learned engagement behaviors

emanated from high school practices.

## Implications

*Implications for Theory & Research*

Higher education has been charged with preparing students to thrive in the global

marketplace (Jayakumar, 2008). As a response, colleges and universities across the nation

have implemented an array of policies and initiatives in order to facilitate positive

engagement among diverse students. The initiatives range from mandating that all

students take a diversity course before graduating, to more comprehensive approaches

such as Intergroup Dialogues that seek to foster positive communication between groups

of students with histories of conflict (Zuniga et al., 2002). Whichever approach colleges

115

have taken toward preparing students for this global marketplace, it is usually done in a piecemealed fashion.

Implications for theory and research surrounding engagement among diverse students must broaden the perspective of engagement to take into account students' pre-college environments. Policymakers and researchers cannot fully understand how campus environments matter for engagement if the very pre-college environment that shaped the student is ignored.  Several studies make the case that pre-college contexts do matter (Hurtado et al., 2002; Jayakumar, 2008; Locks et al., 2008).

*Implications for practice*

*High School.*

The challenge for K-12 schools and colleges is in creating the necessary conditions through which "students are likely to cross the borders that delimit their narrow personal and social worlds and provide opportunities to experience the world of those different from them" (Slavin & Cooper, 1999, pg. 648). This sentiment is most evident in the framework posited by Gurin and associates (2002), as they stress the need for student exposure to a world different from the home environments in order to learn from the experiences of others. These critical periods provide opportunities for students to develop tolerance of diverse perspectives, openness to diverse ideas, and ultimately a desire to engage their diverse peers.

In recent years, the rhetoric surrounding education has moved away from segmented K-12 and higher education communities, toward a joint K-16 community (Locks et al., 2008; Saenz, 2005). Researchers and policy makers understand the need to take a holistic approach when studying education (Cabrera, Burkum & LaNasa, 2005; Perna, 2006). For that reason, the implications for practice offered in this study will extend to the K-12 sector and the higher education sector.

The first practical implication from this study is that more research examining college students should extend beyond college. It should broaden the scope of inquiry to consider the effect of student pre-college experiences on collegiate outcomes. Findings from this study suggest that engagement with diverse peers in college, which results in numerous educational benefits, is a learned behavior extending back to the pre-college environment. Specific high school initiatives influence such behavior (Arms, Cabrera, & Brower, 2008; Moody, 2001; Slavin, 1980). However, only limited research exists that examines why students engage within the K-16 spectrum. I urge the K-12 and higher education sectors to develop partnerships in order to share best practices for engaging diverse peers. Sharing such techniques can ensure that when students leave high school they are already predisposed to engaging with diverse peers. The high school counseling and advising unit can be a key mechanism to facilitate engagement among college going students. Implications for collaboration between high schools and colleges echo the recommendations of Arms, Cabrera and Brower (2008).

As the high schools prepare students for engaging with diverse peers during college, it is also important to examine mechanisms in the K-12 sector that inhibit such interaction. Several scholars find that ability grouping and separating students into tracks

117

are organizational behaviors of school administrators that tend to inhibit interaction across race (Khmelkov & Hallinan, 1999).

*College.*

Mechanisms on college campuses facilitate student engagement levels on campus. As a result, I urge campus administrators to focus on new-student orientation programs to gauge student attitudes and beliefs toward diversity in order to enhance campus climates. Several scholars note that students enter college from varied pre-college backgrounds and with a wide range of beliefs and attitudes toward diversity (Gurin, 1999; Locks et al., 2008; Saenz, 2005). The experiences, attitudes, and beliefs of students on campus ultimately contribute greatly to a campus climate. Because of this, it is important that college administrators acknowledge such differences in attitude and belief when creating programs aimed at facilitating engagement among diverse peers. If administrators are aware of student predisposition attitudes during orientation sessions, these insights can aid them in developing campus-based and residence-hall specific programs that seek to facilitate engagement among diverse students.

## Future Research

As researchers continue to examine complex phenomena, I would urge them to abandon the practice of using simple OLS regression and ANOVA techniques when testing ethnic differences. I join Jayakumar (2008) and Locks and associates' (2008) recommendations of using statistical methods that mimic the longitudinal nature of engagement with diverse peers. SEM allowed me to examine the complex process linking

pre-college environments with college ones. This method also allowed me to examine the direct and indirect effects of pre-college interaction with peers in a manner that OLS and ANOVA would not be able to address. I would only add the need to incorporate Latent Means Modeling (LMM) as an additional option to examine differences among ethnically diverse students.

Each racial group should also be studied separately. This can be of particular interest to researchers and policymakers that examine within-group differences. Several studies note that Black and Latino students perceive their campus climate differently compared to White students (Cabrera et al., 1999; D'Augelli & Hershberger, 1993). Such differences in perception of campus climate are important because they are closely related to sense of belonging to an institution, retention, and grades (Cabrera & Nora, 1994; Ancis, Sedlacek, & Mohr, 2000). Because of data limitations, the Diverse College Student Engagement Model was only tested for two groups: students of color and White students. For that reason, findings from this study suggest that there are major differences in levels of predisposition between the two groups—other significant findings may result if this model were run for individual ethnic groups separately. Testing this model across different ethnic groups can provide practical recommendations as to how students of color differ from one another and provide a more detailed insight into the factors that influence engagement on a particular campus, while factoring in the structural diversity of the particular environment.

Limitations

119

This study has several limitations that must be considered when interpreting study results. The hypothesized model (see Figure 4) is deficient in several ways. While the constructs are reliable based on Locks et al. (2008), they are latent measures and cannot be adequately measured by the hypothesized model. In addition, the results from this study will be applicable at most to one single campus and cannot be easily generalized to other campuses. However, this campus is representative of many campuses because of the size of the undergraduate population, the percentage of minority students on campus, and the diversity initiatives present on campus.

The data of this study are also limited. The students that completed both surveys, during freshman orientation and during the sophomore year, self-selected into the study. As a result of this selection bias, the findings of the study are limited since not all students participated in the baseline and follow-up survey. This limitation is common with survey research.

The ethnicity variable presented in the latent means testing as well as the "students of color group" used during model testing also limits the scope of the study. Ideally, this study should be tested for each minority group individually as suggested by Museus, Nichols and Lambert (2008). Museus and associates (2008) assert that students from different racial and ethnic backgrounds may experience their campus' climate in different ways, and thus should be studied separately, not combined into a "students of color" variable. Although statistical tests confirm that these ethnic groups behave similarly on the study variables (see Appendix B), by combining the Black, biracial, Hispanic and Asian students into one students of color variable, it limits the ability of this study to make specific recommendations for individual racial groups.

The Transition to College Model, which serves as a conceptual framework is also deficient, since it only addresses two campus influences on positive interactions with racially diverse peers. While the Diverse College Student Engagement Model offers additional pre-college and college factors, the model does not measure specific factors from the pre-college environment that affect engagement, specifically cooperative learning classrooms. Pedagogical techniques of college professors were also not addressed within this study. Many of the deficiencies noted within the limitations can be more adequately captured in a qualitative analysis of classroom procedures that influence engagement among racially diverse students.

# Appendix A

**Preparing College Students for a Diverse Democracy: First Year Student Views and Experiences**



Dear Student: This survey is part of a national, collaborative project sponsored by the U.S. Department of Education. This campus has agreed to involve you in order to learn about students' college experiences and find ways universities might improve student preparation for living in a diverse democracy. Your participation is important to us; but it is voluntary and you do not have to answer questions that make you feel uncomfortable. Responses are strictly confidential. Identifying information will be used only for purposes of following up to find out about the quality of your experiences at this university. Thank you in advance for your assistance in this national effort.

STATEMENT OF CONSENT

I understand that this survey is administered by my institution in collaboration with researchers to understand students' experiences within a diverse democracy.

I hereby voluntarily give permission for my responses to be used as data in this study. I understand that all responses are completely confidential and that my name will not be associated with my responses. I understand that my name and other identifying factors will not be associated with any document produced from this research. I understand that I can express my ideas and opinions without consequence.

I may contact campus administrators or the national Project Director, Sylvia Hurtado, 2117 SEB, Ann Arbor MI 48109-1259 any time with questions or concerns about this study.

_____          _____
                                                                      _____

*Print your name*                                    *Signature*                                    *Date*

Please indicate your answer to each question by filling in the oval representing the category which best describes your views on the issue.

Marking instructions…                                                      Incorrect Marking
Correct Mark
Blacken in each oval completely <u>using a number 2 pencil</u>                              0

If you erase, <u>erase completely.</u>

**Please provide the following information so that we may locate you and send a follow=up survey about your experiences at this university.**

**Please print your name clearly and fill in the appropriate ovals.**

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Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y
Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z

**University Code:** (Mark <u>one</u> according to instructions)

01  02  03  04  05  06  07  08  09  10

Please print clearly and fill in the appropriate ovals

| Date of Birth | Student ID or Social Security Number |
|---|---|
| 00-00-0000 | 000-000-000 |
| 11-11-1111 | 111-111-111 |
| 2-22-2222 | 222-222-222 |
| 3-33-3333 | 333-333-333 |
| 4-44-4444 | 444-444-444 |
| 5-55-5555 | 555-555-555 |
| 6-66-6666 | 666-666-666 |
| 7-77-7777 | 777-777-777 |

# I.  Precollegiate Experiences /Background

**1.  What type of high school did you graduate from?** (Mark <u>one</u>)

  0 Public        0 Private, nonreligious     0 GED

  0 Religious     0 Home school or other

**2.  How would you rate yourself in the following areas**? (Mark <u>one</u> for <u>each</u> item)

| | A major weakness – 1 | Somewhat weak – 2 | Average – 3 | Somewhat strong – 4 | A major strength – 5 |
|---|---|---|---|---|---|
| a. Communication skills | 0 | 0 | 0 | 0 | 0 |
| b. Ability to work cooperatively with diverse people | 0 | 0 | 0 | 0 | 0 |
| c. Writing ability | 0 | 0 | 0 | 0 | 0 |
| d. Knowledge about my own culture | 0 | 0 | 0 | 0 | 0 |
| e. Math ability | 0 | 0 | 0 | 0 | 0 |
| f. Racial/cultural awareness | 0 | 0 | 0 | 0 | 0 |
| g. Ability to solve complex problems | 0 | 0 | 0 | 0 | 0 |
| h. Openness to having my views challenged | 0 | 0 | 0 | 0 | 0 |
| i. Leadership ability | 0 | 0 | 0 | 0 | 0 |
| j. Ability to see the world from someone else's perspective | 0 | 0 | 0 | 0 | 0 |
| k. Knowledge about the cultural backgrounds of others | 0 | 0 | 0 | 0 | 0 |
| l. Ability to discuss and negotiate controversial issues | 0 | 0 | 0 | 0 | 0 |
| m. Academic ability | 0 | 0 | 0 | 0 | 0 |
| n. Tolerance of others with different beliefs | 0 | 0 | 0 | 0 | 0 |
| o. Social self-confidence | 0 | 0 | 0 | 0 | 0 |

**3. How many colleges did you apply to for Fall 2000 admission (including this one)?** (Mark <u>one</u>)

    0 1 college        0 4 colleges

    0 2 colleges        0 5 colleges

    0 3 colleges        0 6 or more

**4.  How many acceptances did you receive?** (Mark <u>one</u>)

    0 1        0 4

    0 2        0 5

    0 3        0 6 or more

**5.  Is this college your:** (Mark <u>one</u>)

  0 1st choice        0 3rd choice

  0 2nd choice        0 less than 3rd choice

**6.  Following is a list of reasons why some people select a particular college.  How important was each of these reasons for your attendance at this university?** (Mark <u>one</u> for <u>each</u> item)

| | Not at all important – 1 | Somewhat important – 2 | Very important – 3 | Essential – 4 |
|---|---|---|---|---|
| a. Desire to be near or live at home | 0 | 0 | 0 | 0 |
| b. Good academic reputation of the university | 0 | 0 | 0 | 0 |
| c. Athletic program | 0 | 0 | 0 | 0 |
| d. Academic support programs (tutoring, writing center, etc.) | 0 | 0 | 0 | 0 |

e. Social life ..............................................0    0    0    0
f. Recruitment and admissions programs made you feel welcome    0        0
   ..............................................................0   0
g. Financial aid support.............................0   0   0   0
h. Racially and ethnically diverse student body    0    0   0      0
i. Alumni ...................................................0   0   0   0
j. Comfort with campus environment........0   0   0   0
k. Lower cost than other institutions .........0   0   0   0
l. High school teacher or counselor...........0   0   0   0
m. Parents/guardians, family members, friends0   0   0   0

**7. Where did you rank academically in your high school graduating class?** (Mark <u>one</u>)

0  Top 5%          0  Top 50%       0 Don't Know
0  Top 10%        0 Top 75%
0  Top 25%        0 Lowest 25%

**8. Indicate how frequently you engaged in any of the following during high school:** (Mark <u>one</u> for <u>each</u> item)

Never – 1
A few times per year – 2
A few times per month – 3
A few times per week – 4
Daily –5

a. Used a computer to do homework..0   0   0   0   0
b. Discussed politics with students ....0   0   0   0   0
c. Discussed racial/ethnic issues ........0   0   0   0   0
d. Participated in student clubs...........0   0   0   0   0
e. Engaged in volunteer work.............0   0   0   0   0
f. Studied with someone from a different racial or ethnic group    0       0
   ......................................................0   0   0
g. Participated in an academic honor society   0   0   0   0      0
h. Participated in varsity sports ..........0   0   0   0   0
i. Participated in activities to clean up the environment 0    0       0       0
   ......................................................0
j. Worked on school publications ......0   0   0   0   0
k. Read a newspaper...........................0   0   0   0   0
l. Followed the presidential election process   0   0   0   0      0
m. Participated in religious activities or
    spiritual ceremonies.......................0   0   0   0   0
n. Used the Internet or web ................0   0   0   0   0

**9. Which best describes where you lived most of your life before college?** (Mark <u>one</u>)

0 Urban area              0 Small town

0 Suburban area        0 Rural area

**10. How would you describe the racial/ethnic composition of the following**: (People of color includes African Americans, Hispanics, Asian Americans and American Indians) (Mark <u>one</u> for <u>each</u> item)

All or nearly all people of color – 1
Mostly people of color – 2
Half white and half people of color– 3
Mostly white – 4
All or nearly all white –5

a. Neighborhood where you grew up .0   0   0   0   0
b. High school that you graduated from ...0   0   0   0   0
c. Your friends in high school ............0   0   0   0   0

**11. In high school, how often did you encounter discrimination based on your:** (Mark <u>one</u> for <u>each</u> item)

|  | Never – 1 | Occasionally – 2 | Frequently – 3 |
|---|---|---|---|
| a. Race/ethnicity | 0 | 0 | 0 |
| b. Gender | 0 | 0 | 0 |
| c. Sexual orientation | 0 | 0 | 0 |
| d. Economic background | 0 | 0 | 0 |
| e. Religious affiliation | 0 | 0 | 0 |

