

THE ROLE OF PERCEPTIONS OF DISCRIMINATION IN EXPLAINING COLLEGE
STUDENTS OF COLOR ENGAGEMENT PROCESSES AMONG PERSISTERS AND
NON-PERSISTERS ATTENDING HIGHLY SELECTIVE INSTITUTIONS

by

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A dissertation submitted to the Graduate Faculty in Social-Personality Psychology in
partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City
University of New York

2011

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The manuscript has been read and accepted for the
Graduate Faculty in Psychology in satisfaction of the
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Abstract

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By

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The purpose of this study was to examine a theoretically informed model called the student engagement and retention model (SERM), which predicts that there is a significant relationship between students' of color (persisters and non-persisters) sense of control and their level of engagement (a) faculty, (b) campus, (c) and student level, at the end of their first year attending highly selective and predominantly white institutions. Additionally, this study was designed to determine whether differences in engagement patterns were impacted by race-based belonging and perceived familial support.

This study utilized data from the National Longitudinal Survey of Freshman (NLSF) a longitudinal dataset (1999-2003) that followed a nationally representative sample of students who began their postsecondary education in 1999. A secondary data analysis was performed on data and questionnaires were adapted to determine students' sense of control, race-based belonging, perceived familial support, and engagement. The following questions guided the inquiry: (1) What is the relationship between a sense of control and engagement, (2) Does race-based belonging mediate the relationship

between a sense of control and engagement, and (3) Does perceived familial support moderate the relationship between a sense of control and engagement?

Regardless of race/ethnicity, a sense of control has a significant impact on persisters' engagement patterns, race-based belonging, and perceived familial support compared to non-persisters. Findings were further examined in a mediational analysis of the impact of race-based belonging on the relationship between a sense of control and faculty, campus, and student engagement. The association between a sense of control, faculty and student engagement was significantly reduced by the inclusion of the mediator, race-based belonging only among Latino/a persisters (and student engagement for Latino/a non-persisters). Finally, the moderating role of perceived familial support was examined and supported among persisters and non-persisters. Findings provided significant support for the SERM model. Implications of this research can be used in future studies to explore how students choose to utilize available resources and seek mentors for support as well as for practitioners in designing programs to ensure success of students of color.

Acknowledgements

“Now to Him who is able to do immeasurably more than all we ask or imagine, according to his power that is at work within us.”

-Ephesians 3:20

The completion of this dissertation and my progression through the PhD program would not have been possible without the help of numerous individuals. I would like to extend my eternal gratitude to my undergraduate major professor Dr. Geraldine Downey and my graduate school advisors, Dr. William E. Cross and Dr. Michelle Fine whose guidance and mentorship was instrumental in my development as a scholar. Their commitment to social justice and underrepresented populations through academic scholarship is truly inspiring. My deepest appreciation goes to Dr. William E. Cross, who is my dissertation advisor; this dissertation would not be possible without his advice, encouragement, and support. The dedication and investment by my committee members, Dr. Anderson, Dr. Bonita London and Dr. Joseph Glick, all requires acknowledgement. They struck an amazing balance between strong support and intellectual rigor that represents everything that academia can and should be.

This dissertation is dedicated to my husband and my daughter. Thank you for the sacrifices you have made in order for me to complete this project. You loved me unconditionally and believed in my dreams. You both have given me the purpose and inspiration to reach potential I never before thought possible. To my parents and my brother, thank you for all of your faith, love and support. To my dearest friends, Bonita and Vanessa, your fervent and unwavering support throughout this process can never be repaid. I also extend this appreciation to Dr. Sherri Ondrus and Dr. Ragnhild Utheim and to all of those individuals and families navigating the higher educational process who yearn for their voices to be heard and their experiences represented.

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Chapter 1: Introduction

On March 11, 2010, when President Obama officially announced the ten charities that would receive portions of his \$1.4 million Nobel Peace Prize money, five of the ten charities chosen had mission statements that were education-related and focused on the educational advancement of students of color such as the American Indian College Fund (AIC), the Appalachian Leadership and Education Foundation, College Summit, the Hispanic Scholarship Fund (HSF), and the United Negro College (UNC) (The White House, 2010). Yet, many were surprised to learn that President Obama was allocating funds to a non-profit organization called The Posse Foundation. The Posse Foundation is unique in that it recognizes that many students of color experience difficulties while attending predominantly White institutions not only because of their academic underperformance but because they are unable to become engaged into these new communities (The Posse Foundation, 2009).

In 1989, Deborah Bial, the Founder and President of Posse, began to notice an alarming trend among many urban college-ready youth, although bright and capable, many of these students were dropping out within a semester of entering college. The impetus for the program was built on the response of one particular student who noted “If I only had my posse with me, I never would have dropped out” (The Posse Foundation, 2009). Although many of these students appeared to exhibit the essential characteristics of college success such as maintaining college aspirations, sustaining motivation, and high academic achievement in high school, this was not enough to retain them after their freshman year (The Posse Foundation, 2009). As noted in the persistence literature and the experiences of programs such as the Posse Foundation, the academic success of students of color in college rests on their ability to adjust and integrate into the institution

both socially and academically (Jones, 2001; Moore, 2001). Many students of color report that they are often called upon to be representatives for their racial group and that this added and unique stress can have a negative effect on their overall experiences (Neville, Heppner, Ji, & Thye, 2004). Students of color attending PWIs are more likely to report feeling disconnected from their institution and/or program and the greater their sense of disconnection, the less likely the student is to complete their studies (Johnson-Bailey, Valentine, Cervero & Bowles, 2009). In addition, there is growing evidence to suggest that African American and Latino/a students attending PWIs may perceive and respond to the University environment in ways that are influenced by additional stress due to their minority status in a predominantly white environment (Kim, 2002).

