The Relationship of Student Involvement, Institutional Engagement, and Sense of Belonging among Students of Color at a Predominantly White Institution

Dissertation

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

Joseph Allen Kitchen, M.C.R.P.

Graduate Program in Education and Human Ecology

The Ohio State University

2014

Dissertation Committee:

Terrell Lamont Strayhorn, Advisor

Tatiana Suspitsyna

Eric Anderman
Abstract

There are gaps in our understanding of the relationship between involvement, engagement, and sense of belonging among students of color. To address these gaps, the present study uses data from the National Survey of Student Engagement (NSSE) to explore the relationship between student involvement, institutional engagement, and sense of belonging among people of color at a large, southeastern, predominantly White institution (PWI). The analysis is guided by Kuh and colleagues’ (2009) description of student engagement theory which specifies two major agents of engagement (i.e., the student and the institution) and calls for research that parses out what the student does, what the institution does, and sense of belonging.

This quantitative investigation is centered on two research questions. The first determines whether there are differences by race and ethnicity in reported involvement, engagement, and belonging among PWI students. The second research question examines the relationship between student involvement, institutional engagement, and sense of belonging among students of color attending PWIs. Independent samples t-tests, bivariate correlations, and hierarchical linear regression models were computed to answer the research questions. Findings revealed significant racial/ethnic differences in reported social involvement and sense of belonging at PWIs. Correlation results suggest that
student involvement, institutional engagement, and sense of belonging are positively related. Results from the full regression model revealed that academic involvement, social involvement, and institutional engagement are significant positive predictors of sense of belonging among students of color attending PWIs. Student involvement explained variance in sense belonging above and beyond student characteristics and institutional engagement explained additional variance above and beyond student involvement and characteristics.

This study aims to provide useful information to institutions, educators, and students that can influence policy, theory, and practical decisions alike in an effort to address outcomes like sense of belonging and larger issues that face higher education such as disparate retention rates across race and ethnicity.
Acknowledgements

This dissertation would not have been possible without the guidance and steadfast encouragement of my advisor, supervisor, and professor, Dr. Terrell L. Strayhorn. His cheerful disposition and direction inspired in me a sense of purpose and excitement that translated into the work and writing presented in this dissertation. Observing his pursuit of a meaningful higher education research agenda that touches the lives of many students inspires me daily and reminds me that hard work and dedication to important causes can lead to positions of leadership and a stronger voice on subjects close to one’s heart. The work I undertake as part of Dr. Strayhorn’s research team prepared me well for the development and execution of my own research as presented in this dissertation, and for that I am eternally grateful.

I would also like to thank Dr. Tatiana Suspitsyna. The sincere and genuine encouragement provided by Dr. Suspitsyna throughout coursework and the dissertation process inspired a belief in the significance of the work I do and a belief in my ability to succeed. Her commitment to students and instruction are admirable qualities that continue to inspire me as I look forward to being a faculty member one day myself.

Next, I would like to acknowledge and thank Dr. Eric Anderman. Dr. Anderman’s scholarly insights and expertise were invaluable contributions to the quality of my dissertation. His contributions and encouragement helped me to actualize my goal.
of fashioning a crossdisciplinary approach to my study that incorporated scholarship from educational psychology and the K-12 literature; the dissertation is better for it.

The encouragement and support of my peers in the Center for Inclusion, Diversity & Academic Success (IDEAS) helped me feel connected and like an integral part of a broader research agenda working to ensure the success of underrepresented and marginalized students in every sphere of education. They ensured that I never felt alone throughout the process of writing a dissertation. I especially want to thank my Center for IDEAS teammates, colleagues, and friends Michael Steven Williams, Derrick Tillman-Kelly, and Leroy Long III for their encouragement and for offering feedback when I grappled with ideas in my dissertation. I also want to thank my classmate Deirdre Rosenfeld for her cheerful affirmations and for always reminding me of the significance of the work I do and the impact that my dissertation can have on the lives of others.

I want to thank my parents whom I do not see as often as I might like, but who have sacrificed so much to ensure that their children could have a better life. While they may not always have the firmest grasp on what college is like or the work I do, they inspired in me an ambition to be the best person I could and instilled in me from a young age the belief that I could do whatever I set my mind to with hard work and careful planning. Finally, I want to thank Kyle for being my sounding board and for being the center of my social life as I endeavored on the important and personally-meaningful process of writing this dissertation.
Vita

2007..............................B.A. Psychology, The Ohio State University

2009..............................M.C.R.P., The Ohio State University

2011 to present.................Graduate Research Associate, Center for Inclusion,
Diversity & Academic Success, The Ohio State University

Publications


Fields of Study

Major Field: Education and Human Ecology

Program: Higher Education and Student Affairs
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Chapter 1: Introduction

A recent New York Times (2014) article titled “Who gets to graduate?” drew national attention to a pressing issue that has faced higher education for decades: gaps in educational attainment and persistence rates between student populations. Specifically, it highlighted the transformative potential of college sense of belonging and its role in student success and persistence for minorities. The article called attention to the importance of belonging in efforts to address college retention and graduation rates for the nation to remain globally competitive and to ensure opportunities for socioeconomic mobility for all Americans.

In the article, a recent experimental pre-orientation intervention at the University of Texas at Austin (UT Austin) called the U.T. Mindset was highlighted as a promising strategy for addressing sense of belonging and gaps in attainment. Subsequent research on the intervention revealed patterns that suggest having the right academic and psychological supports in place and encouraging a sense of belonging in college may be one solution to address the racial/ethnic minority\(^1\) persistence gaps that plague higher education (New York Times, 2014). For instance, minority students who received positive messages affirming they belonged in college through the pre-orientation

\(^1\) Racial/ethnic minority, students of color, minorities, and people of color are terms used interchangeably in this dissertation.
intervention did significantly better than their peers who did not receive the message on key indicators of college persistence at the university.

The New York Times story and the research developments it chronicles present only the most recent evidence suggesting the important and promising role that college sense of belonging may play in addressing persistence gaps between minorities and their White peers at predominantly White institutions (PWIs). What appears to be a positive impact from a simple pre-orientation intervention on belonging and retention for minority students provides compelling evidence to suggest that scholars must continue exploring sense of belonging and the factors that engender it as one promising course toward closing the persistence gaps.

While this recent news story describes the impact of a pre-orientation intervention on belonging, this dissertation goes deeper into the college experience to search for additional factors that may be related to sense of belonging for students of color during college. Such an approach is consistent with the preponderance of evidence suggesting that what happens in college is what matters most for students’ success (Astin, 1984; Pascarella & Terenzini, 2005). Specifically, this dissertation examines the relationship between what students and institutions do and student sense of belonging in college. This is accomplished by examining the relationship between student engagement and sense of belonging among students of color at a PWI.

Chapter one builds the case for an investigation into the relationship between student engagement and sense of belonging among students of color at a PWI. First, I describe minority student retention and extant racial/ethnic disparities. Second, I briefly
describe the factors that influence minority student departure decisions. Third, I outline the impact of student departure and retention disparities on people of color and society generally. Fourth, I discuss sense of belonging as a promising approach for understanding and addressing retention among students of color. Fifth, I argue that student involvement and institutional engagement are two key facets of student engagement that may be associated with college sense of belonging among racial/ethnic minorities at PWIs.

**Minority Student Retention**

The number of students of color in higher education is steadily climbing as colleges and universities continue their decades-long shift toward greater racial diversity (Ancis, Seldlacek & Mohr, 2000; Harwood et al., 2012; Seidman, 2005). Between 1976 and 2011 there was a 10% increase in the percentage of Latino students enrolled in college and a 5% increase in the percentage of Black students enrolled (NCES, 2013). Recent statistics reveal that Latino students now account for approximately 14% of undergraduates (2.68 million) whereas Black students account for approximately 15% (2.69 million), together making up nearly 30% of total undergraduate enrollment (NCES). The gains in college enrollment rates for people of color is laudable, however they are unmatched by persistence or retention rates. There are stark gaps in the retention rates of racial/ethnic minorities compared with Whites once they enroll. Scholars, educators, and policymakers are continuing their efforts to understand why retention rate gaps persist along racial and ethnic lines despite gains in access (Lascher & Offenstein, 2012).
Nearly 30% of all undergraduates depart college each year (NCES, 2013). Retention and persistence rates disaggregated by race reveal an even more alarming trend: Black and Latino students have significantly lower persistence rates when compared to their White peers (NCES, 2013). What is more, only 54% of all students graduate within five years (NCES, 2013). Disaggregated by race, data indicates that White students have a significantly higher 5-year graduation rate (58%) when compared to Latino (44.7%), and Black students (34.7%), which is correlated with their persistence and retention rates, respectively (NCES, 2013; Seidman, 2005). Gaps in persistence and retention rates are particularly marked between students of color and Whites at PWIs where racial/ethnic minorities are much more likely to leave college than their White peers (Grieffrda & Douthit, 2010; NCES, 2013).

While there is over 75 years of scholarship on student retention (e.g., Bean & Eaton, 2000; Milem & Berger, 1997; Spady, 1970; Tinto, 1975, 1987) that continues to grow almost daily, it remains a primary concern in higher education (Braxton, 2000; Hu, 2011). Scholars and policymakers are turning to research for an explanation of these trends and for solutions to address observed racial disparities. Notably, scholars are looking for new solutions to these disparities in light of the fact that the retention rates are consistently low and racial gaps are long-standing, continuing to trouble higher education after decades of scholarship, programming, and interventions aimed at addressing the issue (Carter, 2006; DeAngelo et al., 2011; Hu, 2011; Seidman, 2005).
**Factors Related to Minority Student Retention**

The disparities in persistence rates among people of color suggest there are a number of factors that relate to the success of minority students disproportionately in comparison with their White peers. Scholars agree that the experiences of racial/ethnic minority students on college campuses are quite different than those of their White peers, especially at PWIs (Fleming, 1984; Fries-Britt, 1997; Gurin et al., 2004; Jaggers & Iverson, 2012). For instance, Black students may face challenges reconciling their racial and academic identities in their effort to gain acceptance in the Black community while pursuing academic success (Fries-Britt, 2002). Similarly, Latino students may face pressure to adhere to gender and family roles common in Latino culture that differ significantly from those in the dominant culture which in turn influences their educational attainment (Saenz & Ponjuan, 2009). These examples represent issues that are uniquely faced by students of color that may in turn shape students’ experiences at PWIs, their feeling that they belong in college, and their decisions to persist.

The balance of scholarship suggests that students of color who have negative experiences and feel unwelcomed in college are more likely to leave (Baker, 2008; Lock et al., 2008; Nettles & Perna, 1997). This is especially true at PWIs which have a long history of systematically excluding people of color and institutional climates that may be experienced as chilly or unwelcoming to people of color (Goodchild, 1997; Hurtado & Carter, 1997; Museus and Quaye; 2009; Tierney, 1999). Many colleges and universities have invested time, effort, and resources into fostering a more welcoming racial climate (Jaggers & Iverson, 2012). Yet, racial/ethnic minorities continue to face negative race-
related experiences with peers, faculty, and staff that impact departure decisions and their college sense of belonging—especially at PWIs (Strayhorn, 2012). For instance, people of color often feel pressure to be a representative for their racial group during college and grapple with projecting a positive outward image in fear of confirming stereotypes held by White students, a burden than can affect whether a student feels that they belong at the institution (Harper et al., 2011; Jaggers & Iverson, 2012; Seidman, 2005). Failing to find belonging (or feeling alienated) in college has a number of negative consequences for students of color including departure.

Repercussions of Minority Student Departure from College

People of color make up a growing percentage of the American population (Pew Research, 2012). Today, Black and Latino citizens together constitute 28% of the total U.S. population. By 2050, racial/ethnic minorities are projected to make up nearly half of all Americans (Pew Research). The growing proportion of racial/ethnic minorities coupled with the observed disparities in college retention rates is a call for action. If we as a nation are to meet the Obama Administration’s goal to have the highest proportion of college graduates in the world by 2020 (White House, 2014) and avoid exacerbating racial/ethnic inequality in this country, it is imperative that educators and policymakers continue to explore potential ways to address the observed racial/ethnic gaps in college retention rates and educational attainment using culturally appropriate frameworks like sense of belonging. Indeed, the long-term impact of earning a college degree on the welfare of American society paired with the diversification of the nation and troubling
minority student retention rates together create one of the most pressing and urgent issues facing higher education and the nation today (Carter, 2006; Stewart, 1988).

Gaps in retention rates between students of color and their White peers are troubling for many reasons; here I outline at least four major reasons for concern. First, there is a link between persistence to degree attainment and the accrual of cognitive and social benefits by individuals (Kuh, et al., 2008). For instance, having a college education appears to be linked to greater happiness and a greater affinity for lifelong learning (McMahon, 2009). This in turn has an impact on the social mobility and quality of life for racial/ethnic minorities, their family, and their community—as well as society in general (Carter, 2006). Scholars believe that at least some form of higher education will be necessary in the near future for individuals to successfully navigate complicated and complex social and cultural settings in American society (McCabe, 2000).

Second, a study by the U.S. Census Bureau (2002) demonstrated the added economic value for those who go on to earn a bachelor’s degree, at nearly twice the lifetime earnings of someone with only a high school diploma. Thus, student departure and the resulting impact on educational attainment bears on the future financial security and success of persons of color and their families and may inhibit the achievement of economic parity with Whites in the face of an increasingly socioeconomically stratified society (Harper & Quaye, 2009; Seidman, 2005). Currently, White household earnings are nearly twenty times that of Black households and 18 times more than that of Latino households—the largest disparity observed in the past 25 years (Pew Research, 2011). Earning a college degree appears to be one way to reduce these socioeconomic
disparities. Black and Latino individuals with college degrees, while earning less than their White counterparts, still earn more on average than minorities without a college degree (Newburger & Day, 2002).

Third, the global competitiveness of the U.S. economy is at stake (Schneider & Yin, 2011). American higher education participation and degree completion rates are slipping relative to the growth many other nations are experiencing (Douglass, 2006). This in turn impacts the nation’s ability to compete globally in terms of brain power and economy to the detriment of the nation’s prosperity, quality of life, and well-being of its citizens (White House, 2014). Indeed, without addressing current racial/ethnic gaps in degree attainment the nation will suffer socially and economically in the near future (Kelly, 2005).

Finally, when students do not complete college there is a financial loss due to the money invested by the students, their families, and the government (Schneider & Yin, 2011). For example, one report revealed that student dropouts from the 2002 cohort of bachelor degree seekers resulted in an estimated $3.8 billion dollars in lost personal income, $566 million lost in federal income taxes, and $164 million lost in state income taxes (Schneider & Yin, 2011). It is therefore in the best interests of all individuals, educators, policymakers, and the national government to seek out ways to improve retention and college success among all students, and students of color in particular. College sense of belonging is one promising approach to understanding and addressing racial/ethnic retention disparities that is ripe for further research.
Sense of Belonging and Minority Student Retention

Addressing academic ability, achievement, and preparation alone is not sufficient to solve issues related to minority student persistence rates (Cabrera et al., 1999; Fries-Britt, 1997). Scholars must continue to probe the social, psychological, and cultural factors that influence minority student retention in any effort to meaningfully reduce racial/ethnic disparities. To address the unique experiences of racial/ethnic minorities that bear on their success in college, researchers have called for innovative, nuanced approaches to understanding student persistence that go beyond the most commonly used student departure model proposed by Tinto (1993)—a model originally developed and tested using a largely White male student population (Hurtado & Carter, 1997; Museus & Quaye, 2009). Researchers instead recommend more culturally appropriate approaches to understanding minority student persistence and retention that reflect the heritage, culture, values, and experiences of people of color, such as sense of belonging (Hurtado & Carter, 1997; Strayhorn, 2012).

Much of the earlier work on student departure did not account for the complexity of student persistence, including the role of racial and ethnic backgrounds in relation to persistence trends (Braxton, 2000; Braxton et al., 2004; Tierney, 1992; Tinto, 2007). As previously stated, this is particularly troubling given the growing diversity of the college student body at PWIs and suggests a need for educators, institutions, and policymakers to examine the departure puzzle using approaches that may be more suitable for understanding why people of color persist or depart college. Sense of belonging is a promising approach to understanding the experiences of minority students at PWIs and
scholars have theoretically and empirically linked the construct to minority student persistence and retention (Hausmann et al., 2009; Hoffman et al., 2002; Hurtado et al., 2007; Kuh et al., 2005; Maestas et al., 2007; Strayhorn, 2012).

Drawing on the work of Hurtado and Carter (1997), Strayhorn (2008a) succinctly defined sense of belonging:

Sense of belonging consists of both cognitive and affective elements. An individual assesses his/her position or role in relation to the group (cognitive), which, in turn, results in a response, behavior or outcome (affective). Sense of belonging, then, reflects the extent to which students feel connected, a part of, or stuck to a campus. (p. 505)

Students who feel a sense of belonging believe that they matter to others, that they are valued, and that the campus community respects them (Strayhorn, 2012). Sense of belonging is characterized by the quality and nature of the relationships students form with faculty, administrators, peers, and the campus environment. It represents the feeling of connectedness to others on campus (Strayhorn). The lack of belonging negatively impacts motivation, academic achievement, and educational attainment and may lead to a number of negative outcomes for students of color like departure (Anderman & Freeman, 2004; Maestas et al., 2007; Strayhorn, 2012). Indeed, the lack of a sense of belonging is a primary reason why students leave college (Strayhorn).

Further, sense of belonging is a concept that is well-suited to understanding the experiences of racial/ethnic minorities in college with regard to retention (Hurtado & Carter, 1997; Hurtado et al., 2007; Maestas et al., 2007; Museus, 2014; Strayhorn, 2012). It also takes on heightened importance for racial and ethnic minorities in environments where they may be inclined to feel like one of few, unsupported, or marginalized—such
as PWIs, where many students of color are enrolled (Anderman & Freeman, 2004; Strayhorn, 2012). Importantly, sense of belonging extends beyond matters of academic preparation and achievement alone to acknowledge the role of race, culture, and the minority experience as major factors that influence educational outcomes like retention for students of color (Hurtado & Carter, 1997; Strayhorn, 2012).

**Sense of Belonging.**

The sense of belonging literature in higher education clustered around research on students of color (Tovar & Simon, 2010). The wealth of studies conducted on sense of belonging among racial/ethnic minorities provide ample evidence to suggest the usefulness of this theory for understanding and explaining the social and academic experiences of people of color in college and associated educational outcomes (Hausmann et al., 2009; Hoffman et al., 2002; Hurtado & Carter, 1997; Strayhorn, 2012). Nonetheless, researchers have not yet exhausted their search for factors that appear to impact sense of belonging. To encourage college sense of belonging and reap its many benefits, more research is needed that examines additional factors that may be associated with a sense of belonging among students of color at PWIs.

One aspect of the student experience that has received scant attention is the relationship between student engagement and sense of belonging. Engagement is a particularly salient issue for students of color at PWIs who may not only struggle to find culturally relevant or inclusive opportunities for involvement, but who also face heightened challenges in developing a sense of belonging in a majority White space (Fries-Britt & Turner, 2002; Harper & Quaye, 2009). The paucity of scholarship
examining the relationship between student engagement and sense of belonging is particularly troubling because scholars have argued that what happens in college is what matters most (Astin, 1984; Pascarella & Terenzini, 2005; Strayhorn, 2012). In other words, what students do during college and what institutions do to shape students’ experiences during college exerts the greatest impact on student outcomes, such as sense of belonging. The dearth of studies examining this relationship is surprising from a research perspective given that a defining element of the sense of belonging concept is that is represents a sense of personal involvement in a particular educational environment or system and the fact that scholars have posited theoretical links between student engagement and sense of belonging (Finn, 1989; Locks, 2008; McLaren, 2009; Strayhorn, 2008). Thus, the present study marks an important and unique contribution to the literature by examining the relationship between student engagement and sense of belonging.

**Student Involvement and Engagement**

Student involvement and student engagement are related, yet distinct, concepts. A key feature of student engagement theory that distinguishes it from involvement theory is that it recognizes the role of the student and the institution in fostering involvement and engagement in service of positive educational outcomes (Kuh, 2009; Wolf-Wendel et al., 2009; Yearwood & Jones, 2012). While some scholars have argued that the success of students relies most on what students do to get involved rather than the resources and support offered by the institution (Hayek & Kuh, 2004), others have emphasized the important role of the institution in offering the appropriate supports and engagement
opportunities to compel students from diverse backgrounds to get involved given the potency of the institution’s influence in encouraging desirable student outcomes—one of which may be sense of belonging (Harper & Quaye, 2009; Strayhorn, 2012). The latter point may hold special significance for students of color attending a PWI where they may not readily identify with the dominant culture and where culturally relevant engagement activities may or may not be offered by the institution (Harper & Quaye, 2007; Hawkins & Larabee, 2009). What the institution does to support the engagement of racial/ethnic minority students in relevant programming and activities likely bears on their ultimate success in college (Hale, 2004).

Colleges and universities expend substantial resources to attract and retain students by creating campus environments with bountiful opportunities for student involvement and engagement (e.g., clubs, living-learning communities) congruent with contemporary full-time undergraduate student lifestyles and expectations for college (Mortenson et al., 2011). Similarly, higher education scholars have dedicated considerable research and attention to understanding the role of student involvement and engagement in achieving desired educational outcomes (Bridges et al., 2005; Kuh, 2001; Kuh et al., 2007; Zhao & Kuh, 2004). Indeed, decades’ worth of research points to the numerous positive outcomes that result from meaningful student engagement among all students (Astin, 1999; Hu, 2011; Kuh, 2009; Kuh et al., 2003). Evidence suggests that racial/ethnic minorities benefit from engagement even more than their White counterparts in terms of their success in college and it may have a compensatory effect for educational disparities (Kuh, 2008; Kuh et al., 2008).
Furthermore, extant research consistently demonstrates there is link between involvement, engagement, and a suite of social, academic, and psychological gains among students (Astin, 1993; Bridges et al., 2005; Pascarella & Terenzini, 2005)—one of which I propose is sense of belonging. Plentiful evidence demonstrates that involvement in campus activities appears to result in both positive educational gains such as the development of a sense of purpose as well as psychosocial development (Foubert & Grainger, 2006). Student involvement also appears to influence students’ feelings of connectedness to college campuses (Astin, 1999; Strayhorn, 2012)—although supporting evidence is limited. For instance, Strayhorn (2012) found that some Black men may seek out involvement opportunities as a way of achieving a fit at their institution and to feel a sense of belonging.

It is plausible to posit a link between student involvement, institutional engagement, and sense of belonging on a conceptual basis. Engaging institutional environments that encourage student involvement in campus life provide important opportunities for students to form connections, social bonds, and relationships with peers and faculty (Foubert & Grainger, 2006; Hurtado et al., 2007; Martin, 2000). Conversely, a student who is neither involved nor engaged by the institution may spend little time on campus, lack contact with faculty and peers, and forgo opportunities to connect with students via clubs and organizations (Strange & Banning, 2001). Thus, it is reasonable to suggest that the uninvolved and disengaged student may experience a diminished sense of belonging resulting in any number of negative educational outcomes, including departure.
While researchers have made significant strides in advancing our understanding of the various factors that influence sense of belonging, few scholars have examined the linkage between student involvement, institutional engagement, and sense of belonging for students of color attending PWIs. Limited evidence appears to link involvement to college sense of belonging, yet more research that explicitly parses out the relationship between student involvement, institutional engagement, and sense of belonging among students of color at PWIs is necessary to move the posited link beyond theory on the basis of empirical evidence (Hurtado et al., 2007; Strayhorn, 2012).

**Student Involvement, Engagement, and Sense of Belonging**

A significant proportion of the higher education literature refers to the concepts of involvement, engagement, and belonging interchangeably—conflating the efforts of students, institutions, and the social-psychological state of belonging (Strayhorn, 2012; Wolf-Wendel, Ward, & Kinzie, 2009; Yearwood & Jones, 2012). This has led to calls for empirical research that examines the relationship of student involvement, institutional engagement, and sense of belonging as distinct concepts that merit separate treatment to better understand their relationship to one another—an approach that is not well researched to date (Strayhorn, 2012; Wolf-Wendel et al., 2009). Wolf-Wendel and colleagues (2009) reviewed scholarship in an effort to succinctly define the three distinct concepts. Their definitions guide the use of each term in this dissertation. Involvement, they argue, is the effort and time that students put forth to participate in college activities. Engagement refers to the efforts of the institution to induce student participation in activities during college—although student efforts are also an important consideration.
Sense of belonging reflects the nature and quality of the reciprocal relationship between the student and the institution (Strayhorn, 2012; Wolf-Wendel et al.).

Virtually no scholarship was readily uncovered that explicitly tests the relationship between student involvement, institutional engagement, and college sense of belonging as three distinct concepts. Nor is there extant scholarship that has empirically examined both the unique and combined relationship of involvement and engagement with sense of belonging. This lacuna in scholarship has led scholars to call for additional empirical research that examines whether differential levels of student involvement or engagement are tied to differential levels of college sense of belonging (Hurtado et al., 2007; Strayhorn, 2012).

Scholars caution that research that fails to separate out different elements of student engagement theory (i.e. student involvement, institutional engagement) may mask important nuances in their respective relationships to key educational outcomes such as belonging; thus is it prudent and necessary for scholars to parse out different elements of engagement in examining this relationship (Hu, 2011; Wolf-Wendel et al., 2009). Research is needed that examines the relationship between student engagement and belonging, especially research that parses out and clarifies the differential relationship of involvement and engagement on belonging across student populations (Wolf-Wendel et al., 2009), on the basis of race and ethnicity for instance. Heeding these calls, this study draws on two major elements of student engagement as specified by student engagement theory: (a) what the student does (i.e., student involvement), and (b) what the institution does (i.e., institutional engagement) to examine their independent and combined...
relationship to sense of belonging for racial/ethnic minorities at PWIs (Harper & Quaye, 2009; Kuh et al., 2005)

Conclusion

In conclusion, there are deep disparities in student persistence and retention rates across racial/ethnic lines. The disparities hold important implications for the success of people of color in an increasingly diverse society and the future well-being of the nation. These disparities suggest a qualitative difference in college experiences across race and ethnicity. Fostering a sense of belonging among students of color may be one promising approach to addressing retention disparities and their associated outcomes for people of color. Additional research is needed to identify and examine the factors that engender sense of belonging for racial/ethnic minorities attending PWIs. To date, no scholarship has examined the relationship of student involvement, institutional engagement, and sense of belonging despite the weight of evidence suggesting that students across race/ethnicity benefit immensely from involvement and engagement during college (Kuh, 2009). Moreover, no studies have examined specifically the unique and combined relationship of student involvement and institutional engagement to sense of belonging for students of color attending a PWI. This represents a gap in our knowledge that the present study fills.

Purpose of the Study

There are gaps in our understanding of the relationship between involvement, engagement, and sense of belonging among students of color. To address these gaps, the present study uses data from the National Survey of Student Engagement (NSSE) to explore the relationship between student involvement, institutional engagement, and
sense of belonging among people of color at a large, southeastern PWI. The analysis is guided by Kuh and colleagues’ (2009) description of student engagement theory which specifies two major agents of engagement (i.e., the student and the institution) and calls for research that parses out what the student does, what the institution does, and sense of belonging. This study aims to provide useful information to institutions, educators, and students that can influence policy, theory, and practical decisions alike in an effort to address outcomes like sense of belonging and larger issues that face higher education such as disparate retention rates across race and ethnicity.

**Research Questions**

I address the following research questions in this study:

1. Are there differences by race/ethnicity in reported student involvement, institutional engagement, and sense of belonging among PWI students?

2. Is there a relationship between student involvement, institutional engagement, and sense of belonging for students of color attending PWIs?