# II. Transition to College

**12. Mark all the statements that apply to you:**
   a. One or both of my parents went to college here ........ 0
   b. I received a scholarship to attend here ...................... 0
   c. I went to a two-year college before entering here ...... 0
   d. I am the first in my family to go to college ............... 0
   e. I received need-based financial aid ........................... 0
   f. I have attended a diversity awareness program .......... 0
   g. I wrote a paper at least 15 pages long ....................... 0
   h. I spoke another language other than English at home 0
   i. I received merit-based financial aid ........................... 0
   j. I took a class on multicultural/diversity issues............ 0
   k. I applied for a loan to pay for college ....................... 0

**13. How difficult do you think each of the following will be during your first year at the University?**
(Mark <u>one</u> for <u>each</u> item)

|  | Very difficult – 1 | Somewhat difficult – 2 | Somewhat easy – 3 | Very easy – 4 |
|---|---|---|---|---|
| a. Keeping up with school work | 0 | 0 | 0 | 0 |
| b. Making new friends | 0 | 0 | 0 | 0 |
| c. Finding academic help when you need it | 0 | 0 | 0 | 0 |
| d. Paying for college expenses | 0 | 0 | 0 | 0 |
| e. Feeling comfortable in your living environment | 0 | 0 | 0 | 0 |
| f. Managing family responsibilities | 0 | 0 | 0 | 0 |
| g. Getting to know your way around | 0 | 0 | 0 | 0 |

**14. Which of the following <u>best</u> describes your living situation during your first year of college?**
(Mark <u>one</u>)
   a. With parents or relatives ............................................. 0
   b. Off-campus (not with parents) ................................... 0
   c. Residence hall ........................................................... 0
   d. Other campus housing................................................ 0

**15. How likely are you to do the following during your college career?** (Mark <u>one</u> for <u>each</u> item)

|  | Very unlikely – 1 | Unlikely – 2 | Likely – 3 | Very likely – 4 |
|---|---|---|---|---|
| a. Get elected to student office | 0 | 0 | 0 | 0 |
| b. Work at least part-time while in college | 0 | 0 | 0 | 0 |
| c. Join a social fraternity or sorority | 0 | 0 | 0 | 0 |
| d. Need extra time to complete your degree | 0 | 0 | 0 | 0 |
| e. Get tutoring help in specific courses | 0 | 0 | 0 | 0 |
| f. Participate in student protests | 0 | 0 | 0 | 0 |

g. Transfer to another college before graduating     0     0     0          0
h. Drop out of college temporarily (exclude transferring)     0          0          0
..............................................................0
i. Drop out permanently (exclude transferring) 0     0     0     0
j. Compete in intercollegiate athletics .......0     0     0     0
k. Participate in groups and activities reflecting your own cultural-ethnic background
..............................................................0     0     0     0
l. Take a course devoted to diversity issues in your first year of college          0
..............................................................0     0     0
m. Help members of the community get out to vote in elections          0          0
..............................................................0     0
n. Challenge others on racially/sexually derogatory comments.          0          0
..............................................................0     0
o. Join an organization that promotes cultural diversity 0     0          0          0
p. Make an effort to educate others about social issues. 0     0          0          0
q. Make efforts to get to know individuals from diverse backgrounds.          0
..............................................................0     0     0

**16.  What is the highest academic degree that you intend to obtain?** (Mark <u>one</u>)
a. None ..............................................................0
b. Bachelor's Degree.......................................0
c. Master's Degree (e.g. MS, MBA, MDiv)...................0
d. Doctorate (e.g. PhD, EdD) .........................................0
e. Professional Degree (e.g. JD, MD) ............................0
f. Other ..........................................................................0

# III. Preferences for Thinking and Interacting

**17.  Indicate the extent to which you agree or disagree with the following statements:**  (Mark <u>one</u> for <u>each</u> item)

Strongly disagree– 1
Disagree somewhat 2
Agree somewhat 3
Strongly agree – 4

a. Students who talk a lot about societal problems turn me off          0          0
..............................................................0     0
b. I try to keep up with current events .......0     0     0     0
c. Thinking about how this country will change in the future is of little interest to me.
..............................................................0     0     0     0
d. I enjoy talking with other people about the reasons and possible solutions to poverty
..............................................................0     0     0     0
e. I spend little time thinking about race relations in this country.          0          0
..............................................................0     0
f. I would probably find a television show on poverty in the U.S. to be interesting
..............................................................0     0     0     0
g. I want to gain a broad, intellectually exciting education     0          0          0
..............................................................0
h. I enjoy getting into discussions about political issues.     0          0          0
..............................................................0
i. I often think about the amount of power people in different segments of society have
..............................................................0     0     0     0
j. When I see a homeless person, I think about how it could happen to me          0
..............................................................0     0     0
k. I learn the most about societal issues in discussions with diverse peers          0
..............................................................0     0     0

128

**18. We would like to know your thoughts in a variety of situations. For each item, indicate how well it describes you.** (Mark one for each item)

Not at all like me = 1
2
3
4
Very much like me = 5

| | | | | |
|---|---|---|---|---|
| a. I don't usually analyze people's behavior. | 0 | 0 | 0 | 0 | 0 |
| b. I am interested in understanding how my own thinking works when I make judgments about people ................0 | 0 | 0 | 0 | 0 |
| c. I think very little about the different ways that people influence each other. 0 ......................................................0 | 0 | 0 | 0 |
| d. I really enjoy analyzing the reason or causes for people's behavior. 0 ......................................................0 | 0 | 0 | 0 |
| e. I think a lot about the influence that society has on other people 0 0 ......................................................0 | 0 | 0 |
| f I prefer simple rather than complex explanations for people's behavior. 0 ......................................................0 | 0 | 0 | 0 |
| g. I believe it is important to analyze and understand our own thinking processes. ......................................................0 | 0 | 0 | 0 | 0 |
| h. I tend to take people's behavior at face value and not worry about the inner causes for their behavior ..........................0 | 0 | 0 | 0 | 0 |
| i. I think a lot about the influence that society has on my behavior 0 0 ......................................................0 | 0 | 0 |

**19. How much interaction did you have with people in each of the following groups before coming to college?**

(Mark one for each item)
No interaction = 1
Little interaction = 2
Some regular interaction = 3
Substantial interaction = 4

| | | | | |
|---|---|---|---|---|
| a. African Americans/Blacks ....................0 | 0 | 0 | 0 |
| b. Hispanics/Latinos/Chicanos..................0 | 0 | 0 | 0 |
| c. Asian Americans/Pacific Islanders........0 | 0 | 0 | 0 |
| d. Whites/Caucasians ................................0 | 0 | 0 | 0 |
| e. American Indians/Alaskan Natives .......0 | 0 | 0 | 0 |
| f. Multi-Racial/Multi-Ethnic individuals...0 | 0 | 0 | 0 |
| g. Gay/Lesbian/Bisexual individuals.........0 | 0 | 0 | 0 |
| h. People with disabilities .........................0 | 0 | 0 | 0 |
| i. People with different religious beliefs ...0 | 0 | 0 | 0 |

**20. People often have differences in perspectives. Indicate how much you agree or disagree with each statement.** (Mark one for each item)

Strongly disagree– 1
Disagree somewhat 2
Agree somewhat 3
Strongly agree – 4

| | | | |
|---|---|---|---|
| a. There are two sides to every issue and I try to look at them both. 0 ......................................................0 0 0 |
| b. Conflicting perspectives is healthy in a democracy 0 0 0 0 |
| c. I try to look at everybody's side of a disagreement before I make a decision. ................................................0 0 0 0 |
| d. Conflict is a normal part of life .............0 0 0 0 |
| e. I sometimes find it difficult to see the "other person's" point of view. 0 ................................................0 0 0 |
| f. I am afraid of conflicts when discussing social issues 0 0 0 0 |
| g. When I'm upset at someone, I usually try to "put myself in their shoes" for a while. ................................................0 0 0 0 |
| h. It is best to avoid conflict with others ...0 0 0 0 |

i. Democracy thrives on differing views ...0   0   0   0

j. Conflict between groups can have positive consequences  0        0        0
............................................................0

k. Building coalitions from varied interests is key to a working democracy    0       0
............................................................0   0

**21. Indicate how often you felt <u>uncomfortable</u> in a situation with a person or a group of people who are:** (Mark <u>one</u> for <u>each</u> item)

Never– 1
Rarely 2
Sometimes 3
Often – 4

| | Never | Rarely | Sometimes | Often |
|---|---|---|---|---|
| a. Women .................................................0 | 0 | 0 | 0 |
| b. Hispanics/Latinos/Chicanos.................0 | 0 | 0 | 0 |
| c. Whites/Caucasians ...............................0 | 0 | 0 | 0 |
| d. Gays/Lesbians/Bisexuals......................0 | 0 | 0 | 0 |
| e. Asian Americans ..................................0 | 0 | 0 | 0 |
| f. Men.......................................................0 | 0 | 0 | 0 |
| g. African Americans/Blacks ...................0 | 0 | 0 | 0 |
| h. People with disabilities ........................0 | 0 | 0 | 0 |
| i. American Indians/Alaskan Natives........0 | 0 | 0 | 0 |

# IV. Attitudes and Beliefs

**22. Please rate your level of agreement or disagreement with the following statements:** (Mark <u>one</u> for <u>each</u> item)

Strongly disagree– 1
Disagree somewhat 2
Agree somewhat 3
Strongly agree – 4

a. My individual rights are more important than policies for the common good0
............................................................0   0   0

b. Some degree of inequality is necessary in a society that wants to be the best in
the world..............................................0   0   0   0

c. Even if I do the best I can to help others, it won't change the way society operates
............................................................0   0   0   0

d. People in my community are counting on me to do well in college 0        0
............................................................0   0

e. If people were treated more equally we would have fewer problems in this
country.................................................0   0   0   0

f. I believe I can do things that can make a big difference in the lives of others0
............................................................0   0   0

g. My vote doesn't count much in improving the leadership or policies for this country
............................................................0   0   0   0

h. It is not really that big a problem if some people have more of a chance in life
than others............................................0   0   0   0

i. Social progress should be measured by how far the least among us are able to move
economically........................................0   0   0   0

j. I should be able to say whatever I want rather than having to abide by rules to be
civil to others ......................................0   0   0   0

k. I have an obligation to "give back" to the community0   0      0      0

l. There is little I can do to make the world a better place to live.     0      0
............................................................0   0

m. I often think about how my personal decisions affect the welfare of others. 0
............................................................0   0   0

n. Elected officials are unable to resolve their differences for the good of the people
............................................................0   0   0   0

**23. In your role as a responsible citizen in this society, how important are each of the following to you?**

(Mark one for each item)

Not important=1
Somewhat important=2
Very important=3
Essential=4

|  | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| a. Working to end poverty.........................0 | 0 | 0 | 0 |
| b. Paying taxes to support public services.0 | 0 | 0 | 0 |
| c. Using career-related skills to work in low-income communities | 0 | | 0 |
| ...........................................................0 | 0 | | |
| d. Contributing money to a political cause 0 | 0 | 0 | 0 |
| e. Supporting a strong military..................0 | 0 | 0 | 0 |
| f. Promoting racial tolerance and respect ..0 | 0 | 0 | 0 |
| g. Contributing money to a charitable cause | 0 | 0 | 0 | 0 |
| h. Defending the right to own a gun..........0 | 0 | 0 | 0 |
| i. Voting in national elections ...................0 | 0 | 0 | 0 |
| j. Creating awareness of how people affect the environment 0 | | 0 | | 0 |
| ...........................................................0 | | | |
| k. Working to minimize government involvement in individual affairs | | | 0 |
| ...........................................................0 | 0 | 0 | |
| l. Making consumer decisions based on a company's ethics 0 | | 0 | | 0 |
| ...........................................................0 | | | |
| m. Speaking up against social injustice.....0 | 0 | 0 | 0 |
| n. Volunteering with community groups or agencies | 0 | 0 | 0 | 0 |

**24. Many colleges have programs for diversity education. Indicate whether you support or oppose each of following:** (Mark one for each item)

Strongly oppose – 1
Oppose somewhat – 2
Support somewhat – 3
Strongly support – 4

|  | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| a. Incorporating writings and research about different ethnic groups and women into courses ...........................................0 | 0 | 0 | 0 |
| b. Requiring students to complete a community-based experience with diverse populations............................................0 | 0 | 0 | 0 |
| c. Offering courses to help students develop an appreciation for their own and other cultures..................................................0 | 0 | 0 | 0 |
| d. Requiring students to take at least one cultural or ethnic diversity course in order to graduate ...........................................0 | 0 | 0 | 0 |
| e. Offering opportunities for intensive discussion between students with different backgrounds and beliefs.........................0 | 0 | 0 | 0 |

**25. Indicate the extent to which you agree or disagree with each statement.** (Mark one for each item)

Strongly disagree– 1
Disagree somewhat 2
Agree somewhat 3
Strongly agree – 4

|  | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| a. Racial/ethnic discrimination is no longer a major problem in the U.S. | | | 0 | |
| ...........................................................0 | 0 | 0 | |
| b. It's fair to give preference in college admissions to children of alumni | | | 0 | |
| ...........................................................0 | 0 | 0 | |
| c. Many Whites lack an understanding of the problems that people from different racial/ethnic groups face .......................0 | 0 | 0 | 0 |
| d. Colleges should support women's athletics as much as they support men's athletics ...........................................................0 | 0 | 0 | 0 |
| e. Our society has done enough to promote the welfare of different racial/ethnic groups ...........................................................0 | 0 | 0 | 0 |

f. A high priority should be given to see that students of color receive financial aid for college...................................................0　0　0　0

g. Hiring more faculty of color should be a top priority of this University　　0 .................................................................0　0　0

h. The system prevents people of color from getting their fair share of good jobs and better pay ...............................................0　0　0　0

i. State hate crime laws are needed to protect people from harassment based on race, gender or sexual orientation..................0　0　0　0

j. A person's racial background in this society does not interfere with achieving everything he or she wants to achieve ..0　0　0　0

k. Colleges should aggressively recruit more students of color　　　0　　　0 .................................................................0　0

l. Enhancing a student's ability to live in a multicultural society is part of a university's mission..................................................0　0　0　0

m. Colleges do not have a responsibility to correct racial/ethnic injustice　　　0 .................................................................0　0

n. Emphasizing diversity contributes to  disunity on campus 0　　　0　　　0 .................................................................0

**26.  We are all members of different social identity groups (e.g., gender, race, ethnicity, sexual orientation, socio-economic class, etc.). How often do you think about your:** (Mark <u>one </u>for <u>each</u> item)

Never – 1
Rarely – 2
Sometimes – 3
Often – 4

a. Gender ........................................0　0　0　0
b. Race .........................................0　0　0　0
c. Ethnicity ...................................0　0　0　0
d. Sexual orientation .....................0　0　0　0
e. Physical or learning disability ...............0　0　0　0
f. Socio-economic class..............................0　0　0　0