Background and Aims

Research has shown that students of color face many barriers in their quest to obtain academic and social acceptance, particularly at PWIs and these perspectives have raised concerns about how these contexts shape and impact students of color's expectations for engagement, as well as their retention at these institutions (Ancis, Sedlacek, & Mohr, 2000). Indeed, these concerns are especially relevant considering that while African American and Latino/a students are entering PWIs at levels similar to those for White and Asian students, their graduation rates remains an area of concern, especially at our nation's most selective institutions (Davies, 2001). In order to understand how contexts such as PWIs may impact the engagement and retention of African American and Latino/a students, this dissertation presents a new theoretical model that addresses three specific aims:

Specific Aim 1. To test a theoretically informed model called the Student Engagement and Retention Model (SERM), which predicts that there is a significant relationship between students' sense of control and their level of engagement at the end of their first year. During important transitions, people often draw on their preexisting frameworks such as identities, beliefs, and experiences to understand their new roles and environments (Ruble and Seidman, 1996). This aim focuses on whether a sense of control, an individual difference variable predicts engagement among African American and Latino/a students attending PWIs. A number of studies have indicated that high levels of a sense of control is related to positive educational outcomes such as higher grades and higher rates of persistence (Lent, Brown & Larkin, 1984; 1986). However, few studies have examined a sense of control and its impact on the experiences of African American and Latino/a students attending PWIs.

Specific Aim 2. To examine the mediating role of race-based belonging on students' sense of control and engagement. Researchers have proffered disparate theories to explain the low collegiate achievement and high attrition of students of color attending PWIs, including societal discrimination (Wilson, 1996) inadequate pre-college preparation (May, 2002) and cultural factors (Ogbu, 1990). However, these findings neglect the role of institutional factors within colleges and universities in patterns of underachievement among members of traditionally stigmatized ethnic or racial groups, such as African Americans and Latino/as. Although researchers have examined factors that impact the engagement and retention process among students of color attending PWIs (D'Augelli & Hershberg, 1993; Davis, Dias, Greenberg, Klukken, Pollio, Thomas

& Thompson, 2004), little is known about the mediating role of this variable and its impact on the engagement levels of African American and Latino/a students.

Specific Aim 3. To examine the moderating influence of perceived familial support on the engagement process. This aim emerges from research that has demonstrated that family relationships are strongly related to student engagement, which appears to be a consistent finding across ethnic and socioeconomic groups (Wentzel, 1998). The perceived availability of social support buffers mental and physical health (Bolger, Zuckerman, & Kessler, 2000) and in the domains of achievement, students are especially sensitive to the quality of their social bonds. Specific components of family support have been examined for their mediating role on student engagement.

Together, these research aims focus on developing and testing a theoretical model called the Student Engagement and Retention Model (SERM). Prior to describing the model used in this study, it is important to clarify an assertion made in the literature regarding the nature of factors believed to play a critical role in the persistence process among African American and Latino/a students. It is asserted that current persistence or retention models apply only to non-minorities and are inappropriate for explaining the engagement and retention rates of African American and Latino/a students attending PWIs (Biasco, Goodwin, & Vitale, 2001; Lett & Wright, 2003; Tierney, 1992).

In this dissertation, I argue that the SERM is a theoretically informed model that was developed to provide a clearer picture of the ways in which students' sense of control predicts their level of engagement. For example, while there is evidence that a sense of control predicts students motivation to act and persevere in the face of challenge as well as to assist them in employing effective strategies when they believe their actions will

produce positive outcomes (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001), few studies have ventured to develop comprehensive models that combine multiple intellectual strands (i.e., the structural, motivational, psychological, and psychosocial) to more robustly understand why African American and Latino/a students persist (or do not). In this study, I will explore whether interactions between internal (psychological) and external (social, institutional and familial) factors may trigger responses that idiosyncratically foster the integration of some African American and Latino/a students into the institutional milieu of PWIs. If indeed, a “dynamic reciprocism” (Bandura, 1997) exists between the psychological, institutional, and social dimensions that uniquely shape the experiences of African American and Latino/a students, then a combination of these factors should have a greater effect on students who have a high sense of control compared to who have lower levels of a sense of control. This dissertation seeks to examine this hypothesis.

This dissertation also extends research on persistence by asserting that a sense of control enables African American and Latino/a students to engage and persist, as well as integrate into the institutional milieu along academic (faculty) and social (peers and campus) dimensions (St. John, Hu, Simmons, Carter, & Weber, 2004). It further suggests that the levels of engagement for African American and Latino/as are mediated by their sense of race-based belonging and that another factor such as familial support may moderate these relationships. Specifically, I argue that students’ domain-specific human agency (a sense of control) and race-based belonging respectively may influence variations in academic and social adjustment to the institution. The overlap of these

theoretical frames in turn provides a comprehensive explanation for the disparate experiences and outcomes of African American and Latino/a students attending PWIs.

To elucidate these factors, a secondary analyses of a large national dataset called the National Longitudinal Survey of Freshman, provided a clearer understanding of the engagement and retention process and how it is influenced by students' sense of control, as it relates to the experiences of African American and Latino/a students attending highly predominantly white institutions. In order to better understand students of color' experiences at selective colleges and universities, it is necessary to examine the differential experiences of students who persist and graduate within four years and non-persisters, students who did not graduate from their original institution or another institution within four years.

By integrating three theoretical domains-a sense of control, race-based belonging, and perceived familial support, this study hopes to contribute to the literature by producing a multidimensional model for explaining persistence disparities. The findings from this body of research will contribute to the development of a model of persistence that does not assume that all students are the same, but instead, accounts for differences in the engagement and retention processes of African American and Latino/as attending PWIs.

Statement of the Problem

Of importance to the current study is investigating the relationship between students' of color sense of control and its impact on the engagement process. Therefore, it is essential to understand how the higher educational experience of African American and Latino/a students attending PWIs is both unique and similar to other students. Over

the last 30 years, educational policy and research has cited the increasing diversity of undergraduate college students in the United States (Kim, Rhoades, & Woodard, 2000). Reviews of the literature related to race/ethnicity and retention has consistently revealed that students of color have different experiences on PWI campuses than other groups who have consistently been studied in the educational literature such as White or Asian students (Sanez, Ngai, & Hurtado, 2007). Thus, in their quest to obtain a college degree, African Americans and Latino/as attending PWIs are often more likely to report problems with academic integration and social isolation (Baldwin, Chambliss & Tower, 2003). Research has shown that these unique experiences make it difficult for some African American and Latino/as students to succeed academically (Lett & Wright, 2003). However, there is little research that explores the ways in which students of color make sense of these environments and the ways in which a sense of control can impact this process. This is an important gap to address in the literature but is also an important consideration in research pertaining to breaking barriers in higher education.