**Significance of the Study**

The results of this study are significant for many reasons. This section describes the significance of the study for practice, theory, and research.

**Practice**

This study holds practical significance for a number of constituents on campus. Residence life staff could benefit from the findings of this study. The study highlights the role of institutional engagement and student involvement in campus activities in relation to sense of belonging among racial/ethnic minorities. Provided the growing diversity of
the college student population, residence life staff could benefit from an understanding of
the role of their programming and activities in fostering belonging among people of color
in predominantly White spaces on campus. The quality and nature of residence life
programming could be impacted by the findings of this study to yield greater sense of
belonging among students of color living on campus. For example, this study could
influence decisions to include more culturally relevant student activities in the residence
halls to encourage involvement and to provide opportunities for students to connect with
students from diverse backgrounds with associated implications for their college sense of
belonging. Residence hall student councils may work with their hall advisors to use the
results of this study as leverage in efforts to elicit greater institutional investment in
culturally inclusive programming.

Faculty is another constituency that could benefit from this study. Faculty
members interested in the social and academic success of all students would benefit from
knowing the relationship of student involvement and institutional engagement to sense of
belonging among students of color. Results from this study will provide insight into the
role of engaging institutional environments over which faculty exert significant influence
with the ultimate goal of impacting college sense of belonging and its associated positive
outcomes like retention. Moreover, the study reveals the strength of the relationship
between student engagement in campus life (e.g., faculty research, clubs) and college
sense of belonging which in turn may inform faculty advising for students of color who
may feel isolated, who are struggling to connect with others on campus, and students who
are grappling with departure decisions.
Finally, student affairs professionals and campus administrators could benefit from this study in several ways. In light of this study’s findings, diversity, outreach, and inclusion officers could (re)direct funding and other resource allocations to better serve students’ needs to belong. For example, student life may invest in offering and advertising culturally relevant and inclusive programming to students more frequently and through broader media to foster an inclusively engaging environment and to encourage a sense of belonging among students of color and other underrepresented populations at PWIs. Furthermore, findings from this study could affect outreach methods and target audiences for student affairs professionals generally, and especially for those who work with race, culture, and gender based student organizations on PWI campuses. The results of this study will inform the efforts of student life organizations concerned with helping students feel a part of their college community. Results of this study may also reveal an alignment of interests between campus administrators and leadership who desire improved minority student retention rates and student affairs professionals who may wish to offer more inclusive programming to encourage a sense of belonging. Thus, this study might shape policy decisions made by campus administrators as it relates to persistence and their approach to improving retention rates and it may offer a compelling case for administrators to deploy funding to campus programs proven to inculcate a greater sense of belonging among underrepresented students.
Research

The present study is significant for future research as well. This study examined the relationship between student involvement, institutional engagement, and sense of belonging among people of color at PWIs. Future research might distinguish within student populations of color the relationship of student engagement and sense of belonging to identify within-group differences. A study of this nature could highlight the varying degrees to which engagement is associated with sense of belonging for people of color according to nationality, age, home community, or generational status, to name a few. Such research could identify important within group distinctions that would permit a more tailored explanation of observed trends.

Second, this study explicitly focused on factors that predict sense of belonging among students of color at PWIs. Future studies might investigate the relationship between student engagement and sense of belonging for racial/ethnic minorities at minority serving institutions (e.g., HBCUs, HSIs). Alternatively, this study might be conducted with White students attending minority serving institutions to determine whether there exists a parallel relationship between student involvement, institutional engagement, and belonging for White students in majority-minority educational spaces. Furthermore, similar studies could be conducted across broader institutional-types (e.g., residential, two-year, commuter) where opportunities for engagement are qualitatively different and its relationship to belonging might also look quite different.

Third, this research study examines the relationship between student engagement and sense of belonging along racial/ethnic lines. In the future, researchers might conduct
similar studies that examine the relationship between student engagement and sense of belonging for students from a multitude of other marginalized identities at PWIs (e.g., LGBT, international). Moreover, future research could consider additional intersections of identity (e.g. LGBT, SES, nationality) among racial and ethnic minorities to examine the impact of multiple identities on the relationship between engagement and belonging. For instance, one might consider the relationship between engagement and belonging among gay Black men at PWIs where most LGBT clubs, organizations, and other opportunities for engagement may be characterized by predominantly White membership and what might amount to overwhelming White ideals and norms of the gay community on campus.

Fourth, future research might explore different types of involvement opportunities or different institutional strategies to engage students and their association with belonging among students of color. Such an examination would reveal whether the nature and specific qualities of involvement and engagement opportunities appear to augment relationships identified between student engagement and sense of belonging. For instance, one could determine whether involvement in minority or race-based student organizations influence sense of belonging differently than participation in organizations without a specific focus on race/ethnicity. Alternatively, future research could examine whether particular strategies employed by the institution to engage students appear to be associated with students’ reported sense of belonging in different ways.
Theory

There are several significant contributions this study makes in terms of theory. Extant scholarship has identified several factors that influence sense of belonging among college students (e.g., campus climate, faculty relationships). This study contributes to our understanding of sense of belonging as a theory or conceptual model by examining the association between student engagement and belonging—a theorized relationship with limited empirical support currently. These data might be used to clarify and expand existing sense of belonging theory to incorporate the influence of student involvement and institutional engagement as factors that bear on minority students’ sense of belonging at PWIs. Moreover, the study may elucidate the magnitude and direction of the hypothesized relationship which can further shape sense of belonging theory.

Student engagement theory proposes a number of important educational outcomes that result from student involvement and institutional engagement. This study contributes additional information that could be used to further theorize the role of student engagement in achieving important educational outcomes for students such as sense of belonging. Moreover, the evidence gleaned from this study could provide empirical evidence to substantiate recent claims made by engagement theorists that institutional emphasis on and support for engagement plays a critical role in the success of all students—in particular for students of color at PWIs (Harper & Quaye, 2009). Because this study examined two specific facets of student engagement, student involvement and institutional engagement, the results provide some evidence regarding whether different elements of engagement are related to outcomes like sense of belonging in different
ways. Moreover, this study aims to intentionally shift the focus of engagement theory away from an explanation of engagement’s relationship to student outcomes for the dominant, largely White, student population alone (or an explanation that lumps students from all backgrounds together for that matter) to one that focuses more specifically on explaining the relationship of student engagement and educational outcomes among students of color.

Finally, this study provides useful information for campus environment theories. For example, environmental press theory suggests the prominent influence of various contexts on the social and academic experiences of students (Strange & Banning, 2001). An environmental press is a particular set of norms and practices that characterize a particular institutional context and influence behavior, actions, feelings, etc. Findings from this study could be used to augment our theoretical understanding of environmental press in terms of institutional engagement among students of color and its relationship to outcomes like sense of belonging. This is accomplished by shedding light on whether the degree of institutional emphasis on engagement is uniquely related to belonging for racial/ethnic minorities. Ultimately, this study further illuminates linkages between the nature of the campus environments, institutional efforts to engage student, and key socio-psychological concepts like sense of belonging.

**Delimitations**

The present investigation has a number of delimitations. The sample in this study consists of undergraduate students who attend a single PWI in the southeastern United States. Therefore, the findings from this study may or may not apply to colleges and
universities broadly speaking. For instance, the findings from this study may not apply to all institutional types. The findings may not apply to institutions that are much smaller or larger than the one analyzed in the present study, community colleges, minority-serving institutions, or to institutions in other regions in the nation with dissimilar regional cultures.

Next, the present study was based on a secondary analysis of a third-party data set. As with all secondary analyses, the researcher is constrained by the decisions made by the authors of the original research instrument. Utilizing an extant data set meant that decisions had to be made regarding the survey items that best captured the phenomena of interest to the present investigation. While steps were taken to ensure the selected survey items accurately captured the essence of the theoretical concepts explored in this analysis, the precise wording and nature of the survey items was beyond the control of this study’s investigator.

Finally, the racial and ethnic composition of the institutional sample was such that Black and Latino students were grouped under a single umbrella term: people of color and racial/ethnic minorities. Grouping students of color yielded an acceptable analytic sample to calculate the relationships specified in the study, however at a cost. Nuances or distinctions that may exist regarding the relationship between engagement and belonging on the basis of race/ethnicity among students of color may be masked due to the decision to group the two student populations of color together.

Despite these limitations, this study is a valuable contribution to our knowledge. This study provides much needed empirical evidence to substantiate the theorized link
between student engagement and sense of belonging for people of color at PWIs that is not yet firmly established in the literature. The study also racializes student engagement theory by exploring racial differences and by intentionally focusing on the association of student engagement and college outcomes for students of color specifically. Moreover, the study augments our understanding of sense of belonging models by identifying student engagement factors that are predictive of college sense of belonging among people of color. This in turn offers points of departure for college educators to address issues and barriers facing racial/ethnic minorities such as unwelcoming campus environments and the persistence gap.

Furthermore, findings from this study provide information regarding the predictive power of student involvement and institutional engagement in terms of variance in sense of belonging explained by each respective factor. Specifically, the study isolates the unique and combined relationship of each facet of student engagement on belonging among students of color at a PWI. This study uniquely contributes to the literature by examining the influence of institutional engagement on sense of belonging for students of color at PWIs above and beyond that explained by student involvement alone.

Considering the positive outcomes associated with sense of belonging, researchers, policymakers, educators, and college officials could benefit greatly from this study’s findings. In accordance with this study’s findings, each constituent could benefit from this study by making informed decisions related to student involvement and
engagement opportunities, programming, policy, and research in an effort to address sense of belonging and by extension gaps in retention rates for students of color at PWIs.

**Organization of the Study**

The present study is organized into five chapters. The first chapter introduced the research topic and questions and provided an argument for why the study is needed. The second chapter reviews the extant literature to identify major themes related to sense of belonging among racial/ethnic minorities, student engagement, and other studies relevant to the research questions. The blended conceptual framework that guides the study is also presented in chapter two. The methodological approach is discussed in the third chapter, including a detailed account of the sample characteristics, the survey instrument, and the computational analyses employed to answer the research questions. Findings and results are presented in the fourth chapter. The fifth chapter discusses the findings and describes implications for future practice, research, and theory.
Chapter 2: Literature Review

There are gaps in our understanding of the relationship between involvement, engagement, and sense of belonging among students of color. To address these gaps, the present study uses data from the National Survey of Student Engagement (NSSE) to explore the relationship between student involvement, institutional engagement, and sense of belonging among people of color at a large, southeastern PWI. The analysis is guided by Kuh and colleagues’ (2009) description of student engagement theory which specifies two major agents of engagement (i.e., the student and the institution) and calls for research that parses out what the student does, what the institution does, and sense of belonging. This study aims to provide useful information to institutions, educators, and students that can influence policy, theory, and practical decisions alike in an effort to address outcomes like sense of belonging and larger issues that face higher education such as disparate retention rates across race and ethnicity.

**Research Questions**

I address the following research questions in this study:

1. Are there differences by race/ethnicity in reported student involvement, institutional engagement, and sense of belonging among PWI students?

2. Is there a relationship between student involvement, institutional engagement, and sense of belonging for students of color attending PWIs?
Prior to conducting the study, it was necessary to review relevant literature to shape and inform the present inquiry and to provide context for the study related to student engagement and belonging. The literature review is divided into four major sections. The first section describes literature detailing the college student engagement concept, the factors that influence college student engagement, and the association of student engagement and college outcomes. Student engagement scholarship drawn from the school and educational psychology literatures is briefly reviewed. The second section reviews the literature that describes the sense of belonging concept, the factors that are related to college sense of belonging, and the relationship of sense of belonging to college student outcomes. A brief overview of the sense of belonging scholarship drawn from the school and educational psychology literatures is provided. The third section outlines the blended theoretical framework upon which this study draws to answer the study’s research questions. The final section highlights the gap in the literature filled by the present study.

**Student Engagement**

Chapter one provided a brief overview of the term student engagement and described some key highlights to argue a need for this study. Generally speaking, the body of scholarship on student engagement describes: (a) the concept of engagement and the various elements it encompasses, (b) the factors that influence student engagement, and (c) the effects of student engagement on key college outcomes. This section of the literature review describes the college student engagement concept and then provides a review of previous findings.
**Defining Student Engagement**

The term student engagement is a ubiquitous concept in higher education today (Axelson & Flick, 2011). Much of this owes to the fact that it is a highly sought after indicator of institutional effectiveness among colleges and universities (Axelson & Flick). The most broadly cited definition of college student engagement was developed by George Kuh and colleagues in the 1990s and it has since proliferated widely in higher education scholarship (Kuh, 2009; Trowler, 2010). Simply put, student engagement is the “time and effort students devote to activities…and what institutions do to induce students to participate in these activities” in service of desirable student outcomes, one of which I propose is belonging (Kuh, 2009, p. 683). In essence, engagement consists of two parties involved in a relational transaction—the student and the institution—that impacts the student’s educational experience (Kuh, 2001; Wolf-Wendel et al., 2009). Said another way, student engagement entails both frequency of student involvement in educationally purposeful activities and the nature of institutional efforts to engage students in those activities (Bridges, Cambridge, Kuh, & Leegwater, 2005; Kezar & Kinzie, 2006).

As I noted in the first chapter, student involvement and student engagement are conceptually related—but distinct—concepts. Indeed, the two concepts are distinct from one another in important ways that merit separate treatment of their meaning in research (Strayhorn, 2012; Wolf-Wendel, Ward, & Kinzie, 2009). One of the primary distinctions between student involvement and student engagement is that engagement strongly suggests a mutual relationship between the efforts of students and the efforts of the
institution to facilitate engagement in educationally purposeful activities, key variables of interest related to this study’s aim (Kuh, 2009). Another distinction between involvement and engagement is that student engagement presupposes positive outcomes associated with being engaged like retention or sense of belonging (Strayhorn, 2012). This can be contrasted with student involvement which emphasizes the amount of time and energy students devote to college activities and does not presuppose positive outcomes (Astin, 1999; Strayhorn, 2012). Notably, involvement emphasizes what the students does, not the institution. Scholars argue that it is important to tease apart the terms student engagement and student involvement in an effort to recognize the unique contribution each term gives to our understanding of student development and outcomes (Harper & Quaye, 2009; Strayhorn, 2012; Wolf-Wendel, Ward, & Kinzie, 2009). Thus, the present study heeds those calls and focuses on student engagement, a concept that incorporates both what the student does (i.e., student involvement) and what the institution does to encourage involvement in educationally purposeful activities.

I have thus far described the term student engagement and differentiated it from student involvement. The remainder of this section describes two prominent strands of student engagement literature. The first line of inquiry examines the factors that appear to influence student engagement. The second line of inquiry explores the relationship of student engagement and student outcomes. The ensuing review of student engagement

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2 Guided by student engagement theory, student engagement consists of both student involvement and institutional engagement. I often refer to the full construct as “student engagement” throughout, recognizing that student involvement is one component of engagement.
studies is organized along these two general lines of inquiry and provides a holistic context for understanding the student engagement construct and its relationship to other variables.

**Factors Related to Student Engagement**

A review of the literature reveals a number of important factors that appear to influence student engagement. These factors include institutional agents (e.g., faculty), peers, institutional expenditures (e.g., funding), institutional contexts (e.g., residence halls), and student characteristics (e.g., fraternity membership). This section of the paper provides an overview of the engagement literature dedicated to exploring factors impacting engagement.

**Institutional Agents.** One line of scholarly inquiry focuses on the role of faculty practices in fostering student engagement. Chen and colleagues (2008) examined the role of faculty and classroom environments in student engagement in engineering fields. They contend that faculty are critical institutional agents responsible for fostering engaging learning environments and facilitating high levels of student engagement. Their research found that faculty-student interaction, such as engaging in student-faculty collaborative research, was a significant positive predictor of student confidence as well as students’ professional and interpersonal skills. Moreover, the degree to which faculty were engaged in creating environments that supported student learning and personal development influenced the quality and degree of engagement among students.

Smith et al., (2005) examined the impact of classroom pedagogies on engagement with a sample of undergraduate students—something over which faculty exert significant
influence. They found that faculty classroom practices that emphasized cooperative and problem based learning have a positive impact on inducing student engagement with associated implications for desirable student outcomes. Similarly, Umbach and Wawrynski (2005) found that course related student-faculty interactions were positively related to student engagement. Higher student-faculty interaction was associated with key indicators of student engagement like involvement in active and collaborative learning opportunities. Faculty use of active and collaborative learning pedagogies, faculty efforts to interact with students, and faculty efforts to challenge students academically each resulted in greater student engagement.

**Institutional Expenditures.** The literature also examines the role of the institution in fostering engagement among students through resource expenditure. Research reveals that resource allocation to student engagement activities bears a complex relationship with student outcomes (Pike et al., 2006). Decisions related to which activities and the type of activities that are funded as well as the degree to which they are funded influence engagement differentially across students on the basis of characteristics like race or generational status (Pike et al.). Pike and colleagues (2006) found that financial support for student programming does not necessarily exert a positive influence on whether students feel the campus environment is engaging or nurturing. A number of factors mediated the relationship between financial expenditures and student engagement including type of engagement activities and year in school (Pike et al.). Still, resource allocation to academic activities and institutional supports do appear to be related to student-faculty interaction and enriching experiences, two elements of student
engagement. These expenditures were significantly related to reported levels of academic challenge, active and collaborative learning, student-faculty interactions, and reported educational experience enrichments—all representing facets and key indicators of student engagement.

In another related study, Pike et al. (2011) found that institutional expenditures on instruction do in fact bear a strong relationship with student-faculty interaction and reported enriching experiences. This suggests that institutions can foster greater student engagement through financial investment into instruction. The researchers hypothesize that such investments foster more favorable student-faculty ratios and permit additional course offerings that are more attuned to the interests of diverse student goals, desires, and needs (Pike et al.). The mixed nature of the evidence provides further support for calls in the literature to parse out different elements of engagement to determine their relationship with other variables rather than treating it as a singular construct (Pike, 2006; Hurtado et al., 2007).

**Institutional Contexts.** Researchers have explored the influence of particular institutional contexts and environments on student engagement. For example, LaNasa and colleagues (2007) conducted a study of residence halls to determine whether they substantially increase levels of engagement reported among first-year students. The authors found that simply increasing or expanding the institutional structures in place (e.g., residence halls) to encourage engaging learning environments did not significantly influence student engagement. This in turn suggests that broad institutional commitment
across multiple functional areas on campus may be necessary to encourage student engagement (Kuh et al., 2005; LaNasa et al., 2007).

On the other hand, there is evidence to suggest that living-learning environments may have a small, positive influence on student engagement (Pasque & Murphy, 2005). Learning communities are educational live-in environments intentionally designed to combine opportunities for social and academic engagement. Specifically, researchers found that participation in a living learning community was a significant, modest positive predictor of intellectual engagement. Pike, Kuh, and McCormick (2011) explored the influence of participating in a learning community on both in-class and out of class engagement among first year and senior students. They found that participation in a learning community was positively linked to student engagement across the board, though the relationship was only moderate. In any case, it is evident that a significant relationship exists between involvement in a learning community and key indicators of student engagement.

In yet another study of learning community environments and their association with student engagement, Zhao and Kuh (2004) discovered positive links between learning communities and student engagement. Learning community participation was positively linked to diversity-related engagement, student-faculty interactions, and higher order thinking, among other indicators of student engagement. These findings were especially true for first-year students. Inkeles and Weisman (2003) took steps to further parse out the activities that took place in living-learning communities in an effort to examine the specific elements of living learning communities that relate to student engagement.
engagement. They found that the types of discussions students took part in influenced student engagement in academically challenging activities. For instance, peer discussions around social and cultural issues strongly predicted intellectual engagement among students. On the other hand, discussing academic issues with peers did not significantly predict intellectual engagement. Overall, students who participated in a living learning community were significantly more likely to be engaged when compared to students who did not participate in a living learning community.

Finally, there is evidence to suggest that the influence of campus context on engagement extends beyond the immediate living environment (e.g., learning communities) to broader institutional environments and structures. For instance, institutional mission statements appear to set the stage for student engagement to varying degrees across institutional types (Kezar & Kinzie, 2006). Mission statements are powerful agents in shaping the institutional culture and context (Kezar & Kinzie). Scholarship suggests that campus mission statements may be related to the enactment of engagement practices on campus by influencing the nature and type of engagement activities offered at particular institutions. Still other research demonstrates that institutional size and type are also important predictors of student engagement (Kezar, 2006). The size of an institution influenced the degree of faculty-student interaction, active and collaborative learning, academic challenge, and perceived support offered throughout campus educational environments. One study found that larger institutions tend to use specialized structures (e.g., co-curricular programming) to effectively engage students whereas smaller institutions effectively engaged students directly through an
emphasis on activities aligned with their values and mission such as faculty involvement in residence halls (Kezar, 2006).

**Student Characteristics.** Scholars have examined the role of pre-college traits and student characteristics and their influence on student engagement. In one study, Laird et al. (2007) examined the influence of race and institutional type on student engagement for Latino and Black students. They found that Black students tend to be more engaged at HBCUs when compared with Black students at PWIs; in particular, significant differences in collaborative learning and student-faculty interaction were observed. In light of their findings, Laird et al. (2007) suggest that Black students should seek out supportive sub-environments at PWIs that encourage student engagement while calling on institutions to continue nurturing diverse students and continue creating a college atmosphere that offers supportive and engaging environments for racial/ethnic minorities. Interestingly, their findings appear to suggest that Latino students are engaged at roughly the same levels across institutional types.

Additional research examined students’ pre-college traits like race/ethnicity and their influence on student engagement. Hall et al. (2010) probed for differences between minority and White students in their predisposition toward campus-based engagement activities related to diversity and their willingness to engage with diverse peers. They discovered that students who were exposed to diversity and engaged with diverse peers prior to entering college were predisposed to engagement with diverse peers during the first few years of college. Specifically, they discovered that minority students were more likely than their White peers to be predisposed toward diversity-based engagement
opportunities—likely related to the differing demographics of their pre-college communities. Moreover, they discovered that engagement is a learned behavior. Thus suggesting the important interplay between incoming student characteristics and environments that encourage and facilitate student engagement across difference. Additional analysis revealed that simply being placed in a diverse campus environment did not necessarily yield improved engagement outcomes unless intentional steps were taken to tailor what happens in those environments to the needs of the students on the basis of their characteristics and traits (Hall et al., 2010).

Further evidence suggests the influence of pre-college characteristics like socioeconomic status (SES) on student engagement (Pike et al., 2006). Affluent students at private institutions were found to be more engaged on average. On the other hand, low SES students at public institutions were found to be more engaged on average in comparison to their higher SES peers (Pike et al., 2006). This evidence highlights the role of pre-college community, institution types, and socioeconomic status among students with regard to student engagement and suggests the importance of recognizing the potential impact of student demographic characteristics like SES in student engagement research.

Finally, Pike (2003) investigated the relationship between fraternity/sorority membership, engagement, and education outcomes. He found a weak relationship between Greek affiliation and student engagement and educational gains. This finding is unsurprising given previous evidence that suggests the potential negative association between participation in Greek life and educational outcomes for many student
populations (Pike, 2003). Pike found no significant difference in engagement between students who were affiliated with a sorority/fraternity and students who were not.

**Influence of Engagement on Student Outcomes**

The second line of inquiry consists of studies examining student engagement’s relationship to student outcomes. A review of the engagement literature revealed fewer studies examining the influence of engagement on student educational outcomes compared to the body of literature that examines factors associated with student engagement. This may owe to a preponderance of evidence from a series of studies that consistently found student engagement was positively related to desired college student outcomes (Kuh, 2009). Nonetheless, there are several pieces of scholarship that examine the impact of student engagement and point to a number of important relationships between student engagement, college outcomes, retention, and grades.

One piece of scholarship explored the effects of student engagement on early career earnings following college completion. Hu and Wolniak (2013) examined the relationship between student engagement and early career earnings across race and gender. Their study found that both academic and social engagement during college exerted an influence on early career earnings following college. However, a suite of pre-college traits including gender, race, and K-12 educational preparation moderated the influence of engagement on post-college earnings. In particular, gender exerted a strong moderating influence on engagement such that men’s earnings benefited more from academic engagement while women’s earnings benefited more from social engagement during college. The degree to which students were engaged also varied across racial and
ethnic lines. Latino students reported the highest levels of academic engagement and Black students reported the highest levels of social engagement. The authors observed that the type of engagement in which a student was involved influenced post-college career earnings differently on the basis of race/ethnicity. For example, social engagement during college positively influenced early career earnings among Black and Asian students. Academic engagement during college yielded a positive impact on post-college earnings for Latino students, but did not exert any significant effect on earnings for Black or Asian students.

Additionally, the relationship between engagement and overall competence was examined in one study of Asian American students. Specifically, the study probed the relationship between cross-racial engagement and overall competence (Ying et al., 2001). The researchers found that Asian students, on average, had significantly fewer cross-racial interactions and low cross-racial engagement compared with their peers. Overall study results demonstrated that engagement was significantly related to measures of overall competence—defined as the extent to which the world is manageable and comprehensible to the student. On this measure, Asian students scored significantly lower than their White peers while scoring similarly to other racial and ethnic minorities (Ying et al.). This finding suggests the differential relationship between engagement and competence among students on the basis of race and ethnicity.

Finally, George Kuh’s work on student engagement is some of the most widely known and significant higher education research. He has conducted multiple studies on the topic of engagement and a few are highlighted here. In one study, Kuh and colleagues
(2008) examined the relationship between student engagement and first-year student retention and grades. Several important conclusions emerged from the study. Student engagement was positively related to prized academic outcomes such as student grades and persistence from the first to second year of college. Student engagement exerted positive influence on grades and persistence even after controlling for pre-college characteristics, including race and ethnicity. Evidence from this study, among others, led the researchers to conclude that what happens to students while they are in college is what matters most in terms of college student outcomes and success across student populations. What is more, research suggests that student engagement may have a compensatory effect for racial and ethnic minorities in terms of achieving desirable student outcomes which suggests that institutions should take intentional steps to foster engagement among students from all backgrounds—and students of color in particular (Kuh et al., 2008).

The balance of scholarship appears to demonstrate a positive link between engagement and student persistence (Kuh et al., 2005; Pascarella & Terenzini, 2005). Kinzie and colleagues (2008) confirmed that there is a statistically significant positive relationship between engagement and persistence controlling for background characteristics. Involvement in extra and co-curricular activities had a positive relationship to the probability a student would persist, a finding consistent with prior research (e.g., Pascarella & Terenzini, 2005). Moreover, the authors assert that institutions must foster more inclusive environments and take intentional steps to incorporate culturally sensitive engagement activities in order to make any substantive
difference in the success of students from underrepresented backgrounds like racial and ethnic minorities (Kinzie et al., 2008).

There is a growing body of evidence that suggests students of color may experience any number of unique factors that influence their college experience and bear on the quality and nature of their engagement with implications for college outcomes such as sense of belonging (Harper & Quaye, 2009; Hawkins & Larabee, 2009; Hernandez, 2000; Laird et al., 2007). For example, research demonstrates that PWIs often ignore or overlook the interests, culture, and needs of racial and ethnic minority students and fail to provide relevant and relatable campus activities to encourage involvement (Hawkins & Larabee, 2009; Hernandez, 2002). Students of color at PWIs may grapple with a number of challenges including Eurocentric, White norms and culture, unfavorable racial climates, and a vast sea of Whiteness—all contributing to what is often a more difficult college experience for students of color (Harper et al., 2005; Harper & Quaye, 2009). So while the weight of empirical scholarship continues to provide strong evidence that students from all racial and ethnic backgrounds benefit from engagement (Kuh et al., 2008; Laird et al., 2007), scholars also appear to suggest that race and racial differences continue to be an important factor to consider in terms of student engagement, particularly at PWIs.