**27. Indicate the extent to which you agree or disagree with each statement**.  (Mark <u>one</u> for <u>each</u> item)

Strongly disagree– 1
Disagree somewhat 2
Agree somewhat 3
Strongly agree – 4

a. It is important for me to educate others about the social identity groups to which I belong .....................................................0　0　0　0

b. I often think about what I have in common with others in my racial/ethnic group .................................................................0　0　0　0

c. I like to learn about social identity groups different from my own.  0　　　0 .................................................................0　0

d. I would probably not be able to continue my friendship with a friend who I discovered was homosexual....................0　0　0　0

e. I think that what generally happens to people in my racial/ethnic group will affect what happens in <u>my </u>life ........................0　0　0　0

f. I want to bridge differences between social identity groups　　　0　　　0 .................................................................0　0

g. I am physically attracted to women.......0　0　0　0

h. I feel proud when a member of my racial/ethnic group accomplishes something outstanding.............................................0　0　0　0

i. Women should be taken as seriously as men in the classroom　　　0　　　0 .................................................................0　0

j. If I found out someone I knew was gay, lesbian, or bisexual, I'd be accepting and supportive .............................................0　0　0　0

k. Students with disabilities should not be given extra time to take tests        0
.............................................0    0    0
l. Immigrants should receive the same public services as U.S. citizens        0
.............................................0    0    0
m. I am physically attracted to men ..........0    0    0    0
n. To treat everyone fairly, we need to ignore the color of people's skin        0
.............................................0    0    0
o. Romantic relationships between people of the same gender are as acceptable as they
   are for heterosexual couples .................0    0    0    0
p. I would vote in a presidential election for a qualified woman whose views are
   similar to mine .......................................0    0    0    0
q. I am not likely to date or marry someone from a race/ethnicity different than my
   own ......................................................0    0    0    0

**28. Indicate whether you think each of the following racial/ethnic groups have similar or different values and beliefs from your own.** (Mark one for each)

Very similar=4
Somewhat similar=3
Somewhat different =2
Very different=1

| | | | | |
|---|---|---|---|---|
| a. African Americans/Blacks ....................0 | 0 | 0 | 0 | |
| b. Hispanics/Latinos/Chicanos...................0 | 0 | 0 | | 0 |
| c. Asian Americans/Pacific Islanders........0 | 0 | 0 | 0 | |
| d. Whites/Caucasians ...............................0 | 0 | 0 | 0 | |
| e. Native American/American Indians/Alaskan Natives 0 | 0 | 0 | 0 | |

# V. Demographic Information

**29. What is your gender?** (Mark one)
Male ...................... 1          Female .................. 2

**30. What is your current marital status?** (Mark one)
Single, never married .............. 1    Separated ........... 4
Married .................................. 2    Divorced ............ 5
Living with someone in a          Widowed ............ 6
   marriage-like relationship .. 3

**31. Do you have a disability?** (Mark all that apply)
0 None
0 Learning disability
0 Physical/health related disability
0 Other disability

**32. How do you identify yourself racially/ethnically?** (Mark all that apply)
a. African American/Black............................................. 0
b. Asian American/Pacific Islander (includes the Indian subcontinent)        0
c. Native American/American Indian/Alaskan Native ..0
d. Hispanic/Latino/Chicano........................................... 0
e. White/Caucasian (not of Hispanic origin; persons having origins in Europe, North Africa, or the
   Middle East) ........................................................... 0

**33. What is the highest level of education completed by each of your parents/guardians** (Mark one in each column)
Level of education

| Completed | Mother | Father |
|---|---|---|
| Don't Know ..............................................0 | 0 | |
| Some high school.....................................1 | 1 | |
| High school graduate ...............................2 | 2 | |

Some college .............................................3  3
Bachelor's degree .....................................4  4
Master's degree.........................................5  5
Doctorate or professional degree (e.g. JD, MD, PhD) 6  6

**34. What is your best estimate of your total family income last year? Consider income from all sources before taxes:** (Mark <u>one</u> category)
0 Less than $10,000   0 $40,000-59,999
0 $10,000-19,999   0 $60,000-99,999
0 $20,000-29,999   0 $100,000-149,999
0 $30,000-39,999   0 $150,000 or more

**35. Which of the following most accurately describes your generation and citizenship status?** (Mark <u>one</u>)
a. At least one of my grandparents, my parents and I are U.S. born  0
b. At least one of my parents and I are U.S. born .......... 0
c. I am U.S. born, my parents are not............................. 0
d. Foreign born – naturalized citizen.............................. 0
e. Foreign born – resident alien or permanent resident .. 0
f. Student visa................................................................. 0

---

**Your campus may have a page of additional questions. Follow instructions on the extra page and mark your answers here for each of the final set of questions provided by your campus.**

36. 1 2 3 4 5
37. 1 2 3 4 5
38. 1 2 3 4 5
39. 1 2 3 4 5
40. 1 2 3 4 5
41. 1 2 3 4 5
42. 1 2 3 4 5
43. 1 2 3 4 5
44. 1 2 3 4 5
45. 1 2 3 4 5
46. 1 2 3 4 5
47. 1 2 3 4 5
48. 1 2 3 4 5
49. 1 2 3 4 5
50. 1 2 3 4 5

Thank you for participating! If you have any questions about the study, you may contact Sylvia Hurtado, Project Director, Center for the Study of Higher and Postsecondary Education, 2117 SEB, Ann Arbor MI, 48109-1259. Copyright 2000

**Preparing College Students for a
Diverse Democracy:  Second-Year Survey
of Student Views and Experiences**



Dear Student:  This survey is part of a national, collaborative project sponsored by the U.S. Department of Education. This campus has agreed to involve you in order to learn about students' college experiences and find ways universities might improve student preparation for living in a diverse democracy. Your participation is important to us; but it is voluntary and you do not have to answer questions that make you feel uncomfortable, and you can withdraw at anytime.  Responses are strictly confidential.  Identifying information will be used only for purposes of following up to find out about the quality of your experiences at this university. Thank you in advance for your assistance in this national effort.

STATEMENT OF CONSENT

I am over 17 years of age, in good physical health, and understand that this survey is administered by my institution in collaboration with researchers to understand students' experiences within a diverse democracy.

I hereby voluntarily give permission for my responses to be used as data in this study.  I understand that all responses are completely confidential and that my name will not be associated with my responses.  I understand that my name and other identifying factors will not be associated with any document produced from this research.  I understand that my name and ID number will be used to merge responses from this survey and the first-year survey and that after all data have been merged, my name and ID number will be removed from the data set. I understand that I can express my ideas and opinions without consequence and that there are no known risks to participating in this project.

I may contact campus administrators or the national Project Director, Sylvia Hurtado, 2117 SEB, Ann Arbor MI 48109-1259 any time with questions or concerns about this study.  Additionally, I may contact the Chairperson of my campus IRB Office with any questions regarding my participation in this study.

_____     _____

_____

**Please provide the following information so that we may locate you and send a follow-up survey about your experiences at this university.**

**Please print your name clearly and fill in the appropriate ovals.**

**Last Name**

**First Name**

_____    _____

A A A A A A A A A A A A A A A  A
A A A A A A A A A
B B B B B B B B B B B B B B B B B B  B  B
B B B B B B B B B B B
C C C C C C C C C C C C C C C C  C C
C C C C C C C C C
D D D D D D D D D D D D D D D D D  D D
D D D D D D D D
E E E E E E E E E E E E E E E E E E  E  E
E E E E E E E E E E E
F F F F F F F F F F F F F F F F F F F  F  F
F F F F F F F F F F F F
G G G G G G G G G G G G G G G G  G G
G G G G G G G G G G
H H H H H H H H H H H H H H H  H
H H H H H H H H H H
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I I I I I I I I I I I I I I I I
J J J J J J J J J J J J J J J J J J J J J J J J J J  J J J
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L L L L L L L L L L L L
M M M M M M M M M M M M M M M
M M M M M M M M
N N N N N N N N N N N N N N N  N
N N N N N N N N N
O O O O O O O O O O O O O O O O O  O
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P P P P P P P P P P P P P P P P P P P P  P
P P P P P P P P P P P
Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q  Q
Q Q Q Q Q Q Q Q Q Q

R R R R R R R R R R R R R R R R R R  R R
R R R R R R R R R
S S S S S S S S S S S S S S S S S S S S S  S
S S S S S S S S S S S
T T T T T T T T T T T T T T T T T T T  T T
T T T T T T T T T T T
U U U U U U U U U U U U U U U U U U  U
U U U U U U U U U U
V V V V V V V V V V V V V V V V V V  V V
V V V V V V V VVV
W W W W W W W W W W W W W W W W  W
W W W W W W W W
X X X X X X X X X X X X X X X X X X  X X
X X X X X X X X X X
Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y  Y Y
Y Y Y Y Y Y Y Y Y Y
Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z  Z Z
Z Z Z Z Z Z Z Z Z Z

Please print clearly and fill in the appropriate ovals

**Date of Birth**                                      **Student ID**

00-00-0000                                            000000000
11-11-1111                                            111111111
 2-22-2222                                            222222222
 3-33-3333                                            333333333
 4-44-4444                                            444444444
 5-55-5555                                            555555555
 6-66-6666                                            666666666
 7-77-7777                                            777777777
 8-88-8888                                            888888888
 9-99-9999                                            999999999

# I. Experiences /Background

**1. Which University did you enter in Fall 2000?**
(Mark <u>one</u> only)

0 Arizona State Univ.        0 Univ. of Michigan
0 Norfolk State Univ.        0 Univ. of Minnesota
0 UCLA        0 Univ. of New Mexico
0 Univ. of Maryland        0 Univ. of Vermont
0 Univ. of Massachusetts        0 Univ. of Washington

**2. Which of the following describes your current enrollment status?** (Mark <u>one</u> only)

0 Enrolled at the same university I entered in Fall 2000
0 Enrolled at a different college/university
0 Not enrolled at any college/university

**3. Will you enroll at this university in Fall 2002?**

0 No    0 Yes

**Please complete the survey even if you are no longer enrolled at the university marked in question 1.**

**4. How difficult was each of the following during your first year at the University?** (Mark <u>one</u> for <u>each</u> item)

Very easy – 4
Somewhat easy – 3
Somewhat difficult – 2
Very difficult – 1

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| a. Keeping up with school work | 0 | 0 | 0 | 0 |
| b. Making new friends | 0 | 0 | 0 | 0 |
| c. Finding academic help when you needed it | 0 | 0 | 0 | 0 |
| d. Paying for college expenses | 0 | 0 | 0 | 0 |
| e. Feeling comfortable in your living environment | 0 | 0 | 0 | 0 |
| f. Managing family responsibilities | 0 | 0 | 0 | 0 |
| g. Getting to know your way around | 0 | 0 | 0 | 0 |

**5. How would you currently rate yourself in the following areas?** (Mark <u>one</u> for <u>each</u> item)

A major strength – 5
Somewhat strong – 4
Average – 3
Somewhat weak – 2
A major weakness – 1

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| a. Communication skills | 0 | 0 | 0 | 0 | 0 |
| b. Ability to work cooperatively with diverse people | 0 | 0 | 0 | 0 | 0 |
| c. Writing ability | 0 | 0 | 0 | 0 | 0 |
| d. Knowledge about my own culture | 0 | 0 | 0 | 0 | 0 |
| e. Math ability | 0 | 0 | 0 | 0 | 0 |
| f. Racial/cultural awareness | 0 | 0 | 0 | 0 | 0 |
| g. Ability to solve complex problems | 0 | 0 | 0 | 0 | 0 |
| h. Openness to having my views challenged | 0 | 0 | 0 | 0 | 0 |
| i. Leadership ability | 0 | 0 | 0 | 0 | 0 |
| j. Ability to see the world from someone else's perspective | 0 | 0 | 0 | 0 | 0 |
| k. Knowledge about the cultural backgrounds of others | 0 | 0 | 0 | 0 | 0 |
| l. Ability to discuss and negotiate controversial issues | 0 | 0 | 0 | 0 | 0 |

138

m. Academic ability ............................0   0   0   0   0
n. Tolerance of others with different beliefs   0   0   0   0       0
o. Social self-confidence .....................0   0   0   0   0

**6. Mark all of the activities that apply to you since you entered college:**
   a. Participated in intercollegiate athletics....................... 0
   b. Helped members in the community
      to get out and vote.......................................................   0
   c. Lived in a culturally-themed residence hall/floor/house   0
   d. Assisted on faculty research projects ......................... 0
   e. Studied abroad (outside of U.S.) ................................ 0
   f. Voted in federal/state elections.................................. 0
   g. Joined a sorority or fraternity.................................... 0
   h. Joined an organization reflecting my own cultural heritage       0
   i. Held a campus leadership position (e.g. student government, Resident Advisor, club
      officer, etc.)................................................................ 0
   j. Transferred from another college................................ 0
   k. Joined an organization that
      promotes cultural diversity ........................................ 0
   l. Joined an Asian, Black or Latino sorority or fraternity       0
   m. Dropped out of college temporarily .......................... 0
   n. Lived with people from cultural backgrounds different than my own         0
   o. Voted in student government elections ...................... 0

**7.  Since coming to the University, how often have you done the following?** (Mark one for each item)

```
                              Very often – 5
                                Often – 4
                          Sometimes – 3
                          Seldom – 2
                    Never – 1
```

a. Participated in class discussion .........0   0   0   0   0
b. Made an effort to educate others
   about social issues.............................0   0   0   0   0
c. Felt challenged to think more broadly about an issue   0   0       0       0
   ........................................................ 0
d. Heard students express stereotypes about racial/ethnic groups       0       0
   ........................................................ 0   0   0
e. Participated in student protests..........0   0   0   0   0
f. Fell asleep in class ...........................0   0   0   0   0
g. Felt insulted or threatened based on my sexual orientation       0       0
   ........................................................ 0   0   0
h. Made efforts to get to know individuals from diverse backgrounds.       0
   ........................................................ 0   0   0   0
i. Felt overwhelmed by all I had to do... 0   0   0   0   0
j. Challenged others on racially/sexually derogatory comments.       0       0
   ........................................................ 0   0   0
k. Talked to high school students about college   0   0   0   0       0
l. Engaged in discussions about racial/ethnic issues in class  0       0       0
   ........................................................ 0   0
m. Felt pressure from members of my own racial/ethnic group not to socialize with
   other racial/ethnic groups..................0   0   0   0   0

**8. What is the highest academic degree that you intend to obtain?** (Mark only <u>one</u> answer)
   a. None ............................................................... 0
   b. Bachelor's Degree ........................................ 0
   c. Master's Degree (e.g. MS, MBA, MDiv) .................. 0
   d. Doctorate (e.g. PhD, EdD) ........................... 0
   e. Professional Degree (e.g. JD, MD) ............................ 0
   f. Other ............................................................... 0