Similarly, researchers studying the experiences of students of color in higher education have highlighted the critical role of race-based belonging in the engagement and retention process. Pike and Kuh (2006) make it clear that educational institutions play a large role in shaping and impacting their students' perceptions about race relations on campus, and that perceptions of race relations on campus have a significant effect on shaping interactions both in and out of the classroom. These research studies are very consistent in concluding that students of color have a significantly more negative perception of racial climate on campus compared to their White and/or Asian students counterparts (Lewis, Chesler, and Forman, 2000; Davis, Dias, Greenberg, Klukken,

Pollio, Thomas, & Thompson, 2004) which directly or indirectly impacts the engagement and persistence process. However, if these studies are lacking in any area, it is in describing whether race-based belonging may mediate the relationship between students' sense of control and engagement.

An examination of extant literature indicates that familial support has a direct relationship to student engagement. Students who have family relationships that are negative may be at risk for poorer student engagement, whereas those with especially positive family relationships may be more likely to have healthier engagement. When considering the role of family relationships as a risk or asset as it relates to student engagement, it is also important to consider that perceived parental support shapes students individual beliefs about themselves and that these beliefs are related to engagement in school (Caraway, Tucker, Reinke, and Hall (2003). Academically successful African American and Latino/a students report that higher levels of support from their family in spite of academic or economic hardships profoundly influenced their orientation toward academic pursuits (Noguera, 2003). However, little research has focused on the moderating effect of familial and economic support on the engagement process.

Both the evidence and logic, however, suggest that factors in addition to students' campus experiences may influence the engagement and retention experiences of African American and Latino/as students attending PWIs in ways not yet identified or fully understood. Taken together, these findings demonstrate that students of color enter college with a sense of control that can best be described as a pre-entry attribute or an internal resilience that may predict future levels of engagement in college. By

introducing a framework that focuses on the role of a sense of control in the social development and educational attainment of African American and Latino/a students, this study permits us to look at how students negotiate relationships within PWIs. Thus, within the academic and social domains of PWIs, a sense of control may play an important role in determining what students of color expect and how they behave in these environments.

Significance of the Study

Given recent calls for theory development and extension relevant to the experiences of students of color attending predominantly White institutions (PWIs), the purpose of this study is to develop a model called the Student Engagement and Retention Model (SERM). This model is derived from educational and psychological theory and extant literature on the engagement and retention experiences of students and asserts that a sense of control affects their level of engagement. This relationship was also explored by examining the differential experiences of persisters versus non-persisters among students of color.

Student persistence and engagement have become an increasingly important issue. The attempt to better understand, explain, and predict student persistence remains a challenging and important area of research within the higher education literature. For example, researchers rely on students' engagement ratings to indicate persistence and retention levels (Kuh, 2001). However, as research continues and our understanding of the student departure process evolves, researchers have begun to suggest the importance of creating and testing new integrated models of student engagement and retention as a next step in developing retention research for specific groups of students (Allen, 1999;

Barone & Saunders, 2010). Similarly, researchers have argued that new models of the engagement and retention process are essential in order to capture the experiences of students of color, such as African American and Hispanic students attending predominantly White institutions (Johnson & Arbona, 2006; Utsey, Chae, Brown, & Kelly, 2002).

Research on a sense of control contends that students will be motivated to act and persevere through challenge and to employ various strategies when they believe their actions will produce positive outcomes such as graduation (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001). The capacity and willingness to exercise certain achievement-related behaviors that are linked to academic performance is essentially a reflection of one's sense of control (Bandura, 1997). There are numerous and compelling reasons to advance research on improving the college experiences of African American and Latino students attending PWIs. In the majority of reports and studies examining college engagement and retention, the case has faithfully been made for the significance of the topic. Thus, the significance of this study is paramount as it contributes valuable insight and theory into the factors that may predict increased levels of engagement and retention among a group of students that have traditionally been characterized as high-risk (Seymour & Hewitt, 1997). The motivation behind advancing our understanding of the engagement process among underrepresented students is also driven by social, institutional, and individual needs.

Chapter 2: Review of the Literature

This chapter begins by describing research on a sense of control and contending that this variable can help researchers elucidate the specific motivational and psychosocial processes that may foster or hinder the engagement and retention experiences of students of color. I suggest that the relationship between a sense of control and engagement is mediated by race-based belonging and moderated by perceived familial support. That is, a sense of control may help explain variations in the social adjustment of students of color attending PWIs.

This chapter reviews four bodies of literature to answer the following questions:

1. Is a sense of control positively associated with engagement?
2. Does race-based belonging mediate the links between a sense of control and engagement?
3. Does perceived familial support moderate the relationship between a sense of control and engagement/persistence?

Few studies have explored the ways in which a sense of control impacts the experiences of African American and Latino/a students attending PWIs in sufficient detail. While the research literature on the experiences of African Americans and Latino/as attending PWIs is extant, as a whole it is broader in the number of factors it explicates and the volume of scholarship it has generated.

The Educational Experiences of Students of Color in Higher Education

As the United States has become more ethnically diverse, so are the students at today's higher education institutions. According to the Digest of Education Statistics (2001), from 1976 to 2001, the student enrollment of African American and Latino/a students increased by 63% whereas White student enrollment increased moderately by

15%. However, in spite of these increases national studies of college graduation rates have consistently shown that African Americans, and Latino/as graduate at a lower rate than Whites and Asians (Astin, 1984; 1985; 1991; 1993; Harvey, 2002; NCES, 2003). While the number of African Americans and Latino/as attending college and receiving higher educational degrees is higher than ever before (Nettles & Perna, 1997), African Americans and Latino/as attending PWIs continue to be underrepresented among undergraduate and bachelor degree recipients (Freeman, 1997).