**Student Engagement in Psychology**

There also exists an extensive body of student engagement literature that comes out of psychology with a decidedly K-12 emphasis. The literature is reviewed here briefly to provide additional context and viewpoints on student engagement to better inform this
study and to illuminate some key distinctions in the way student engagement is conceived across educational research. The student engagement literature in psychology can be traced back to interventions intended to prevent school dropout, which disproportionately affects minorities (Finn, 1998), and to efforts intended to improve and enhance school educational outcomes among students (Reschly & Christenson, 2012). In the psychology and K-12 literature, engagement is envisioned as a multidimensional meta-construct representing the extent of student school behavioral and psychological involvement as well as the degree of school attachment students experience (Appleton, Christenson, & Furlong, 2008; Caraway, Tucker, Reinke, & Hall, 2003; Li & Lerner, 2013). Students’ psychological and social experiences in school are shaped by engagement (Skinner & Pitzer, 2012). In turn, engagement results in a range of positive educational, psychosocial, and learning outcomes. Moreover, engagement represents participation and commitment to school curriculum and activities (Glanville & Wildhagen, 2007). It is the “outward manifestation of motivation” (Skinner & Pitzer, 2012, p. 22). The construct incorporates involvement in both academic and social realms of the school experience (Appleton et al., 2008) and consists of several nested levels. The nested levels include student involvement at the institution, involvement with peers in school activities and extracurriculars, engagement with academic work and learning, and classroom involvement (Skinner & Pitzer, 2012).

While opinions vary, many scholars are in agreement that student engagement consists of three main elements or types including cognitive engagement, emotional engagement, and behavioral engagement (Archambault, Janosz, Morizot, & Pagaini,
2009; Fredricks, Blumenfeld, & Paris, 2004; Jimerson et al., 2003; Li & Lerner, 2013; Mahatmya et al., 2012; Skinner & Pitzer, 2012). Similar to the case in higher education literature (e.g., Wolf-Wendel et al., 2006), the term student engagement in the K-12 literature is often referred to interchangeably with terms like involvement, connectedness, belonging, and attachment (O’Farrell & Morrison, 2003; Sharkey, You, & Schnoebelen, 2008). Recent research suggests that student engagement represents three integrated dimensions, yet the three dimensions of engagement may be differentially related to one another (Li & Lerner, 2013). Moreover, there is evidence to suggest that each element of engagement may contribute something unique to our understanding of student educational outcomes and therefore merits clarification through empirical research that parses out the contribution of each type of engagement to student success (Archambault et al., 2009).

Behavioral engagement is represented by the voluntary actions and behaviors of students in school (Li & Lerner, 2013). This includes such things as attendance, homework completion, contribution to class discussions, and involvement in classwork and extracurricular activities (Archambault et al., 2009; Finn, 1989; Li & Lerner). Behavioral engagement is often considered the most objective measure of student engagement among the three dimensions because it can be observed directly (Lewis et al., 2011).

Emotional engagement is characterized by student emotions and attitudes related to school as well as their perceptions of the school which are in turn related to their sense of belonging and disposition toward learning (Archambault et al., 2009; Li & Lerner,
It also consists of students’ perceptions of connectedness and relationships to others (Reschley & Christenson, 2012). For instance, quality student-teacher relationships and classroom emotional connections are associated with greater student engagement and positive learning outcomes (Reyes et al., 2012).

Cognitive engagement is composed of factors related to learning, thinking, and goal orientation (Li & Lerner, 2013). It represents the degree of psychological involvement exhibited by students in terms of their learning and disposition toward thinking and planning, focus, and challenges (Archambault et al., 2009; Skinner & Pitzer, 2012). Furthermore, it is characterized by an investment in learning and school on the part of the student and an understanding of the role education plays in future success (Fredericks et al., 2005; Lewis et al., 2011). Measures of cognitive and emotional engagement are largely inferential and rely on student perceptions (Christenson et al., 2008).

Scholars argue that it is important that all three elements of engagement be considered to provide more complete and comprehensive information regarding student engagement and its influence (Fredericks et al., 2004). Consistent with this argument, scholars claim it is important to distinguish between various measures, influences, and outcomes related to engagement as a way of clarifying engagement research (Skinner & Pitzer, 2012) while others view the three elements of student engagement as separate constructs that may overlap (Bingham & Okagaki, 2012). Considering school engagement as a single construct may masque the unique role of a particular dimension of engagement in fostering positive student outcomes (Glanville & Wildhagen, 2007).
Student engagement represents what schools can do to alter and enhance student outcomes in the face of student demographic traits and characteristics beyond their control (Christenson et al., 2000; Jimerson et al., 2003; Reschly, Huebner, Appleton, & Antaramian, 2008; Sharkey et al., 2008). Thus, this suggests the role of the institution and school interventions in making positive changes despite there being numerous factors influencing student outcomes that they may not be able to influence (e.g., race/ethnicity, socioeconomic status) (Appleton et al., 2008). Understanding student engagement in school provides important information for educators designing intervention strategies intended to prevent school dropout (Archambault et al., 2008).

Student engagement is related to learning contexts and the interactions that take place in those contexts (Finn & Zimmer, 2012; Reschly et al., 2008). Thus, the literature has examined student engagement at the student level, school level, and a broader meso-level that includes family and teachers (Ungar & Liebenberg, 2013). Because student engagement is shaped by contextual factors, it is also related to the quality of relationships and social bonds forged in those contexts akin to school sense of belonging (Finn, 1989; Goodenow, 1993). Schools may affect engagement by way of supporting or alienating students (Skinner & Pitzer, 2012). Moreover, the congruence between a student’s family and school life may in turn impact students’ levels of engagement (Mahatmya et al., 2012). For instance, minority students may face marginalization or exclusion in schools with associated negative repercussions for school engagement and their ultimate educational success (Goodenow, 1993). Therefore, there are implications
for student engagement when a student’s culture, background, and values are not necessarily congruent with those espoused by the school.

Consistent with the purpose of this study, addressing engagement among racial/ethnic minority students may be a way to address educational attainment, outcomes, and learning disparities (Connell, Spencer & Aber, 1994; Glanville & Wildhagen, 2007). There is a growing body of research that compares the role of engagement in student success across race and ethnicity and there is growing attention to the relationship between student engagement and the academic success of racial/ethnic minorities (Bingham & Okagaki, 2012; Glanville & Wildhagen, 2007). Racial/ethnic minorities exhibit different patterns of engagement when compared to students from majority cultures/ethnicities (Ungar & Liebenberg, 2013). For instance, theory suggests that the differences between the culture and values of a particular racial or ethnic group may differ from the dominant culture which in turn may lead to a disconnect between students of color and the school culture, ultimately leading to disengagement (Bingham & Okagaki, 2012). Students may feel that their heritage and backgrounds are not valued or celebrated by the school or in class curricula which holds implications for student involvement in school activities. Still others theorize that minority students may experience systemic and structural oppression as well as negative messages about their abilities that may lead students to disidentify with elements of mainstream school culture and educational attainment all together (Bingham & Okagaki; Fordham & Ogbu, 1986; Steele, 1997). In other words, students may disengage from school because systemic and
structural oppression influences their relative perceptions of the importance of education to their success in society.

Conversely, there is also evidence to suggest that students who hold strong racial identities are more likely to be engaged in school (Bennett, 2006; Chavous et al., 2003; Ungar & Liebenberg, 2013). Extant literature suggests that minority student racial/ethnic identity and student engagement are mutually compatible (Bingham & Okagaki, 2012). Ultimately, support and the strength and quality of relationships with family, peers, and instructors are all influential factors in student engagement among racial and ethnic minorities. The empirical literature suggests that the relationship between ethnic/racial backgrounds, community support, and engagement is very complex and that schools and policymakers need to place greater emphasis on the role of context and its influence on school engagement for racial/ethnic minorities and students generally (Miller-Cribbs, Cronen, Davis, & Johnson, 2002; Ungar & Liebenberg, 2013). This emphasis on context and the institution (e.g., school) is consistent with the aims of this study to examine not only what the student does, but also the role of the institution.

Considering the role of race/ethnicity across different forms of school engagement is an area scholars have identified ripe for further research (Bingham & Okagaki, 2012). Additional research is needed that examines how cultural incongruence in two major spheres of a student’s life (i.e., family and school) influences engagement across racial/ethnic groups. Moreover, more research is needed that examines the influence of engagement on educational outcomes among racial/ethnic minorities, such as belonging. The latter is especially needed in light of the fact that disengaged students are often the
students who do not develop a sense of belonging to school and thus are at risk for dropping out (Finn & Zimmer, 2012).

**Sense of Belonging**

The scholarship on sense of belonging generally describes: (a) the concept of belonging, (b) conditions that foster or inhibit belonging, and (c) the association of belonging with educational outcomes and other variables (Strayhorn, 2012). This section of the literature review briefly defines the term sense of belonging and then reviews findings from college sense of belonging scholarship. This is followed by a brief overview of sense of belonging scholarship drawn from the K-12 and educational psychology literatures.

**Defining Sense of Belonging**

Sense of belonging is a term that has gathered momentum in higher education scholarship for the past decade. This is evident from the wide proliferation of the construct in higher education literature in recent years (Hurtado et al., 2007; Strayhorn, 2008; Strayhorn, 2012). A historical review of the sense of belonging construct reveals that sense of belonging has multiple origins. Sense of belonging emerged from both sociological (e.g., Emile Durkheim) and psychological (e.g., Abraham Maslow) strands of literature. Higher education scholars then drew on these two strands of scholarship to weave a social-psychological definition of sense of belonging that has gained prominence in college student research. Strayhorn (2012) argues that sense of belonging has taken on several meanings over the years. However, he acknowledges that each definition shares several common elements in that they each explain the social and psychological
experiences of students and their subjective appraisal of their fit within a particular environment such as a school, college, or classroom (Strayhorn, 2012). Moreover, most college sense of belonging scholarship of the past decade suggests a common ancestor in the work of higher education scholars from the mid-1990s, especially the work of Sylvia Hurtado and Deborah Faye Carter (Hausmann et al., 2007; Hausmann et al., 2009; Johnson et al., 2007; Maramba & Museus, 2012; Meeuwisse et al., 2010; Museus, 2008; Strayhorn, 2008a; Strayhorn, 2012).

The origins of the term sense of belonging stretch far beyond its emergence in the higher education literature during the 1990s. Maslow (1954; 1968) asserted that sense of belonging was a universal fundamental need sufficient to drive human behavior. He placed sense of belonging squarely in the center of a hierarchy of needs that ranged from physiological needs like food and sleep at the bottom to self-actualization (e.g., pursuit of knowledge, creativity) at the top. In the context of the hierarchy, sense of belonging was envisioned as a need for social connectedness, interpersonal relationships, and membership to social groups. This need only emerged after the lower-level needs were met (e.g., physiological needs) and satisfying the need to belong was described as a gateway to achieving higher level needs like self-actualization. Strayhorn (2012) traces the history and definition of the term sense of belonging, in part, back to Maslow’s work.

On the other hand, Bollen and Hoyle (1990) and Hurtado and Carter (1997) trace the origins of sense of belonging back to a rich history of scholarship on group cohesion and integration that descends from social-psychology and sociology. They credit Emile Durkheim’s (1956) theoretical exploration of the link between social cohesion, suicide,
and labor for what would become the conceptual basis of sense of belonging. Sociologists built on the work of Durkheim to develop theory and measures to probe individual and group cohesion (Hurtado & Carter, 1997). The essence of this line of inquiry went on to inform the work of Spady (1970) and Tinto (1975, 1987) in the field of higher education (Hurtado & Carter, 1997).

Spady and Tinto interpreted the work of Durkheim and social cohesion in the context of higher education further developing the concept of group integration among college students. Both Spady and Tinto described the idea of students’ social and academic integration into the college environment. Tinto went a step further by using the work of Durkheim and Spady to describe students’ interactions in the various social and academic spheres of college to develop one of the most common approaches to studying student departure—student departure theory (Hurtado & Carter, 1997; Tinto, 1993).

However, many higher education scholars take issue with the implications of the term integration because it suggests that a student needs to adopt normative values, culture, and beliefs in order to become a part of the academic and social fabric of college (Hurtado & Carter, 1997; Tierney, 1992). This critique would later inspire some scholars to shift away from integration to further develop the term sense of belonging as a way to better understand the academic and social experiences of racial/ethnic minorities and their influence on educational outcomes (Hurtado & Carter).

Bollen and Hoyle (1990) were also early pioneers of the term belonging and sought to elaborate on prior work of sociologists and social psychologists like Durkheim to further develop the concept sense of belonging. They believed they could take sense of
belonging and the idea of social cohesion outside of the social psychology lab to apply it to other social contexts like education in an effort to better understand social groups and how individuals relate to those groups (Bollen & Hoyle, 1990). Bollen and Hoyle made a concerted effort to separate their work from the historical lineage of group cohesion and to develop their own independent construct related to social cohesion and sense of belonging. Ultimately, they proposed a conceptual definition of perceived cohesion that represented “the extent to which individual group members feel stuck to, or a part of, particular social groups” (Bollen & Hoyle, 1990, p. 482). Importantly, sense of belonging emerged as a key component of the overall architecture of their social cohesion construct. Sense of belonging was both a part of a larger social cohesion construct and its own independent construct.

Bollen and Hoyle (1990) intentionally crafted the term “sense of belonging” to mean more than the frequency of interactions with members of a given group and more than sheer social support. Specifically, their description of the sense of belonging construct entailed both cognitive evaluations of a student’s role in relation to a given group and feelings they had related to their position in the group. This was in contrast to some of the sociological and social-psychological work of their predecessors because it marked a carefully tailored introduction of psychological and affective dimensions to our understanding of sense of belonging. Moreover, their definition recognized the primary importance of the individual in evaluating their relationships to a particular social group (Bollen & Hoyle, 1990). Elements of this definition would be prominently featured in the
definition of sense of belonging used by future higher education scholars like Hurtado and Carter (1997) as well as Strayhorn (2012).

Baumeister and Leary (1995) built on prior work in the field of psychology to formulate and refine the meaning of sense of belonging. They reconciled prior theoretical work in psychology (i.e., Maslow) and sociology (i.e., Durkheim) using extant empirical data to clarify the nature and meaning of the term. They, like Maslow, believed that the need to belong is universal across all societies and cultures but that sense of belonging might look different for different people. They drew further on Durkheim’s (1963) idea of social cohesion from sociology believing that social ties were related to psychological sensations of belonging. Baumeister and Leary carefully distinguished the meaning of sense of belonging from conceptually similar theories drawn directly from sociology or psychology such as the need for affiliation and the need for human contact (e.g., Bowlby, 1973). They argued that sense of belonging does not describe any one particular relationship and that sense of belonging is characterized by more than regular contact or intimacy alone—in turn setting it apart from the concept of affiliation or need for human contact. Baumeister and Leary’s (1995) major contribution to our understanding of the term belonging is that they integrated the sociological and psychological elements of earlier scholars to formulate their definition of belonging. For them, sense of belonging was defined as a combination of frequent social interaction, social ties, and ongoing emotional attachment (Baumeister & Leary, 1995).

The literature reviewed thus far sets the stage for contemporary conceptual definitions of sense of belonging that have proliferated in the higher education literature.
The work of Hurtado and Carter (1997) was a critical juncture in the use and definition of the sense of belonging construct within higher education scholarship. Similar to Baumeister and Leary (1995), their work represents the bringing together of several threads of research drawn from the psychological and sociological literatures to create the college sense of belonging construct. They cite the critical contribution of several of the aforementioned scholars including Durkheim (1957), Spady (1971), Tinto (1975, 1987), and Bollen and Hoyle (1990) to their understanding of belonging. Armed with the concepts described by these scholars, Sylvia Hurtado and Deborah Faye Carter (1997) further developed and refined the sense of belonging construct and transplanted survey items developed by Bollen and Hoyle (1990) into the higher education context to study the experiences of Latino students in college. Sense of belonging was comprised of: (a) the extent to which students felt part of a community on campus, (b) the extent to which they felt they were a member of the college, and (c) the extent to which that they felt a sense of belonging at their college (Hurtado et al., 2007; Hurtado & Carter, 1997).

Furthermore, Hurtado and Carter (1997) were inspired to develop the sense of belonging construct in part as a reaction to the critiques leveled against Tinto’s (1993) ubiquitous student integration/departure theory (Johnson et al., 2007). Hurtado and Carter took issue with Vincent Tinto’s (1993) integration theory because, they argued, it placed the burden of integration on the student rather than attributing the responsibility for fostering a sense of belonging to the institution (Johnson, et al., 2007). They set out to create a related yet distinct construct to describe and measure the process students underwent to become a ‘part’ of an institution (Johnson et al., 2007). To do so, they
tailored the sense of belonging construct in an effort to better understand and explain what integration looked like for students of color who sought a sense of belonging in college without necessarily giving up cultural heritage or masking differences (Nunez, 2009). Specifically, sense of belonging was defined as a construct that consists of both cognitive and affective dimensions (Hurtado & Carter, 1997; Strayhorn, 2012). It entails an evaluation of a student’s relationship to a given social group or campus community that in turn yields psychological outcomes and emotional responses. The extent to which a student feels connected to campus and feels like a respected and valued member of the college community is also a critical component of their definition.

The weight of college sense of belonging literature produced in the past fifteen years has explicitly traced the meaning of the term sense of belonging to the sources identified above. The definition described by Hurtado and Carter in 1997 is particularly popular among higher education scholars (e.g., Hausmann et al., 2007; Hausmann et al., 2009; Johnson et al., 2007; Maestas et al., 2007; Maramba & Museus, 2012; Meeuwisse et al., 2010; Museus, 2008; Museus & Maramba, 2011; Strayhorn, 2008; Strayhorn, 2012). In fact, Tovar et al. (2010) noted that the meaning of the term has evolved little in the years since it was described by Hurtado and Carter (1997).

I would be remiss to exclude a volume reviewing scholarly work on sense of belonging produced by Terrell Strayhorn. Strayhorn (2012) produced a book that describes the meaning behind sense of belonging and in it he identifies several core definitional elements that reflect a blend of prior work on belonging in higher education, sociology, and psychology. He cites Hurtado and Carter’s (1997) work on sense of
belonging as a key point of departure for shaping his own work on belonging. He adopts and expands Hurtado and Carter’s (1997) definition of sense of belonging described previously. He also draws on the sense of belonging work of Baumeister and Leary (1995) to describe sense of belonging as a largely relational construct. Moreover, he names the theoretical musings of Maslow (1968) as a fundamental influence on how he conceives the term belonging.

Strayhorn (2012) suggests that sense of belonging as a construct takes on different properties from context to context. That is, someone can feel a sense of belonging in one context and not in another. He also describes the influence of social identities on sense of belonging and indicates that sense of belonging might look different across various student populations and characteristics like race, gender, or sexual identity. His work asserts that sense of belonging is particularly meaningful for those who experience marginalization (e.g., people of color, LGBQ students) in particular settings (e.g, PWIs) (Hurtado & Carter, 1997; Strayhorn, 2012). Finally, he believes that sense of belonging is related to the concept of mattering. A sense of belonging may be formed because an individual feels that they matter to others, that they are valued, and that a given group respects them.

**Conditions that Engender Sense of Belonging**

A review of the literature reveals a wealth of studies that examine factors that influence students’ sense of belonging. It is readily apparent that the literature on sense of belonging has clustered around studies of racial and ethnic minority students (Johnson, 2003)—in part owing to the extensive work of some of the concept’s biggest proponents
(Hurtado & Carter, 2007; Strayhorn, 2012). While studies of other identity groups exist (e.g., Ostrove, 2007; Strayhorn, 2012), the great majority of the research examines factors and outcomes related to sense of belonging for students of color. The next section of the literature review describes major findings related to factors and outcomes associated with belonging.

**Campus Climate and Culture.** In one of the first major studies on college sense of belonging, Hurtado and Carter (1997) examined the association of college transition and environmental factors like campus racial climate with sense of belonging for Latino students. Results suggest there is indeed a relationship between college environmental factors and reported sense of belonging among Latino students. For instance, they observed a negative relationship between students’ perceptions of a hostile racial climate and their reported college sense of belonging (Hurtado & Carter). In other words, a more hostile racial climate was associated with lower sense of belonging for students.

In another study of environmental factors and their relationship to sense of belonging, Maramba and Museus (2013) examined the influence of campus climate, ethnic group cohesion and cross-cultural interaction on sense of belonging among Asian Americans. The findings suggest that all three factors directly influence sense of belonging among Asian students. The influence of cultural differences on sense of belonging among Asian students is a particularly noteworthy result that reflects the role of institutional culture and structural diversity on sense of belonging among students of color. The researchers also discovered that strong cultural/ethnic identification among Asian students may account for frequent observations of self-segregation among Asian
students on campuses due to hostile climates, in effect driving students of color to form social groups on the basis of shared identity (e.g., race, culture, ethnicity) (Maramba & Museus, 2013). Similarly, Maramba and Museus (2011) also examined the relationship between culture and sense of belonging among Filipino Americans. The authors found that major cultural challenges exist for Filipino American students in terms of their adjustment and sense of belonging in college where the overall institutional culture is often very different from their own. Their study found that students’ connections to cultural heritage exerted an indirect influence on sense of belonging through its influence on cultural adjustment to the campus.

Additional research has explored the relationship between various environmental factors and sense of belonging among first-year undergraduates of color. Johnson et al. (2007) found that Asian, Black, and Latino students all reported a weaker sense of belonging when compared to their White counterparts at PWIs, suggesting the influence of institutional context on sense of belonging. They also found that a smooth transition to college was significantly linked to reported sense of belonging across all races. What is more, the support of faculty, advisors, peers, and the college environment all appeared to shape student perceptions of a smooth college transition (Johnson et al., 2007).

It also appears that particular contexts within institutions, such as residence halls, significantly influenced the development of a sense of belonging across all races and ethnicities. Indeed, residence hall environments provide a space for relationship building and interpersonal contact that in turn shape student sense of belonging (Johnson et al., 2007). Whether students found their residence halls to be socially supportive and
inclusive was a significant predictor of reported sense of belonging across race and ethnicity.

Further, Hurtado and colleagues (2007) explored factors that influenced sense of belonging among underrepresented first-year science students and uncovered a host of environmental factors and pedagogical characteristics that influence belonging. Their examination probed the influence of students’ perceptions of their environment on their sense of belonging. Specifically, they found that hostile racial climates exhibited a consistently negative influence on sense of belonging for students of color. As well, students’ perceptions of a competitive learning environment exerted a negative influence on their sense of belonging. The practical relevance of coursework communicated by instructors also appeared to influence their reported sense of belonging, suggesting that classroom cultures and environments that emphasizes practical application of work may contribute to a sense of belonging for students of color. Finally, their research revealed that students’ adjustment to the academic environment was strongly linked to students’ sense of belonging to the campus community. These studies suggest that environmental factors, culture, and campus climate are important factors to consider when studying sense of belonging among racial/ethnic minority students.

**Academic and Social Experiences.** Extant literature identified a suite of academic and social experiences that bear on sense of belonging. Maestas, Vaquera, and Zehr (2007) conducted a single institutional study that probed for the influence of academic and social experiences on sense of belonging at a Hispanic Serving Institution (HSI). They found that several academic experiences positively influenced sense of
belonging for students including participation in academic support programs and perceptions of faculty interest in students’ personal development. The social experiences that influenced sense of belonging included living on campus and participation in extracurricular activities. These social experiences appeared to provide additional opportunities for students to form relationships and make connections with others with implications for belonging given the construct’s relational nature. Finally, diverse interactions and interactions with peers from a different race each were positively related to students’ reported sense of belonging.

Another research investigation probed the relationship between peer interactions, student success, and sense of belonging, finding some evidence to suggest positive links (Meeuwisse, Severiens, & Born, 2010). A survey of their findings reveals that racial and ethnic minorities felt a greater sense of belonging when they reported quality relationships and positive interactions with faculty and peers. Academic experiences in learning environments also exerted an influence on the quality and nature of interactions between students and their teachers and peers with implications for student sense of belonging.

Other research has examined the influence of academic and social experiences in college on sense of belonging for specific student racial/ethnic populations. Strayhorn (2008a) queried the relationship between academic and social experiences and Latino student sense of belonging. His study found that grades, time spent studying, and diverse peer interactions are all significantly and positively related to sense of belonging among Latino students. Moreover, he identified significant differences between Latino and
White students in terms of their reported sense of belonging. Interactions with diverse peers more strongly influenced sense of belonging among Latinos than Whites. Perhaps then unsurprisingly, other studies have shown that Latino students tend to report lower levels of belonging at PWIs when compared to their White counterparts (Strayhorn, 2012).

Another study of first year students at a four year public university tested for factors that predict sense of belonging among Latino students. The study investigated the college social experiences and background traits that influenced sense of belonging for Latino students. Specifically, the authors wanted to know whether racial climate, experiences with diversity, and immigrant status were associated with sense of belonging (Nunez, 2009). Findings suggest that positive diversity experiences, faculty-student interactions, and presence of diversity curriculum were positively associated with sense of belonging for Latino students. On the other hand, perceptions of a negative racial climate and second generation status were negatively associated with sense of belonging for Latino students. Johnson and colleagues (2007) found similar results in their examination of racial/ethnic differences in belonging. They found that interacting with diverse peers was an important predictor of sense of belonging among Latino students—a relationship the study’s authors did not find for the other racial groups under examination (Johnson et al., 2007). This research suggests the critical role of diverse social interactions for belonging among Latino students and the need to foster diverse campus environments.
Strayhorn (2008b) studied the influence of diverse peer interactions on sense of belonging for Black students at PWIs. Findings suggest a significant relationship between diverse peer interactions and sense of belonging for Black men. More frequent diverse interactions were associated with higher sense of belonging to campus. Interacting with students who had a diversity of interests and students from other races also appeared to positively influence Black men’s sense of belonging on campus. Interactions with diverse peers proved to be the strongest predictor of belonging, consistent with what was found for Latino students in the studies reviewed earlier in this chapter. Furthermore, Strayhorn (2012) highlighted findings from numerous studies that revealed several additional social and academic factors that relate to sense of belonging for Black men. Consistent with his earlier research, he found that cross-racial peer interactions were significant positive predictors of sense of belonging among Black men (Strayhorn). Higher frequency of peer engagement was positively related to reported sense of belonging for Black men. Participation in campus life, welcoming racial climates, and academic support were also all found to be related to greater sense of belonging among Black men (Strayhorn, 2012).

**Student Activities.** There is evidence to suggest that student activities and involvement may influence sense of belonging. Museus (2008) conducted a qualitative study to examine the role of ethnic student organizations and clubs in fostering Black and Asian student belonging at PWIs. He found that ethnic student organizations and subcultures at PWIs appeared to positively influence minority student adjustment to college and in turn their sense of belonging. These organizations and their associated
subcultures helped students forge connections with their cultural background and with peers who shared similar cultural backgrounds which yielded a sense of being tied to the campus (i.e., a sense of belonging). The study provides confirming evidence that student organizations and groups that foster subcultures at PWIs play an important role in adjustment and sense of belonging among racial and ethnic minorities who may not otherwise identify with the dominant institutional culture. Indeed, these organizations and groups offer an important space for students to explore and express their identities (Museus). Similarly, Johnson and colleagues (2007) found that participation in co-curricular activities was significantly related to sense of belonging for both Asian and White students. Contrary to Museus’ (2008) findings however, their study revealed that participating in co-curricular activities bore no significant relationship to sense of belonging reported by Black and Latino students. While the evidence is mixed, it appears that student participation in ethnic or cross-cultural organizations and clubs may exert some influence on sense of belonging for students of color. It may be that the nature of the co-curricular activity alters its relationship to students’ sense of belonging. For instance, it is possible that the racial/ethnic orientation of the co-curricular activities described by Museus (2008) exerted a positive impact on belonging for racial/ethnic minorities whereas the general nature of the co-curricular activities examined by Johnson and colleagues (2007) did not.