**9. Approximately how many hours per week do you typically spend doing the following?:**
   (Mark <u>one</u> for <u>each</u> item)                   Over 20 hours – 6
                                                         16-20 hours – 5
                                            11-15 hours – 4
                                       6 -10 hours – 3
                                  1-5 hours – 2
                                  0 hours – 1

|                                        | 1 | 2 | 3 | 4 | 5 | 6 |
|----------------------------------------|---|---|---|---|---|---|
| a. Working for pay                     | 0 | 0 | 0 | 0 | 0 | 0 |
| b. Socializing with other students     | 0 | 0 | 0 | 0 | 0 | 0 |
| c. Studying                            | 0 | 0 | 0 | 0 | 0 | 0 |
| d. Attending to home responsibilities  | 0 | 0 | 0 | 0 | 0 | 0 |

**10. To what extent have you experienced the following with students in a racial/ethnic group <u>other than your own</u>?** (Mark <u>one</u> for <u>each</u> item) Very often – 5
                                                         Often – 4
                                            Sometimes – 3
                                       Seldom – 2
                                  Never – 1

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| a. Dined or shared a meal | 0 | 0 | 0 | 0 | 0 |
| b. Had meaningful and honest discussions about race/ethnic relations outside of class | 0 | 0 | 0 | 0 | 0 |
| c. Had guarded, cautious interactions | 0 | 0 | 0 | 0 | 0 |
| d. Shared personal feelings and problems | 0 | 0 | 0 | 0 | 0 |
| e. Had tense, somewhat hostile interactions | 0 | 0 | 0 | 0 | 0 |
| f. Felt insulted or threatened based on my race or ethnicity | 0 | 0 | 0 | 0 | 0 |
| g. Studied or prepared for class | 0 | 0 | 0 | 0 | 0 |
| h. Socialized or partied | 0 | 0 | 0 | 0 | 0 |
| i. Had intellectual discussions outside of class | 0 | 0 | 0 | 0 | 0 |
| j. Attended events sponsored by other racial/ethnic groups | 0 | 0 | 0 | 0 | 0 |

**11. Since coming to the University, how often have you participated in the following?** (Mark <u>one</u> for each item)

```
                                                    Very often – 5
                                                       Often – 4
                                           Sometimes – 3
                                           Seldom – 2
                                           Never – 1
```

a. Events sponsored by a fraternity
or sorority ......................................0   0   0   0   0

b. Residence hall activities (e.g. hall council, social activities, etc.)   0        0
.....................................................0   0   0

c. Events or activities sponsored by groups reflecting your own
cultural heritage .............................0   0   0   0   0

d. Tutoring sessions where you received help for specific courses   0        0
.....................................................0   0   0

e. Community service activities.........0   0   0   0   0

f. Academic support programs ..........0   0   0   0   0

g. Campus organized discussions on racial/ethnic issues      0        0        0
.....................................................0   0

h. Diversity awareness workshops.....0   0   0   0   0

i. Religious or spiritual activities ......0   0   0   0   0

j. Activities to clean up the
environment ...................................0   0   0   0   0

**12. Which of the following describe your response to the terrorist attack on the World Trade Center/Pentagon?** (Mark <u>all</u> that apply)

a. Attended a class, seminar, campus panel, workshop, or information session related to September 11 .................................................................. 0

b. Felt more aware of my own ethnic minority status or Middle Eastern ethnicity        0

c. Attended a campus vigil for the victims..................... 0

d. Became more aware of being an American................ 0

e. Donated blood ........................................................... 0

f. Felt wary of people who appear to be of Middle Eastern descent    0

g. Participated in activities to help others ...................... 0

h. Displayed an American flag....................................... 0

i. Felt more aware of my status as an international student    0

j. Did not participate in any activities related to September 11        0

# II.  Classroom Experiences

**13. Which best describes the field of your intended major?** (Mark only <u>one</u> answer)

0 Agricultural Sciences      0 Education

0 Arts (including performing arts,      0 Engineering
architecture and fine arts)      0 Health Professions

0 Biological Sciences      0 Humanities

0 Business/Management      0 Math/Physical Sciences

0 Communications      0 Social Sciences

0 Computer Science      0 Social Work

0 Cultural Studies/Ethnic Studies      0 Undecided

**14. Please indicate the extent to which you agree or disagree with the following statements:**

(Mark <u>one</u> for <u>each</u> item)
Strongly agree – 4
Agree somewhat – 3
Disagree somewhat – 2
Strongly disagree – 1

a. There are few students of color in my classes   0   0   0     0

b. I am enthusiastic about this university ..0   0   0   0

c. This university offers ample opportunity for students to learn about different racial/ethnic groups in a non-threatening way   0   0   0     0

d. I have been singled out in class because of my race/ethnicity, gender or sexual orientation .............................................0   0   0   0

e. I see myself as a part of the university community   0   0     0       0

f. There is a lot of racial tension on the University campus   0       0       0 .............................................0

g. At least one faculty member has taken an interest in my development       0 .............................................0   0   0

h. I feel a sense of belonging to this university 0   0   0   0

i. I have heard faculty express stereotypes about racial/ethnic groups in class   0 .............................................0   0   0

j. I feel that I am a member of the University community   0       0       0 .............................................0

k. Faculty who are racially/ethnically similar to me address issues of greater relevance to me ....................................0   0   0   0

l. If asked, I would recommend this university to others 0   0     0      0

**15. How many courses have you enrolled in that included the following?:**

(Mark <u>one</u> for <u>each</u> item)
Three or more – 3
Two – 2
One – 1
None – 0

a. Material/readings on gender issues .......0   0   0   0

b. Faculty who created opportunities for class discussions/interactions with other students ................................................0   0   0   0

c. Material/readings on social justice issues   0   0   0   0

d. An experience serving communities in need (e.g. service learning) 0       0 .............................................0   0

e. Material/readings on race and ethnicity issues   0   0   0     0

f. Opportunities for intensive dialogue between students with different backgrounds and beliefs........................0   0   0   0

# III. Thinking and Interacting

**16. Indicate the extent to which you agree or disagree with the following statements:** (Mark <u>one</u> for <u>each</u> item)

Strongly agree – 4
Agree somewhat – 3
Disagree somewhat – 2
Strongly disagree – 1

a. Students who talk a lot about societal problems turn me off     0     0
..............................................................0   0

b. I try to keep up with current events.......0   0   0   0

c. Thinking about how this country will change in the future is of little interest to me.
..............................................................0   0   0   0

d. I enjoy talking with other people about the reasons and possible solutions to poverty
..............................................................0   0   0   0

e. I spend little time thinking about race relations in this country     0     0
..............................................................0   0

f. I would probably find a television show on poverty in the U.S. to be interesting
..............................................................0   0   0   0

g. I want to gain a broad, intellectually exciting education   0     0     0
..............................................................0

h. I enjoy getting into discussions about political issues.    0     0     0
..............................................................0

i. I often think about the amount of power people in different segments of society have
..............................................................0   0   0   0

j. When I see a homeless person, I think about how it could happen to me     0
..............................................................0   0   0

k. I learn the most about societal issues in discussions with diverse peers     0
..............................................................0   0   0


**17. We would like to know your thoughts in a variety of situations. For each item, indicate how well it describes you.** (Mark <u>one</u> for <u>each</u> item) Very much like me – 5

Like me – 4
Somewhat like me – 3
Not like me –2
Not at all like me – 1

a. I am interested in understanding how my own thinking works when I make
judgments about people ......................0 0   0   0   0

b. I really enjoy analyzing the reason or causes for people's behavior 0     0
..........................................................0   0   0

c. I think a lot about the influence that society has on other people    0     0
..........................................................0   0   0

d. I realize that getting along with individuals from different racial groups is more
difficult than I originally thought........0 0   0   0   0

e. I prefer simple rather than complex explanations for people's behavior.     0
..........................................................0   0   0   0

f. I believe it is important to analyze
and understand our own thinking processes   0    0    0 0     0

g. I think a lot about the influence that society has on my behavior    0     0
..........................................................0   0   0

**18. Think of your 5 closest friends at this university; how many of them are of a different race/ethnicity from yourself?** (Mark <u>one</u>)

0 None       0 One       0 Two

0 Three       0 Four or more

**19. How much interaction have you had with people in each of the following groups in college?**
(Mark <u>one</u> for <u>each</u> item)      Substantial interaction – 4
                    Some regular interaction – 3
                        Little interaction – 2
                        No interaction – 1

| | | | |
|---|---|---|---|
| a. African Americans/Blacks ....................0 | 0 | 0 | 0 |
| b. Hispanics/Latinos/Chicanos ..................0 | 0 | 0 | 0 |
| c. Asian Americans/Pacific Islanders........0 | 0 | 0 | 0 |
| d. Whites/Caucasians ................................0 | 0 | 0 | 0 |
| e. American Indians/Alaskan Natives .......0 | 0 | 0 | 0 |
| f. Gay/Lesbian/Bisexual individuals .........0 | 0 | 0 | 0 |
| g. People with disabilities .........................0 | 0 | 0 | 0 |
| h. People with different religious beliefs ..0 | 0 | 0 | 0 |

**20. People often have differences in perspectives. Indicate how much you agree or disagree with each statement.** (Mark <u>one</u> for <u>each</u> item)  Strongly agree – 4
                        Agree somewhat – 3
                    Disagree somewhat – 2
                    Strongly disagree – 1

a. There are two sides to every issue and I try to look at them both.   0         0
...............................................................0   0

b. Conflicting perspectives is healthy in a democracy   0   0       0        0

c. I try to look at everybody's side of a disagreement before I make a decision.
...............................................................0   0   0   0

d. Conflict is a normal part of life .............0   0   0   0

e. I sometimes find it difficult to see the "other person's" point of view.      0
...............................................................0   0   0

f. I am afraid of conflicts when discussing social issues 0   0       0        0

g. When I'm upset at someone, I usually try to "put myself in their shoes" for a while.
...............................................................0   0   0   0

h. It is best to avoid conflict with others ...0   0   0   0

i. Democracy thrives on differing views ...0   0   0   0

j. Conflict between groups can have positive consequences  0       0       0
...............................................................0

k. Building coalitions from varied interests is key to a working democracy   0       0
...............................................................0   0

**21. Indicate how often you felt <u>uncomfortable</u> in a situation with a person or a group of people who are:** (Mark <u>one</u> for <u>each</u> item)         Often – 4
                      Sometimes – 3
                      Rarely – 2
                      Never – 1

| | | | |
|---|---|---|---|
| a. Hispanics/Latinos/Chicanos ..................0 | 0 | 0 | 0 |
| b. Whites/Caucasians ................................0 | 0 | 0 | 0 |
| c. Gays/Lesbians/Bisexuals.......................0 | 0 | 0 | 0 |
| d. Asian Americans....................................0 | 0 | 0 | 0 |
| e. African Americans/Blacks ....................0 | 0 | 0 | 0 |
| f. American Indians/Alaskan Natives........0 | 0 | 0 | 0 |

# IV. Attitudes and Beliefs

**22. In your role as a responsible citizen in this society, how important are each of the following to you?**
(Mark <u>one</u> for <u>each</u> item)              Essential – 4
                      Very important – 3
                    Somewhat important – 2
                    Not important – 1

a. Working to end poverty..........................0   0   0   0
b. Paying taxes to support public services.0   0   0   0
c. Using career-related skills to work in low-income communities   0      0
............................................................0   0
d. Contributing money to a political cause 0   0   0   0
e. Supporting a strong military..................0   0   0   0
f. Promoting racial tolerance and respect ..0   0   0   0
g. Contributing money to a charitable cause   0   0   0   0
h. Defending the right to own a gun..........0   0   0   0
i. Voting in national elections ...................0   0   0   0
j. Creating awareness of how people affect the environment 0      0      0
............................................................0
k. Working to minimize government involvement in individual affairs      0
............................................................0   0   0
l. Making consumer decisions based on a company's ethics 0      0      0
............................................................0
m. Speaking up against social injustice.....0   0   0   0
n. Volunteering with community groups or agencies   0   0      0      0

**23. Indicate whether you think each of the following racial/ethnic groups have similar or different values and beliefs from your own.** (Mark <u>one</u> for <u>each</u>)

|  | Very different – 1 | Somewhat different – 2 | Somewhat similar – 3 | Very similar – 4 |
|---|---|---|---|---|
| a. African Americans/Blacks | 0 | 0 | 0 | 0 |
| b. Hispanics/Latinos/Chicanos | 0 | 0 | 0 | 0 |
| c. Asian Americans/Pacific Islanders | 0 | 0 | 0 | 0 |
| d. Whites/Caucasians | 0 | 0 | 0 | 0 |
| e. Native American/American Indians/Alaskan Natives | 0 | 0 | 0 | 0 |

**24. Please rate your level of agreement or disagreement with the following statements:** (Mark <u>one</u> for <u>each</u> item)

```
                          Strongly agree – 4
                        Agree somewhat – 3
                     Disagree somewhat – 2
                     Strongly disagree – 1
```

a. My individual rights are more important than policies for the common good 0
.............................................................0   0   0

b. Some degree of inequality is necessary in a society that wants to be the best in
   the world ...............................................0   0   0   0

c. Even if I do the best I can to help others, it won't change the way society operates
.............................................................0   0   0   0

d. People in my community are counting on me to do well in college 0       0
.............................................................0   0

e. If people were treated more equally we would have fewer problems in this
   country ...................................................0   0   0   0

f. I believe I can do things that can make a big difference in the lives of others 0
.............................................................0   0   0

g. My vote doesn't count much in improving the leadership or policies for this country
.............................................................0   0   0   0

h. It is not really that big a problem if some people have more of a chance in life
   than others...............................................0   0   0   0

i. Social progress should be measured by how far the least among us are able to move
   economically.........................................0   0   0   0

j. I should be able to say whatever I want rather than having to abide by rules to be
   civil to others .......................................0   0   0   0

k. I have an obligation to "give back" to the community 0   0       0       0

l. There is little I can do to make the world a better place to live.    0       0
.............................................................0   0

m. I often think about how my personal decisions affect the welfare of others. 0
.............................................................0   0   0

n. Elected officials are unable to resolve their differences for the good of the people
.............................................................0   0   0   0