Statistics indicate that seventy percent of African-Americans who attended PWIs did not complete their baccalaureate education, compared to the 20% of African-Americans who attended HBCUs (Davis, Dias-Bowie, Greenberg, Klukken, Pollio, Thomas, & Thompson, 2004). Only one-half of African American students receive degrees from PWIs even when indications exist that they are just as prepared academically upon entrance than their White and Asian student counterparts (Gosseett, Cuyjet, & Cockriel, 1998). Because of the steady increases in the postsecondary enrollment rates of students of color attending PWIs and their low levels of student engagement and persistence rates, further research is warranted in this area. While the Latino/a student experience at PWIs remains unclear, and their experiences in higher education has been largely limited to findings from research conducted at Hispanic serving institutions (HSIs). Currently in the U.S., there are no liberal arts institutions that have reported having Latino/a student populations greater than 25% which can further our understanding (Hubbard & Stage, 2009) and in terms of student engagement, Nelson Laird, Shoup, Kuh, & Schwarz (2007) found that while African American students at HBCUs are more engaged with faculty than their counterparts at PWIs, Latino/a student

engagement levels with faculty are relatively low at both PWIs and HSIs.

Among Latino/a student populations, a large body of research has focused on the Latino/a student acclimation experience in PWIs (Hurtado & Carter, 1997) or Hispanic-serving institutions (HSIs) (Garcia, 2001; Hurtado & Carter, 1997). However, empirical work that has provided a clear understanding of the factors that impact the engagement and persistence process of the Latino/a student experience at PWIs is practically non-existent at the present time. Many scholars have continued to look to HSIs to understand the factors that impact the retention process among Latino/as attending PWIs and some scholars have noted that this model may not work for Latino/a students as many HSIs do not have institutional missions that directly serve the needs of the Latino population due to the fact that unlike HBCUs, most HSIs became Latino/a serving because of their geographic location and/or a demographic shift of the population (Contreras & Bensimon, 2005). HSIs have played a significant role in educating Latino/a students and that even though HSIs represent only 5% of the total institutions of higher education in the country, they enroll almost half of the Latino students enrolled in higher education, these findings have not been able to be translated into the experiences of Latino students attending PWIs (Latino Association of Colleges and Universities, 2001).

Results from the above lines of research have failed to capitalize on lessons learned at minority serving campuses and scholars have not been consistent in how they conceptualize and measure students' of color persistence experiences and how this impacts their perceptions of engagement and retention. Though there is support for the notion that the ways in which students' of color are successfully able to navigate an institution impacts engagement and retention; there is a lack of research that examines the

experiences of students of color attending PWIs, both nationally and longitudinally (Hurtado, 1992; 1994; Outcalt & Skews-Cox, 2002).

In his classic work, *Leaving College*, Tinto (1993) proposed that the higher the student's level of persistence, the more likely the student is to stay in school. Tinto (1987) argued that it was imperative that we understand the psychological perspective that centers attention on the role of student psychological characteristics and the student departure process. Research has suggested that increasing the number of students of color who attain a college degree requires attention to four critical features: academic preparation for college, graduation from high school, enrollment in college, and persistence in college to completion of the bachelor's degree. Yet why are many of the students of color that fulfill these critical features and attend predominantly white institutions, not graduating?

Past student retention research has linked students' sense of control as a measure of persistence which might offer a deeper insight into the social and academic connections that students form on PWI and campuses which might also lead to increases in student engagement and retention (Upcraft, Gardner, & Barefoot, 2005). The current research explores factors that impact the engagement and retention process for students including a sense of control, race-based belonging, and perceived familial support. Despite rather extensive research examining differences for students of color attending PWIs and differences in achievement, the impact of a sense of control on engagement and retention has not been examined in concert. The current study seeks to link these two areas of research by examining whether differences found in PWI educational environments, will be impacted by a sense of control among students of color. The

examination of this issue will include the following variables: sense of control, race-based belonging, perceived familial support.

By examining variations in the students' sense of control, race-based belonging, and perceived familial support among both African American and Latino students, we can begin to apply what we know works at minority serving institutions and explore differences in students' ability to persist and graduate within the context of a PWI.

Definition of terms

The model proposed in this study is based on the premise that the engagement and retention literature will be improved by examining the ways in which institutional structures and contexts can be potent socializing forces that impact the ways in which students continue to engage in their educational journey. Although, education experiences both within and between institutions are not uniform, research has indicated that students of color who attend predominantly white institutions are particularly vulnerable to attrition if they perceive or experience racial issues on their campus (Massey, Fischer, Lundry, & Charles, 2003). While an individual students' educational success is more than the sum of his or her campus experiences, factors such as personal will, and aspiration, as well as factors such as one's race can shape students opportunities for college success.

Sense of control

Students bring into the university environment a set of entry characteristics based on their past academic and social experiences, which include attributes such as expectations, motivations and coping skills (Bandura, 1997; Bean & Eaton, 2000).

Research has indicated that these entry characteristics affect the interactions and experiences that students have, both on and off the college campus. Students' sense of control refers to the extent to which individuals perceive that they have personal power and control over their life and environment (e.g., Lachman & Weaver, 1998; Zarit, Pearlin, & Schaie, 2003).

Psychological characteristics such as a sense of control emerge at the level of the individual student and at the level of the college environment, thus impacting the engagement and retention process. At the individual level, Bean and Eaton (2001) discussed a psychological model of the college student departure. This model assumed that behavior is a choice and used constructs derived from attitude behavior theory, coping behavioral theory and a sense of control theory. Behavioral characteristics such as a sense of control can influence students as well as their interactions with the institutional environment. Bean and Eaton (2001) asserted that high levels of self-efficacy or a sense of control builds confidence in a student's ability to adapt to a particular college or university. These behavioral characteristics represent an important element in the college student departure process that refers to an individual's perception of their ability to engage in activities necessary to achieve a particular outcome (Bandura, 1997). This perspective offers a way to view the phenomena of college student departure and inform our understanding of the engagement and retention experience of students of color attending PWIs. This framework presents a central research opportunity for PWIs to study the engagement and retention process of students of color in order to potentially impact graduate rates.