Furthermore, Hurtado and Carter (1997) examined the relationship between holding discussions about course materials outside of class, involvement with religious and social organizations, and sense of belonging among Latino students. Their findings
revealed the positive influence of speaking with faculty and tutoring other students on sense of belonging. Their study did not find any significant association between involvement in ethnic or culture-based organizations and clubs on campus and sense of belonging for Latino students—although membership in such organizations is known to help combat the impact of negative campus racial climates that may exist at PWIs (Hurtado & Carter, 1997).

Finally, Strayhorn (2012) conducted a series of studies examining the association of student involvement and sense of belonging. While he took care to differentiate student involvement from student engagement, as does this dissertation, his studies offer important insights into the role of what the student does and its relationship to their sense of belonging. Thus, a brief overview of those findings is merited here with a caveat acknowledging the important distinction between involvement and engagement described elsewhere in this dissertation. Strayhorn (2012) consistently found that involvement in academic and social activities was positively related to sense of belonging. Through a series of correlation analyses, he found that involvement in campus organizations, using recreational facilities, playing sports, socializing with faculty, and spending time on academic work outside of class were all positively related to increased sense of belonging among students. His studies also detailed the ways that involvement helped students develop a sense of belonging through connecting with other students with similar interests and values and providing students the opportunity to become familiar with the college environment (Strayhorn).
The Role of Sense of Belonging

In a second line of inquiry, scholars have examined the relationship of sense of belonging to student educational outcomes. A review of the literature reveals that comparatively fewer studies have examined the influence of belonging on other college outcomes. One study of first-year students at a PWI explored class sense of belonging and its association with motivation, perceptions of their instructor, and overall sense of belonging to the larger campus. Several findings of note emerged. First, students who felt a stronger classroom sense of belonging also reported feeling greater motivation in class and more confident in accomplishing course tasks (Freeman et al., 2007). Second, the authors found a relationship between student feelings of belonging in class and their perceptions of the instructor traits (e.g., openness, encouraging). Third, the researchers uncovered some limited evidence of a positive relationship between students feeling they belonged in class and reported belonging at the campus level.

Other important findings related to the role of belonging in student educational outcomes emerged from the work of Hausmann and colleagues across two studies. One study focused on the relationship between sense of belonging and student persistence. Researchers found that sense of belonging predicted intentions to persist among first-year Black and White students (Hausmann, Schofield, & Woods, 2007). In a second study, Hausmann and colleagues (2008) found that sense of belonging influenced institutional commitment and intentions to persist in addition to actual persistence among both Black and White students. These two studies offered precious empirical evidence linking sense of belonging and student persistence/retention, highlighting the critical role of belonging.
in student success and educational attainment as well as supporting theoretical claims to that posit a link between sense of belonging and retention (Hausmann et al., 2008; Strayhorn, 2012). Thus, the researchers concluded that sense of belonging deserved inclusion in any future attempts to address observed retention issues—a claim the present investigation heeds.

School Sense of Belonging

This chapter has thus far covered the sense of belonging literature in the college setting and cited the key works of sense of belonging scholars in higher education. While sense of belonging shares many features across scholarship, the defining elements that comprise the term do vary somewhat across literatures (Libbey, 2004; Strayhorn, 2012). For instance, there is a corpus of scholarship that addresses sense of belonging in the school setting that at once reveals shared and divergent notions of the term compared to its usage in higher education. The next section provides a brief overview of sense of belonging in the school setting and educational psychology context.

Ames (1992) claims that sense of belonging entails both cognitive and affective components and can be described as a motivational pattern. Belonging represents a feeling of peer acceptance, of being important, respected and supported by others, and being a contributing participant in one’s own learning experience (Ames, 1992; Goodenow, 1993). Moreover, it incorporates student identification with the school and an integration into educational tasks; students with a school sense of belonging feel that they are an integral part of their educational environment (Finn, 1989). Belonging is likely influenced by both the academic and social dimensions of the school experience and
varies across educational contexts (Anderman, 2003; Juvonen, 2007; Osterman, 2000). It is established through the formation of reciprocal relationships with others in school (Goodenow, 1993). Sense of belonging is particularly critical for adolescents and bears on student decisions to depart school (Anderman, 2003; Finn, 1989). Therefore, scholars contend it is a basic psychological need that schools bear a responsibility to meet (Osterman, 2000).

Furthermore, Carol Goodenow (1993) has conducted several studies related to sense of belonging and she submits there are at least three primary dimensions of belonging including peer relationships, instructor relationships, and a broad-spectrum, general sense of belonging. Her claims are consistent with other scholars who suggest there is an association between sense of belonging, peer relationships, teacher relationships, and student engagement (Juvonen, 2007). Other scholars offer additional elements of school belonging, maintaining that belonging may entail cooperative learning with peers and teachers, teacher support and validation, and opportunities for students to contribute to the learning process (Albert, 1991; Ma, 2003). What is more, school climate, administrators, and teachers all appear to influence students’ sense of school belonging (Ma).

Scholarship suggests that sense of belonging is related to motivation, effort, and achievement (Goodenow, 1993). This appears to be consistent with the higher education literature that links college sense of belonging to persistence and retention (e.g., Strayhorn, 2012). Sense of belonging is associated with a number of important student outcomes. Case in point, belonging may be associated with satisfaction, happiness, and a
general sense of well-being among students (Osterman, 2000). Still others have linked the lack of belonging to a number of negative psychological outcomes like anxiety, depression, behavioral problems, and other forms of mental and physical ailments (Baumeister & Leary, 1995; Osterman, 2000; Resnick et al., 1997).

School sense of belonging scholarship has especially focused on the middle school and junior high school years as key transition points where belonging may take on heightened importance (Juvonen, 2007). Indeed, without the right supports in place, students often become disengaged and feel a diminished sense of belonging in these years. Anderman (2003) conducted one study examining sense of belonging among middle school children. She found that the promotion of adaptive academic and interpersonal contexts in classrooms were positively related to sense of belonging. The results of her study revealed several factors were positively related to students’ school sense of belonging. Specifically, previous school achievement, the nature of tasks in the classroom, and academic motivation appeared to be positively associated with sense of belonging. Moreover, student perceptions of academic assignments as interesting and useful were also related to greater sense of belonging. In yet another study, school sense of belonging was found to be positively related to focus on academic tasks and increased goal orientation, while exhibiting a negative relationship with ability goal orientation (Anderman & Anderman, 1999). Therefore, the authors suggest that school sense of belonging may be related to students’ pursuit of knowledge.

Scholars lament that little is known about the variables that influence sense of belonging in the K-12 school setting (Anderman, 2003). Moreover, the extant literature is
unclear regarding the directionality of a number of variables (e.g., motivation) in relation to sense of belonging—and the relationship between sense of belonging and a range of social and academic variables in the school setting may in fact be reciprocal in nature (Anderman, 2003; Juvonen, 2007). While some scholars posit that any number of social and academic factors are precursors to sense of belonging, others posit that sense of belonging is a precursor to student performance and behaviors (e.g., engagement) (Osterman, 2000; Wentzel, 1998). Thus, scholars acknowledge that it is challenging to establish any form of causality between belonging and other factors such as engagement and vice versa, yet they maintain investigations that probe such relationships are worthwhile endeavors (Juvonen, 2007). Adding to the complexity, there is some overlap in construct definition for concepts like engagement and belonging. Libbey (2004) conducted a metanalysis of scholarship related to school attachment, belonging, involvement, and engagement and outlined each as a distinct construct with its own definition that appears to support calls in the higher education literature for separate treatment of these constructs acknowledging the unique contribution each may make to our understanding of the student experience (e.g., Wolf-Wendel et al., 2009)—calls that are noted in the present investigation.

Several studies have linked school involvement with sense of belonging in the school setting (Osterman, 2000). Some contend that any form of school engagement is likely to facilitate the development of a sense of belonging, which in turn may dissuade students from dropping out (Finn, 1989). Finn (1989) claims that involvement in extracurricular activities, spending time in the school environment, and social interactions
may be associated with sense of belonging because it provides opportunities for students to connect to and identify with their school. More recent scholarship appears to support the notion that sense of belonging is related to academic motivation, student engagement, achievement, and persistence (Osterman, 2000).

Furthermore, Anderman (2003) acknowledges that sense of belonging likely varies across different student populations. Goodenow (1993) contends that school sense of belonging may be particularly important for students in environments or contexts that place them at risk, such as minority students in a predominantly White school. One study explored school sense of belonging in a community of largely racial and ethnic minorities and found that value assigned to school work, sense of belonging, and persistence were all significantly related—notably, sense of school belonging was lower among students in these communities compared to mostly White students in predominantly White suburban communities (Goodenow & Grady, 1993). Another study found that Black adolescents who were more engaged also reported higher levels of competence and belonging (Connell et al., 1995). While there is compelling evidence to suggest the importance of school belonging, those students with the greatest need to belong (e.g., racial/ethnic minorities in predominantly White schools) are often those with the lowest levels of belonging (Osterman, 2000). This suggests an exigent need for additional scholarship that examines factors that are related to increased belonging among students who may be marginalized or experience alienation or exclusion such as students of color in predominantly White educational contexts.
Finally, scholars maintain that efforts to increase sense of belonging among students should focus at both the individual and institutional level (Goodenow, 1993). Relatively few studies explore the role of institutional responsibility in fostering sense of belonging through building school community (Osterman, 2000). Thus, parsing out the role of the student and the role of the institution in engagement and the relationship of each to student outcomes (e.g., sense of belonging) may be particularly useful for future research and in any scholarly efforts to formulate a more complete picture of factors that engender belonging.

**A Blended Framework**

Drawing on the scholarship reviewed in this chapter, a blended framework guides the present study. This framework provides the study with the necessary language to meaningfully address the purpose of this inquiry and assists the author in his approach to the investigation and making sense of the results.

**Student Engagement**

The student engagement component of the blended framework consists of at least two distinct dimensions. The first dimension consists of the broad theoretical claims that define student engagement theory: (a) students dedicate time and effort into educationally purposeful learning activities that in turn produce positive educational outcomes, and (b) institutions provide students with the educationally purposeful activities and experiences necessary to achieve positive outcomes. Student engagement is a mutual relationship between student and the institution (Strayhorn, 2012; Harper & Quaye, 2009). In sum,
theory contends that engagement consists of what the student does (i.e., involvement) and what the institution does (i.e., institutional engagement).

The engagement framework also consists of five benchmarks for educationally purposeful activities outlined in NSSE. These five benchmarks are presupposed to contribute to desired outcomes of student engagement and college education. Kuh (2009), NSSE (2007; 2011), and Harper & Quaye (2009) offer succinct descriptions of each of the five benchmarks that I will describe here:

- **Level of academic challenge** is defined as the hard work that students put forth to apply key theories and concepts from class, meeting or exceeding faculty expectations, and studying and preparing for classes. From the institutional perspective, level of academic challenge consists of providing an educational atmosphere that challenges students intellectually and creatively while promoting high expectations for students;

- **Active and collaborative learning** is characterized by class contributions to discussions, discussing course content outside of class, significant contributions to group work with peers on assignments, and engaging in community projects. The institution’s role is to provide learning activities and spaces conducive to intense group work, peer collaboration, and problem solving both in and outside of class;

- **Student-faculty interaction** refers to student and faculty discussions around ideas that emerged from course readings, meeting frequently to meaningfully discuss career plans with staff, and working on committees that bring together faculty,
staff, and students. The institution promotes these interactions and fosters mentoring relationship between its faculty, advisors, staff, and students;

- *Enriching educational experiences* entails diverse interactions and meaningful discussions, participation in student organizations, hall councils, and study abroad, as well as participation in faculty research and internships. The institution in turn must provide learning activities that complement what is learned in the classroom, it must recruit a diverse student body, and it must provide opportunities for cross-cultural interaction and study;

- The *supportive campus environment* component refers to student perceptions of their academic and social environments and the accompanying support structures provided by the institution in addition to quality of relationships formed with peers, faculty, and staff on campus. The institution’s role is to commit to cultivating a supportive living-learning environment that encourages positive relationships among diverse student, faculty, and staff groups. The fifth and final component was deemed particularly relevant for the purpose of this study because my dissertation brings forth the role of the institution in supporting engagement

**Sense of Belonging**

The second component of the blended framework is sense of belonging. A brief overview of the particular elements of sense of belonging as described by Strayhorn (2012) is presented here and elsewhere in this dissertation. Strayhorn (2012) identifies and describes seven components of sense of belonging that guide the present inquiry: (a) sense of belonging is a basic human need; (b) sense of belonging is a fundamental motive
that drives student behavior in productive ways; (c) sense of belonging takes on heightened importance in certain contexts, at particular times, and for particular student populations; (d) sense of belonging is related to, and a result of, mattering, meaning that a student must feel valued and respected by others on campus to develop a sense of belonging; (e) social identities intersect and affect sense of belonging, the salience of those identities bear on feelings of belonging, (f) sense of belonging is related to other positive outcomes such as wellbeing and happiness, and (g) belonging is an ongoing need that must be continually fulfilled. The nature of belonging varies from situation to situation, condition to condition, and from context to context.

Need for the Study

The literature contained in this chapter reveals a gap in our knowledge. Several studies have described the nature of student engagement while others have examined the factors that influence engagement. Comparatively fewer have examined the relationship between engagement and other student outcomes. The belonging literature describes the sense of belonging concept and the influence of sense of belonging on several educational outcomes—most notably persistence and retention. The scholarship examining the factors that relate to sense of belonging covers a wide array of variables including campus climate/culture, student activities, and several academic and social experiences. Very few scholars have examined the influence of student involvement on sense of belonging and virtually no scholarship has explicitly examined the influence of student engagement on sense of belonging as it is conceived in this dissertation.
There are unanswered calls for scholarship that parses out the relationship between involvement, engagement, and belonging (Strayhorn, 2012; Wolf-Wendel et al., 2009) and many unanswered calls for studies that examine the relationship between specific elements of engagement and outcomes such as sense of belonging (Harper & Quaye, 2009; Hurtado et al., 2007). To date, no studies have specifically examined the influence of engagement, as defined by Kuh and colleagues (2009), on sense of belonging among students of color at PWIs. No research exists that explicitly parses out the influence of the two core agents of engagement (i.e., the student and the institution) on sense of belonging for students of color attending PWIs. Furthermore, despite the prominent role of the student and the institution in student engagement theory (Harper & Quaye, 2009; Kuh et al., 2009), no studies examine the unique and combined relationship of student involvement and institutional engagement with sense of belonging for racial/ethnic minorities. Nor is there research that determines whether institutional engagement exerts an influence on student sense of belonging above and beyond that accounted for by student involvement—despite scholars arguing conceptually that the institution’s role is particularly important to encourage positive educational outcomes for students of color in contexts like PWIs (Harper & Quaye, 2009). The present study fills this gap in our knowledge.
Chapter 3: Methodology

There are gaps in our understanding of the relationship between involvement, engagement, and sense of belonging among students of color. To address these gaps, the present study uses data from the National Survey of Student Engagement (NSSE) to explore the relationship between student involvement, institutional engagement, and sense of belonging among people of color at a large, southeastern PWI. The analysis is guided by Kuh and colleagues’ (2009) description of student engagement theory which specifies two major agents of engagement (i.e., the student and the institution) and calls for research that parses out what the student does, what the institution does, and sense of belonging. This study aims to provide useful information to institutions, educators, and students that can influence policy, theory, and practical decisions alike in an effort to address outcomes like sense of belonging and larger issues that face higher education such as disparate retention rates across race and ethnicity.

Research Questions

I address the following research questions in this study:

1. Are there differences by race/ethnicity in reported student involvement, institutional engagement, and sense of belonging among PWI students?

2. Is there a relationship between student involvement, institutional engagement, and sense of belonging for students of color attending PWIs?
This study utilized an ex-post facto survey design with data from the 2006-2007 administration of the NSSE at a large, public, predominantly White four-year institution in the southeastern United States. Ex-post facto research is a commonly used method in social sciences that entails an investigation into a specified phenomenon after it has occurred naturally without researcher manipulation (Silva, 2010). Data from this administration of the NSSE were used to conduct a secondary analysis examining the aforementioned research questions.

This chapter outlines and explains the methodological steps taken to answer the research questions and probe the relationship between the variables of interest to this study. The chapter is organized into five sections. First, I begin by describing the student population and sample at the research site. Second, I provide an overview of the data source and instrumentation. The third section provides a description of the validity and reliability of the data source and variables. The fourth section describes how data were manipulated and analyzed to answer my research questions. This is followed by a final section of concluding remarks.

Sample Selection

The sample for this study was drawn from a 2006-2007 local administration of the NSSE. The NSSE was administered to randomly selected first-year and senior year undergraduate students attending a large, selective public university located in the southeastern region of the United States. The institution is a four-year, degree granting PWI located in a mid-sized urban community. The university enrolls over 19,000 full-time undergraduates on its main campus with first-year students accounting for
approximately 22% and seniors accounting for approximately 26% of the student body, approximately half of all students enrolled at the institution. The institutional gender breakdown of the student population is 51% male and 49% female. Students of color (i.e., Black and Latino students) constitute 10% of the total first-year and senior undergraduate student population while White students comprise approximately 81%. The majority of students were enrolled in the College of Arts and Sciences (34%), followed by the College of Business Administration (18%) and the College of Engineering (12%). A large majority (83%) of the undergraduate student population at this institution fall within the traditional college age range of 18-22.

Several sample selection criteria were used to extract the analytic sample from the 2006-2007 NSSE data set. The analytic sample consisted of students who identified as Black, Latino, and White on the appropriate NSSE survey item. The decision to exclude Asian students from the analysis was informed by the overall scope and purpose of the study. Because this study examines the relation between student engagement and sense of belonging, situated in the larger context of student persistence and retention among racial/ethnic minorities, the sample was restricted to those racial/ethnic minorities that exhibit the lowest persistence and retention rates, Black and Latino students. On average, Asian students persist and graduate at the highest rates among all racial/ethnic populations (Seidman, 2005). Therefore, the decision was made to exclude Asian students from the analytic sample.

A randomly selected group was extracted from the larger sample of 6,016 White students to yield a sample of White students ($N=481$) that closely approximated
the number of racial/ethnic minorities in the analysis. Comparing data from White students and students of color is a commonly used strategy when conducting higher education research related to racial/ethnic minorities at PWIs to probe for racial differences (Johnson, 2003; Strayhorn, 2008). The final analytic sample consisted of 477 students of color and 481 White students.

The gender breakdown of the aggregate sample was 48.8% male and 51.2% female. The majority of the sample was enrolled full-time (95.5%) with the remaining enrolled part-time. Most students were native to the institution (62.9%) with the remaining sample consisting of transfer students (19.3%). Further description of sample characteristics disaggregated by race is provided in Table 3.1

**Instrumentation**

The present study entailed a secondary analysis of data collected from a local administration of the 2006-07 NSSE instrument. The NSSE is a widely used survey instrument in higher education administered by Indiana University at Bloomington to over 600 education institutions nationwide to examine the experiences of college students and associated student outcomes. The NSSE instrument is comprised of 28 survey questions that measure student background traits (e.g., race), characteristics (e.g., year in college), student perceptions of institutional environment, and student engagement in campus activities (Kuh, 2009).
### Table 3.1
Sample Characteristics

<table>
<thead>
<tr>
<th>Variables</th>
<th>White (N=481)</th>
<th>SOC* (N=477)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>41.1</td>
<td>35.0</td>
</tr>
<tr>
<td>Female</td>
<td>58.9</td>
<td>65.0</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 or younger</td>
<td>53.7</td>
<td>71.0</td>
</tr>
<tr>
<td>20-23</td>
<td>31.7</td>
<td>22.8</td>
</tr>
<tr>
<td>24-29</td>
<td>6.2</td>
<td>2.4</td>
</tr>
<tr>
<td>30-39</td>
<td>6.4</td>
<td>1.3</td>
</tr>
<tr>
<td>40+</td>
<td>2.1</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>Class Rank</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Year</td>
<td>54.9</td>
<td>71.1</td>
</tr>
<tr>
<td>Sophomore</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Junior</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Senior</td>
<td>45.1</td>
<td>28.9</td>
</tr>
<tr>
<td><strong>Transfer Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native</td>
<td>78.2</td>
<td>84.4</td>
</tr>
<tr>
<td>Transfer</td>
<td>21.8</td>
<td>15.6</td>
</tr>
<tr>
<td><strong>Enrollment status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>94.6</td>
<td>97.4</td>
</tr>
<tr>
<td>Part-time</td>
<td>5.4</td>
<td>2.6</td>
</tr>
</tbody>
</table>

*Note. SOC means students of color*

The NSSE survey is administered online to randomly selected first-year and senior year students. Data collection and student recruitment takes place via the web by NSSE and/or institutional staff during spring semester. It is important to note that the spring administration of the survey may affect perceptions of belonging among first-year and transfer students.
Online surveys are an increasingly common data collection strategy used in social science research; the web-based administration of surveys generally yield acceptable response rates (Nulty, 2008). Indeed, response rates to online surveys are comparable to paper-based surveys (Gosling, Vazire, Srivastava, & John, 2004; Poole & Loomis, 2009). The average NSSE response rate is 30%, a number widely accepted in social science research (NSSE, 2014).

NSSE is organized around five benchmarks for student engagement: (a) level of academic challenge, (b) active and collaborative learning, (c) student-faculty interaction, (d) enriching educational experiences, and (e) supportive campus environments (Harper & Quaye, 2009; Kuh, 2001). These five benchmarks each represent a facet of educationally purposeful activities that define student engagement and shape the college experience in ways that impact growth and may lead to positive student educational outcomes like sense of belonging and retention (Harper & Quaye, 2009; Kuh et al., 2005).

The instrument is designed to elicit student self-reports of involvement in campus activities, quality of effort put forth in those activities, and perceptions of the campus environment as it relates to institutional efforts to engage students (Harper & Quaye, 2009; NSSE, 2007). Specifically, the NSSE instrument contains six sections: (a) informed consent, (b) participation in educationally purposeful activities, (c) institutional requirements and nature, (d) student perceptions of the college environment, (e) self-reported educational growth and personal development in
college, and (f) student demographic information. A sample of the survey is provided in Appendix A.

**Variables**

This study consisted of four main independent variables, one dependent variable, and a battery of control variables related to student characteristics. This section describes how each of the variables was measured and provides accompanying sample survey questions from the 2006-07 NSSE instrument. For the purposes of this study, composite scales were created based on several survey items drawn from the NSSE to reflect the nature and scope of the variables of interest to this investigation. Items were initially selected that appeared to capture the essence of variables based on prior literature and extant NSSE scales. Principal component factor analysis was conducted to determine the latent structure of each variable. A full index of NSSE items for each composite variable and their respective factor loadings and coefficient alphas are presented in Appendix B.

**Independent variables**

The main independent variables in this analysis were operationalized based on two agents of engagement as defined by Kuh (1993, 2005) and corroborated by Harper and Quaye (2009)—the student and the institution. Recall that student engagement implicates at least two major phenomena: (a) student involvement, and (b) institutional engagement. Harper and Quaye (2009) argue that student engagement, particularly for students of color, only yields positive outcomes when students participate in educationally purposeful college activities and when institutions undertake intentional
efforts to foster welcoming and supportive environments that encourage involvement. Guided by the student engagement literature, two independent constructs were operationalized using items from the NSSE. The first construct is student involvement and it is measured using three variables, *student academic involvement, student social involvement,* and *student-faculty involvement.* The second construct is institutional efforts to engage students and it is measured using one variable called *institutional engagement.*

**Student Involvement.** Student involvement is the first construct and it is measured with three independent variables: (a) student academic involvement, (b) student social involvement, and (c) student faculty involvement. Student involvement refers to students’ reported frequency of participation in educationally purposeful activities consistent with those described by Kuh and colleagues (1993; 2005). Involvement in educationally purposeful activities is characterized by active and meaningful participation with peers inside and outside of the classroom, meaningful interactions with faculty members and college personnel, working with faculty on research, and diverse interactions with peers, among others features (Kuh, 2005; Harper et al., 2004; Harper & Quaye, 2009). Decisions to create each variable were informed and guided by student engagement theory, empirical evidence (Harper et al., 2004), and especially Pike’s (2006) work to create subscales from NSSE survey items that address particular facets of student involvement and engagement. Fourteen items were subject to factor analysis to determine the underlying structure of each involvement variable and to make final decisions regarding the variable subscales.
detailed explanation of NSSE survey items that comprise each student involvement variable is provided in Appendix C.

**Student academic involvement.** The student academic involvement variable is a composite, summated scale of three NSSE survey items that relate to working with peers on course projects, working on assignments with students outside of class, and other similar educationally purposeful and academically-oriented student involvement activities. Students were asked to rate their frequency of involvement across a range of educationally purposeful activities related to academics. A sample survey item asked students to report how frequently they worked with other students on projects during class. Another survey question asked students to rate how often they made presentations in class. Each item was rated on a 4-point Likert-type scale ranging from 1 (never) to 4 (very often). The student academic involvement summated scale ranged from 3 to 12.

**Student social involvement.** The student social involvement variable is a composite, summated scale of four NSSE survey items that relate to interactions and discussions with diverse peers, friends, family, or coworkers. Students were asked to rate their frequency of involvement in conversations and social interactions with others from diverse political, religious, and racial backgrounds. A sample survey item asked students to report how frequently they had serious conversations with students of a different race or ethnicity than their own. Another sample survey question asked students to rate how often they had serious conversations with students with religious beliefs, political opinions, or personal values that differed from their own. Each item
was rated on a 4-point Likert-type scale ranging from 1 (never) to 4 (very often). The student social involvement summated scale ranged from 4 to 16.

**Student faculty involvement.** Prior theory and the weight of empirical scholarship suggests that student-faculty interaction is a major component of student involvement and engagement (Harper et al., 2004; Pike, 2006). The *student-faculty involvement* variable is a composite, summated scale of five NSSE survey items that relate to interactions with faculty, discussing grades with instructors, or asking instructors questions in class. Students were asked to rate their frequency of involvement with faculty across a range of educationally purposeful activities. A sample survey item asked students to rate how frequently they discussed ideas from their readings or classes with faculty members outside of class. Another sample survey item asks students to rate how frequently they discuss grades or assignments outside of the class with their instructor. All items were rated on a 4-point Likert-type scale ranging from 1 (never) to 4 (very often). The student faculty involvement summated scale ranged from 5 to 20.

**Institutional Engagement.** Guided by student engagement theory, items were considered that measure institutional emphasis on student engagement and involvement opportunities (Kuh, 2005; NSSE, 2007; Pike, 2006). Specifically, these items represent what the institution does to engage students in educationally purposeful activities as opposed to what the student does—a phenomenon which is measured by the *student involvement* variables. The institutional engagement variable was operationalized using a composite, summated scale of seven NSSE survey items
that asked students to rate the extent to which their institution emphasized engagement and involvement. For example, one item asked students to rate the extent to which their institution encouraged contact among students from different economic, social, and racial/ethnic backgrounds. Another sample item asks students to rate the extent to which their institution emphasized attending campus events and activities like special speakers, cultural performances, or athletic events. Items were measured on a 4-point Likert-type scale ranging from 1 (very little) to 4 (very much). The institutional engagement summated scale ranged from 7 to 28.