**25. Indicate the extent to which you agree or disagree with each statement.** (Mark <u>one</u> for <u>each</u> item)

Strongly agree – 4
Agree somewhat – 3
Disagree somewhat – 2
Strongly disagree – 1

a. Racial/ethnic discrimination is no longer a major problem in the U.S. .............................................................0    0    0    0

b. It's fair to give preference in college admissions to children of alumni .............................................................0    0    0    0

c. Colleges should support women's athletics as much as they support men's athletics .............................................................0    0    0    0

d. Our society has done enough to promote the welfare of different racial/ethnic groups .............................................................0    0    0    0

e. Hiring more faculty of color should be a top priority of this university .............................................................0    0    0    0

f. Colleges do not have a responsibility to correct racial/ethnic injustice .............................................................0    0    0    0

g. The system prevents people of color from getting their fair share of good jobs and better pay .............................................0    0    0    0

h. Emphasizing diversity contributes to disunity on campus .............................................................0    0    0    0

i. State hate crime laws are needed to protect people from harassment based on race, gender or sexual orientation..................0    0    0    0

j. Colleges should aggressively recruit more students of color .............................................................0    0    0    0

k. A person's racial background in this society does not interfere with achieving everything he or she wants to achieve ..0    0    0    0

l. Enhancing a student's ability to live in a multicultural society is part of a university's mission.................................................0    0    0    0

m. We need to stop emphasizing race and treat everybody the same .............................................................0    0    0    0

n. A high priority should be given to see that students of color receive financial aid for college...................................................0    0    0    0

**26. We are all members of different social identity groups (e.g., gender, race, ethnicity, sexual orientation, socio-economic class, etc.). How often do you think about your:** (Mark <u>one </u>for <u>each</u> item)

Often – 4
Sometimes – 3
Rarely – 2
Never – 1

a. Gender...................................................0    0    0    0

b. Race ....................................................0    0    0    0

c. Ethnicity...............................................0    0    0    0

d. Sexual orientation ................................0    0    0    0

e. Socio-economic class ...........................0    0    0    0

**27. Indicate the extent to which you agree or disagree with each statement**. (Mark <u>one</u> for <u>each</u> item)

Strongly agree – 4
Agree somewhat – 3
Disagree somewhat – 2
Strongly disagree – 1

a. It is important for me to educate others about the social identity groups to which I
 belong ...................................................0   0   0   0
b. I often think about what I have in common with others in my racial/ethnic group
 ...............................................................0   0   0   0
c. I like to learn about social identity groups different from my own. 0        0
 ...............................................................0   0
d. I would probably not be able to continue my friendship with a friend who I
 discovered was homosexual..................0   0   0   0
e. I think that what generally happens to people in my racial/ethnic group will affect
 what happens in <u>my</u> life ........................0   0   0   0
f. I want to bridge differences between social identity groups          0        0
 ...............................................................0   0
g. I am physically attracted to women.......0   0   0   0
h. I feel proud when a member of my racial/ethnic group accomplishes something
 outstanding............................................0   0   0   0
i. If I found out someone I knew was gay, lesbian, or bisexual, I'd be accepting and
 supportive .............................................0   0   0   0
j. Students with disabilities should not be given extra time to take tests          0
 ...............................................................0   0   0
k. Immigrants should receive the same public services as U.S. citizens          0
 ...............................................................0   0   0
l. I am physically attracted to men ............0   0   0   0
m. Romantic relationships between people of the same gender are as acceptable as
 they are for heterosexual couples..........0   0   0   0

# V. Demographic Information

**28. What is your gender?** (Mark <u>one</u>)

Male ...................... 0          Female .................. 0

**29. Which best describes your current living situation this academic year?** (Mark <u>one</u>)

a. With parents or relatives ........................................... 0
b. Off-campus (not with family) .................................... 0
c. Residence hall .......................................................... 0
d. Fraternity or sorority ................................................ 0
e. Other campus housing ............................................... 0

**30. What is your current marital status?** (Mark <u>one</u>)

Single, never married .............. 0    Separated .......... 0
Married ................................. 0    Divorced ........... 0
Living with someone in a              Widowed ........... 0
   marriage-like relationship .. 0

**31. How do you identify yourself racially/ethnically?** (Mark <u>all</u> that apply)

a. African American/Black ............................................ 0
b. Asian American/Pacific Islander (includes the Indian subcontinent)          0
c. Native American/American Indian/Alaskan Native .. 0
d. Hispanic/Latino/Chicano ........................................... 0
e. White/Caucasian (not of Hispanic origin; persons having origins in Europe, North Africa, or the Middle East) ............................................................ 0

---

**Your campus may have a page of additional questions. Follow instructions on the extra page and mark your answers here for each of the final set of questions provided by your campus.**

**32.**

**33.**

**34.**

**35.**

**36.**

**37.**

**38.**

**39.**

**40.**

**41.**

# Appendix B

DEMOGRAPHIC CROSSTABULATIONS

STRUCTURAL DIVERSITY OF THE PRE-COLLEGE ENVIRONMENT

**Minority status * Racial comp of neighborhood grew up Crosstabulation**

| Count | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Racial comp of neighborhood grew up | | | | | |
| | | All-nearly all White | Mostly white | Half white&half ppl color | Mostly ppl of color | All-near all ppl color | Total |
| Minority status | White | 189 | 244 | 99 | 17 | 6 | 555 |
| | Minority | 28 | 80 | 76 | 30 | 32 | 246 |
| Total | | 217 | 324 | 175 | 47 | 38 | 801 |

**Minority status * Racial composition of high school Crosstabulation**

| Count | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Racial composition of high school | | | | | |
| | | All-nearly all white | Mostly white | Half white&half ppl color | Mostly ppl of color | All-nearly all ppl of color | Total |
| Minority status | White | 116 | 233 | 165 | 35 | 6 | 555 |
| | Minority | 23 | 59 | 91 | 48 | 22 | 243 |
| Total | | 139 | 292 | 256 | 83 | 28 | 798 |

Appendix B: Continued

**Minority status * Racial comp of friends in hi-school Crosstabulation**

| Count | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Racial comp of friends in hi-school | | | | | |
| | | All-nearly all white | Mostly white | Half white&half ppl color | Mostly ppl of color | All-nearly all ppl of color | Total |
| Minority status | White | 155 | 272 | 107 | 15 | 6 | 555 |
| | Minority | 24 | 33 | 92 | 64 | 29 | 242 |
| Total | | 179 | 305 | 199 | 79 | 35 | 797 |

## PREDISPOSITION TO ENGAGE IN DIVERSITY ACTIVITIES

**Minority status * Participate in actv of my culture in college Crosstabulation**

| Count | | | | | | |
|---|---|---|---|---|---|---|
| | | Participate in actv of my culture in college | | | | |
| | | Very unlikely | Unlikely | Likely | Very likely | Total |
| Minority status | White | 157 | 209 | 128 | 55 | 549 |
| | Minority | 19 | 44 | 104 | 77 | 244 |
| Total | | 176 | 253 | 232 | 132 | 793 |

**Minority status * Take diversity course 1st yr of college Crosstabulation**

| Count | | | | | | |
|---|---|---|---|---|---|---|
| | | Take diversity course 1st yr of college | | | | |
| | | Very unlikely | Unlikely | Likely | Very likely | Total |
| Minority status | White | 138 | 195 | 152 | 60 | 545 |
| | Minority | 26 | 86 | 93 | 37 | 242 |
| Total | | 164 | 281 | 245 | 97 | 787 |

Appendix B: Continued

**Minority status * Join cultural diversity org in college Crosstabulation**

| Count | | | | | | |
|---|---|---|---|---|---|---|
| | | Join cultural diversity org in college | | | | |
| | | Very unlikely | Unlikely | Likely | Very likely | Total |
| Minority status | White | 104 | 282 | 124 | 33 | 543 |
| | Minority | 23 | 70 | 91 | 58 | 242 |
| Total | | 127 | 352 | 215 | 91 | 785 |

POSITIVE INTERACTION WITH DIVERSE PEERS IN COLLEGE

**Minority status * Exp w/othrgrp--Dined or shared meal Crosstabulation**

| Count | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Exp w/othrgrp--Dined or shared meal | | | | | |
| | | Never | Seldom | Sometimes | Often | Very often | Total |
| Minority status | White | 13 | 86 | 160 | 147 | 149 | 555 |
| | Minority | 7 | 28 | 47 | 59 | 104 | 245 |
| Total | | 20 | 114 | 207 | 206 | 253 | 800 |

**Minority status * Exp w/othrgrp--Rac/eth discus outsde clss Crosstabulation**

| Count | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Exp w/othrgrp--Rac/eth discus outsde clss | | | | | |
| | | Never | Seldom | Sometimes | Often | Very often | Total |
| Minority status | White | 62 | 159 | 162 | 103 | 68 | 554 |
| | Minority | 23 | 54 | 71 | 48 | 47 | 243 |
| Total | | 85 | 213 | 233 | 151 | 115 | 797 |

Appendix B: Continued

**Minority status * Exp w/othrgrp--Shared prsnl feel/problms Crosstabulation**

| Count | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Exp w/othrgrp--Shared prsnl feel/problms | | | | | |
| | | Never | Seldom | Sometimes | Often | Very often | Total |
| Minority status | White | 46 | 97 | 172 | 126 | 114 | 555 |
| | Minority | 14 | 35 | 55 | 67 | 72 | 243 |
| Total | | 60 | 132 | 227 | 193 | 186 | 798 |

**Minority status * Exp w/othrgrp--Studied/prepared class Crosstabulation**

| Count | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Exp w/othrgrp--Studied/prepared class | | | | | |
| | | Never | Seldom | Sometimes | Often | Very often | Total |
| Minority status | White | 44 | 90 | 174 | 131 | 114 | 553 |
| | Minority | 5 | 28 | 58 | 72 | 80 | 243 |
| Total | | 49 | 118 | 232 | 203 | 194 | 796 |

**Minority status * Exp w/othrgrp--Socialized/partied Crosstabulation**

| Count | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Exp w/othrgrp--Socialized/partied | | | | | |
| | | Never | Seldom | Sometimes | Often | Very often | Total |
| Minority status | White | 20 | 60 | 141 | 183 | 148 | 552 |
| | Minority | 15 | 35 | 61 | 58 | 74 | 243 |
| Total | | 35 | 95 | 202 | 241 | 222 | 795 |

Appendix B: Continued

**Minority status * Exp w/othrgrp--Intellect disc outsde class Crosstabulation**

| Count | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|
| | | Exp w/othrgrp--Intellect disc outsde class | | | | | |
| | | Never | Seldom | Sometimes | Often | Very often | Total |
| Minority status | White | 40 | 90 | 173 | 147 | 100 | 550 |
| | Minority | 5 | 45 | 70 | 69 | 52 | 241 |
| Total | | 45 | 135 | 243 | 216 | 152 | 791 |

**Minority status * Felt own grp pressure not soc w/diff grp Crosstabulation**

| Count | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|
| | | Felt own grp pressure not soc w/diff grp | | | | | |
| | | Never | Seldom | Sometimes | Often | Very often | Total |
| Minority status | White | 434 | 80 | 31 | 9 | 1 | 555 |
| | Minority | 147 | 57 | 30 | 9 | 2 | 245 |
| Total | | 581 | 137 | 61 | 18 | 3 | 800 |

**Minority status * Few studnts of color in my class Crosstabulation**

| Count | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|
| | | Few studnts of color in my class | | | | |
| | | Strongly disagree | Disagree somewhat | Agree somewhat | Strongly agree | Total |
| Minority status | White | 253 | 190 | 87 | 23 | 553 |
| | Minority | 68 | 76 | 60 | 40 | 244 |
| Total | | 321 | 266 | 147 | 63 | 797 |

154

**Minority status \* Current living situation Crosstabulation**

| Count | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Current living situation | | | | | |
| | | With parents/relatives | Off-campus | ResidenceHall | Frat/sor | Other campus housing | Total |
| Minority status | White | 56 | 43 | 337 | 63 | 57 | 556 |
| | Minority | 55 | 21 | 140 | 6 | 23 | 245 |
| Total | | 111 | 64 | 477 | 69 | 80 | 801 |

**Minority status \* Hours/week--Socializing with other students Crosstabulation**

| Count | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Hours/week--Socializing with other students | | | | | | |
| | | 0 | 1-5 | 6-10 | 11-15 | 16-20 | Over 20 | Total |
| Minority status | White | 5 | 49 | 94 | 126 | 111 | 169 | 554 |
| | Minority | 4 | 57 | 42 | 61 | 26 | 54 | 244 |
| Total | | 9 | 106 | 136 | 187 | 137 | 223 | 798 |

Appendix B: Continued

ANOVA TESTS

PREDISPOSITION TO ENGAGE IN DIVERSITY ACTIVITIES

| Multiple Comparisons | | | | | | | |
|---|---|---|---|---|---|---|---|
| Scheffe | | | | | | | |
| | | | Mean Difference (I-J) | | | 95% Confidence Interval | |
| Dependent Variable | (I) Ethnicity | (J) Ethnicity | Mean Difference (I-J) | Std. Error | Sig. | Lower Bound | Upper Bound |
| Participate in actv of my culture in college | Black | Asian | .237 | .147 | .626 | -.22 | .69 |
| | | Hispanic | .449 | .204 | .306 | -.18 | 1.08 |
| | | White | 1.141* | .126 | .000 | .75 | 1.53 |
| | | Biracial | .927* | .195 | .000 | .33 | 1.53 |
| | Asian | Black | -.237 | .147 | .626 | -.69 | .22 |
| | | Hispanic | .212 | .186 | .861 | -.36 | .79 |
| | | White | .903* | .094 | .000 | .61 | 1.19 |
| | | Biracial | .690* | .175 | .004 | .15 | 1.23 |
| | Hispanic | Black | -.449 | .204 | .306 | -1.08 | .18 |
| | | Asian | -.212 | .186 | .861 | -.79 | .36 |
| | | White | .691* | .170 | .003 | .17 | 1.22 |
| | | Biracial | .478 | .226 | .347 | -.22 | 1.17 |
| | White | Black | -1.141* | .126 | .000 | -1.53 | -.75 |
| | | Asian | -.903* | .094 | .000 | -1.19 | -.61 |
| | | Hispanic | -.691* | .170 | .003 | -1.22 | -.17 |
| | | Biracial | -.214 | .159 | .770 | -.70 | .28 |
| | Biracial | Black | -.927* | .195 | .000 | -1.53 | -.33 |
| | | Asian | -.690* | .175 | .004 | -1.23 | -.15 |
| | | Hispanic | -.478 | .226 | .347 | -1.17 | .22 |
| | | White | .214 | .159 | .770 | -.28 | .70 |
| Take diversity course 1st yr of college | Black | Asian | .378 | .148 | .168 | -.08 | .84 |
| | | Hispanic | .231 | .209 | .874 | -.41 | .87 |
| | | White | .585* | .127 | .000 | .19 | .98 |
| | | Biracial | .247 | .197 | .812 | -.36 | .85 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Asian | Black | -.378 | .148 | .168 | -.84 | .08 |
| | | Hispanic | -.147 | .190 | .963 | -.73 | .44 |
| | | White | .207 | .095 | .312 | -.09 | .50 |
| | | Biracial | -.130 | .177 | .969 | -.68 | .42 |
| | Hispanic | Black | -.231 | .209 | .874 | -.87 | .41 |
| | | Asian | .147 | .190 | .963 | -.44 | .73 |
| | | White | .354 | .174 | .390 | -.18 | .89 |
| | | Biracial | .017 | .230 | 1.000 | -.69 | .73 |
| | White | Black | -.585* | .127 | .000 | -.98 | -.19 |
| | | Asian | -.207 | .095 | .312 | -.50 | .09 |
| | | Hispanic | -.354 | .174 | .390 | -.89 | .18 |
| | | Biracial | -.337 | .160 | .350 | -.83 | .16 |
| | Biracial | Black | -.247 | .197 | .812 | -.85 | .36 |
| | | Asian | .130 | .177 | .969 | -.42 | .68 |
| | | Hispanic | -.017 | .230 | 1.000 | -.73 | .69 |
| | | White | .337 | .160 | .350 | -.16 | .83 |
| Join cultural diversity org in college | Black | Asian | .256 | .134 | .452 | -.16 | .67 |
| | | Hispanic | .452 | .186 | .207 | -.12 | 1.03 |
| | | White | .842* | .115 | .000 | .49 | 1.20 |
| | | Biracial | .400 | .179 | .287 | -.15 | .95 |
| | Asian | Black | -.256 | .134 | .452 | -.67 | .16 |
| | | Hispanic | .195 | .169 | .856 | -.33 | .72 |
| | | White | .585* | .085 | .000 | .32 | .85 |
| | | Biracial | .144 | .161 | .939 | -.35 | .64 |
| | Hispanic | Black | -.452 | .186 | .207 | -1.03 | .12 |
| | | Asian | -.195 | .169 | .856 | -.72 | .33 |
| | | White | .390 | .155 | .175 | -.09 | .87 |
| | | Biracial | -.052 | .206 | 1.000 | -.69 | .59 |
| | White | Black | -.842* | .115 | .000 | -1.20 | -.49 |
| | | Asian | -.585* | .085 | .000 | -.85 | -.32 |
| | | Hispanic | -.390 | .155 | .175 | -.87 | .09 |
| | | Biracial | -.442 | .146 | .058 | -.89 | .01 |
| | Biracial | Black | -.400 | .179 | .287 | -.95 | .15 |