An impressive body of literature demonstrates the significant benefits of a sense of control, and that it is one of the most robust predictors of student retention and academic success all across the educational levels (Wigfield, Eccles, Schiefele, Roeser, & Davis-Kean, 2006). Thus, students who report high levels of control are more likely to initiate and maintain constructive engagement, deal productively with obstacles and setbacks, seek help as needed, and rebound from failure (Jang, Graves, Haley, Small, & Mortimer, 2003; Zarit, Pearlin, & Schaie, 2003). Although a sense of control is typically viewed as a personal disposition or attribute, social and interpersonal factors cannot be ignored. Despite a large body of research which has indicated that a sense of control can be impacted by contact with instructors, classroom contexts and transition periods, it is difficult to construct a coherent picture of how a sense of control can impact the engagement and retention process among students of color attending predominantly white institutions (Elliot & Dweck, 2005; Koestner & McClelland, 1990; Schieman, 2003).

Research has typically referred to this body of work as motivation research which focuses on the need for competence, effectance, or mastery, and these perspectives posit that all people are intrinsically motivated to produce effects, to make things happen (Bandura, 1997). Although, the empirical conceptualization of the control construct is varied, these frameworks have allowed researchers to understand the ways in which an individual makes sense of his or her environment and how in doing so, he or she can potentially develop either opportunities or constraints in an environment. Past research with adults (McClelland, Atkinson, Clark, & Lowell, 1972) demonstrates that there does seem to be a relationship between the need for achievement and an internal sense of control. Thus, the ways in which students' perceive their power to effect a situation or

event, either internally or externally has important implications for their academic and social adjustment to campus life. Typically, an internal sense of control assumes that events are contingent on one's own behavior and/or characteristics, while an external sense of control assumes that events are either not entirely contingent on one's own actions, but instead, due more so to luck, chance, fate, and control of others, or unpredictable because of the complex nature of life (Rotter, 1982).

It should be noted that within the psychological literature there is a cluster of control-related terms and that there is no consensus on a single construct that can be identified as the "best". However, notions of competence and efficacy provide a useful framework for understanding *a sense of control*, whereby these concepts are the basic building blocks of competence which begin with "experiences of control" that are effective in producing intended outcomes (Segliman, 1975). An underlying function of this perspective is that during times of difficulty, high levels of a sense of control are viewed as a form of competence that are key to both surviving and thriving, in contrast to low levels of a sense of control which are viewed as difficult tasks or outcomes are based on luck, chance, or other uncontrollable factors like skin color or gender, the lower the sense of control.

Although a sense of control may initially be perceived as a positive characteristic for one to have, the issue is more complex for students of color, who are more likely to experience racism in the college setting as they do in the broader society. Researchers such as Gurin and Epps (1975) have challenged the inclination to view an internal sense of control as consistently positive among students of color because an internal sense of control has often been equated with "fate control" and if the world were benign and

opportunities were truly equal, the depiction of an external sense of control might be justified, as it probably is when applied to people in favored, advantaged social positions. Thus, low-status, discriminated minorities, and women often face many external obstacles that have nothing to do with fate, yet operate in the opposite way, systematically and predictably (Gurin and Epps, 1975). According to this perspective, it may be unhealthy for students of color to believe in chance or fate, yet it can also be argued that their understanding of how social system can condition individual success and failure can be a strong motivational asset. Similarly, since discrimination does exist, awareness of it attests to a sense of reality, which can not only help people cope with these constraints, but it can protect them from the damage to personal identity that comes from blaming members of their own group for inequities they face (Gurin & Epps, 1975). Thus, the ways in which students' continue to learn and invest themselves in their college experiences is due to the ways in which they perceive that their success at a particular institution is connected to sense of control over a particular task, situation, or event as well as their expectancy for success. This framework can also help us understand why some students do or do not attempt to continue to pursue their educational goals.

The literature on a sense of control suggests that students with high levels of a sense of control persist to degree completion at higher rates than students with low levels of a sense of control (Lent, Brown, & Larkin, 1986). Additionally, students with high levels of a sense of control are more likely to form strong social support networks (Coffman & Gilligan, 2002), which has also been shown to increase rates of persistence to degree completion (Gloria, Castellanos, Lopez, & Rosales, 2005). Extant theoretical perspectives and emerging empirical evidence also suggest a link between a sense of

control over one's life and environment, and perceived discrimination. Research on students of color has examined the relationship between students' sense of control and perceived discrimination and found that perceived discrimination was related uniquely to perceived control (Shorey, Cowan, & Sullivan, 2002). In particular, Branscombe and Ellemers (1998) argued that although discrimination provides targets with an external attribution for negative events (Crocker & Major, 1989), targets are likely to feel that they cannot control prejudicial attitudes and behaviors. Thus, experiences of discrimination can undermine an individuals' sense of control in their life and across situations (Branscombe & Ellemers, 1998; Ruggiero & Taylor, 1995). Indeed, Ruggiero and Taylor (1997) found that perceived discrimination was related to lowered sense of control. Lower sense of control, in turn, is conceptualized to relate to greater distress (Branscombe & Ellemers, 1998), and empirical evidence supports such links (Folkman, Lazarus, Gruen, & DeLongis, 1986). Considering that all individuals are constantly involved in interactions with others in everyday life and such interactions and interpersonal relationships, if positive, may bolster feelings of worth (Shorey, Cowan, & Sullivan, 2002). However, if individuals are constantly involved in interactions with others that are negative, these interactions may reduce feelings of worth as well as impact their sense of control.

A sense of control is defined as an important concept that represents a critical dimension of one's self-concept (Oates, 2004). Researchers such as Chung (2002) defined a sense of control to reflect a person's belief in his/her ability to successfully complete a behavior or set of behaviors. Thus, a sense of control is a reflection of how capable and secure one feels about the self and his or her abilities. Beliefs regarding self-

esteem and self-efficacy are highly correlated in most cases as they are two concepts reflecting beliefs about one's self. However, in the study of these two areas of the self-concept, researchers have established the need to differentiate self-esteem, feelings and beliefs about one's self, from a sense of control, feelings and beliefs about one's abilities, especially for African Americans (Oates, 2004; van Laar, 2000). Self-esteem has been found to be commensurate, if not greater, among African Americans compared to White respondents (van Laar, 2000) yet a sense of control beliefs tend to be lower among African American college students compared to White college students (Oates, 2004).