**Dependent variable**

The dependent variable of interest in this study was college *sense of belonging*. Sense of belonging entails cognitive and affective dimensions whereby a student evaluates their relationships with others in the campus community that in turn yields affective and behavioral responses (Hurtado & Carter, 1997; Strayhorn, 2012). It reflects the extent to which a student feels connected to others on campus, feels like a respected and valued member of the college community, and feels like a part of the institution (Strayhorn). A composite scale was constructed using five items in the NSSE congruent with defining elements of sense of belonging and reflecting the relational nature of belonging. For example, students were asked to rate the quality of their relationships with (a) students, (b) faculty members, and (c) college personnel and offices. One item asked students to rate the quality of their relationships with other students. Options ranged from 1 (unfriendly, unsupportive, sense of alienation) to 7
(friendly, supportive, sense of belonging). The sense of belonging composite scale ranged from 7 to 29.

**Control Variables**

A battery of controls were included based on prior literature. Control variables included items related to student characteristics and demographics measured by the survey that may potentially confound the primary analysis. Informed by the literature reviewed in chapter two, each of these variables may influence college sense of belonging if not controlled for in the analysis. The following items were statistical controls in the final analysis: (a) fraternity/sorority membership, (b) grades, (c) transfer status, (d) class rank, (e) parents’ education, (f) living arrangements, (g) age, (h) gender, (i) enrollment status. Appendix D presents an index of the control variables.

**Validity and Reliability**

Validity is an overall judgment of the empirical evidence and theoretical reasoning with regard to the appropriateness of measures and interpretation of data (Messick, 1995). Moreover, “validation combines scientific inquiry with rational argument to justify score interpretation and use” (Messick, 1995, p. 742). Said another way, validity is an evaluation of whether a particular mode of assessment is accurately measuring what it intends to measure (Suskie, 1996). Validity of the present study’s variables was assessed using theoretical justification and factor analysis.

Reliability is defined as the “consistency with which an instrument measures whatever it measures” (Schmidt et al., 2000, p. 905). In other words, reliability refers
to the stability and internal consistency of the measure at hand (Neuman, 1994). One popular index of reliability is Cronbach’s alpha (1951), which assesses whether scale items are reliably measuring a latent construct. Several steps were taken to test the reliability of the survey items included in the present analysis.

Some prior research raises questions about the validity of self-reported data. However, many scholars have argued that both objective measures and self-reports are correlated and that self-reports are reasonable approximations of data collected through various objective measures (e.g., facility visitation records) (Kuh et al., 1997; Whitt et al., 1999). Furthermore, the validity of self-report data in part relies on the comprehension of survey questions by participants (Fink, 2013; Fowler, 2009). Over a decade’s worth of extensive administration and use of the NSSE to more than 600 colleges and universities provided ample evidence to make the case for appropriate wording, clarity, and comprehension of the survey among students—all of which contribute to validity.

This study addressed validity in several ways. The NSSE survey is used extensively by higher education scholars and is deemed credible due the extensive body of research that supports the validity of the instrument (NSSE, 2007). Moreover, the survey was developed by a panel of higher education experts over the course of several years. Content validity and clarity of NSSE items was established through many focus groups and cognitive interviews with students from across racial/ethnic backgrounds (Kuh et al., 2007; Pike, 2013). Generalizability and dependability of NSSE constructs was established in a validity study by Pike (2012) which revealed
group mean generalizability coefficients of 0.80 or above for samples of 100 students or more. Finally, construct validity of the specific measures utilized in this study was assessed using factor analysis with Varimax rotation to determine underlying structure of the variables.

Validity for NSSE measures and the related College Student Experiences Questionnaire (CSEQ) is well established through extensive use in educational contexts and accompanying evaluations of the psychometric properties of the measures (Kuh, 2009; Strayhorn & DeVita, 2010). Measures on the NSSE are positively correlated with other direct measures of student engagement, learning, and development used by institutions and they are positively linked to objective outcome measures that further establish validity (NSSE, 2007; Pascarella et al., 2009; Pike, 2006). For instance, Pascarella and colleagues (2009) conducted a study comparing NSSE scores to seven objective college outcomes from 19 institutions measured using various tests such as the CAAP Critical Thinking Test. They found that NSSE measures were significantly associated with several objective educational outcomes and they established predictive validity. The reported mean of all partial correlations was 0.34 (p<0.001).

The variables in this study were initially shaped and informed by engagement theory, empirical evidence reviewed in the literature review, and especially Pike’s (2006) NSSE scalelets. Building on his previous work, Pike (2006) developed a total of 12 NSSE scalelets that exhibit generalizability and validity in an effort to provide more specific research and assessment tools for colleges and universities (Pike, 2006).
He defines scalelet as “a set of survey questions related to a specific aspect of the educational experiences of a group of students” (Pike, 2006, p. 551). Scalelets are subsets of survey items akin to subscales drawn from the larger NSSE survey. Drawing on student engagement theory (Kuh et al., 1991) and Loevinger’s (1957) approach to construct validity, Pike demonstrated that the NSSE scalelets exhibited convergent and discriminant validity and signaled the appropriateness of using scalelets based on NSSE survey items to conduct assessment and research like the present analysis—particularly at the institutional level. Initially, the present investigation fashioned each of the variables based on the scalelet and NSSE item organization developed by Pike (2006) in light of their links to convergent and discriminant validity and their conceptual accuracy.

Reliability of student engagement measures adapted from NSSE was established by Kuh and colleagues (Kuh et al., 1997; Kuh et al., 2009) over the course of several survey pilot tests and numerous intervals of nationwide survey administration to a diverse array of over 600 colleges and universities comprised of various institutional types for over a decade. The reliability coefficients for the NSSE student engagement measures (Cronbach’s α) are in an acceptable range and responses are generally found to be normally distributed (Kuh et al., 2009). I calculated Cronbach’s Alpha (1951) for each of the independent variables to establish reliability for the analytic sample in the present study. Reliability coefficients approaching 0.70 or higher are generally considered acceptable (Nunnaly, 1978).
**Sense of belonging**

I hypothesized that five NSSE items assess the relational nature of sense of belonging and students’ subjective appraisal of their relationships with campus faculty, peers, staff, and the institution (Hurtado & Carter, 1997; Strayhorn, 2012). I conducted a factor analysis to determine the underlying factor structure. All five items loaded onto one factor accounting for nearly 50% of the variance among items. Although this belonging scale may be limited in important ways noted in the limitations section of this chapter, I calculated reliability estimates and found the scale’s reliability was adequate ($\alpha=0.70$). This finding is consistent with prior research at PWIs using items similar to those employed in the current study (Hurtado & Carter, 1997; Strayhorn, 2011). Thus, this factor was labeled *sense of belonging*.

**Institutional engagement**

Prior theory and literature suggests that engaging institutional environments are a major component of student engagement (Harper & Quaye, 2009; NSSE, 2007; Pike, 2006). I hypothesized that seven items measured institutional engagement. I conducted a factor analysis to determine the latent factor structure. All seven items loaded onto one factor accounting for 48% of the variance among items. Varimax rotation revealed that the items could not be rotated. I calculated a reliability analysis and found the variable was reliable ($\alpha=0.81$). The factor was labeled *institutional engagement*. 
Student Involvement

I hypothesized that 14 items in NSSE captured student involvement in educationally purposeful activities (Harper et al., 2004; NSSE, 2007; Pike, 2006; Strayhorn, 2012). I conducted a factor analysis to assess the underlying factor structure. Items loaded onto four factors. The fourth factor contained two items and was ultimately dropped from the analysis due to a low eigenvalue and because the scale had very poor reliability ($\alpha=0.36$). The remaining three factors were used. The three factor solution accounted for 49% of the variance among items. Items loading on the first factor related to faculty interactions and thus the factor was named Student Faculty Involvement. I calculated reliability estimates and found the factor was reliable ($\alpha=0.71$). Items loading on the second factor related to social interactions and discussion and thus was labeled Student Social Involvement. I computed reliability estimates and found the factor was reliable ($\alpha=0.75$). Items loading on the third factor related to student class involvement and thus the factor was labeled Student Academic Involvement. I calculated reliability estimates and found the factor was reliable ($\alpha=0.69$). A full index of factor loadings and reliability values are provided in Appendix B.

Data Analysis Procedures

All analyses proceeded in the aggregate stripped by NSSE personnel of any personally identifiable information. Data were subsequently prepared for the secondary analysis. First, the sample was restricted to reflect the study criteria to exclude data beyond the scope and purpose of this study. To do so, the sample was
restricted to participants who identified as Black, Latino, and White. Second, I conducted a missing values analysis and determined that there were very few missing values (less than 2% total). Missing data less than 3-5% is likely inconsequential to data analysis (Cohen et al., 2003; Schaffer, 1999). Third, highly unequal sample sizes may result in parameter estimate errors (Howell, 1992). Descriptive statistics revealed that the overall sample consisted of 6,016 White students and 477 students of color randomly selected by NSSE to complete the survey. A randomized sample was drawn from larger sample of White students (N=481) that was approximately equal to the student of color sample size.

**Research Question 1: Descriptives and Independent Samples t-tests**

After preparing the data set, data analysis proceeded in three steps. First, frequencies were calculated for the disaggregated sample of White students (N=481) and students of color (N=477). I calculated frequencies to determine the distribution of participants across race, age, class rank, transfer status, enrollment status, and gender. Next, I calculated the means, standard deviations, and range of values reported by participants related to key variables of interest to this study: (a) student academic involvement, (b) student social involvement, (c) student faculty involvement, (d) institutional engagement, and (e) sense of belonging. These were computed for both the aggregate sample and the sample disaggregated by race/ethnicity. Preliminary steps of the analysis gave the researcher a sense of the sample characteristics and revealed important data patterns that informed decisions regarding the appropriate next steps.
To answer the first research question, independent samples $t$-tests were computed to search for key differences in reported sense of belonging, student involvement, and institutional engagement by race/ethnicity. Subsequently, significance tests were calculated to determine whether the observed trends were statistically significant at the 0.05 and 0.01 levels. Results were presented and interpreted.

**Research Question 2: Bivariate Correlation and Regression Analysis**

To answer the second research question, I restricted the sample to students of color. I calculated bivariate correlations to determine the magnitude and direction of the relationships among key variables of interest to this study. Specifically, I computed correlations for college sense of belonging, student academic involvement, student social involvement, student faculty involvement, and institutional engagement.

Finally, I computed a 3-step hierarchical linear regression to determine the relation between student involvement, institutional engagement, and college sense of belonging among students of color at PWIs. Hierarchical linear regression is a statistical technique that reveals both the cumulative and independent relations of the predictors to the outcome variable in terms of variance explained by the model (Cohen, Cohen, West, & Aiken, 2003). Moreover, hierarchical linear regression allows the researcher to ascertain the variance in the dependent measure explained by one or more independent variables above and beyond that which is explained by independent variables specified in a preceding model. The first model determined the amount of variance in sense of belonging among students of color accounted for by
background characteristics. The second model tested whether student involvement explained variance in college sense of belonging above and beyond background variables for students of color at PWIs. The third model revealed whether institutional engagement explained variance in college sense of belonging above and beyond that accounted for by background variables and the student involvement variables consistent with the theorized role of the student and the role of the institution for students of color described by engagement scholars.

Prior to interpreting results of the regression analysis, I computed multicollinearity diagnostics to determine whether multicollinearity was present among the independent factors. Multicollinearity is present when two or more explanatory variables share a linear relationship (Alin, 2010; Cohen et al., 2003). Such a relationship indicates that the variables are not orthogonal. Multicollinearity in regression models can be assessed using collinearity diagnostics such as VIF and/or tolerance values. As a rule, tolerance values less than 0.10 or VIF values of 10 and above may be indicative of multicollinearity (Cohen et al., 2003; Lin, 2006).

The first hierarchical linear regression model included a battery of control items reflecting student characteristics including fraternity/sorority membership, grades, enrollment status, transfer status, class rank, living arrangements, parents’ education, gender, and student age. The second model included the background variables as well as three independent variables related to student involvement: (a) student academic involvement, (b) student social involvement, and (c) student faculty involvement. The third model included the aforementioned control variables, the three
independent variables related to student involvement, and a fourth independent variable of interest, institutional engagement. Sense of belonging was the dependent variable in each model.

I calculated an $F$ ratio to determine whether each of the proposed models were a significantly better fit than the grand mean model (Cohen et al., 2003). Then, I computed the $R^2$ values for each model (Cohen et al., 2003), which revealed the amount of variance in sense of belonging explained by the independent and control variables. The models provided information to answer the stated research questions in several ways. The first model revealed the amount of variance in sense of belonging explained by background variables. The second model allowed the researcher to determine whether student involvement variables were significant predictors of sense of belonging among students of color controlling for the influence of background traits and student characteristics. The second model also permitted the researcher to determine the amount of variance in sense of belonging explained by student involvement above and beyond that explained by background variables. The third and final model determined whether institutional engagement explained additional variance in college sense of belonging controlling for the influence of student involvement and student background characteristics. It also revealed the amount of variance in belonging explained by institutional engagement above and beyond that explained by student involvement and background variables. The final, full model also revealed the net relationship of the student involvement and institutional engagement variables on college sense of belonging in terms of variance explained, controlling for
student background traits. The betas in the final model revealed the increase (or decrease) in sense of belonging explained by a one-unit increase in each respective predictor—holding the influence of the other predictors constant. In each case, the statistical significance of each predictor was evaluated at the 0.05 and 0.01 levels.

Conclusion

Recall the purpose of this investigation was to explore the relation between student involvement, institutional engagement, and college sense of belonging among students of color at a large, public, 4-year PWI located in the southeastern United States. The first research question asks whether there are differences by race and ethnicity in reported student involvement, institutional engagement, and sense of belonging. To answer this question, I calculated means, standard deviations, and ranges for the sample of White students and students of color. Results were compared and differences noted. Second, the investigation used independent samples $t$-tests to explore whether there were statistically significant differences in reported student involvement, institutional engagement, and belonging on the basis of race/ethnicity.

The second research question posits whether there exists a relationship between student involvement, institutional engagement, and sense of belonging among students of color attending a PWI. To answer the second research question, I computed bivariate correlations and a 3-step hierarchical linear regression. The correlation analyses revealed the strength and direction of the variable relationships for students of color. The hierarchical linear regression revealed the amount of variance in sense of belonging explained by the three independent measures of student
involvement above and beyond that accounted for by background characteristics. The analysis also assessed whether institutional engagement accounted for variance in college sense of belonging above and beyond that which is explained by student involvement and background variables.

The analysis contributes significant insight into the relationships of each of the predictors with the dependent variable sense of belonging. Importantly, this study provides additional empirical evidence to address Harper and Quaye’s (2009) call for student and institutional efforts to engage in service of positive student outcomes such as sense of belonging. The analysis parsed out the relationship between involvement, engagement, and sense of belonging as separate constructs—heeding calls for such treatment in the literature. In turn, there may be myriad implications for campus and residence life, institutional policies and practices, the nature of institutional support for engagement, university investment allocations, and student outcomes. This dissertation turns next to the research findings presented in chapter four.
Chapter 4: Results

There are gaps in our understanding of the relationship between involvement, engagement, and sense of belonging among students of color. To address these gaps, the present study uses data from the National Survey of Student Engagement (NSSE) to explore the relationship between student involvement, institutional engagement, and sense of belonging among people of color at a large, southeastern PWI. The analysis is guided by Kuh and colleagues’ (2009) description of student engagement theory which specifies two major agents of engagement (i.e., the student and the institution) and calls for research that parses out what the student does, what the institution does, and sense of belonging. This study aims to provide useful information to institutions, educators, and students that can influence policy, theory, and practical decisions alike in an effort to address outcomes like sense of belonging and larger issues that face higher education such as disparate retention rates across race and ethnicity.

Research Questions

I address the following research questions in this study:

1. Are there differences by race/ethnicity in reported student involvement, institutional engagement, and sense of belonging among PWI students?

2. Is there a relationship between student involvement, institutional engagement, and sense of belonging for students of color attending PWIs?
This chapter presents the results of the current study. It is organized around the research questions and the associated analyses outlined in chapter three. Data analysis proceeded in three steps. First, I describe the results of the frequency analysis previously presented in chapter three. Then, I present the means, standard deviations, and range of values reported by participants for each of the main variables of interest to this study including student academic involvement, student social involvement, student faculty involvement, institutional engagement, and sense of belonging. The results are reported for students of color and White students.

Next, I present the results of an analysis conducted to answer the first research question. I calculated independent samples t-tests to search for mean differences in sense of belonging, student involvement, and institutional engagement across race/ethnicity among PWI students. I tested for equality of variances using Levene’s test for equal variances. Welch’s (1947) t-test statistic was interpreted when the assumption of homogeneity of variances was violated. Mean differences between White students and students of color are reported and statistically significant mean differences are noted and interpreted.

I restricted the sample to students of color and conducted a series of analyses to answer the second research question regarding the scope and nature of the relationship between student involvement, institutional engagement, and sense of belonging for students of color attending PWIs. First, I computed bivariate correlations to determine the magnitude and direction of the relationship between the main variables of interest to this study. Second, I conducted a 3-step hierarchical linear
regression to probe for the independent and cumulative relationship of the explanatory variables (i.e. academic involvement, social involvement, faculty involvement, institutional engagement) in terms of variance observed in the dependent variable, sense of belonging. This chapter presents the results of each analysis.

**Descriptive Statistics**

The final analytic sample included 958 students. The researcher randomly selected White students from a larger sample of 6,016 students to approximate the sample of racial/ethnic minority students and to obtain balanced cell sizes. The analytic sample consisted of 481 White students and 477 students of color. All analyses proceeded with the randomized sample of White students and racial/ethnic minority students. Sample characteristics and frequencies presented in Chapter 3 are summarized in Table 4.1.

**Means, Standard Deviations, Ranges**

Means, standard deviations, and ranges were calculated for each of the main variables for the aggregate sample, the White sample, and the student of color sample to provide the researcher with information regarding the nature and scope of the data. Data were approximately normally distributed. Recall from chapter three, the possible score range for each scale was: *sense of belonging* (5 to 29); *student academic involvement* (3 to 12); *student social involvement* (4 to 16); *student faculty involvement* (5 to 20); and *institutional engagement* (7 to 28). Higher values indicate greater belonging, involvement, or engagement, respectively. Descriptive statistics
Table 4.1
Sample Characteristics and Frequencies

<table>
<thead>
<tr>
<th>Variables</th>
<th>%</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White (N=481)</td>
<td>SOC* (N=477)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>41.1</td>
<td>35.0</td>
</tr>
<tr>
<td>Female</td>
<td>58.9</td>
<td>65.0</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 or younger</td>
<td>53.7</td>
<td>71.0</td>
</tr>
<tr>
<td>20-23</td>
<td>31.7</td>
<td>22.8</td>
</tr>
<tr>
<td>24-29</td>
<td>6.2</td>
<td>2.4</td>
</tr>
<tr>
<td>30-39</td>
<td>6.4</td>
<td>1.3</td>
</tr>
<tr>
<td>40+</td>
<td>2.1</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>Class Rank</strong></td>
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<td></td>
</tr>
<tr>
<td>First Year</td>
<td>54.9</td>
<td>71.1</td>
</tr>
<tr>
<td>Sophomore</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Junior</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Senior</td>
<td>45.1</td>
<td>28.9</td>
</tr>
<tr>
<td><strong>Transfer Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native</td>
<td>78.2</td>
<td>84.4</td>
</tr>
<tr>
<td>Transfer</td>
<td>21.8</td>
<td>15.6</td>
</tr>
<tr>
<td><strong>Enrollment status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>94.6</td>
<td>97.4</td>
</tr>
<tr>
<td>Part-time</td>
<td>5.4</td>
<td>2.6</td>
</tr>
</tbody>
</table>

*Note. SOC signifies students of color*

calculated for the three samples revealed several findings of note. Results are presented in Tables 4.2, 4.3, and 4.4.

As shown in Table 4.2, the aggregate sample of students reported an average academic involvement level of 7.42 (SD = 2.05; range = 3 to 12), an average social involvement level of 9.26 (SD = 2.79; range = 4 to 16), and average student faculty involvement of 11.82 (SD = 3.01; range = 5 to 20). Reported institutional engagement
was an average of 18.60 ($SD = 4.26$; range = 9 to 28). The mean sense of belonging score reported for the aggregate sample was 20.38 ($SD = 4.07$; range = 10 to 29). Means, standard deviations, and ranges disaggregated by race are presented in Tables 4.3 and 4.4. Range of responses were comparable across race for each variable.

Unexpectedly, students of color, on average, reported greater academic, social, and faculty involvement compared to their White peers. People of color also reported greater institutional engagement and a higher sense of belonging than their White peers on average. However, standard deviations for several of the factors were significantly larger among students of color when compared with their White peers. This suggests that, while students of color may report higher involvement, engagement, and belonging than their White peers on average, there is greater variability and dispersion in the responses among people of color. For instance, students of color report a higher sense of belonging ($M = 20.87$, $SD = 4.42$) than White students ($M = 19.90$, $SD = 3.65$) on average. Yet, there is a 0.77 unit difference in standard deviations for belonging between the White students and students of color. This indicates greater variation and dispersion from the mean among students of color when compared to their White peers for reported sense of belonging. Independent samples $t$-tests were computed next to determine the statistical significance of the observed mean differences.
Table 4.2  
*Means, standard deviations, and range for aggregate sample of students (N=958)*

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Academic Involvement</td>
<td>7.42</td>
<td>2.05</td>
<td>3.00</td>
<td>12.00</td>
</tr>
<tr>
<td>Student Social Involvement</td>
<td>9.26</td>
<td>2.79</td>
<td>4.00</td>
<td>16.00</td>
</tr>
<tr>
<td>Student Faculty Involvement</td>
<td>11.82</td>
<td>3.01</td>
<td>5.00</td>
<td>20.00</td>
</tr>
<tr>
<td>Institutional Engagement</td>
<td>18.60</td>
<td>4.26</td>
<td>9.00</td>
<td>28.00</td>
</tr>
<tr>
<td>Sense of Belonging</td>
<td>20.38</td>
<td>4.08</td>
<td>10.00</td>
<td>29.00</td>
</tr>
</tbody>
</table>

Table 4.3  
*Means, standard deviations, and range for White sample of students (N=481)*

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Academic Involvement</td>
<td>7.38</td>
<td>1.94</td>
<td>3.00</td>
<td>12.00</td>
</tr>
<tr>
<td>Student Social Involvement</td>
<td>8.93</td>
<td>2.80</td>
<td>4.00</td>
<td>16.00</td>
</tr>
<tr>
<td>Student Faculty Involvement</td>
<td>11.70</td>
<td>4.16</td>
<td>6.00</td>
<td>20.00</td>
</tr>
<tr>
<td>Institutional Engagement</td>
<td>18.38</td>
<td>4.16</td>
<td>10.00</td>
<td>28.00</td>
</tr>
<tr>
<td>Sense of Belonging</td>
<td>19.90</td>
<td>3.65</td>
<td>10.00</td>
<td>29.00</td>
</tr>
</tbody>
</table>

Table 4.4  
*Means, standard deviations, and range for SOC* sample (N=477)*

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Academic Involvement</td>
<td>7.45</td>
<td>2.15</td>
<td>3.00</td>
<td>12.00</td>
</tr>
<tr>
<td>Student Social Involvement</td>
<td>9.60</td>
<td>2.74</td>
<td>4.00</td>
<td>16.00</td>
</tr>
<tr>
<td>Student Faculty Involvement</td>
<td>18.80</td>
<td>3.02</td>
<td>5.00</td>
<td>18.00</td>
</tr>
<tr>
<td>Institutional Engagement</td>
<td>18.80</td>
<td>4.35</td>
<td>9.00</td>
<td>28.00</td>
</tr>
<tr>
<td>Sense of Belonging</td>
<td>20.87</td>
<td>4.42</td>
<td>11.00</td>
<td>29.00</td>
</tr>
</tbody>
</table>

*Note.* SOC signifies students of color.
Research Question One: Independent Samples T-tests

To answer the first research question, independent samples t-tests were conducted to measure whether there were statistically significant differences between White students and students of color across all five main variables of interest.

First, a t-test was conducted to probe for racial differences in student academic involvement. Levene’s test for equality of variances revealed that equal variances could not be assumed ($p<0.05$). There was no statistically significant difference in average reported student academic involvement between White students ($M=7.38$, $SD=1.94$) and students of color ($M=7.45$, $SD=2.15$); $t(944)=-0.53$, $p>0.05$.

Second, an independent samples t-test was calculated to examine racial differences in student social involvement. Equal variances were assumed. There was a statistically significant difference in average reported social involvement between White students ($M=8.93$, $SD=2.80$) and students of color ($M=9.60$, $SD=2.74$); $t(956)=-3.72$, $p<0.01$.

Third, a t-test was computed to measure racial differences in reported student-faculty involvement. Equal variances were assumed. Tests revealed that there were no statistically significant differences in average reported student-faculty involvement between White students ($M=11.70$, $SD=3.00$) and students of color ($M=11.94$, $SD=3.02$); $t(956)=-1.19$, $p>0.05$.

Next, a t-test was calculated to measure racial differences in reported institutional engagement. Equality of variances was assumed. There was no statistically significant difference in average reported institutional engagement.
between White students ($M=18.38$, $SD=4.16$) and students of color ($M=18.80$, $SD=4.35$); $t(956)=-1.53$, $p>0.05$.

Finally, a $t$-test was calculated to probe for racial differences in sense of belonging. Levene’s test for equality of variance indicated that equal variances could not be assumed. There was a statistically significant difference in average reported sense of belonging between White students ($M=19.90$, $SD=3.65$) and students of color ($M=20.87$, $SD=4.42$); $t(920)=-3.74$, $p<0.01$.

**Research Question Two: Correlations and Regression**

The second research question examines whether there is a relationship between student involvement, institutional engagement, and sense of belonging for students of color attending a PWI. To answer this question, bivariate correlations and a hierarchical linear regression was calculated for the restricted sample of racial and ethnic minorities. Results of the analysis are presented in this section.

**Bivariate Correlation Results**

To answer the second research question, bivariate correlations were computed between each of the main variables of interest. Recall that the main variables include sense of belonging, student academic involvement, student social involvement, student faculty involvement, and institutional engagement. Correlation results were interpreted comparing absolute values to Urdan’s (2010) guide for correlation strength: modest = 0.1-0.2; moderate = 0.2-0.5; strong = 0.5 – 1.0. As seen in Table 4.5, correlation results revealed the magnitude and direction of the relationship between the main variables in the analytic sample of 477 students of color. Two-tailed correlation tests...
revealed that all variables were statistically, significantly related for students of color. Moreover, the correlations revealed that the variable relationships were all positive and modestly or moderately related in the sample of racial and ethnic minorities.

Each of the three student involvement factors were statistically significantly and moderately related to sense of belonging including student academic involvement \( (r=0.34; p<0.01) \), student social involvement \( (r=0.38, p<0.01) \), and student faculty involvement \( (r=0.34, p<0.01) \). This suggests that greater student involvement is moderately and statistically significantly related to greater belonging reported among students of color. All relationships were positive, indicating that as student involvement increases, reported sense of belonging tends to increase. Institutional engagement was the independent variable with the strongest relationship to sense of belonging for students of color at PWIs; the relationship was moderately strong and in a positive direction \( (r=0.41; p<0.01) \). This suggests that greater institutional engagement is associated with a stronger sense of belonging among students of color. Moreover, it may suggest the role of institutional engagement in efforts to increase sense of belonging among students of color at PWIs.