157

|  |  | Asian | -.144 | .161 | .939 | -.64 | .35 |
|  |  | Hispanic | .052 | .206 | 1.000 | -.59 | .69 |
|  |  | White | .442 | .146 | .058 | .00 | .89 |
| *. The mean difference is significant at the 0.05 level. |  |  |  |  |  |  |  |

INTERACTION WITH DIVERSE PEERS PRIOR TO COLLEGE

| Multiple Comparisons | | | | | | | |
|---|---|---|---|---|---|---|---|
| Scheffe | | | | | | | |
| | | | Mean | | | 95% Confidence Interval | |
| Dependent Variable | (I) Ethnicity | (J) Ethnicity | Difference (I-J) | Std. Error | Sig. | Lower Bound | Upper Bound |
| Amt interact with Af Amer prior college | Black | Asian | .848* | .124 | .000 | .47 | 1.23 |
| | | Hispanic | .597* | .173 | .018 | .06 | 1.13 |
| | | White | .873* | .106 | .000 | .55 | 1.20 |
| | | Biracial | .636* | .163 | .005 | .13 | 1.14 |
| | Asian | Black | -.848* | .124 | .000 | -1.23 | -.47 |
| | | Hispanic | -.251 | .158 | .642 | -.74 | .24 |
| | | White | .025 | .079 | .999 | -.22 | .27 |
| | | Biracial | -.212 | .147 | .723 | -.67 | .24 |
| | Hispanic | Black | -.597* | .173 | .018 | -1.13 | -.06 |
| | | Asian | .251 | .158 | .642 | -.24 | .74 |
| | | White | .276 | .145 | .458 | -.17 | .72 |
| | | Biracial | .039 | .191 | 1.000 | -.55 | .63 |
| | White | Black | -.873* | .106 | .000 | -1.20 | -.55 |
| | | Asian | -.025 | .079 | .999 | -.27 | .22 |
| | | Hispanic | -.276 | .145 | .458 | -.72 | .17 |
| | | Biracial | -.237 | .133 | .528 | -.65 | .17 |
| | Biracial | Black | -.636* | .163 | .005 | -1.14 | -.13 |
| | | Asian | .212 | .147 | .723 | -.24 | .67 |
| | | Hispanic | -.039 | .191 | 1.000 | -.63 | .55 |
| | | White | .237 | .133 | .528 | -.17 | .65 |
| Amt interact with Hispanics prior college | Black | Asian | .320 | .139 | .258 | -.11 | .75 |
| | | Hispanic | -.808* | .196 | .002 | -1.41 | -.20 |
| | | White | .376* | .119 | .041 | .01 | .74 |
| | | Biracial | .020 | .183 | 1.000 | -.55 | .59 |
| | Asian | Black | -.320 | .139 | .258 | -.75 | .11 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Hispanic | -1.128* | .180 | .000 | -1.68 | -.57 |
| | | White | .056 | .089 | .983 | -.22 | .33 |
| | | Biracial | -.300 | .166 | .513 | -.81 | .21 |
| | Hispanic | Black | .808* | .196 | .002 | .20 | 1.41 |
| | | Asian | 1.128* | .180 | .000 | .57 | 1.68 |
| | | White | 1.184* | .165 | .000 | .67 | 1.69 |
| | | Biracial | .829* | .216 | .006 | .16 | 1.50 |
| | White | Black | -.376* | .119 | .041 | -.74 | .00 |
| | | Asian | -.056 | .089 | .983 | -.33 | .22 |
| | | Hispanic | -1.184* | .165 | .000 | -1.69 | -.67 |
| | | Biracial | -.356 | .149 | .225 | -.82 | .10 |
| | Biracial | Black | -.020 | .183 | 1.000 | -.59 | .55 |
| | | Asian | .300 | .166 | .513 | -.21 | .81 |
| | | Hispanic | -.829* | .216 | .006 | -1.50 | -.16 |
| | | White | .356 | .149 | .225 | -.10 | .82 |
| Amt interact with As Amer prior college | Black | Asian | -.828* | .145 | .000 | -1.28 | -.38 |
| | | Hispanic | -.153 | .206 | .968 | -.79 | .48 |
| | | White | .013 | .124 | 1.000 | -.37 | .40 |
| | | Biracial | -.041 | .192 | 1.000 | -.63 | .55 |
| | Asian | Black | .828* | .145 | .000 | .38 | 1.28 |
| | | Hispanic | .675* | .188 | .013 | .09 | 1.26 |
| | | White | .841* | .093 | .000 | .55 | 1.13 |
| | | Biracial | .787* | .173 | .000 | .25 | 1.32 |
| | Hispanic | Black | .153 | .206 | .968 | -.48 | .79 |
| | | Asian | -.675* | .188 | .013 | -1.26 | -.09 |
| | | White | .166 | .173 | .922 | -.37 | .70 |
| | | Biracial | .111 | .226 | .993 | -.59 | .81 |
| | White | Black | -.013 | .124 | 1.000 | -.40 | .37 |
| | | Asian | -.841* | .093 | .000 | -1.13 | -.55 |
| | | Hispanic | -.166 | .173 | .922 | -.70 | .37 |
| | | Biracial | -.055 | .156 | .998 | -.54 | .43 |
| | Biracial | Black | .041 | .192 | 1.000 | -.55 | .63 |
| | | Asian | -.787* | .173 | .000 | -1.32 | -.25 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Hispanic | -.111 | .226 | .993 | -.81 | .59 |
| | | White | .055 | .156 | .998 | -.43 | .54 |
| Amt interact with Whites prior college | Black | Asian | -.062 | .051 | .825 | -.22 | .09 |
| | | Hispanic | -.183 | .072 | .165 | -.40 | .04 |
| | | White | -.368[*] | .043 | .000 | -.50 | -.23 |
| | | Biracial | -.279[*] | .067 | .002 | -.49 | -.07 |
| | Asian | Black | .062 | .051 | .825 | -.09 | .22 |
| | | Hispanic | -.121 | .066 | .501 | -.32 | .08 |
| | | White | -.305[*] | .033 | .000 | -.41 | -.20 |
| | | Biracial | -.216[*] | .061 | .013 | -.40 | -.03 |
| | Hispanic | Black | .183 | .072 | .165 | -.04 | .40 |
| | | Asian | .121 | .066 | .501 | -.08 | .32 |
| | | White | -.185 | .060 | .053 | -.37 | .00 |
| | | Biracial | -.096 | .079 | .831 | -.34 | .15 |
| | White | Black | .368[*] | .043 | .000 | .23 | .50 |
| | | Asian | .305[*] | .033 | .000 | .20 | .41 |
| | | Hispanic | .185 | .060 | .053 | .00 | .37 |
| | | Biracial | .089 | .054 | .616 | -.08 | .26 |
| | Biracial | Black | .279[*] | .067 | .002 | .07 | .49 |
| | | Asian | .216[*] | .061 | .013 | .03 | .40 |
| | | Hispanic | .096 | .079 | .831 | -.15 | .34 |
| | | White | -.089 | .054 | .616 | -.26 | .08 |
| Amt interact with NativeAm prior college | Black | Asian | .134 | .121 | .871 | -.24 | .51 |
| | | Hispanic | .086 | .170 | .992 | -.44 | .61 |
| | | White | .114 | .103 | .875 | -.20 | .43 |
| | | Biracial | -.036 | .158 | 1.000 | -.52 | .45 |
| | Asian | Black | -.134 | .121 | .871 | -.51 | .24 |
| | | Hispanic | -.048 | .155 | .999 | -.53 | .43 |
| | | White | -.020 | .077 | .999 | -.26 | .22 |
| | | Biracial | -.171 | .143 | .839 | -.61 | .27 |
| | Hispanic | Black | -.086 | .170 | .992 | -.61 | .44 |
| | | Asian | .048 | .155 | .999 | -.43 | .53 |
| | | White | .028 | .142 | 1.000 | -.41 | .47 |

| | | | Mean Diff | Std Error | Sig | Lower | Upper |
|---|---|---|---|---|---|---|---|
| | | Biracial | -.123 | .186 | .980 | -.70 | .45 |
| | White | Black | -.114 | .103 | .875 | -.43 | .20 |
| | | Asian | .020 | .077 | .999 | -.22 | .26 |
| | | Hispanic | -.028 | .142 | 1.000 | -.47 | .41 |
| | | Biracial | -.150 | .128 | .849 | -.55 | .25 |
| | Biracial | Black | .036 | .158 | 1.000 | -.45 | .52 |
| | | Asian | .171 | .143 | .839 | -.27 | .61 |
| | | Hispanic | .123 | .186 | .980 | -.45 | .70 |
| | | White | .150 | .128 | .849 | -.25 | .55 |
| Amt interact with Multiracial prior college | Black | Asian | .290 | .144 | .400 | -.15 | .73 |
| | | Hispanic | .116 | .203 | .988 | -.51 | .74 |
| | | White | .662* | .123 | .000 | .28 | 1.04 |
| | | Biracial | -.135 | .189 | .973 | -.72 | .45 |
| | Asian | Black | -.290 | .144 | .400 | -.73 | .15 |
| | | Hispanic | -.174 | .187 | .929 | -.75 | .40 |
| | | White | .372* | .093 | .003 | .09 | .66 |
| | | Biracial | -.425 | .172 | .191 | -.95 | .11 |
| | Hispanic | Black | -.116 | .203 | .988 | -.74 | .51 |
| | | Asian | .174 | .187 | .929 | -.40 | .75 |
| | | White | .546* | .171 | .037 | .02 | 1.07 |
| | | Biracial | -.251 | .223 | .868 | -.94 | .44 |
| | White | Black | -.662* | .123 | .000 | -1.04 | -.28 |
| | | Asian | -.372* | .093 | .003 | -.66 | -.09 |
| | | Hispanic | -.546* | .171 | .037 | -1.07 | -.02 |
| | | Biracial | -.797* | .154 | .000 | -1.27 | -.32 |
| | Biracial | Black | .135 | .189 | .973 | -.45 | .72 |
| | | Asian | .425 | .172 | .191 | -.11 | .95 |
| | | Hispanic | .251 | .223 | .868 | -.44 | .94 |
| | | White | .797* | .154 | .000 | .32 | 1.27 |
| *. The mean difference is significant at the 0.05 level. | | | | | | | |

| Multiple Comparisons | | | | | | | |
|---|---|---|---|---|---|---|---|
| Scheffe | | | | | | | |
| Dependent Variable | (I) Ethnicity | (J) Ethnicity | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
| | | | | | | Lower Bound | Upper Bound |
| Exp w/othrgrp--Intellect disc outsde class | Black | Asian | -.052 | .183 | .999 | -.62 | .51 |
| | | Hispanic | -.303 | .256 | .844 | -1.10 | .49 |
| | | White | .075 | .157 | .994 | -.41 | .56 |
| | | Biracial | -.198 | .240 | .954 | -.94 | .54 |
| | Asian | Black | .052 | .183 | .999 | -.51 | .62 |
| | | Hispanic | -.252 | .234 | .884 | -.97 | .47 |
| | | White | .126 | .116 | .882 | -.23 | .49 |
| | | Biracial | -.146 | .215 | .977 | -.81 | .52 |
| | Hispanic | Black | .303 | .256 | .844 | -.49 | 1.10 |
| | | Asian | .252 | .234 | .884 | -.47 | .97 |
| | | White | .378 | .214 | .537 | -.28 | 1.04 |
| | | Biracial | .105 | .280 | .998 | -.76 | .97 |
| | White | Black | -.075 | .157 | .994 | -.56 | .41 |
| | | Asian | -.126 | .116 | .882 | -.49 | .23 |
| | | Hispanic | -.378 | .214 | .537 | -1.04 | .28 |
| | | Biracial | -.273 | .194 | .739 | -.87 | .33 |
| | Biracial | Black | .198 | .240 | .954 | -.54 | .94 |
| | | Asian | .146 | .215 | .977 | -.52 | .81 |
| | | Hispanic | -.105 | .280 | .998 | -.97 | .76 |
| | | White | .273 | .194 | .739 | -.33 | .87 |
| Exp w/othrgrp--Shared prsnl feel/problms | Black | Asian | -.029 | .195 | 1.000 | -.63 | .57 |
| | | Hispanic | -.188 | .270 | .975 | -1.02 | .65 |
| | | White | .289 | .168 | .562 | -.23 | .81 |
| | | Biracial | .100 | .255 | .997 | -.69 | .89 |
| | Asian | Black | .029 | .195 | 1.000 | -.57 | .63 |
| | | Hispanic | -.159 | .245 | .981 | -.92 | .60 |
| | | White | .318 | .123 | .158 | -.06 | .70 |