Porter and Washington (2000) explained that lower levels of a sense of control reflect a healthy response to the reality that society "systematically and reliably undermines blacks' progress, which then lowers aspirations but not necessarily beliefs regarding the self (i.e., self-esteem). Oates (2004) performed a study examining how racially consonant academic environments, meaning the extent to which the individual is surrounded by others of a similar ethnicity, impact the self-esteem and a sense of control of African American students. This study was based on Rosenberg's (1979) theory that racially congruent environments may serve to protect the individual from prejudiced behavior including "slurs, epithets, jokes" and other malicious comments and bolster one's sense of belonging. Oates (2004) hypothesized that being in a consonant environment would decrease the likelihood that African Americans would feel inferior compared to peers thereby also decreasing the likelihood of developing negative self appraisals. Oates reported solid if not unequivocal support for Rosenberg's consonance theory in that racially consonant experiences in college increases self-esteem, but not a

sense of control, compared to environments where the individual perceives him or herself to be the minority (2004).

While it can be assumed that levels of a sense of control may be lower among African Americans due to societal and historical realities of discrimination toward African Americans, particularly with regards to employment, it can also be argued that a positive self-image may leave self-esteem intact whereas perceptions of discrimination and/or prejudice may negatively impact one's belief that a goal may be successfully completed, regardless of ability. A separation between self-esteem and a sense of control or academic achievement is necessary given that many African Americans do not receive the same educational opportunities prior to attending college (van Laar, 2000). As stated by van Laar, such structural differences lead to African American students entering college on average less academically prepared than White students, though the students enter college with equally high levels of sense of control beliefs regarding academic ability as White students (2000). Additionally, van Laar proposes that when African American students do not perform as well as anticipated, an attributional search begins to detect a reason often leading to a perception of discrimination and/or bias. As reported by van Laar (2004), data show that African American college students experience increasing doubts that their efforts will be rewarded in ways equivalent to those of White students, and they make increasingly external attributions to compensate.

Steele (1999) proposed a "disidentification hypothesis" to explain the separation of self-esteem from academic outcomes. Steele proposed that the separation occurs so as to protect one's self-esteem from potential failures, including academic failures in college. Researchers propose that students separate self-esteem from a sense of control as

a means of protecting self-esteem as well as expectations for their future. According to van Laar (2000), student's expectations of what he or she will actually achieve will be constrained by his or her perception of discrimination and that beliefs about their future become dissociated from their evaluations of themselves. To better assess the aspects of the global construct of a sense of control that is producing racial discrepancies in the literatures, many researchers targeted specific beliefs about one's abilities with regards to future employment (Chung, 2002) and academic abilities (van Laar, 2000).

Researchers such as Chung (2002) sampled 165 undergraduates and found that African Americans scored significantly higher than the White respondents on the short form version of the Decision-Making Self Efficacy Scale, a scale tapping a sense of control beliefs regarding their ability to make career decisions. Although this study was not a comparison of African Americans attending PWIs, Chung reported that a sense of control regarding future career goals among African Americans, particularly women, from predominantly Black campuses may be higher than those at a PWI due to the greater availability of positive African American role models (2002). Research has consistently reflected lower levels of a sense of control, specifically lower levels with regards to academic ability among African American students compared to White students (van Laar, 2000). Although this finding is consistent in studies between MSIs and PWIs, there is evidence that the racially congruent environment of MSIs may aid in keeping a sense of control stable if not bolstering it among students of color (Chung, 2002) compared to PWIs. Thus, it would appear that the student demographic make-up of an educational institution might possibly influence students' levels of a sense of control. Okech and Harrington (2002) noted in their study that experiences of inequality

and discrimination influence students' sense of control through the deprivation of opportunities that would foster higher levels of a sense of control. This framework provides a central research opportunity for PWIs to study the engagement and retention process of students of color in order to potentially increase graduate rates.

The relationship between sense of control, engagement and sense of race-based belonging carries important implications for academic and psychological well-being; however, few researchers have considered their dynamics.

Race-based belonging

The need for social-belonging, for seeing oneself as socially connected is a basic human motivation (Baumeister & Leary, 1995). Indeed a sense of belonging predicts favorable outcomes. For students of color, the issue of belonging or feeling a part of a campus community is often a challenging one when they feel like they are part of a minority. With the majority of college institutions remaining predominantly White, students of color often report feeling marginalized and isolated (Jones, Castellanos, & Cole, 2002; Nora & Cabrera, 1996). The environment of the college campus has a major impact on students of color, sense of belonging. Understanding perceptions of the environment context and the subsequent academic comfort of racial and ethnic minorities in higher education is particularly important when studying engagement and retention (Gloria, Robinson, Kurpius, Hamilton, & Wilson, 1999).

Few studies have investigated whether the factors that explain success at minority-serving institutions can be used to explain the success of students of color at PWIs, particularly with respect to student engagement and retention (Astin, 1993; Davis & Murrell, 1993; Tinto, 1993). A majority of studies (Baldwin, Duncan, & Bell, 1987;

Cheatham, Slaney & Coleman, 1990) propose that some of the benefits of attending an MSI are the result of receiving an education from racially congruent instructors among peers with shared cultural experiences, and a context where minorities become the majorities on campus. The implications of this body of research has also indicated that students of color tend to experience the campus climate at PWIs differently than White students do, often perceiving such environments as more hostile, unwelcoming and unfair to students of color (Hurtado & Punjuan, 2005; Rankin & Reason, 2005). These differences in perception can have real implications for the social and academic engagement of students of color at PWIs, perhaps contributing to the Black-White achievement gap (Bowen & Bok, 1998; Steele & Aronson, 1995).