The student involvement predictors were moderately and statistically significantly related to one another which appears to suggest that greater involvement in one domain is positively related to greater involvement in other domains of involvement. For instance, student faculty involvement has a moderately strong relationship with student academic involvement \( (r=0.47; p<0.01) \), as one might expect. Student-faculty involvement is also moderately and positively related to
student social involvement ($r=0.48; p<0.01$). Thus, students who report greater involvement with faculty also tend to report greater social involvement with others more generally, including students and peers. Student social involvement is also moderately and positively related to student academic involvement ($r=0.45; p<0.01$). This indicates that students who report higher levels of social involvement also tend to report greater academic involvement. That is, it does not appear that an increase in one form of involvement (e.g., social) necessarily comes at the cost of other forms of involvement (e.g., academic). Results of this study suggest the opposite is true for students of color at PWIs.

Institutional engagement is significantly but modestly related to student academic involvement ($r=0.17, p<0.01$). While the relationship is modest, it is in a positive direction indicating that greater institutional engagement tends to be related to a modest increase in social and academic involvement. Institutional engagement is moderately related to student social involvement ($r=0.33; p<0.01$) and student faculty involvement ($r=0.31; p<0.01$), as one might expect given faculty’s role in—and relationship to—the institution. The modest relationship between student academic involvement and institutional engagement may be a telling result with important institutional implications that will be explored further in chapter five. Table 4.5 presents a full index of Pearson’s correlation coefficients for each of the main independent variables.
Table 4.5
*Correlation of main variables for students of color*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense of Belonging</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Academic Involvement</td>
<td>0.34**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Social Involvement</td>
<td>0.38**</td>
<td>0.45**</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Faculty Involvement</td>
<td>0.34**</td>
<td>0.47**</td>
<td>0.48**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Institutional Engagement</td>
<td>0.41**</td>
<td>0.17**</td>
<td>0.33**</td>
<td>0.31**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

**p < 0.01, two-tailed.

**Hierarchical Linear Regression Results**

To answer the second research question further, a 3-step hierarchical linear regression was computed. Hierarchical linear regression tested the relationship between each of the independent factors (i.e., academic involvement, social involvement, student-faculty involvement, and institutional engagement) and the dependent variable, sense of belonging. The first model included ten background variables and student characteristics that served as statistical controls in the analysis. The control variables included reported age, gender, enrollment status, class rank, fraternity/sorority membership, grades, transfer status, mother’s education, father’s education, and living arrangements. The second model included the ten control variables and three student involvement variables including student academic involvement, student social involvement, and student faculty involvement. The third model included the variables from the first two models and the fourth main variable of
interest, institutional engagement. The dependent variable in each model was college student sense of belonging.

Multicollinearity among variables was evaluated prior to interpretation of regression results. Tests in all three models revealed acceptable tolerance levels of greater than 0.10 and all VIF values were less than 5 (Cohen et al., 2003; Lin, 2008). Tolerance statistics in the final model were acceptable (Social Involvement TOL=0.53; Academic Involvement TOL=0.62; Faculty Involvement TOL=0.52; Institutional Engagement TOL=0.75). The tests indicated that multicollinearity was not likely an issue. Therefore, all independent variables were included and interpreted in the final analysis.

The first hierarchical regression model included statistical controls related to student background traits and characteristics in the sample of racial/ethnic minority students at a PWI. The first model was a significantly better fit than the grand mean model $F(10, 466)=8.76, p<0.01$. The model explained 16% of the variance in sense of belonging reported by students of color ($R=0.40$). Two student characteristics were statistically significantly related to sense of belonging, controlling for all other variables. First, grades were significantly, positively related to sense of belonging ($\beta=0.31; p<0.01$). Students reporting higher grades tended to report greater sense of belonging in college, controlling for all other variables. Second, transfer status was statistically significantly and negatively related to sense of belonging among students of color ($\beta=-0.23; p<0.01$). The negative relationship indicates that students who
transferred to the institution tended to report lower levels of belonging than those who were native to the institution, as expected.

The second model included the battery of statistical controls and three independent variables measuring student involvement including student academic involvement, student social involvement, and student faculty involvement. The model was a significantly better fit than the grand mean model and explained 31% of the variance in sense of belonging; \( F(13, 463) = 16.29, p < 0.01, R = 0.56 \). As shown in Table 4.6, a total of six factors were statistically significant predictors of sense of belonging among students of color in the second model. Student academic involvement and student social involvement were positively and statistically significantly related to sense of belonging. Student faculty involvement was not a significant predictor.

Student academic involvement was a statistically significant and positive predictor of sense of belonging \((\beta = 0.19; p < 0.01)\). This suggests that students who reported greater academic involvement tended to report higher sense of belonging, controlling for all other variables. Student social involvement was a significant positive predictor of sense of belonging \((\beta = 0.32; p < 0.01)\). This suggests that students who reported greater social involvement also tended to report higher sense of belonging in college. Student faculty involvement was not a significant predictor for sense of belonging \((\beta = 0.01; p > 0.05)\). The addition of the three student involvement variables in the second model explained an additional 15% of variance in sense of belonging above and beyond the variance explained by background variables alone \((\Delta R^2 = 0.15)\). The second model, including the ten background variables and three
student involvement variables, explained a total of 31% of the variance in sense of belonging among people of color ($R=0.56$, $p<0.01$).

The third and final model included statistical controls, three student involvement variables, and the final predictor institutional engagement. The model was a significantly better fit than the grand mean model; $F(14, 462)=22.24$, $p<0.01$. As shown in Table 4.6, a total of nine of the variables in the final model were statistically significant predictors of sense of belonging. Background variables in the final model that were significantly and positively related to belonging included gender, fraternity/sorority membership, grades, and father’s education. In other words, a student of color who was male, was a member of a fraternity, had higher grades, and whose father had higher education tended to report a higher sense of belonging, controlling for all other variables. Transfer status and living on campus were statistically significantly and negatively related to belonging. This indicates that transfer students and students who live on campus tended to report lower levels of belonging, controlling for all other variables.

Student academic involvement and student social involvement remained statistically significant positive predictors in the final model. Student social involvement was a statistically significant positive predictor ($\beta=0.23$; $p<0.01$) as was student academic involvement ($\beta=0.18$; $p<0.01$). While correlation results revealed that student-faculty involvement exhibited a moderately strong positive correlation with sense of belonging, the regression results revealed that student faculty
involvement is a statistically non-significant predictor in the final regression model ($\beta=-0.03; \, p>0.05$).

The final variable added in the third model, institutional engagement, was a statistically significant positive predictor of college sense of belonging among people of color ($\beta=0.34; \, p<0.01$). This suggests that student perceptions of greater institutional engagement is positively related to greater sense of belonging among students of color at a PWI, controlling for background variables and all three student involvement variables. The final model including institutional engagement explained an additional 9% of variance in belonging above and beyond the model that included background variables and student involvement alone ($\Delta R^2=0.09$). The full final model including background variables, student involvement, and institutional engagement explained 40% of the variance in overall sense of belonging among students of color at a PWI ($R=0.64$). Student involvement and institutional engagement together explained an additional 24% of the variance in belonging above and beyond background variables.
Table 4.6
Hierarchical linear regression results for students of color

| Variables                     | Step 1 |          |          |          |          |          |          |          
|-------------------------------|--------|----------|----------|----------|----------|----------|----------|----------
|                               | B      | SE       | β        | B        | SE       | β        | B        | SE       |
| Constant                      | 13.30  | 2.55     |          | 10.10    | 2.37     | 0.07     | 8.36     | 2.21     |
| Age                           | 0.95   | 0.53     | 0.18     |          |          |          | 0.20     | 0.46     |
| Gender                        | 0.19   | 0.43     | 0.02     | 1.04     | 0.41     | 0.11**   | 1.15     | 0.38     |
| Enrollment Status             | 2.62   | 1.73     | 0.10     | 0.53     | 1.64     | 0.02     | -1.50    | 1.55     |
| Class Rank                    | 0.36   | 0.89     | 0.04     | -1.58    | 0.83     | -0.16    | -1.06    | 0.77     |
| Fraternity/Sorority           | 2.05   | 1.21     | 0.08     | 3.08     | 1.11     | 0.11**   | 4.48     | 1.05     |
| Grades                        | 0.71   | 0.10     | 0.31**   | 0.51     | 0.10     | 0.22**   | 0.43     | 0.10     |
| Transfer                      | -2.77  | 0.63     | -0.23**  | -2.48    | 0.60     | -0.20**  | -2.21    | 0.56     |
| Mother’s Education            | 0.13   | 0.17     | 0.04     | -0.12    | 0.16     | -0.04    | -0.24    | 0.15     |
| Father’s Education            | 0.02   | 0.16     | 0.01     | 0.28     | 0.15     | 0.10     | 0.37     | 0.14     |
| Living Arrangements           | 0.11   | 0.84     | 0.01     | -1.46    | 0.78     | -0.15    | -1.85    | 0.73     |
| Academic Involvement          | 0.39   | 0.10     | 0.19**   | 0.37     | 0.08     | 0.18**   | 0.37     | 0.08     |
| Social Involvement            | 0.52   | 0.08     | 0.32**   | 0.37     | 0.08     | 0.23**   | 0.37     | 0.08     |
| Faculty Involvement           | 0.01   | 0.08     | 0.01     | -0.04    | 0.07     | -0.03    | -0.04    | 0.07     |
| Institutional Engagement      |        |          |          |          |          |          |          |          |
| R                             | 0.40   |          |          | 0.56     |          |          | 0.64     |          |
| R^2                           | 0.16   |          |          | 0.31     |          |          | 0.40     |          |
| Adj. R^2                      | 0.14   |          |          | 0.30     |          |          | 0.38     |          |
| R^2 change                    | 0.16** |          |          | 0.15**   |          |          | 0.09**   |          |

*p<0.05, **p<0.01
Summary of Results

This study examined the relation between student involvement, institutional engagement, and sense of belonging among people of color at a large, southeastern PWI. Two research questions guided the present inquiry: (a) Are there differences by race/ethnicity in reported student involvement, institutional engagement, and sense of belonging among PWI students? and (b) Is there a relationship between student involvement, institutional engagement, and sense of belonging for students of color attending PWIs? A number of significant results emerged from the analysis and were presented in this chapter.

Independent samples t-tests were computed to answer the first research question by measuring differences in mean scores between students of color and White students. Significance values for mean differences were tested at the 0.05 and 0.01 levels. Analyses revealed that there were no statistically significant differences in reported academic involvement or student-faculty involvement between students of color and White students. There were also no statistically significant differences in reported institutional engagement across race/ethnicity, indicating that students report similar views regarding institutional engagement efforts. However, there was a statistically significant difference between students of color and White students in reported social involvement, with students of color reporting greater social involvement at the institution. Contrary to extant literature, a surprising result was that students of color, on average, report a statistically significantly greater sense of belonging in college than their White peers at this particular institution.
Bivariate correlations and hierarchical linear regression were computed to answer the second research question. Two-tailed bivariate correlations indicated that all main variables of interest were positively and significantly related for students of color. Each of the three involvement variables exhibited a moderately strong, positive relationship to one another. Student academic involvement and social involvement were positively related to institutional engagement and the relationship was modest and moderate, respectively. Institutional engagement had a moderately strong and positive relationship to student-faculty involvement. Student academic, social, faculty involvement, and institutional engagement all had positive and moderately strong relationships to sense of belonging among students of color.

Finally, a hierarchical linear regression revealed a number of significant relationships between the independent variables and sense of belonging. Three models were computed. The first model measured the relationship between background variables and sense of belonging. Background traits explained 16% of the variance in sense of belonging among students of color. The second model included background characteristics and student involvement variables and explained 31% of the variance in sense of belonging. Student academic, social, and faculty involvement explained an additional 15% of the variance in reported sense of belonging above and beyond that explained by student background traits. The third model included statistical controls, the three student involvement variables, and an additional variable measuring institutional engagement. The final model explained 40% of the variance in sense of belonging among students of color at a PWI. The third model including institutional engagement accounted for an additional 9% of the variance in belonging above and beyond student involvement.
and background traits. Student involvement and institutional engagement explained nearly a quarter of the variance in sense of belonging among students of color attending a PWI above and beyond background variables. The next chapter discusses the results presented in this chapter in greater depth, relates the findings to extant literature, and describes the contribution of this study to theoretical and practical considerations related to belonging and engagement.
Chapter 5: Discussion

There are gaps in our understanding of the relationship between involvement, engagement, and sense of belonging among students of color. To address these gaps, the present study uses data from the National Survey of Student Engagement (NSSE) to explore the relationship between student involvement, institutional engagement, and sense of belonging among people of color at a large, southeastern PWI. The analysis is guided by Kuh and colleagues’ (2009) description of student engagement theory which specifies two major agents of engagement (i.e., the student and the institution) and calls for research that parses out what the student does, what the institution does, and sense of belonging. This study aims to provide useful information to institutions, educators, and students that can influence policy, theory, and practical decisions alike in an effort to address outcomes like sense of belonging and larger issues that face higher education such as disparate retention rates across race and ethnicity.

Research Questions

I address the following research questions in this study:

1. Are there differences by race/ethnicity in reported student involvement, institutional engagement, and sense of belonging among PWI students?

2. Is there a relationship between student involvement, institutional engagement, and sense of belonging for students of color attending PWIs?
This chapter discusses the study’s findings. First, I provide an overview of the findings presented in chapter four. Second, I describe how the findings provide answers to the research questions. Third, I compare and contrast the results from the present investigation with prior scholarship reviewed in chapter two. Fourth, I discuss the implications of my research results for future practice, research, and theory. Fifth, I note limitations to my study and final conclusions.

The first research question was related to racial/ethnic differences in reported student involvement, institutional engagement, and sense of belonging among PWI students. To answer this question, I examined the means, standard deviations, and ranges for student involvement, institutional engagement, and sense of belonging. The results gave the researcher insight into the scope and nature of the data disaggregated by race/ethnicity. Then, I calculated independent samples t-tests to determine whether there were statistically significant racial/ethnic mean differences for the main variables of interest including student academic involvement, student social involvement, student-faculty involvement, institutional engagement, and sense of belonging.

The second research question asked whether there was a relationship between student engagement and sense of belonging among students of color at PWIs. Bivariate correlations were calculated to determine the magnitude and direction of the relationships between student academic involvement, student social involvement, student faculty involvement, institutional engagement, and sense of belonging among students of color attending a PWI. Then, a 3-step hierarchical linear regression was computed to further
examine the relationship between student involvement, institutional engagement, and sense of belonging among racial and ethnic minorities.

**Discussion**

The first research question queries mean differences by race/ethnicity in student academic involvement, student social involvement, student-faculty involvement, institutional engagement, and sense of belonging. The independent samples t-test analysis measured for statistically significant differences between students of color and White students attending a PWI. Findings revealed that there were no statistically significant racial/ethnic differences in student academic involvement. It appears that students of color and White students are roughly equally involved in academic activities at this particular PWI. There were also no statistically significant differences in student-faculty involvement across race and ethnicity. Thus, students of color reported interacting with faculty about as frequently as White students. Furthermore, there were also no observed differences in reported institutional engagement across race/ethnicity. In other words, both White students and students of color felt that the institution emphasized student involvement such as attending campus events and spending time on academic work to a similar degree.

Several results emerged from the analysis that provided insight into key differences across race and ethnicity at PWIs. There was a statistically significant difference in student social involvement across race and ethnicity. The finding suggests that students of color may be more socially involved than their White peers at PWIs and thus report engaging in activities such as having serious conversations with people from backgrounds different than their own more often than White students. Finally, the
analysis demonstrated that there were statistically significant differences in sense of belonging across race and ethnicity at the PWI. Unexpectedly, students of color reported greater sense of belonging in college when compared to their White peers at the institution, on average. The difference in reported sense of belonging, while statistically significant, amounted to only 0.97 units on a 29-point scale. Therefore, the results are significant, but the difference in average reported sense of belonging across race is not particularly remarkable.

To answer the second research question, I examined the relationship between student engagement and sense of belonging. I calculated a series of bivariate correlations to determine the magnitude and direction of the relationship between main variables of interest to this study for students of color attending a PWI. First, I computed correlations between each of the main independent factors (i.e., student involvement variables, institutional engagement) and the dependent variable, sense of belonging. The strength of the relationships between each student involvement variable and sense of belonging were similar in magnitude, with student social involvement exhibiting the strongest relationship to belonging. Furthermore, institutional engagement was significantly and positively related to sense of belonging. The relationship between institutional engagement and sense of belonging was stronger than any of the relationships between the involvement variables and belonging. These findings suggest that efforts on the part of students to get involved with faculty, peers, and in the classroom are positively associated with a greater sense of belonging in college for racial/ethnic minorities attending a PWI. Moreover, increased efforts on the part of the institution to engage students of color and communicate opportunities for involvement appear to be especially
important because of their association with an emboldened sense of belonging for students of color at PWIs.

Student academic involvement, student social involvement, and student faculty involvement were all modestly related. Therefore, this study suggests that students of color who tend to be more involved in one domain also tend to be more involved in other domains as well. There may be an underlying motivation or disposition toward involvement that cuts across multiple spheres of the college experience for minorities at PWIs that accounts for the universally positive association between involvement variables identified in this study. Institutional engagement was only modestly related to academic involvement and it was moderately related to social dimensions of student involvement. Thus, increased efforts on the part of PWIs to encourage student involvement among students of color were not strongly related to more frequent academic or social involvement—though they were positive associations. Student-faculty involvement was moderately related to institutional engagement. Therefore, greater institutional emphasis on engagement tended to be associated with more frequent student involvement with faculty.

Finally, I calculated a hierarchical linear regression to examine the relationship of student academic involvement, student social involvement, student faculty involvement, institutional engagement, and sense of belonging for students of color attending a PWI. Three models were computed to test for the unique and combined influence of student involvement and institutional engagement on variance explained in sense of belonging among students of color, controlling for a battery of background traits and student characteristics.
The first model consisted of background traits and student characteristics including age, gender, enrollment status, class rank, fraternity/sorority membership, grades, transfer status, parents’ education, and living arrangements. The model revealed that two student characteristics were statistically significant predictors of sense of belonging among racial and ethnic minorities attending a PWI, grades and transfer status. Specifically, students of color with higher grades tended to report increased sense of belonging in college. On the other hand, students who transferred institutions tended to report a decreased sense of belonging in college. Background characteristics alone explained approximately 16% of the variance in sense of belonging.

The second model included the statistical controls from the first model and three involvement variables: (a) student academic involvement, (b) student social involvement, and (c) student faculty involvement. The second model examined the unique relationship of student involvement to sense of belonging in terms of variance explained above and beyond that accounted for by background variables and student characteristics alone. The analysis revealed that two of the student involvement variables, student academic and social involvement, were statistically significant and positive predictors of sense of belonging for people of color at PWIs, holding all other factors constant. Results indicated that student involvement explained an additional 15% of the variance in sense of belonging reported by students of color attending a PWI beyond that explained by student characteristics and demographic traits. In other words, students who report greater levels of involvement also tend to report an increased sense of belonging to the college. This finding supports mounting evidence that student involvement positively influences a number of educational outcomes, one of which appears to be sense of
belonging. The results from the present study suggest this is true even for students who may be marginalized or encounter hostile racial climates, such as students of color at PWIs. Simply put, students of color who are more involved are likely to report feeling a greater connection to the institution.

The final model consisted of the statistical controls, student involvement variables, and the fourth main predictor, institutional engagement. The full model revealed the relationship of background variables and student characteristics, the three student involvement variables, institutional engagement, and sense of belonging in terms of variance explained. The model explained a total of 40% of the observed variance in sense of belonging among students of color attending a PWI. Student academic and social involvement were statistically significant positive predictors in the full model, controlling for all other variables. Student-faculty involvement was a statistically non-significant involvement variable in the final model. Accordingly, students of color who were more involved in the academic and/or social spheres of the college experience tended to report a stronger sense of belonging at the PWI. Moreover, the introduction of institutional engagement variable explained an additional 9% of the variance in sense of belonging beyond that accounted for by student involvement and student characteristics alone. That is, students who perceive greater institutional efforts to encourage involvement in activities like studying or attending campus events also tend to report feeling a greater sense of belonging at the institution. Therefore, one could reasonably conclude that enhancing institutional efforts to engage students is a worthwhile endeavor given its link to a stronger sense of belonging among students of color. Interestingly, the beta weight for institutional engagement was larger than any one of the student involvement variables
alone, highlighting its relative importance for explaining variance in belonging for students of color at PWIs.

Results from this study revealed several positive predictors of sense of belonging among people of color at PWIs. Findings suggest that a student of color attending a PWI who reports more frequent academic and social involvement and perceives stronger institutional engagement is likely to report a greater sense of belonging than a student who reports little involvement or perceives weak institutional engagement, controlling for background characteristics. This study contributes uniquely to our understanding of the relationship between student engagement and sense of belonging by parsing out the influence of two agents of engagement (i.e., the student and the institution) on variance explained in sense of belonging for students of color at PWIs. The current investigation provides additional supporting evidence suggesting the important role of student involvement in achieving desirable college outcomes (e.g., Pascarella & Terenzini, 2005). Moreover, the present study uniquely contributes to our understanding of institutional engagement and its relationship to college sense of belonging for students of color at a PWI by identifying a positive relationship that extends beyond the association between belonging and student involvement alone.

The findings from this study are notable for a number of reasons. First, no racial/ethnic differences in student academic involvement were observed. That there are no differences may suggest that the institution makes great strides to provide opportunities for academic involvement that are appealing across racial/ethnic backgrounds. Alternatively, it could be that students across race/ethnicity have received similar messages regarding the value of being academically involved in terms of their
ultimate success in college and they are acting accordingly. Recall, however, that the average reported academic involvement levels for both racial groups was fairly middle of the road in terms of how frequently students engage in academic activities like participating in class discussions or working with classmates on course projects. It may be that educators are not offering meaningful incentives for academic involvement or creating enough appealing academically-oriented involvement opportunities to encourage more frequent involvement from students of all racial/ethnic backgrounds, thus explaining the lackluster levels of academic involvement across the board.

Second, no racial/ethnic differences were observed in student faculty involvement. This result was somewhat surprising in light of extant literature that suggests students of color may struggle to connect or relate to faculty at PWIs (who are overwhelmingly likely to be White) and may desire contact with more faculty of color (Flores, 2000; Jones, Castellanos, Cole, 2002; Valverde & Rodriguez, 2002). One might expect students of color to report much lower student-faculty involvement at a PWI due to there being fewer faculty of color whom they felt were relatable or with whom they could identify (Jones et al., 2002). It is worth noting, however, that the standard deviation for student-faculty involvement among racial and ethnic minorities was larger than that of their White peers. This indicates greater dispersion in reported student-faculty involvement among people of color when compared to their White peers. It could be that students across race report similar levels of faculty involvement on average, but the frequency of student-faculty involvement for students of color varies more from student to student compared to their White counterparts. Furthermore, while it appears that students at this institution report similar frequency of interaction with faculty on average,
the student-faculty involvement measure employed in this study does not necessarily capture the quality of those interactions. Thus, students may interact at similar levels across race/ethnicity, but the nature of those interactions could still very well impact students differently across race as the literature suggests.

Third, there was a statistically significant difference in student social involvement. Unexpectedly, students of color tended to report greater social involvement than their White peers at PWIs. However, this appears to be consistent in part with prior research that suggests the important role that social activities play in the adjustment of students of color to predominantly White campuses (Doan, 2011; Park, 2008). Involvement in social activities may present an important opportunity for students of color to connect with peers and forge support networks to guard against chilly racial climates that often pervade PWIs.

Moreover, recall that social involvement in this study was characterized by activities such as conversations with students from a different racial/ethnic background than one’s own and serious conversations with others who held different religious beliefs, political opinions, or personal values. Viewed this way, it is unsurprising that students of color report higher levels of social involvement compared to their White peers. By nature of the institutional student body composition (i.e., predominantly White), it is reasonable to assume that students of color simply encounter students who are different from them more often and in turn must engage across difference more frequently simply to survive at the institution. Conversely, a White student at a predominantly White university is probably less likely to encounter someone from a different cultural and racial/ethnic background than their own and in turn may have fewer social interactions with diverse
peers. What is more, de facto segregation across educational institutions often results in minimal multicultural exposure for White students and thus they may not readily learn to value or engage across difference (Renner, 1998). This could also be partly responsible for the observed differences in reported social involvement.

Fourth, there were no significant racial/ethnic differences in reported institutional engagement. This result is surprising in light of a great deal of evidence and frequent lamentations on the part of scholars, educators, and students that PWIs are not investing enough in the success of their students of color (Harper & Quaye, 2009; Jones et al., 2002). Indeed, PWIs have a long history of excluding racial/ethnic minorities and students of color often report psychological stress and barriers to their success at PWIs (Blake, 1991; Doan, 2011; Goodchild, 1997; Steele, 1997; Strayhorn, 2008). It could be that this particular institution has taken specific steps to rectify educational inequities by investing more time, effort, and money into supporting students of color such that they report levels of institutional engagement similar to that of their White peers—indeed a brief review of this particular institution’s diversity efforts appears to reveal a fairly comprehensive treatment, at least on the surface. Alternatively, institutional efforts to engage students may be very general or generic in nature. In turn, students across racial/ethnic backgrounds might recognize the same general institutional efforts to provide opportunities for involvement regardless of whether or not they are particularly relevant to their own personal needs or desires.

Finally, significant racial and ethnic differences were observed in sense of belonging at PWIs. In a stunning result, students of color reported a greater college sense of belonging than their White peers. This finding contradicts prior work that suggests
students of color are less likely than their White peers to find a sense of belonging in spaces where they may be one of few such as predominantly White campuses (e.g., Johnson et al., 2007; Strayhorn, 2012). There could be a number of factors at work that bear on the sense of belonging reported by students. One benefit of conducting a single-institution study is that it allows the researcher to investigate further into the nature of the institution and to speculate about the impact of the institution’s efforts as it relates to student outcomes such as sense of belonging. In this instance, it appears that the institution offers a wide range of multicultural programming, activities, diversity-related university-sponsored events, and allocations to faculty and staff to infuse diverse perspectives into the curriculum. The university is host to 17 associations related to diversity, offers resources to report bias and prejudice, and houses several commissions with specific focus on diversity. The comprehensive nature of this particular institution’s efforts to welcome diverse students and provide numerous venues for interacting with diverse peers and celebrating one’s heritage may be exerting an especially positive influence on sense of belonging for students of color that is manifest in the present analysis. This would be consistent with evidence that suggests the positive impact of ethnic based student organizations on minority students’ sense of belonging at PWIs and the influential role of institutional multicultural centers on minority student outcomes (e.g., Jones et al., 2002; Museus, 2007).

As expected, correlation analysis revealed that both student involvement and institutional engagement were positively and significantly related to belonging among people of color. Moreover, the strength of the relationship between each of the involvement variables and sense of belonging was of a similar magnitude. This finding
corroborates the preponderance of evidence that suggests the positive association
between student involvement, engagement, and desirable student outcomes (Harper & Quaye, 2009; Kuh, 2009; Pascarella & Terenzini, 2005). More frequent involvement in meaningful and educationally purposeful social and academic activities during college was related to stronger sense of belonging for students of color. It may be that more frequent interactions, whether social or academic in nature, provide more opportunities for students to form friendships, connect with others, and feel a part of their educational experiences—all of which are conceptually linked to sense of belonging.

One of the more notable results was that institutional engagement had a stronger relationship to sense of belonging than any one of the student involvement variables. This finding strongly suggests that the institution may play a critical role in fostering a greater sense of belonging for students of color at PWIs. Institutional contexts such as PWIs, where students of color may be marginalized or inclined to feel like one of few, would do well to emphasize avenues for involvement among all students and to convey a sense that the institution cares about the success and education of students of color. Indeed, results from this study suggest greater institutional emphasis on involvement and student success tends to be associated with a greater sense of belonging for students of color.