163

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Biracial | .129 | .229 | .989 | -.58 | .84 |
| | Hispanic | Black | .188 | .270 | .975 | -.65 | 1.02 |
| | | Asian | .159 | .245 | .981 | -.60 | .92 |
| | | White | .477 | .224 | .340 | -.21 | 1.17 |
| | | Biracial | .288 | .296 | .918 | -.62 | 1.20 |
| | White | Black | -.289 | .168 | .562 | -.81 | .23 |
| | | Asian | -.318 | .123 | .158 | -.70 | .06 |
| | | Hispanic | -.477 | .224 | .340 | -1.17 | .21 |
| | | Biracial | -.189 | .206 | .933 | -.83 | .45 |
| | Biracial | Black | -.100 | .255 | .997 | -.89 | .69 |
| | | Asian | -.129 | .229 | .989 | -.84 | .58 |
| | | Hispanic | -.288 | .296 | .918 | -1.20 | .62 |
| | | White | .189 | .206 | .933 | -.45 | .83 |
| Exp w/othrgrp-- Dined or shared meal | Black | Asian | -.297 | .179 | .601 | -.85 | .26 |
| | | Hispanic | -.273 | .249 | .878 | -1.04 | .50 |
| | | White | .095 | .154 | .984 | -.38 | .57 |
| | | Biracial | -.305 | .235 | .794 | -1.03 | .42 |
| | Asian | Black | .297 | .179 | .601 | -.26 | .85 |
| | | Hispanic | .024 | .227 | 1.000 | -.68 | .72 |
| | | White | .392* | .114 | .019 | .04 | .74 |
| | | Biracial | -.008 | .211 | 1.000 | -.66 | .64 |
| | Hispanic | Black | .273 | .249 | .878 | -.50 | 1.04 |
| | | Asian | -.024 | .227 | 1.000 | -.72 | .68 |
| | | White | .368 | .207 | .533 | -.27 | 1.01 |
| | | Biracial | -.032 | .273 | 1.000 | -.88 | .81 |
| | White | Black | -.095 | .154 | .984 | -.57 | .38 |
| | | Asian | -.392* | .114 | .019 | -.74 | -.04 |
| | | Hispanic | -.368 | .207 | .533 | -1.01 | .27 |
| | | Biracial | -.400 | .191 | .355 | -.99 | .19 |
| | Biracial | Black | .305 | .235 | .794 | -.42 | 1.03 |
| | | Asian | .008 | .211 | 1.000 | -.64 | .66 |
| | | Hispanic | .032 | .273 | 1.000 | -.81 | .88 |
| | | White | .400 | .191 | .355 | -.19 | .99 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Exp w/othrgrp--Socialized/partied | Black | Asian | .050 | .182 | .999 | -.51 | .61 |
| | | Hispanic | -.035 | .252 | 1.000 | -.81 | .74 |
| | | White | -.076 | .156 | .993 | -.56 | .40 |
| | | Biracial | .070 | .238 | .999 | -.67 | .81 |
| | Asian | Black | -.050 | .182 | .999 | -.61 | .51 |
| | | Hispanic | -.085 | .230 | .998 | -.79 | .63 |
| | | White | -.126 | .116 | .881 | -.48 | .23 |
| | | Biracial | .020 | .215 | 1.000 | -.64 | .68 |
| | Hispanic | Black | .035 | .252 | 1.000 | -.74 | .81 |
| | | Asian | .085 | .230 | .998 | -.63 | .79 |
| | | White | -.041 | .210 | 1.000 | -.69 | .61 |
| | | Biracial | .105 | .277 | .998 | -.75 | .96 |
| | White | Black | .076 | .156 | .993 | -.40 | .56 |
| | | Asian | .126 | .116 | .881 | -.23 | .48 |
| | | Hispanic | .041 | .210 | 1.000 | -.61 | .69 |
| | | Biracial | .146 | .193 | .966 | -.45 | .74 |
| | Biracial | Black | -.070 | .238 | .999 | -.81 | .67 |
| | | Asian | -.020 | .215 | 1.000 | -.68 | .64 |
| | | Hispanic | -.105 | .277 | .998 | -.96 | .75 |
| | | White | -.146 | .193 | .966 | -.74 | .45 |
| Exp w/othrgrp--Studied/prepared class | Black | Asian | .012 | .187 | 1.000 | -.56 | .59 |
| | | Hispanic | -.008 | .259 | 1.000 | -.81 | .79 |
| | | White | .503[*] | .160 | .043 | .01 | 1.00 |
| | | Biracial | .182 | .245 | .968 | -.57 | .94 |
| | Asian | Black | -.012 | .187 | 1.000 | -.59 | .56 |
| | | Hispanic | -.020 | .236 | 1.000 | -.75 | .71 |
| | | White | .492[*] | .119 | .002 | .12 | .86 |
| | | Biracial | .170 | .220 | .963 | -.51 | .85 |
| | Hispanic | Black | .008 | .259 | 1.000 | -.79 | .81 |
| | | Asian | .020 | .236 | 1.000 | -.71 | .75 |
| | | White | .511 | .215 | .229 | -.15 | 1.18 |
| | | Biracial | .190 | .284 | .978 | -.69 | 1.07 |
| | White | Black | -.503[*] | .160 | .043 | -1.00 | .00 |

165

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Asian | -.492[*] | .119 | .002 | -.86 | -.12 |
| | | Hispanic | -.511 | .215 | .229 | -1.18 | .15 |
| | | Biracial | -.321 | .198 | .622 | -.93 | .29 |
| | Biracial | Black | -.182 | .245 | .968 | -.94 | .57 |
| | | Asian | -.170 | .220 | .963 | -.85 | .51 |
| | | Hispanic | -.190 | .284 | .978 | -1.07 | .69 |
| | | White | .321 | .198 | .622 | -.29 | .93 |
| Exp w/othrgrp-- Rac/eth discus outsde clss | Black | Asian | .058 | .193 | .999 | -.54 | .65 |
| | | Hispanic | -.364 | .267 | .763 | -1.19 | .46 |
| | | White | .232 | .165 | .740 | -.28 | .74 |
| | | Biracial | -.010 | .253 | 1.000 | -.79 | .77 |
| | Asian | Black | -.058 | .193 | .999 | -.65 | .54 |
| | | Hispanic | -.421 | .244 | .559 | -1.17 | .33 |
| | | White | .174 | .123 | .734 | -.21 | .55 |
| | | Biracial | -.067 | .227 | .999 | -.77 | .63 |
| | Hispanic | Black | .364 | .267 | .763 | -.46 | 1.19 |
| | | Asian | .421 | .244 | .559 | -.33 | 1.17 |
| | | White | .596 | .222 | .128 | -.09 | 1.28 |
| | | Biracial | .354 | .293 | .834 | -.55 | 1.26 |
| | White | Black | -.232 | .165 | .740 | -.74 | .28 |
| | | Asian | -.174 | .123 | .734 | -.55 | .21 |
| | | Hispanic | -.596 | .222 | .128 | -1.28 | .09 |
| | | Biracial | -.242 | .205 | .845 | -.87 | .39 |
| | Biracial | Black | .010 | .253 | 1.000 | -.77 | .79 |
| | | Asian | .067 | .227 | .999 | -.63 | .77 |
| | | Hispanic | -.354 | .293 | .834 | -1.26 | .55 |
| | | White | .242 | .205 | .845 | -.39 | .87 |

*. The mean difference is significant at the 0.05 level.

Appendix B: Continued

Correlations and Test Statistics

(PE=Pearson Product Moment, PC=Polychoric, PS=Polyserial)

| | | | Test of Model | | | Test of Close Fit | |
|---|---|---|---|---|---|---|---|
| Variable vs. Variable | | Correlation | Chi-Squ. | D.F. | P-Value | RMSEA | P-Value |
| sd1 vs. | int | 0.379 (PS) | 22.124 | 3 | 0 | 0.093 | 0.584 |
| sd2 vs. | int | 0.336 (PS) | 14.787 | 3 | 0.002 | 0.073 | 0.863 |
| sd2 vs. | sd1 | 0.495 (PC) | 22.612 | 3 | 0 | 0.094 | 0.564 |
| sd3 vs. | int | 0.454 (PS) | 39.384 | 3 | 0 | 0.128 | 0.082 |
| sd3 vs. | sd1 | 0.448 (PC) | 16.360 | 3 | 0.001 | 0.078 | 0.813 |
| sd3 vs. | sd2 | 0.511 (PC) | 35.606 | 3 | 0 | 0.121 | 0.141 |
| pd1 vs. | int | 0.191 (PS) | 7.084 | 5 | 0.214 | 0.024 | 1 |
| pd1 vs. | sd1 | 0.146 (PC) | 13.097 | 5 | 0.022 | 0.047 | 0.998 |
| pd1 vs. | sd2 | 0.056 (PC) | 3.848 | 5 | 0.572 | 0 | 1 |
| pd1 vs. | sd3 | 0.079 (PC) | 8.399 | 5 | 0.136 | 0.03 | 1 |
| pd2 vs. | int | 0.164 (PS) | 3.842 | 5 | 0.572 | 0 | 1 |
| pd2 vs. | sd1 | 0.123 (PC) | 16.743 | 5 | 0.005 | 0.056 | 0.991 |
| pd2 vs. | sd2 | 0.067 (PC) | 9.773 | 5 | 0.082 | 0.036 | 1 |
| pd2 vs. | sd3 | 0.162 (PC) | 4.972 | 5 | 0.419 | 0 | 1 |
| pd2 vs. pd1 | | 0.448 (PC) | 92.165 | 8 | 0 | 0.119 | 0.065 |
| pd3 vs. | int | 0.241 (PS) | 7.527 | 5 | 0.184 | 0.026 | 1 |
| pd3 vs. | sd1 | 0.142 (PC) | 17.457 | 5 | 0.004 | 0.058 | 0.989 |
| pd3 vs. | sd2 | 0.060 (PC) | 11.067 | 5 | 0.05 | 0.041 | 0.999 |
| pd3 vs. | sd3 | 0.132 (PC) | 5.364 | 5 | 0.373 | 0.01 | 1 |
| pd3 vs. pd1 | | 0.596 (PC) | 40.049 | 8 | 0 | 0.074 | 0.968 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pd3 vs. pd2 | | 0.561 (PC) | 40.034 | 8 | 0 | 0.074 | 0.968 |
| pi1 vs. | int | 0.282 (PS) | 12.126 | 7 | 0.097 | 0.032 | 1 |
| pi1 vs. | sd1 | 0.136 (PC) | 5.112 | 7 | 0.646 | 0 | 1 |
| pi1 vs. | sd2 | 0.079 (PC) | 5.811 | 7 | 0.562 | 0 | 1 |
| pi1 vs. | sd3 | 0.112 (PC) | 7.719 | 7 | 0.358 | 0.012 | 1 |
| pi1 vs. | pd1 | 0.062 (PC) | 13.760 | 11 | 0.247 | 0.018 | 1 |
| pi1 vs. | pd2 | 0.070 (PC) | 19.938 | 11 | 0.046 | 0.033 | 1 |
| pi1 vs. | pd3 | 0.170 (PC) | 7.970 | 11 | 0.716 | 0 | 1 |
| pi2 vs. | int | 0.252 (PS) | 7.702 | 7 | 0.36 | 0.012 | 1 |
| pi2 vs. | sd1 | 0.057 (PC) | 3.171 | 7 | 0.869 | 0 | 1 |
| pi2 vs. | sd2 | 0.036 (PC) | 3.223 | 7 | 0.864 | 0 | 1 |
| pi2 vs. | sd3 | 0.096 (PC) | 10.146 | 7 | 0.18 | 0.025 | 1 |
| pi2 vs. | pd1 | 0.162 (PC) | 3.808 | 11 | 0.975 | 0 | 1 |
| pi2 vs. | pd2 | 0.151 (PC) | 5.300 | 11 | 0.916 | 0 | 1 |
| pi2 vs. | pd3 | 0.226 (PC) | 7.628 | 11 | 0.746 | 0 | 1 |
| pi2 vs. | pi1 | 0.653 (PC) | 44.695 | 15 | 0 | 0.052 | 1 |
| pi3 vs. | int | 0.264 (PS) | 10.671 | 7 | 0.154 | 0.027 | 1 |
| pi3 vs. | sd1 | 0.129 (PC) | 1.672 | 7 | 0.976 | 0 | 1 |
| pi3 vs. | sd2 | 0.060 (PC) | 7.325 | 7 | 0.396 | 0.008 | 1 |
| pi3 vs. | sd3 | 0.130 (PC) | 9.066 | 7 | 0.248 | 0.02 | 1 |
| pi3 vs. | pd1 | 0.136 (PC) | 8.115 | 11 | 0.703 | 0 | 1 |
| pi3 vs. | pd2 | 0.115 (PC) | 17.381 | 11 | 0.097 | 0.028 | 1 |
| pi3 vs. | pd3 | 0.221 (PC) | 4.679 | 11 | 0.946 | 0 | 1 |
| pi3 vs. | pi1 | 0.684 (PC) | 55.193 | 15 | 0 | 0.06 | 1 |
| pi3 vs. | pi2 | 0.656 (PC) | 26.735 | 15 | 0.031 | 0.033 | 1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| pi4 vs. | int | 0.208 (PS) | 10.724 | 7 | 0.151 | 0.027 | 1 |
| pi4 vs. | sd1 | 0.126 (PC) | 4.656 | 7 | 0.702 | 0 | 1 |
| pi4 vs. | sd2 | 0.083 (PC) | 8.876 | 7 | 0.262 | 0.019 | 1 |
| pi4 vs. | sd3 | 0.139 (PC) | 10.074 | 7 | 0.184 | 0.024 | 1 |
| pi4 vs. | pd1 | 0.113 (PC) | 14.539 | 11 | 0.205 | 0.021 | 1 |
| pi4 vs. | pd2 | 0.062 (PC) | 16.738 | 11 | 0.116 | 0.027 | 1 |
| pi4 vs. | pd3 | 0.185 (PC) | 6.038 | 11 | 0.871 | 0 | 1 |
| pi4 vs. | pi1 | 0.544 (PC) | 24.239 | 15 | 0.061 | 0.029 | 1 |
| pi4 vs. | pi2 | 0.480 (PC) | 17.296 | 15 | 0.301 | 0.014 | 1 |
| pi4 vs. | pi3 | 0.587 (PC) | 36.054 | 15 | 0.002 | 0.044 | 1 |
| pi5 vs. | int | 0.140 (PS) | 8.253 | 7 | 0.311 | 0.016 | 1 |
| pi5 vs. | sd1 | 0.081 (PC) | 8.262 | 7 | 0.31 | 0.016 | 1 |
| pi5 vs. | sd2 | 0.041 (PC) | 8.494 | 7 | 0.291 | 0.017 | 1 |
| pi5 vs. | sd3 | 0.072 (PC) | 9.572 | 7 | 0.214 | 0.022 | 1 |
| pi5 vs. | pd1 | 0.011 (PC) | 6.348 | 11 | 0.849 | 0 | 1 |
| pi5 vs. | pd2 | 0.066 (PC) | 12.858 | 11 | 0.303 | 0.015 | 1 |
| pi5 vs. | pd3 | 0.126 (PC) | 10.194 | 11 | 0.513 | 0 | 1 |
| pi5 vs. | pi1 | 0.626 (PC) | 36.950 | 15 | 0.001 | 0.045 | 1 |
| pi5 vs. | pi2 | 0.527 (PC) | 22.480 | 15 | 0.096 | 0.026 | 1 |
| pi5 vs. | pi3 | 0.641 (PC) | 43.495 | 15 | 0 | 0.051 | 1 |
| pi5 vs. | pi4 | 0.553 (PC) | 49.427 | 15 | 0 | 0.056 | 1 |
| pi6 vs. | int | 0.209 (PS) | 7.969 | 7 | 0.335 | 0.014 | 1 |
| pi6 vs. | sd1 | 0.107 (PC) | 6.107 | 7 | 0.527 | 0 | 1 |
| pi6 vs. | sd2 | 0.056 (PC) | 7.891 | 7 | 0.342 | 0.013 | 1 |
| pi6 vs. | sd3 | 0.143 (PC) | 15.797 | 7 | 0.027 | 0.041 | 1 |