Research has shown that students of color attending PWIs may experience race-based difficulties compared with students of color attending MSIs (Greer & Chwalisz, 2007). Greer and Chwalisz (2007) report that some African American students attending PWIs may experience “person-environment incongruence that puts them at risk for potentially detrimental emotional, psychological, social and academic outcomes.” The authors note that in addition to the typical stressors of college (i.e., papers and exams), students of color may experience additional stressors related to discrimination and stereotypes. Greer and Chwalisz point to the stress caused by racial incongruence to explain why African American students, as well as other minority students, appear to benefit more from the MSI environment. In their study of 203 African American undergraduate students, PWI respondents reported significantly more stress related to minority status than those participants from the MSIs. Furthermore, PWI students reported significantly more interpersonal stress, environmentally related stress, and

intragroup stress than respondents from MSIs (Greer & Chwalisz, 2007). This finding is in stark contrast to work comparing the experiences of students of color attending minority-serving institutions, who report having many interactions with both White and African American faculty at MSIs but report significantly higher levels of engagement in their college experiences and develop considerably more both, cognitively and personally (Kim, 2002).

While much of the research pertaining to campus climate and racial groups primarily focuses on one race, Antis, Sedlacek, and Mohr (2000) compared the experiences of students by their different race/ethnic groups. In their study, they compared the perceptions and experiences of the campus cultural climate for African American, Latino Asian American and White students. The majority of the participants were White (40%), African American (25%), Asian American (22%), and Latino/a (13%). In an attempt to measure the perceptions and experiences of students with regard to the racial/ethnic climate of the university researchers used the Cultural Attitudes and Climate Questionnaire (CACQ). The results were reported in four major categories: perceptions of general racial and ethnic climate, personal experiences of campus racism, racial-ethnic comfort and the last section reported themes according to racial/ethnic background. African American students perceived more interracial tensions in residence halls, more conflict on campus with regards to race, and separation due to racial background more than their Asian American and White counterparts. White students reported more overall satisfaction with the university and greater level of respect from faculty and students with regard to racial/ethnic groups than African American and Asian American students. When asked about personal experiences of racism on campus,

African American, Asian American and Latino/a students were more likely to experience “pressure to conform to racial and ethnic stereotypes regarding their academic performance and behavior”, more so than White and Asian students (Ancis, Sedlacek, and Mohr, 2000). African American and Asian American students reported higher incidences of experiences of racism from faculty than their White counterparts. African American and Latino/a students reported greater comfort with both similar and different racial groups of faculty than their White counterparts. The overall results indicated that a difference exists in the perception of institutional climate with regard to racial/ethnic groups. African American students reported negative experiences more, greater racial hostility, more pressure to conform to stereotypes and less equitable treatment from university personnel. Asian American and Latino/a students also reported stereotyping and prejudices but the authors added that the students’ experiences were in “the form of limited respect and unfair treatment from faculty, teaching assistants, and students” (Ancis, Sedlacek, & Mohr, 2000). These students also experienced pressure to conform to stereotypes. However, Latino/a students reported experiencing less racism and a climate with no racial/ethnic conflict when compared to other students of color. Latino/a students also reported a higher comfort level with their own culture and others from different cultures. White students reported being the most satisfied among the students reporting less tension and fewer expectations to conform. The authors noted that White students appeared to be “immune from such a hostile climate” they have “experienced limited discrimination” and “seemed to lack a recognition that interracial tension and conflict exist for a significant portion of the student body”. Thus, students’ perceptions of the campus climate differed vastly based on race/ethnicity.

Similar to the research collected by Ancis, Sedlacek, and Mohr (2000), Reid and Radhakrishnan (2003) examined students' perceptions of racial and academic climate as possible mediators of their perception of the general campus climate. The Office of Minority Student Affairs provided a list of racial minority students and White students that were randomly selected from the general student population. The researchers mailed the survey to 1423 undergraduate and graduate students. The results indicated that undergraduate students of color reported a more negative perception of the general campus and racial climate than White students. African American graduate students reported more negative perceptions than all other groups. Asian American students believed their university could be doing more to support racial diversity when compared to White students. Overall, students of color, especially African American students, reported more negative experiences than their White student counterparts.

In addition to Reid and Radhakrishnan (2003), Locks, Hurtado, Bowman, and Oseguera (2008) examined students' diversity experiences in relation to their transition to college. The study also predicted the transition to college for students of color and White students. The data was derived from a national, multi-institutional research project, which was entitled, "Preparing college students for a Diverse Democracy". Ten institutions were chosen to participate based upon their diversity commitment, their community-building activities, and success in their student body diversification. Surveys were distributed in 2002, the beginning of the first year of college and at the end of the second year of college. Four campuses mailed surveys to incoming students, three campuses administered the survey during their summer orientation program and the final three campuses distributed surveys in freshman seminar classes. The results revealed that

students of color are more likely than White students to have greater precollege exposure to people of color and to have a greater predisposition to engage in diversity-related activities in college, to have positive interactions with diverse peers. One of the major findings indicated that students of color were more likely to perceive more racial tension on campus, to spend less time socializing and to live with their parents in their second year of college (Locks, Hurtado, Bowman, and Oseguera, 2008). The authors specified that the demographics of students' precollege environments effect their interactions with diverse peers in college and that college transitions are contingent upon students' sense of race-based belonging and that positive educational outcomes are the result of successful transitions.

These studies point to the critical role of race-based belonging as an important aspect of intellectual development, whereby students of color might suffer a disadvantage if they are unable to develop a connection to their institution and its representatives because they perceive or experience their campus as discriminatory. Research by Walton and Cohen (2007) has indicated that when students of color see places in which members of their group are numerically under-represented, encounter overt and subtle forms of prejudice, and receive lower grades, this state can prove especially pernicious because it can manifest neither as perceived bias nor as a fear of being stereotyped. Walton and Cohen (2007) argue that in these situations, students' inability to develop a sense of race-based belonging may take the form of a broad based hypothesis that "people like me do not belong here" and that in this state people may begin to notice threatening cues that they would otherwise have overlooked (Mendoza-Denton, 2002). In two experiments, Walton and Cohen (2007) tested how belonging uncertainty undermined the motivation

and achievement of students of color in academic settings by providing college freshman with information that would help ease their uncertainties about “belonging” in college. In the context of a one-hour study, the students learned that upperclassmen of all ethnic groups had worried during their freshman year about whether they “fit in” and were accepted in college. Participants further learned that this worry subsided with time. The authors predicted that the intervention would have no consistent effect on White students, but that it would lead to a one-hour increase in the amount of time that African American students reported studying each day over the next 7 days. During the same period, the intervention also forestalled dips in African Americans’ race-based belonging such that in the control condition, their self-perceived belonging in college fell steeply on days of stress. Walton and Cohen (2007) found that almost 60% of the day-to-day variance in African Americans’ race-based belonging could be accounted for by the stressfulness of their day, compared with only 5% for White students. By contrast, for African Americans in the treatment condition, this figure fell to 24%, in spite of the intervention’s small size, it improved the GPA scores of the African American students by roughly .3 grade points which is almost the difference between a B+ and an A-. Thus, the intervention virtually eliminated the race achievement gap among students of color.