Each student involvement variable is positively correlated for students of color. This suggests that an increase in involvement in one domain is associated with an increased level of involvement in the other domains. As one might expect, student faculty involvement and academic involvement exhibited a moderately strong association. It is perhaps intuitive that these two variables would be moderately or strongly related to one another provided that students who are actively involved in the classroom and
coursework may have more opportunities to interact with faculty members, form bonds, and seek out additional opportunity for faculty involvement such as working on research projects together.

The relationship between student academic involvement and student social involvement was also moderately strong. Contrary to conventional wisdom, it appears that more frequent student involvement in one domain (e.g., social) does not necessarily come at the expense of the other (e.g., academic) for students of color at PWIs. In fact, findings from the present study suggest the opposite is true. It may be that the bonds students form with students through social involvement extend into the classroom and may foster a greater comfort in contributing to class discussions, group work with peers, and cooperation on course projects. Alternatively, greater involvement in class discussions, engagement in group work, and more involvement in one’s coursework may provide students the opportunity to bond with their class peers and those social ties may extend beyond the classroom and facilitate additional and more frequent conversations as well as friendships that might not have occurred otherwise.

Another interesting result that emerged from the correlation analysis was the relatively modest or moderate relationship between institutional engagement and academic and social involvement, respectively. One might reasonably assume that greater institutional engagement would be associated with greater social and academic involvement among students. However, the modest-moderate nature of the relationships suggests that this is true only to an extent. It may be that students are aware of and acknowledge institutional efforts to engage them, but institutional encouragement alone is not enough to compel students of color to become significantly more involved
academically or socially. Rather, institutional engagement may be one of several factors that influence racial and ethnic minority student decisions to get involved on campus. On the other hand, the campus culture of PWIs often excludes or marginalizes students of color and their needs (Gonzalez, 2003; Lewis, Chesler, & Forman, 2000; Museus, 2008). Therefore, the nature of the involvement opportunities institutions emphasize may not be particularly appealing to students of color regardless of how strongly institutions emphasize the opportunities, especially at PWIs. Thus, involvement among students of color at PWIs may operate somewhat independently of institutional efforts due to the biased nature of the involvement activities advertised that favor the dominant culture at the institution (i.e., White, Eurocentric involvement opportunities).

Finally, the hierarchical linear regression revealed several findings of note. The full final model explained 40% of the variance in reported sense of belonging among students of color. Student involvement and institutional engagement together accounted for nearly a quarter of the variance in sense of belonging among students of color at PWIs above and beyond student background characteristics. A number of student characteristics and background traits were significant predictors of sense of belonging among students of color at PWIs. First, grades were statistically significant predictors of sense of belonging, controlling for all other variables. Higher grades were associated with greater sense of belonging. This is intuitive to some degree. Students of color who are succeeding in college and excelling in their coursework, as measured by grades, may in turn feel validated and a sense that they do in fact belong in college. This would be consistent with other research demonstrating a positive association between GPA and sense of belonging (Strayhorn, 2012). Fraternity and sorority membership was also
significantly and positively associated with sense of belonging. While the composition of
the fraternities and sororities is unknown, this finding may be related to observations in
the scholarship that students of color seek out support and build networks through
participating in race-oriented fraternities and sororities—especially in culturally exclusive
or chilly environments like PWIs (Harper & Quaye, 2009; Ozaki & Johnston, 2008).
Race-related fraternities and sororities may offer students of color a safe space where
they have the opportunity to develop their racial identity; fraternity/sorority membership
may also be related to a number of positive outcomes such as involvement and use of
campus services that may enhance a student’s relationship to the college (Baker, 2008;

There were also several student characteristics that were negatively related to
sense of belonging among students of color at PWIs. First, transfer status was statistically
significantly and negatively related to sense of belonging. Students of color who
transferred to the institution tended to report a weaker sense of belonging compared with
their peers who were native to the institution, controlling for all other factors. The
transfer student college experience is known to be qualitatively different from that of
non-transfer students and transfer student outcomes are often more negative than
outcomes for students native to the institution (Ishitani, 2008). It stands to reason then
that students who transfer to a new institution may have fewer friendships and social
connections than native students and thus may have lower sense of fit and belonging at
the institution.

Several of the main variables of interest in this study were associated with sense
of belonging. Student academic involvement, student social involvement, and
institutional engagement were all positive and significant predictors of belonging. This is notable for several reasons. The fact that student academic and social involvement are positive predictors of belonging among students of color at PWIs provides further evidence to suggest the critical importance of student involvement in the college setting for outcomes such as sense of belonging, consistent with the weight of evidence (e.g., Bridges et al., 2005; Strayhorn, 2012). When students were reportedly more involved in academic and social activities they tended to report feeling a greater sense of belonging to the institution, controlling for all other variables. Thus, efforts on the part of students to get more involved and efforts on the part of educators to encourage more frequent student involvement both inside and outside the classroom appears to be related to a stronger sense of fit, mattering, and connection to the university for racial/ethnic minorities attending a PWI.

Student faculty involvement was not a significant predictor of sense of belonging, contrary to evidence that suggests the important role of institutional agents such as faculty in fostering positive student outcomes (Cole, 2010; Dowd, Pak, & Bensimon, 2013; Strayhorn & Saddler, 2009). This finding is particularly interesting in light of the moderate association between student-faculty involvement and sense of belonging revealed by the correlation analysis. While the regression analysis does not appear to support the notion that student-faculty interaction predicts sense of belonging for students of color, there could be alternative explanations for the positive association between student faculty involvement and sense of belonging revealed by the correlation analysis. For instance, it may be that students who feel a greater sense of belonging are more comfortable in the PWI setting and more likely to approach and interact with faculty—
thus accounting for the positive correlation relationship identified earlier. Indeed, prior evidence suggests that sense of fit among students of color at PWIs is related to the nature and quality of student-faculty interactions (Cole, 2010; Cole & Jackson, 2005). Therefore, one could reasonably posit that sense of belonging may be associated with more frequent interactions with faculty while mere frequency of faculty interactions may not linearly predict whether one feels a greater sense of belonging nor significantly explain variance in reported belonging.

Greater academic involvement was positively related to sense of belonging in the regression model. Students who were more involved in academic-related activities tended to report an increased sense of belonging, controlling for all other variables. It may be that greater academic involvement in co-curricular and course-related activities (e.g., presentations, class discussions) influences students’ overall success in the course, in turn boosting a students’ confidence, self-efficacy, and a sense that they can succeed in college (Bandura, 1986). Opportunities to become a part of the academic fabric of the institution through frequent peer tutoring, group work in class, and class discussions may exert a positive influence on their sense of belonging. Greater involvement in academic endeavors might also lead students to feel more invested in their education and college success because of the time they are dedicating to academics and coursework. In turn, these factors may validate one’s sense that they belong in college. Indeed, academic involvement may help students of color form connections to the formal educational elements of the college experience and to feel like an integral part of their education, thus feeding into an increased sense of belonging (Ames, 1992; Goodenow, 1993).
Recall that sense of belonging is a subjective appraisal of one’s position in relation to other social groups on campus which in turn yields particular emotions and behavioral responses (Strayhorn, 2012). It is relational in nature and entails a strong social component. Therefore, it may come as no surprise that the current study found social involvement is a positive predictor of sense of belonging among students of color attending a PWI. This finding is consistent with prior evidence that suggests social interactions for students of color at PWIs can be an influential force in terms of their educational success, retention, and satisfaction with college (Dennis, Phinney, & Chuateco, 2005; Hurtado et al., 1996). More frequent social involvement may permit students of color more opportunities to form bonds with other students, establish peer support networks, and come to a better understanding of others on campus. Remember that in this study, social involvement consisted of frequency of student social interactions across race/ethnicity, beliefs, and views, among other activities. Findings from this study appear to support the value in frequent interactions with those from different backgrounds given its positive relationship to sense of belonging among students of color at PWIs. This finding corroborates and extends prior findings that suggest the positive influence of cross-racial interactions on college outcomes like belonging for students of color (e.g., Strayhorn, 2008). With the right institutional supports and climate, encouraging frequent social interactions with diverse peers may provide students of color the opportunity to form meaningful relationships at PWIs, despite their underrepresented status, which in turn appears to positively predict a stronger college sense of belonging.

Finally, results from the full model indicated that institutional engagement was a significant positive predictor of sense of belonging among students of color at a PWI,
controlling for all other variables. It explained an additional 9% of the variance in belonging above and beyond that explained by background traits or the three student involvement variables. That institutional engagement is a significant positive predictor of sense of belonging among students of color and explains variance in belonging above and beyond student involvement is notable for several reasons.

First, the findings uniquely contribute to our understanding of the relationship between student engagement and sense of belonging for students of color attending PWIs. To date, no research has explored both the unique and combined influence of student involvement and institutional engagement on sense of belonging for students of color. Second, the finding lends credit to the notion posited by scholars (e.g., Harper & Quaye, 2009; Kuh, 2009) who suggest that it is important from a theoretical and practical standpoint to consider the efforts of the student and the institution to understand student engagement and its relationship to student outcomes such as sense of belonging. Third, it provides supporting evidence for shifting some of the burden of student engagement on to the institution. Findings from this study appear to suggest that greater efforts on the part of institutional leadership to encourage attendance at events, offer social and academic supports, and communicate involvement opportunities is associated with an increased sense of belonging for students of color at PWIs, controlling for all other factors. Doing so may have a positive impact not only on desirable student outcomes like sense of belonging, but also desirable institutional outcomes like minority student retention given the link between belonging and persistence. Fourth, the beta weight for institutional engagement was larger than any other single factor in the model. This suggests the powerful association between minority students’ perceptions of intuitional
engagement and their sense of belonging to the institution. Institutional engagement
efforts may communicate to students that the institution cares about their involvement
and the success of all students. Indeed, feeling cared for and that one matters is a key
component of sense of belonging. Findings from this study suggest that those messages
of caring and mattering coming from the institution may be particularly important for
minority students to feel a stronger sense of belonging at PWIs.

In sum, results revealed that student academic and social involvement are
significant positive predictors of sense of belonging among students of color attending a
PWI. Student involvement explained variance in reported belonging above and beyond
that accounted for by a litany of background traits and student characteristics that served
as statistical controls in this analysis. The analysis indicated that only two of three
dimensions of student involvement were statistically significant predictors of belonging
among students of color. Student-faculty involvement was not a significant predictor of
belonging for people of color in the final model.

This study uniquely contributes to the literature by revealing that institutional
efforts to engagement students was a significant positive predictor of belonging and
explained an additional 9% of variance in student sense of belonging for people of color
attending a PWI beyond that accounted for by involvement or background variables. The
finding suggests the important role of the institution in fostering a sense of belonging
among students of color at PWIs. The full model including the three student involvement
variables, the institutional engagement variable, and student background traits explained
40% of the variance in sense of belonging in students of color attending a PWI. Student
involvement and institutional engagement explained an additional 24% of the variance in
belonging above and beyond student background traits. Overall, findings suggest that student engagement is significantly related to sense of belonging among students of color attending a PWI and should be considered by institutions, educators, and practitioners alike who are interested in fostering a stronger sense of belonging in college among students of color.

**Relationship of the Findings to Prior Research**

This study makes a unique contribution to the growing body of student engagement and sense of belonging literatures. Specifically, this study examined racial/ethnic differences in sense of belonging and uncovered several significant student engagement factors that predict increased sense of belonging among people of color at PWIs. This section brings the findings from the present investigation into conversation with prior scholarship presented in chapter two. I situate the findings from the current study in the larger scholarship and move into implications for future practice, research, and theory.

Findings from this study add to the mounting evidence that student engagement positively influences student outcomes (Kuh, 2009; Kuh et al., 2008). This investigation contributes uniquely to this body of evidence by investigating the independent and combined relationship of two major agents of engagement, the student and the institution. Findings from this investigation indicate that student engagement—as it is conceived in this study—accounts for nearly a quarter of the variance in belonging beyond student background characteristics. Specifically, student involvement explains 15% additional variance in belonging beyond background characteristics and institutional engagement explains an additional 9% of the variance over and beyond involvement. In turn, the
present study appears to provide supporting evidence for calls in the literature (e.g., Harper & Quaye, 2009; Wolf-Wendel et al., 2009) for engagement research that parses out specific elements of student engagement to examine their relationship to other variables like belonging.

Prior evidence suggests that faculty interaction is positively associated with sense of belonging and suggests a need for faculty to develop structured opportunities for those interactions (Freeman, Anderman, & Jensen, 2007; Strayhorn, 2012). Indeed, there is mounting evidence to suggest that student-faculty involvement yields a positive influence on student outcomes such as belonging (e.g., Braxton, Milem, & Sullivan, 2000; Chen et al., 2008; Strayhorn, 2012). Yet, results from the present investigation do not wholly support this evidence. The current study revealed that student-faculty involvement was moderately correlated with sense of belonging for students of color. This finding supports prior evidence suggesting that student-faculty interactions and belonging are positively associated. However, in the full regression model, student-faculty involvement was a statistically non-significant predictor of belonging. Thus, an increase in involvement with faculty does not appear to linearly predict an increase in sense of belonging for students of color attending a PWI. However, in light of the consistent evidence suggesting the important role of student-faculty relationships for positive student outcomes to occur, I contend that both student-faculty relationships and a broader institutional commitment to engaging students of color are important considerations in terms of reaching desired outcomes like sense of belonging. Additional research is necessary to see if this particular finding can be replicated or if there are other underlying factors beyond this analysis that
are influencing or moderating the relationship between student-faculty involvement and belonging (e.g., race of faculty member, quality of interaction).

The present study found that, on average, students of color reported higher levels of social involvement than their White peers. The result was unexpected given the sometimes hostile and chilly racial climates of PWIs that may hinder minority student engagement (Nelson-Laird et al., 2007; Palmer, Maramba, & Holmes, 2012). While unexpected, the results are not inconsistent with prior evidence that supports the notion that students of color often report higher levels of engagement compared to their White peers (Greene, Marti, & McClennery, 2008; Hu & Kuh, 2002, Swigart & Murrell, 2001). Notably, minority student engagement often takes the form of social involvement in minority-based programs, clubs, and organizations that offer safe spaces for the formation of social and cultural bonds with other students in an otherwise unwelcoming campus space (Guiffrida, 2003; Person & Christensen, 1996; Woldoff, Wiggins, & Washington, 2011). Thus, students of color at PWIs may be more socially involved in the aforementioned activities than their White peers in their efforts to guard against racially hostile environments by forming additional social bonds and support networks through a wide variety of clubs and student organizations.

Other scholarship indicates that students with prior exposure to diversity and diverse social environments were more likely to be predisposed to engaging with diverse peers (Hall et al., 2010). For instance, Hu and Wolniak (2013) found that Black students tend to report some of the highest levels of social involvement among student populations and Hall and colleagues (2010) found that racial and ethnic minorities were more likely than their White peers to be predisposed to engage in diversity-related opportunities. The
The present study appears to provide some evidence that corroborates these findings. Recall that in this study, the social involvement variable was characterized in part by frequency of conversations and social interactions with students from diverse backgrounds—specifically backgrounds different than one’s own. Thus, the present study’s finding that students of color reported greater levels of social involvement compared to their White peers may make sense in light of the student body composition at PWIs because there may simply be more opportunities for students of color to engage with someone of a different background (e.g., White peer) at a PWI than the other way around. In an alternative explanation, Hall and colleagues (2010) claim that minority students often have greater exposure to diversity prior to college than their White peers and thus they may be more inclined to engage across difference.

Furthermore, the literature calls for greater institutional commitment to providing supportive and engaging environments for racial and ethnic minorities while encouraging students of color to seek out support in sub-environments at PWIs that validate and celebrate their background and heritage (Harper & Quaye, 2008; Kinzie et al., 2008; Laird et al., 2007). This approach to engagement is consistent with the way engagement was conceived in the present study, parsing out the role of the student (i.e., student involvement) and the role of the institution (i.e., institutional engagement) and hypothesizing their respective relationship to student outcomes such as sense of belonging—a hypothesis supported by the findings. Said another way, the current investigation supports prior literature that calls for, describes, and investigates the responsibility of both the student and the institution in student engagement in any effort to achieve the positive educational outcomes widely associated with engagement. For
instance, Harper (2008) contends that institutional leaders must push for greater engagement among Black men and calls for greater faculty and staff accountability. Moreover, he calls for additional collaboration on the part of institutions and students, among others, to ensure greater engagement in an effort to positively impact Black men and address disparities in educational outcomes.

In prior research, scholars contend that student engagement represents a way for educators and institutions to positively influence student outcomes, such as sense of belonging; Research suggests that student engagement is a powerful tool for educators and institutions to take advantage of in the face of influential student demographics and characteristics that are beyond their control (Christenson et al., 2000; Jimerson et al., 2003; Reschly, Huebner, Appleton, & Antaramian, 2008; Sharkey et al., 2008). Engagement is a way for institutions to intervene in the college success of students from all backgrounds. Empirical evidence from this study supports the postulation that institutional efforts to engage students is positively related to outcomes like sense of belonging, as prior scholarship contends.

The adjustment of racial and ethnic minorities to predominantly White campuses can be a complicated endeavor. Institutional climate, culture, and the nature of institutional engagement efforts all influence how engaged students are in their college learning experience (Laird et al., 2007). Research demonstrates that racial climates at PWIs can influence both academic and social involvement and that hostile racial climates at PWIs may lead to minority student disengagement, dissatisfaction, and a weakened sense of belonging to the institution (Ancis et al., 2000; Cabrera et al., 1999; Harper et al., 2005; Harper & Quaye, 2009). Still further, students of color at PWIs may feel
uncared for by the institution, may experience prejudice, and hostile social relationships with others which in turn may lead to learning impediments or student departure (Allen, 1992; Feagin et al., 1996; Fleming, 1984; Hawkins & Larabee, 2009; Hernandez, 2000).

The present investigation clarifies our understanding of the institution’s role in shaping the minority student experience and provides supporting evidence to suggest that PWIs may play an important part in encouraging sense of belonging among students of color..

While PWIs may be host to hostile racial climates and a number of race-related issues that detrimentally impact students, the present study suggests that meaningful institutional efforts to engage students of color are positively associated with gains in their sense of belonging and fit in college.

Results from this study suggest that sense of belonging differs across race and ethnicity among students at PWIs. Unexpectedly, students of color reported greater sense of belonging than their White peers at this particular PWI. This finding appears to contradict prior literature that suggests students of color often experience marginalization, isolation, and hostile racial climates at PWIs that in turn negatively impacts their college sense of belonging; thus students of color may have less sense of belonging than their White peers (Hurtado et al., 2007; Hurtado & Carter, 1997; Johnson et al., 2007; Maramba & Museus, 2013; Strayhorn, 2008; 2012). As noted elsewhere in this chapter, there could be a number of factors related to the institution’s commitment to diversity (e.g., diversity committees, student groups) that account for this discrepancy and unexpected finding.

The balance of evidence suggests students accrue a number of benefits from faculty interactions (Pascarella & Terenzini, 2005). Contrary to what one might expect,
the findings from the present study suggest that frequency of student-faculty interactions
is not a significant predictor of sense of belonging for students of color. Nonetheless, this
finding is actually consistent with some prior examinations of faculty-student interactions
and sense of belonging among students of color. For instance, Johnson and colleagues
(2007) found no significant relationship between faculty involvement and sense of
belonging for students of color with one exception—Latino students—and that
relationship was in a negative direction. On the other hand, additional evidence suggests
that faculty student interactions and faculty inclusion of diversity in the course
curriculum were positively related to sense of belonging among Latino students (Nunez,
2009). It could be that frequency of faculty student interactions alone matters less than
the quality and nature of those interactions in terms of their relationship to sense of
belonging.

This student-faculty involvement finding should be interpreted with caution.
While student-faculty involvement may not be a significant predictor of sense of
belonging for students of color at this particular PWI, more research is needed to make
any definitive claims. Moreover, all students, including students of color, experience a
number of other positive gains as a result of faculty interaction (Ku & Hu, 2001;
Pascarella & Terenzini, 1991). For example, student-faculty interactions share a strong
relationship with student learning, intellectual development, and problem solving among
students of color (Eimers, 2001; Lundberg & Schreiner, 2004).

Extant research points to a broad range of academic and social experiences that
bear on sense of belonging. Findings from the current study appear to provide additional
supporting evidence that suggests academic and social experiences are positively related
to sense of belonging. Specifically, this study found that academic involvement and social involvement were significant, positive predictors of belonging for people of color at PWIs. This finding is consistent with the work of Maestas and colleagues (2007) who conducted a study to explore the impact of academic and social experiences on sense of belonging among students at a Hispanic Serving Institution (HSI). They found that participation in academic support programs, diverse interactions with peers, and participation in extracurricular activities were all positively related to sense of belonging.

Other scholars have found that academic and social experiences, such as time spent studying and diverse peer interactions, positively impacted sense of belonging among Black and Latino students (Nunez, 2009; Strayhorn, 2008a; Strayhorn, 2008b; Strayhorn, 2012). Finally, the findings from this dissertation support Strayhorn’s (2012) findings that student involvement in academic and social activities such as working on committees, socializing with faculty outside of class, and using recreational facilities, is consistently and positively correlated with greater sense of belonging.

To date, no studies have examined specifically the relationship between institutional engagement and sense of belonging among people of color at PWIs as conceived in the present investigation. While there is some evidence to suggest that academic and social experiences may exert a positive influence on sense of belonging among students of color, no studies have conceptualized those experiences in the scope of a two-part student engagement construct that entails student involvement and institutional engagement, though there is theoretical precedence for an investigation organized in this manner (e.g., Goodenow, 1993). The present study adds to the mounting evidence suggesting the positive influence of student engagement and uniquely contributes to the
literature by expanding our understanding of the roles of student involvement and institutional engagement and their combined and independent relationships to sense of belonging for students of color at a PWI.

**Implications for Future Practice, Research and Theory**

Findings from this study have a number of important implications for future practice, research, and theory. This section describes the implications for each respective area.

**Implications for Practice**

Findings from this study offer several implications for practice. First, the results have implications for institutional leadership at PWIs. Findings suggest that institutional efforts to engage students of color at PWIs are positively related to increased sense of belonging in college. PWIs should acknowledge their role in engaging students of color and should not only provide supports that encourage involvement, but also communicate to students the institution’s commitment to student success, offering strong encouragement to students to take advantage of the supports and activities the institution offers. For example, institutional leadership might take the time to distribute encouraging emails to students with a reminder of campus academic resources in the weeks leading up to final exams in an effort to encourage academic engagement and a feeling among students that their institution cares about their academic success. By doing so, institutions may find that their students of color feel an increased sense of belonging and connection to the university and they may be more likely to persist because they feel supported and cared about by the institution (Strayhorn, 2012).
Leadership at PWIs should also take intentional steps to frequently advertise a wide range of opportunities for student engagement across social and academic domains that are culturally inclusive and meaningful for racial and ethnic minorities. For example, institutions might devote resources to sponsor social events every term that bring together diverse students and various student organizations and cultural centers (e.g., Muslim Student Association; Black Student Organization) to encourage interaction and friendship building across racial, cultural, social, and economic backgrounds. Orchestrating meaningful, well-funded engagement opportunities such as this would convey to students from diverse backgrounds that the institution cares about them and celebrates diversity.

Providing resources and supports to help students thrive in the social sphere of college may provide students the opportunity to form connections with others on campus across difference. Institutional emphasis on engagement of this nature may in turn be associated with greater sense of belonging among students of color at PWIs.

In all cases, institutions should adopt creative strategies for informing students of opportunities for involvement and resources for their success in college. Institutions should seek out ways to communicate the resources, supports, and involvement opportunities they offer students through minority student organizations (e.g., Latino Student Association), cultural events, and by working with existing networks of racial/ethnic minorities on campus (e.g., race-oriented fraternities/sororities). Increased efforts on the part of institutions to have a broader and more inclusive reach may communicate to students that they matter, they are not invisible, and the institution cares about their success—in turn potentially increasing their sense of belonging to the institution.
Second, the findings hold important implications for higher education and student affairs practitioners. Student affairs practitioners should bear in mind the relationship between student engagement and sense of belonging when designing and implementing programming—particularly programming that is geared toward acclimating students to college and ensuring persistence and retention among people of color given the link between sense of belonging and retention. For instance, orientation programs, pre-enrollment programs, and student support programming would do well to incorporate both academic and social activities to acclimate students of color to both spheres of the college experience and familiarize students with a broad range of academic and social involvement opportunities available to them at the institution and in the local community. Orientation campus tours might feature stops at social hotspots on campus known to draw a diverse crowd of students (e.g., student union, performance theater) and academically oriented spaces on campus like a library spaces for group work and presentation practice sessions, the student writing center, or a peer tutoring office. Alternatively, pre-enrollment programs might incorporate a campus resource scavenger hunt for participating students to encourage students to work together on teams to identify and note where they can take advantage of opportunities to get involved. In any case, these strategies should be accompanied with ample information regarding hours of operation, specific services offered, and other relevant information to ensure students are well-informed, familiar with the academic and social supports available to them, and well-equipped to take advantage of meaningful involvement opportunities frequently in the coming years. These kinds of activities familiarize students with opportunities to be involved in their education and may increase the frequency with which they are involved.
In turn, increased academic and social involvement may encourage students to feel an increased sense of belonging to the institution, fulfilling program goals and helping students reach graduation.

Third, the findings offer critical insight into strategies that educators at PWIs (e.g., faculty, instructors) may use to encourage a sense of belonging among students of color and a sense that they matter, they are respected, and they are cared about by others. Opportunities should be embedded into the classroom structure that encourage guided or structured interactions that welcome, recognize, and validate diverse viewpoints and experiences. Doing so may create a classroom culture and climate at PWIs that encourages and emboldens students of color to be actively involved and make frequent contributions to class discussions and other course-related opportunities. For instance, when discussing course topics, instructors might welcome students to reflect on their own personal views and encourage friendly debate, acknowledging each student’s opinion and contribution to the class discussion in hopes of encouraging more frequent involvement. Alternatively, faculty and staff might incorporate diverse perspectives in the curriculum reflecting the life experiences and viewpoints of diverse scholars with whom students of color may identify—in turn, students may be more inclined to participate and speak to those perspectives in class. Moreover, educators should adopt strategies to encourage frequent student interactions across difference with the ultimate goal of helping students cement supportive social relationships while fostering an environment conducive to frequent serious conversations with those from diverse backgrounds.

The results from this study suggest that increased academic involvement and social involvement are both related to gains in sense of belonging. Moreover, as one form
of involvement increases, the other tends to increase as well. Thus, faculty might capitalize on opportunities to encourage curricular and co-curricular activities that incorporate both social and academic elements throughout the length of the course. What faculty do in the classroom may influence students’ sense of belonging (Freeman, Anderman, & Jensen, 2007). For instance, faculty might incorporate group projects in class structured in such a way as to encourage students to get to know one another on a social basis while also tackling the academic tasks at hand. This could be done by incorporating structured social opportunities like ice breakers or brief structured “peer interviews” with group members as part of the introductory stages of class projects to encourage social connections and friendship building in and outside of the class centered on the academic assignments. Alternatively, faculty might consider creating carefully structured peer paper/homework review dyads in the classroom to encourage students to learn from one another, expose students to different perspectives on course topics, and help students establish connections across difference all while providing students the opportunity for peer reviews, proofreading, and revisions for their academic work. In turn, findings from this investigation suggest that more frequent opportunities to do these sorts of activities may be related to an increased sense of belonging among students of color.