| | | | | | | |
|---|---|---|---|---|---|---|
| pi6 vs. | pd1 | 0.078 (PC) | 7.748 | 11 | 0.736 | 0 | 1 |
| pi6 vs. | pd2 | 0.105 (PC) | 12.478 | 11 | 0.329 | 0.014 | 1 |
| pi6 vs. | pd3 | 0.178 (PC) | 19.088 | 11 | 0.06 | 0.032 | 1 |
| pi6 vs. | pi1 | 0.583 (PC) | 38.937 | 15 | 0.001 | 0.047 | 1 |
| pi6 vs. | pi2 | 0.699 (PC) | 34.410 | 15 | 0.003 | 0.042 | 1 |
| pi6 vs. | pi3 | 0.677 (PC) | 65.162 | 15 | 0 | 0.067 | 0.999 |
| pi6 vs. | pi4 | 0.634 (PC) | 41.599 | 15 | 0 | 0.049 | 1 |
| pi6 vs. | pi5 | 0.664 (PC) | 57.933 | 15 | 0 | 0.062 | 1 |
| social vs. | int | -0.080 (PS) | 9.323 | 7 | 0.23 | 0.021 | 1 |
| social vs. sd1 | | -0.043 (PC) | 2.503 | 7 | 0.927 | 0 | 1 |
| social vs. sd2 | | 0.027 (PC) | 10.695 | 7 | 0.153 | 0.027 | 1 |
| social vs. sd3 | | -0.139 (PC) | 9.964 | 7 | 0.191 | 0.024 | 1 |
| social vs. pd1 | | -0.015 (PC) | 11.266 | 11 | 0.421 | 0.006 | 1 |
| social vs. pd2 | | 0.063 (PC) | 24.177 | 11 | 0.012 | 0.04 | 1 |
| social vs. pd3 | | -0.037 (PC) | 14.531 | 11 | 0.205 | 0.021 | 1 |
| social vs. | pi1 | 0.163 (PC) | 23.698 | 15 | 0.07 | 0.028 | 1 |
| social vs. | pi2 | 0.178 (PC) | 18.305 | 15 | 0.247 | 0.017 | 1 |
| social vs. | pi3 | 0.186 (PC) | 20.912 | 15 | 0.14 | 0.023 | 1 |
| social vs. | pi4 | 0.109 (PC) | 27.356 | 15 | 0.026 | 0.033 | 1 |
| social vs. | pi5 | 0.385 (PC) | 18.969 | 15 | 0.215 | 0.019 | 1 |
| social vs. | pi6 | 0.204 (PC) | 22.409 | 15 | 0.098 | 0.026 | 1 |
| campus vs. int | | -0.071 (PS) | 0.445 | 1 | 0.505 | 0 | 0.98 |
| campus vs. sd1 | | -0.051 (PC) | 0.831 | 1 | 0.362 | 0 | 0.964 |
| campus vs. sd2 | | -0.012 (PC) | 1.699 | 1 | 0.192 | 0.031 | 0.921 |

| | | | | | | |
|---|---|---|---|---|---|---|
| campus vs. sd3 | -0.024 (PC) | 2.306 | 1 | 0.129 | 0.042 | 0.884 |
| campus vs. pd1 | 0.045 (PC) | 0.591 | 2 | 0.744 | 0 | 1 |
| campus vs. pd2 | 0.094 (PC) | 0.596 | 2 | 0.742 | 0 | 1 |
| campus vs. pd3 | 0.104 (PC) | 7.128 | 2 | 0.028 | 0.059 | 0.908 |
| campus vs. pi1 | 0.041 (PC) | 1.243 | 3 | 0.743 | 0 | 1 |
| campus vs. pi2 | 0.068 (PC) | 0.768 | 3 | 0.857 | 0 | 1 |
| campus vs. pi3 | 0.079 (PC) | 3.113 | 3 | 0.375 | 0.007 | 0.999 |
| campus vs. pi4 | 0.016 (PC) | 3.904 | 3 | 0.272 | 0.02 | 0.999 |
| campus vs. pi5 | 0.104 (PC) | 3.612 | 3 | 0.307 | 0.017 | 0.999 |
| campus vs. pi6 | 0.131 (PC) | 1.022 | 3 | 0.796 | 0 | 1 |
| campus vs. social | 0.215 (PC) | 12.142 | 3 | 0.007 | 0.064 | 0.929 |
| | | | | | | |

# Appendix C

Data Screening

| Number of Missing Values Per Variable | | | | | | | |
|---|---|---|---|---|---|---|---|
| Int | SD1 | SD2 | SD3 | PD1 | PD2 | PD3 | |
| 146 | 3 | 6 | 7 | 11 | 17 | 24 | |
| | | | | | | | |
| PI1 | PI2 | PI3 | PI4 | PI5 | PI6 | SOC | LIV |
| 70 | 74 | 73 | 75 | 76 | 80 | 72 | 0 |
| | | | | | | | |
| | | | | | | | |

| Test of Univariate Normality for Continuous Variables | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | Skewness | | Kurtosis | | Skewness and Kurtosis |
| | | | | | |
| Variable | Z-Score | P-Value | Z-Score | P-Value | Chi-Square P-Value |
| | | | | | |
| int | -3.770 | 0.000 | -0.533 | 0.594 | 14.495 0.001 |
| sd1 | 1.865 | 0.062 | -16.272 | 0.000 | 268.253 0.000 |
| sd2 | -1.567 | 0.117 | -14.949 | 0.000 | 225.927 0.000 |
| sd3 | 0.453 | 0.651 | -14.666 | 0.000 | 215.309 0.000 |
| pd1 | 1.028 | 0.304 | -14.700 | 0.000 | 217.156 0.000 |
| pd2 | 1.438 | 0.151 | -9.365 | 0.000 | 89.771 0.000 |
| pd3 | 3.133 | 0.002 | -4.833 | 0.000 | 33.177 0.000 |
| pi1 | -4.235 | 0.000 | -9.571 | 0.000 | 109.551 0.000 |
| pi2 | 1.433 | 0.152 | -10.079 | 0.000 | 103.632 0.000 |
| pi3 | -3.029 | 0.002 | -9.610 | 0.000 | 101.537 0.000 |
| pi4 | -3.282 | 0.001 | -7.468 | 0.000 | 66.546 0.000 |
| pi5 | -5.593 | 0.000 | -4.007 | 0.000 | 47.340 0.000 |
| pi6 | -2.401 | 0.016 | -6.921 | 0.000 | 53.664 0.000 |
| peerpres | 14.888 | 0.000 | 8.197 | 0.000 | 288.848 0.000 |
| classdiv | 6.966 | 0.000 | -3.976 | 0.000 | 64.332 0.000 |
| social | -2.186 | 0.029 | -25.521 | 0.000 | 656.097 0.000 |
| campus | -8.263 | 0.000 | -33.889 | 0.000 | 1216.711 0.000 |
| | | | | | |
| Relative Multivariate Kurtosis = 1.038 | | | | | |
| | | | | | |

Appendix C: Continued

Test of Multivariate Normality for Continuous Variables

| | Skewness | | | Kurtosis | | | Skewness and Kurtosis | |
|---|---|---|---|---|---|---|---|---|
| Value | Z-Score | P-Value | Value | Z-Score | P-Value | | Chi-Square | P-Value |
| ------ | ------- | ------- | ------- | ------- | ------- | | ---------- | ------- |
| 16.387 | 17.969 | 0.000 | 335.236 | 6.016 | 0.000 | | 359.069 | 0.000 |

| Univariate Summary Statistics for Continuous Variables | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Variable | Mean | St. Dev. | T-Value | Skewness | Kurtosis | Minimum | Freq. | Maximum | Freq. | |
| -------- | ---- | -------- | ------- | -------- | -------- | ------- | ----- | ------- | ----- | |
| int | 11.503 | 2.648 | 117.380 | -0.349 | -0.105 | 3.000 | 1 | 16.000 | 51 | |
| sd1 | 1.892 | 0.728 | 70.202 | 0.169 | -1.102 | 1.000 | 237 | 3.000 | 158 | |
| sd2 | 2.093 | 0.722 | 78.365 | -0.142 | -1.072 | 1.000 | 159 | 3.000 | 227 | |
| sd3 | 1.973 | 0.720 | 74.069 | 0.041 | -1.065 | 1.000 | 199 | 3.000 | 179 | |
| pd1 | 2.403 | 1.003 | 64.715 | 0.093 | -1.066 | 1.000 | 161 | 4.000 | 118 | |
| pd2 | 2.359 | 0.941 | 67.706 | 0.130 | -0.885 | 1.000 | 148 | 4.000 | 91 | |
| pd3 | 2.352 | 0.885 | 71.835 | 0.287 | -0.605 | 1.000 | 115 | 4.000 | 87 | |
| pi1 | 3.701 | 1.137 | 87.934 | -0.394 | -0.894 | 1.000 | 18 | 5.000 | 235 | |
| pi2 | 3.014 | 1.217 | 66.902 | 0.129 | -0.916 | 1.000 | 77 | 5.000 | 111 | |
| pi3 | 3.423 | 1.223 | 75.634 | -0.277 | -0.896 | 1.000 | 52 | 5.000 | 179 | |
| pi4 | 3.484 | 1.175 | 80.110 | -0.301 | -0.788 | 1.000 | 41 | 5.000 | 180 | |
| pi5 | 3.671 | 1.136 | 87.301 | -0.534 | -0.533 | 1.000 | 32 | 5.000 | 208 | |
| pi6 | 3.374 | 1.141 | 79.902 | -0.218 | -0.755 | 1.000 | 41 | 5.000 | 140 | |
| peerpres | 1.390 | 0.739 | 50.859 | 1.999 | 3.649 | 1.000 | 536 | 5.000 | 2 | |
| classdiv | 1.932 | 0.943 | 55.328 | 0.688 | -0.530 | 1.000 | 295 | 4.000 | 56 | |
| social | 3.273 | 1.407 | 62.853 | -0.198 | -1.231 | 1.000 | 107 | 5.000 | 206 | |
| campus | 0.695 | 0.461 | 40.711 | -0.846 | -1.287 | 0.000 | 223 | 1.000 | 507 | |

Appendix C: Continued

| Test of Univariate Normality for Continuous Variables | | | | | | |
|---|---|---|---|---|---|---|
| | Skewness | | Kurtosis | | Skewness and Kurtosis | |
| Variable | Z-Score | P-Value | Z-Score | P-Value | Chi-Square | P-Value |
| int | -3.770 | 0.000 | -0.533 | 0.594 | 14.495 | 0.001 |
| sd1 | 1.865 | 0.062 | -16.272 | 0.000 | 268.253 | 0.000 |
| sd2 | -1.567 | 0.117 | -14.949 | 0.000 | 225.927 | 0.000 |
| sd3 | 0.453 | 0.651 | -14.666 | 0.000 | 215.309 | 0.000 |
| pd1 | 1.028 | 0.304 | -14.700 | 0.000 | 217.156 | 0.000 |
| pd2 | 1.438 | 0.151 | -9.365 | 0.000 | 89.771 | 0.000 |
| pd3 | 3.133 | 0.002 | -4.833 | 0.000 | 33.177 | 0.000 |
| pi1 | -4.235 | 0.000 | -9.571 | 0.000 | 109.551 | 0.000 |
| pi2 | 1.433 | 0.152 | -10.079 | 0.000 | 103.632 | 0.000 |
| pi3 | -3.029 | 0.002 | -9.610 | 0.000 | 101.537 | 0.000 |
| pi4 | -3.282 | 0.001 | -7.468 | 0.000 | 66.546 | 0.000 |
| pi5 | -5.593 | 0.000 | -4.007 | 0.000 | 47.340 | 0.000 |
| pi6 | -2.401 | 0.016 | -6.921 | 0.000 | 53.664 | 0.000 |
| peerpres | 14.888 | 0.000 | 8.197 | 0.000 | 288.848 | 0.000 |
| classdiv | 6.966 | 0.000 | -3.976 | 0.000 | 64.332 | 0.000 |
| social | -2.186 | 0.029 | -25.521 | 0.000 | 656.097 | 0.000 |
| campus | -8.263 | 0.000 | -33.889 | 0.000 | 1216.711 | 0.000 |
| Relative Multivariate Kurtosis = 1.038 | | | | | | |

Appendix C: Continued

| Data Screening: Computation of polychorial-polyserial correlations |
| --- |
| Note: All polyserial correlations are tenable |
| |
| Univariate Marginal Parameters |
| |

| Variable | Mean | St. Dev. | Thresholds | | | |
| --- | --- | --- | --- | --- | --- | --- |
| -------- | ---- | -------- | ---------- | | | |
| sd1 | 0.000 | 1.000 | -0.456 | 0.791 | | |
| sd2 | 0.000 | 1.000 | -0.782 | 0.494 | | |
| sd3 | 0.000 | 1.000 | -0.605 | 0.688 | | |
| pd1 | 0.000 | 1.000 | -0.768 | 0.094 | 0.994 | |
| pd2 | 0.000 | 1.000 | -0.820 | 0.166 | 1.158 | |
| pd3 | 0.000 | 1.000 | -1.005 | 0.281 | 1.185 | |
| pi1 | 0.000 | 1.000 | -1.970 | -0.950 | -0.183 | 0.463 |
| pi2 | 0.000 | 1.000 | -1.242 | -0.327 | 0.418 | 1.028 |
| pi3 | 0.000 | 1.000 | -1.452 | -0.710 | 0.036 | 0.693 |
| pi4 | 0.000 | 1.000 | -1.569 | -0.820 | 0.002 | 0.688 |
| pi5 | 0.000 | 1.000 | -1.712 | -0.977 | -0.228 | 0.572 |
| pi6 | 0.000 | 1.000 | -1.581 | -0.741 | 0.083 | 0.873 |
| social | 0.000 | 1.000 | -1.051 | -0.486 | 0.121 | 0.576 |
| campus | 0.000 | 1.000 | -0.509 | | | |

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182

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