Finally, findings from this study offer a way for students and university staff to collaborate on student success (Harper & Quaye, 2009). Results offer important information to students who are not satisfied with their college experience or who feel alienated at their institution. While educators and student affairs practitioners should take care not to overburden students with sole responsibility for involvement, they should
actively encourage students to frequently take advantage of the academic and social involvement opportunities on campus as a method to address a student’s lack of fit or belonging at an institution. Advisors or college counselors who are made aware of a student’s sense of alienation could draw on the empirical information presented in this study to make a case to their students that getting involved may help them feel an increased sense of belonging. For instance, advisors and counselors might maintain a list of involvement opportunities, events, activities, clubs, etc. that cover a wide array of social, economic, racial, and cultural dimensions. When they encounter students of color who feel alienated, unhappy with their college experience, or students who are considering withdrawal from college, counselors and advisors could work through the list of involvement opportunities with students and monitor the frequency of that student’s involvement through a journaling activity or similar strategies in light of the positive relationship between increased involvement and sense of belonging.

**Implications for Future Research**

The present research study explored racial/ethnic differences in student engagement and sense of belonging and the relationship between engagement and belonging among students of color at a PWI. A series of computational analyses of survey data from a national dataset were used to provide answers to the study’s research questions. There are numerous opportunities for future research based on the results of this study.

First, future research might replicate this study at other PWIs or expand this study to include multiple PWIs. The present study utilized data from a single PWI to examine racial differences in engagement and belonging and to probe the relationship between
engagement and belonging for students of color. Replicating the current study at other PWIs could provide additional evidence supporting or refuting the findings from the present investigation. Findings from these studies could then be used to further shape and augment our understanding of the relationship between elements of engagement and belonging for people of color at PWIs.

Second, the relationship between student engagement and sense of belonging could be explored at minority serving institutions. Minority-serving institutions often have a more diverse student body and institutional missions that elevate their commitment to diverse student populations. Such institutional environments may offer unique student engagement opportunities and institutional foci that may influence student sense of belonging for people of color differently than at predominantly White colleges and universities. Such a study could add to the literature and extend the findings of this research undertaking by revealing whether institutional type and the racial/ethnic composition of the student body appears to impact the relation between sense of belonging and engagement among students of color.

Third, this investigation examined the relationship between engagement and belonging, treating students of color as a single group. However, the histories and life experiences of people of color vary across race and ethnicity. These differences may merit future research that parses out the relationship between student engagement and sense of belonging for Latino, Black, Native American, and Asian students separately to determine whether the relationships identified in this study hold and whether the magnitude and directions of the relationships are changed. For example, the present study excluded Asian students from the analysis because the study was couched in the larger
issue of student persistence—Asian students on the whole persist at the highest rates among all racial and ethnic groups (NCES, 2013). Nonetheless, there are a number of negative campus climate and race-related issues at PWIs that Asian students, like their Black and Latino counterparts, must endure. Thus, future research could examine the relationship between engagement and belonging for Asian students at PWIs which could provide empirical information for addressing the impact of chilly campus climates and other race related issues as a means of addressing psychological stress associated with alienation or chilly institutional racial climates for Asian students.

Fourth, future research could explore the influence of engagement on sense of belonging for students of color in various PWI contexts. For instance, researchers might explore whether institutional efforts to encourage student involvement relate to sense of belonging differently at the classroom level versus the campus level. Alternatively, future research could probe the relationship of student engagement and sense of belonging in different majors, disciplines, or departments among students of color at PWIs. For example, does student engagement have a similar relationship to sense of belonging for students of color in the social sciences as it does for students in the physical sciences at PWIs? Findings from such studies would extend and diversify the results of the present study and provide a more complete picture of the role of engagement in belonging across contexts at PWIs.

Fifth, parsing out academic involvement, social involvement, faculty involvement, and institutional engagement permitted the researcher to determine the unique and combined influence of each element of engagement on sense of belonging. Thus, future research investigating the relationship between student engagement and
sense of belonging might explore other elements of the link framed by an understanding of student engagement as a multidimensional construct. For instance, future research could adopt the tripartite conceptualization of student engagement drawing on the K-12 and educational psychology literature to explore whether emotional engagement, behavioral engagement, and cognitive engagement are linked to sense of belonging differentially. Such an approach is supported in the educational psychology literature dedicated to student engagement (e.g., Archambault et al., 2009). Different forms of engagement could be mapped on to the key facets of sense of belonging to determine underlying connections. For example, is emotional engagement linked to the affective element of sense of belonging or is cognitive engagement specifically linked to the cognitive element of belonging? Such an investigation would tap into an area of research that, to date, has gone virtually unexplored in the higher education setting.

Finally, future studies could employ a range of alternative quantitative, mixed-methods, or qualitative approaches to further explore the relationships identified in this study and provide additional information that clarifies and expands our understanding of how and why the variables relate. Mixed methods and qualitative approaches could provide deeper, richer explanation for the presence or non-existence of relationships between variables. For instance, qualitative analyses could probe for information that provides more insight into why academic and social involvement seem to be related to sense of belonging at PWIs. Alternatively, other quantitative methods could be employed to make more definitive claims regarding the relationship between student engagement and sense of belonging. An experimental programmatic intervention could be designed to provide tailored inclusive engagement opportunities to a group of randomly selected
students of color to examine whether the students’ sense of belonging increases relative to a control group of students who do not receive the treatment. Such an investigation may allow the researcher to probe further into the nature of the relationship and gain greater insight into ways researchers and educators can capitalize on the presence of such a relationship to benefit students.

**Implications for Theory**

The results of this study implicate the role of engagement in sense of belonging among racial and ethnic minorities at PWIs. It augments existing sense of belonging models suggesting that student engagement may be an important factor that is associated with sense of belonging for students of color. Moreover, the present study provides additional empirical evidence to support theoretical claims that context matters for sense of belonging. Specifically, the study highlights the important role of engaging institutions as a factor that is related to sense of belonging above and beyond what the student does; institutional environments that emphasize engagement are related to a stronger sense of belonging for students of color at PWIs. Future theory and models addressing sense of belonging might incorporate student engagement as one element that may explain variation in sense of belonging.

The results also provide additional evidence answering calls from scholars (e.g., Wolf-Wendel et al., 2009) for research that parses out involvement, engagement, and sense of belonging as independent theoretical constructs each deserving of separate treatment in analyses and each contributing something unique to our understanding of the student experience. In part, these calls are made in order to further clarify and specify theoretical relationships. The results of this study indicate that student involvement is
related to sense of belonging and that institutional engagement contributes uniquely to sense of belonging above and beyond the contribution of what students do (i.e., student involvement). Thus, findings suggest that future theorizing on the role of student engagement could benefit from parsing out elements of student engagement to test the relationship of each respective component of engagement on student outcomes such as belonging. Doing so may lead to further clarification of engagement theory, college impact theories, and sense of belonging theory. The treatment of student engagement as a single variable in the present analysis may have masked the role of different elements of engagement with regard to student outcomes like belonging; therefore this research supports greater specificity in engagement and sense of belonging theory.

The present study theorized the role of student engagement in sense of belonging among racial and ethnic minorities at PWIs. This approach was employed in an effort to decenter Whiteness in our understanding of engagement and its link to important outcomes like belonging. Noted student engagement scholars (e.g., George Kuh) posit that students of color benefit from engagement and that they may even benefit more from engagement than their White peers. The present investigation appears to corroborate this claim, finding that student engagement is more strongly associated with sense of belonging for students of color than it is for White students. Therefore, findings from the present study suggest that students of color may benefit from greater engagement in terms of their sense of belonging—and may benefit more so than their White peers. Future theorizing on the role of engagement and its connection to student outcomes like belonging would do well to factor in the role of race in lieu of blanket statements about the relationship of engagement to student outcomes.
Next, the present study contours our understanding of campus environment theories that address the influence of institutional contexts on student experiences and outcomes. For instance, the present study may offer a link between theories such as environmental press theory to sense of belonging (Strange & Banning, 2001). Environmental press theory posits that campuses have particular norms and expectations that in turn shape student behaviors and experiences on campus (Strange & Banning). If PWIs do not offer opportunities for students from diverse backgrounds to get involved and the institutional press for engagement bends toward Whiteness or the uninvolved student, it may be difficult for racial and ethnic minorities to become involved. The findings from the present study suggest that institutions that are perceived as engaging by students of color—in other words, institutions with an environmental press toward inclusive involvement—may in turn impact students’ levels of belongingness at the institution. In turn, institutions with an environmental press toward engagement that is centered on Whiteness may be doing a distinct disservice to students of color with associated influences on their sense of belonging. Ultimately, the present study may provide some evidence to support a theoretical bridge between environmental press theory and student engagement as a way to explain sense of belonging among students of color.

Finally, one of the major contributions this study makes to theory is related to the way student engagement and sense of belonging are conceptualized and the responsibility assigned to the major agents outlined in each respective theory. Higher education scholars such as Hurtado and Carter (1997) developed sense of belonging, in part, as an alternative to Tinto’s (1993) student departure theory and theorizing on student
integration. Hurtado and Carter took exception to the idea that students needed to give up parts of their identity in order to integrate into college and they took issue with the assimilationist language and the burden of responsibility student departure/integration theory appeared to place on the student rather than assigning some responsibility to educators and the institution as well (Hurtado & Carter, 1997; Johnson et al., 2007).

In a similar vein, student engagement theory evolved, in part, out of student involvement theory. Student involvement theory (Astin, 1984; 1999) describes the time and psychological and physical energy that a student invests in their college experience. Notably, the theory emphasizes the student’s role and responsibility in their involvement as the primary subject. The theory incorporates the role of environments as well—though often from the perspective of what the student does in those environments. Student engagement theory emerged later and posits a dual responsibility for student engagement that implicates the role of student and the role of institution (Harper & Quaye, 2009; Kuh, 2009). Student engagement theory emphasized the role of the institution and the investment institutions make to induce student involvement (Kuh).

This study recognized the parallels in the evolution of sense of belonging and student engagement in what appears to amount to a theoretical shift away from assigning all or most of the responsibility to the student, instead recognizing and acknowledging the important role and responsibility of educators and the institution in supporting students. Moreover, a great deal of engagement research appears to focus exclusively on engagement at the student level rather than the institution’s role. Indeed, scholars lament that more research is needed that further emphasizes the role of the institution in student engagement.
engagement and its associated outcomes, particularly for students of color attending PWIs (e.g., Harper & Quaye, 2009).

This study sought to capitalize on these theoretical parallels to explore the role of the student (involvement) and the role of the institution (institutional engagement) as they came to bear on sense of belonging for students of color at a PWI. The present study contributes to future theory and augments existing theory by providing empirical evidence to suggest that the engagement efforts on the part of the student and the institution are indeed positively linked with sense of belonging among students of color—clarifying further each respective theory. In other words, this study suggests that sense of belonging is positively related to both what the student does via involvement and what the institution does via engagement.

**Limitations of the Study**

No study is without its limitations. The present study is limited in a few ways. First, the study is a single-institution investigation. While the single-institution investigation permitted the researcher to bring specific institutional characteristics to bear on the results to facilitate interpretation, the results may or may not hold for other institutions with significantly different characteristics.

Second, the study entailed a secondary analysis of data drawn from a third-party (i.e., NSSE). Thus, the researcher was limited in tailoring crafting the variables and construction of items. The benefit of using the NSSE included its wide usage across various institutional settings and numerous iterations as well as the extensive research that establishes the validity and reliability of the survey. However, there may be other elements of engagement that could be influential for sense of belonging that simply are
not captured by the NSSE items. Moreover, the NSSE collects data from first-year and senior year students only. Thus, the present study may or may not apply to the experiences of sophomores or junior students at this institution or elsewhere.

Moreover, the belonging scale as it is conceived in the present analysis may be contested or limited. For instance, one could argue that the items that compose the scale—while capturing the relational nature of the construct—may tap most strongly into the affective or emotional element of sense of belonging as opposed to the behavioral component. Nonetheless, the sense of belonging scale is consistent with similarly defined sense of belonging variables previously published by higher education scholars. For example, Strayhorn (2008) used items from the College Student Experiences Questionnaire (CSEQ) such as “rate the quality of your relationships with other students/faculty/administrators” to create a composite variable for sense of belonging in his analysis of belonging among Black men at PWIs. Thus, the decision was made to proceed with the variable as defined with the noted limitations.

As noted in chapter three, the NSSE relies on student self-reports to collect data. While there is evidence to suggest the accuracy of self-reports described in chapter three and more broadly in the literature, the self-reported nature of the data may be a limitation. The degree of accuracy for self-reports is unknown at the particular institution under investigation; in other words, we must take students at their word regarding the frequency of time invested in involvement activities. Thus, the present study relied on extant scholarship identified in chapter three as evidence of the accuracy of reported involvement relative to actual involvement.
Finally, people of color and White students were each treated as monolithic groups in this analysis. Such treatment may have masked important within group differences. For instance, Latino students and Black students were grouped together in this analysis and thus any racial differences between Latino and Black students may have been obscured. In yet another example, students of color from the northeastern United States compared with students of color from the southern United States may have a different experience at the southeastern PWI research site in this study due to regional cultural differences that may in turn bear on their sense of belonging. Moreover, the present study does not parse out the influence of a few other identities or characteristics in the analysis that could potentially bear on engagement and belonging such as sexual orientation or socioeconomic status. However, such dimensions of identity could not be included in this analysis because the NSSE does not solicit such information.

Conclusions

The present investigation examined racial/ethnic differences in student engagement and sense of belonging among PWI students and probed the relationship between student engagement and sense of belonging for students of color at PWIs. Several important findings emerged from the analysis that meaningfully and significantly contribute to our understanding of engagement and belonging. In light of the findings, this study offers a number of important implications and future directions for practice, research, and policy related to student engagement and sense of belonging for students of color at PWIs.

First, the study revealed significant racial/ethnic differences in average reported social involvement and sense of belonging among students attending a PWI.
Specifically, students of color reported greater social involvement and sense of belonging than their White counterparts. No statistically significant racial or ethnic differences were observed in average reported student academic involvement, student faculty involvement, or institutional engagement. The observed differences and non-significance of several results were somewhat surprising to the researcher in light of prior evidence. For instance, prior scholarship suggests students of color are particularly prone to feeling a diminished sense of belonging relative to their White peers at PWIs.

Second, findings indicated that student academic involvement, student social involvement, institutional engagement, and sense of belonging were all positively and significantly related for students of color attending PWIs. Thus, an increase in one is associated with an increase in another. Two correlation relationships were particularly notable. The strongest relationships between any variables were between student faculty involvement and student academic involvement, as one might expect, as well as student faculty involvement and student social involvement. Another notable result was the moderately strong relationship between academic and social involvement. Despite conventional wisdom, it appears that increased involvement in social activities is positively related with increased involvement in academic activities, and vice versa.

Finally, hierarchical linear regression results demonstrated the unique and combined relationship of student involvement and institutional engagement in terms of variance explained in sense of belonging for students of color at a PWI. The full model revealed that student academic involvement, student social involvement, and institutional engagement are all statistically significant and positive predictors of sense of belonging for students of color attending PWIs. Student involvement explained variance in sense of belonging for students of color attending PWIs.
belonging above and beyond student background traits and institutional engagement explained variance in sense of belonging above and beyond student involvement and background traits. Together, student engagement accounted for nearly a quarter of all variance explained in sense of belonging beyond background traits.

This study makes an especially unique contribution to the literature by offering supporting evidence to suggest the association between student engagement and college sense of belonging. This study suggests that two agents of student engagement, the student and the institution, each explain unique variance in sense of belonging. Thus, the study presents myriad implications for research and practice. Finally, this study offers precious empirical evidence to substantiate calls in the literature from some of the most prominent engagement and belonging theorists for holding institutions and educators responsible for their role in student success.

This study provides a resounding answer to the question posited in the opening paragraph by the New York Times, who gets to graduate? The answer is, everyone should get the chance to graduate. With the right opportunities, students can take the initiative to get involved to form vital connections and bonds with other students, to find their fit. Still, it is incumbent upon institutions and educators to support students on their journey toward graduation by fostering a sense of belonging among students from all backgrounds. This study suggests that institutions bear special responsibility to encourage student involvement and to be proactive in its efforts to engage students from all backgrounds to drive students toward a greater sense of belonging.
References


Pascarella, E., Seifert, T., & Blaich, C. (2009). Validation of the NSSE benchmarks and deep approaches to learning against liberal arts outcomes. Iowa City: University of Iowa Center for Research on Undergraduate Education.


Welch, B. L. (1947). The generalization of "Student's" problem when several different population variances are involved. *Biometrika, 34*(1–2), 28–35.


Appendix A: National Survey of Student Engagement (NSSE)
### National Survey of Student Engagement 2006
#### The College Student Report

1. In your experience at your institution during the current school year, how often have you done each of the following? Mark your answers in the boxes. Examples: □ or ■

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very Often</th>
<th>Often</th>
<th>Sometimes</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Asked questions in class or contributed to class discussions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Made a class presentation</td>
<td></td>
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</tr>
<tr>
<td>c. Prepared two or more drafts of a paper or assignment before turning it in</td>
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<tr>
<td>d. Worked on a project that required integrating ideas or information from various sources</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>e. Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or written assignments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Came to class without completing readings or assignments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Worked with other students on projects during class</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Worked with classmates outside of class to prepare class assignments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Put together ideas or concepts from different courses when completing assignments or during class discussions</td>
<td></td>
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</tr>
<tr>
<td>j. Tutored or taught other students (paid or voluntary)</td>
<td></td>
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</tr>
<tr>
<td>k. Participated in a community-based project (e.g., service learning) as part of a regular course</td>
<td></td>
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</tr>
<tr>
<td>l. Used an electronic medium (lecture, chat group, Internet, instant messaging, etc.) to discuss or complete an assignment</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>m. Used e-mail to communicate with an instructor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n. Discussed grades or assignments with an instructor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o. Talked about career plans with a faculty member or advisor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p. Discussed ideas from your readings or classes with faculty members outside of class</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>q. Received prompt written or oral feedback from faculty on your academic performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. During the current school year, how much has your coursework emphasized the following mental activities?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very Much</th>
<th>Quite a Bit</th>
<th>Some</th>
<th>Very Little</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Memorizing facts, ideas, or methods from your courses and readings so you can recall them in pretty much the same form</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Analyzing the basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Making judgments about the value of information, arguments, or methods, such as assessing how others gathered and interpreted data and assessing the soundness of their conclusions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Applying theories or concepts to practical problems or in new situations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Response Options</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 Write in your year of birth:</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 Your sex</td>
<td>Male, Female</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 Are you an international student or foreign national?</td>
<td>Yes, No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 What is your racial or ethnic identification?</td>
<td>American Indian, Black, Hispanic, Mexican, Puerto Rican, Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 What is your current classification in college?</td>
<td>Freshman, Senior, Sophomore, Unclassified</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 Did you begin college at your current institution or elsewhere?</td>
<td>Started here, Started elsewhere</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 Since graduating from high school, which of the following types of schools have you attended other than the one you are attending now?</td>
<td>Vocational, Community, 4-year college other than this one, None, Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 Thinking about this current academic term, how would you characterize your enrollment?</td>
<td>Full time, Less than full time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23 Are you a member of a social fraternity or sorority?</td>
<td>Yes, No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24 Are you a student-athlete on a team sponsored by your institution’s athletics department?</td>
<td>Yes, No (Go to question 25.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 On what team(s) are you an athlete (e.g., football, swimming)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26 What have most of your grades been up to now at this institution?</td>
<td>A, B, C, F, F+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27 Which of the following best describes where you are living now while attending college?</td>
<td>Residence (house, apartment, etc.) within walking distance of the institution, Residence (house, apartment, etc.) within driving distance of the institution, Fraternity or sorority house</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 What is the highest level of education that your parent(s) completed?</td>
<td>Father, Mother</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29 Please print your major(s) or your expected major(s).</td>
<td>a. Primary major (hint only one):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. If applicable, second major (not minor, concentration, etc.):</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**THANKS FOR SHARING YOUR VIEWS!**

After completing the survey, please put it in the enclosed postage-paid envelope and deposit it in any U.S. Postal Service mailbox. Questions or comments? Contact the National Survey of Student Engagement, Indiana University, 1900 East Seventh Street, Eskenazi Hall Suite 410, Bloomington IN 47405-7912 or nssse@indiana.edu or www.nssse.iu.edu. Copyright © 2005 Indiana University.
Appendix B: Variable Factor Loadings
Appendix B: Variable Factor Loadings

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>College Sense of Belonging (α = 0.70)</strong></td>
<td></td>
</tr>
<tr>
<td>Quality of relationships with other students</td>
<td>.616</td>
</tr>
<tr>
<td>Quality of relationships with faculty members</td>
<td>.639</td>
</tr>
<tr>
<td>Quality of relationships with administrative personnel and offices</td>
<td>.807</td>
</tr>
<tr>
<td>Quality of academic advising at your institution</td>
<td>.652</td>
</tr>
<tr>
<td>Would you go to the same institution</td>
<td>.675</td>
</tr>
<tr>
<td><strong>Student Academic Involvement (α = 0.69)</strong></td>
<td></td>
</tr>
<tr>
<td>Made a class presentation</td>
<td>.604</td>
</tr>
<tr>
<td>Worked with other students on projects during class</td>
<td>.826</td>
</tr>
<tr>
<td>Worked with classmates outside of class to prepare class assignments</td>
<td>.687</td>
</tr>
<tr>
<td><strong>Student Social Involvement (α = 0.75)</strong></td>
<td></td>
</tr>
<tr>
<td>Had serious conversations with students of a different race or ethnicity than your own</td>
<td>.819</td>
</tr>
<tr>
<td>Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values</td>
<td>.791</td>
</tr>
<tr>
<td>Discussed ideas from your readings or classes with others outside of class (students, family members, coworkers)</td>
<td>.706</td>
</tr>
<tr>
<td>Worked with faculty members on activities other than coursework (committees, student life activities)</td>
<td>.399</td>
</tr>
<tr>
<td><strong>Student Faculty Involvement (α = 0.71)</strong></td>
<td></td>
</tr>
<tr>
<td>Discussed grades or assignments with an instructor</td>
<td>.770</td>
</tr>
<tr>
<td>Discussed ideas from your readings or classes with faculty members outside of class</td>
<td>.675</td>
</tr>
<tr>
<td>Received prompt feedback from faculty on your academic performance</td>
<td>.744</td>
</tr>
<tr>
<td>Discussed ideas from your readings or classes with faculty members outside of class</td>
<td>.776</td>
</tr>
<tr>
<td>Discussed ideas from your readings or classes with faculty members outside of class</td>
<td>.642</td>
</tr>
<tr>
<td>Discussed ideas from your readings or classes with faculty members outside of class</td>
<td>.464</td>
</tr>
<tr>
<td><strong>Institutional Engagement (α = 0.81)</strong></td>
<td></td>
</tr>
<tr>
<td>Spending significant amounts of time studying and on academic work</td>
<td>.511</td>
</tr>
<tr>
<td>Providing you the support you need to help you succeed academically</td>
<td>.768</td>
</tr>
<tr>
<td>Encouraging contact among students from different economic, social, and racial or ethnic backgrounds</td>
<td>.823</td>
</tr>
<tr>
<td>Helping you cope with your non-academic responsibilities</td>
<td>.776</td>
</tr>
<tr>
<td>Providing the support you need to thrive socially</td>
<td>.821</td>
</tr>
<tr>
<td>Attending campus events and activities</td>
<td>.642</td>
</tr>
<tr>
<td>Using computers in academic work</td>
<td>.420</td>
</tr>
</tbody>
</table>
Appendix C: Index of Main Variable Scales
### Appendix C: Main Variable Index

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sense of belonging</strong></td>
<td>Rate the quality of your relationships with other students.</td>
</tr>
<tr>
<td></td>
<td>Rate the quality of your relationships with faculty members</td>
</tr>
<tr>
<td></td>
<td>Rate the quality of your relationships with administrative personnel and offices.</td>
</tr>
<tr>
<td></td>
<td>How would you evaluate the quality of academic advising you have received at your institution?</td>
</tr>
<tr>
<td></td>
<td>If you could start over again, would you go to the same institution you are not attending?</td>
</tr>
<tr>
<td><strong>Student involvement</strong></td>
<td><strong>About how often have you done each of the following?</strong></td>
</tr>
<tr>
<td><strong>Student academic involvement</strong></td>
<td>Made a class presentation</td>
</tr>
<tr>
<td></td>
<td>Worked with other students on projects during class</td>
</tr>
<tr>
<td></td>
<td>Worked with classmates outside of class to prepare class assignments</td>
</tr>
<tr>
<td><strong>Student social involvement</strong></td>
<td>Had serious conversations with students of a different race or ethnicity than your own.</td>
</tr>
<tr>
<td></td>
<td>Discussed ideas from your readings or classes with others outside of class</td>
</tr>
<tr>
<td></td>
<td>Had serious conversations with students who differ from you in terms of their religious beliefs, political opinions, or personal values.</td>
</tr>
<tr>
<td></td>
<td>Worked with faculty members on activities other than coursework (committees, student life, etc.)</td>
</tr>
<tr>
<td><strong>Student-faculty involvement</strong></td>
<td>Discussed grades or assignments with an instructor.</td>
</tr>
<tr>
<td></td>
<td>Discussed ideas from your readings or classes with faculty members outside of class.</td>
</tr>
<tr>
<td></td>
<td>Received prompt feedback from faculty on your academic performance.</td>
</tr>
<tr>
<td></td>
<td>Talked about career plans with a faculty member or advisor.</td>
</tr>
<tr>
<td></td>
<td>Asked questions in class or contributed to class discussions.</td>
</tr>
<tr>
<td><strong>Institutional engagement</strong></td>
<td><strong>To what extent does your institution emphasize each of the following?</strong></td>
</tr>
<tr>
<td></td>
<td>Spending significant amounts of time studying and on academic work.</td>
</tr>
<tr>
<td></td>
<td>Providing the support you need to help you succeed academically.</td>
</tr>
<tr>
<td></td>
<td>Contact among students from different economic, social, and racial or ethnic backgrounds.</td>
</tr>
<tr>
<td></td>
<td>Helping you cope with your non-academic responsibilities (work, family, etc.).</td>
</tr>
<tr>
<td></td>
<td>Providing the support you need to thrive socially.</td>
</tr>
<tr>
<td></td>
<td>Attending campus events and activities (speakers, cultural performances, athletic events, etc.).</td>
</tr>
<tr>
<td></td>
<td>Using computers in academic work.</td>
</tr>
</tbody>
</table>
Appendix D: Control Variable Index
### Appendix D: Control Variables

<table>
<thead>
<tr>
<th>Control Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Continuous; 1 = 19 or younger, 6 = Over 55</td>
</tr>
<tr>
<td>Gender</td>
<td>0 = Male; 1 = Female</td>
</tr>
<tr>
<td>Enrollment Status</td>
<td>0 = Full-time; 1 = Part-time</td>
</tr>
<tr>
<td>Class Rank</td>
<td>0 = First-year; 1 = Senior</td>
</tr>
<tr>
<td>Fraternity/Sorority</td>
<td>0 = Non-member; 1 = Member of fraternity or sorority</td>
</tr>
<tr>
<td>Grades</td>
<td>Continuous; 1 = C- or lower, 8 = A</td>
</tr>
<tr>
<td>Transfer Status</td>
<td>0 = Native; 1 = Transfer</td>
</tr>
<tr>
<td>Mother’s Education</td>
<td>Continuous; 1 = Did not finish high school, 7 = Completed a doctoral degree</td>
</tr>
<tr>
<td>Father’s Education</td>
<td>Continuous; 1 = Did not finish high school, 7 = Completed a doctoral degree</td>
</tr>
<tr>
<td>Living Arrangements</td>
<td>0 = Off-campus; 1 = On-campus</td>
</tr>
</tbody>
</table>