Gloria, Robinson-Kurpius, Hamilton, & Wilson (1999) found that confronting negative contexts could result in decisions not to persist, particularly for racial and ethnic minority students at PWIs, who often perceived the environment as unwelcoming and intolerant of their presence on campus. Richardson and Skinner (1988) found that the social environment of large predominantly White universities has been problematic, even for minority students with strong academic preparation. Hurtado and Carter (1997) found

that Latino/a students' perceptions of a hostile climate directly affected their sense of belonging in their colleges. They reported that students who described their campus environments as characterized by racial-ethnic tension tended to have much lower levels of a sense of belonging. Further, Latino/a students were more likely to perceive less appreciation by the faculty and administration (Hurtado, 1994). As a result, Latino/a students had a difficult time dealing with the academic and social environment of the university. Moreover, the challenge was further impacted by the students' perceptions of a lack of adequate support from the university. Hurtado (1994) also found that even though there is a relatively high amount of interaction across racial/ethnic groups, more than one in four Latino/a students reported substantial campus racial conflict.

These interactions also have important implications for students' race-based belonging and socialization experiences. Race-belonging, defined as feelings of membership in the larger community, is an essential piece of the overall attitude that students develop about their college or university. Campus climate research suggests that perceptions of openly diverse campus climates are associated with positive social adjustment and has extended this generalization to academic adjustment (Cabrera, Nora, Terenzini, Pascarella, & Hagedorn, 1999) and academic achievement (D'Augelli and Hershberger, 1993). Exposure to a climate of prejudice and discrimination both in the classroom and on campus has gained attention as the main factor in accounting for differences in the engagement and retention processes between minorities and non-minorities (Fleming, 1984; Hurtado, 1992, 1994; Hurtado, Carter, & Spuler, 1996). Research indicates that experiences of discrimination are considered unique in that they are present only among minority students and heighten the feeling of not belonging at the

institution with a spillover effect on a student's academic performance (Hurtado, 1992; 1994; Hurtado, Carter & Spuler, 1996). This climate of prejudice and discrimination creates disincentives for the minority student to interact with non-minority students, faculty, and campus administrators. The resulting low involvement with the different campus communities, then, impinges on the minority students' cognitive and affective development as well as his or her decisions to persist in college (Fleming, 1984; Tracey & Sedlacek, 1984, 1985, 1987).

The concept of race-based belonging captures the ways in which a student can perceive or experience situation(s) that make them feel as though they or students like them are not welcomed on campus. In this dissertation, race-based belonging does not capture, the ways in which a student feels, as though, he or she is included in the college community. Instead, I will be capturing the ways in which students' perceptions of discriminatory events, can make some students feel as though, he or she are not included in the college community. These feelings can often result, in expectations or feelings that students bear the sole responsibility for success through their integration into existing institutional structures. Thus, a sense of race-based belonging illustrates the interplay between the individual and the institution. Students' engagement is in part predicated upon the extent to which they feel welcomed by institutional environments and climates. Research indicates that race-based belonging appears to be an important factor that differentiates the experiences of students attending MSIs, compared to PWIs. For example, having a higher percentage of African American students on a college campus was a positive predictor of overall satisfaction for African American students attending predominantly White institutions (Bonous-Hammarth and Boatsman, 1996). Outcalt and

Skewes-Cox (2002) examined the relationship between African-American students' involvement, interaction and satisfaction at HBCU's and PWI's and found that African American students reported higher overall satisfaction at HBCU's than at PWI. This relationship was significant, even though, African American students at PWI's reported greater satisfaction with measures such as student-faculty interaction, quality of instruction, and campus facilities (Outcalt and Skewes-Cox, 2002). The authors concluded that attending an HBCU almost doubled the odds that an African American student was satisfied with his or her overall college experiences and attributed much of this satisfaction to a unique environment of reciprocal engagement at HBCUs (Outcalt and Skewes-Cox, 2002).

Aside from the discomfort that an awareness of discrimination may cause, research has indicated that the unsupportive nature of some predominantly White campuses and African American students' experience of racism may mediate the relationship between their academic potential and their actual performance (Mallinckrodt, 1988). Some studies report that as many as 43% of African American students have been harassed by other undergraduate students or university faculty, staff, and administrators (D'Augelli & Hershberger, 1993). Evidence suggests that students of color attending PWIs experience significantly higher levels of overt racism than do their White counterparts, which has been shown to relate to increased feelings of social isolation, stress, and personal dissatisfaction (Feagin, Vera and Imani, 1996). Phillips Morrow, Burris-Kitchen, and Der-Karabetian (2000) held eight focus groups consisting of students of color in an attempt to assess campus climate and the cultural needs of these students attending PWIs. What they consistently found was that African Americans, more so than

Latino/a Americans and European Americans, were dissatisfied with the racial harmony (the integration of culturally diverse students) on campus. On average, African American students reported experiencing more prejudice on campus than did Latino/a and European Americans. Almost one-third of the African Americans involved in these discussions viewed faculty as either somewhat insensitive or not sensitive at all to issues of multiculturalism and diversity. One of the African American women stated: “Our faculty and staff need an awareness program about other cultures such as African American and Latino/a, to know what is considered sensitive to the students” (Phillips Morrow et al., 2000). Not surprisingly, studies show that African Americans who believe their faculty are racist have been shown to have an overall dissatisfaction with their academic experience at their college or university, while students who perceive faculty and teaching associates as fair tended to have an overall satisfaction with their university (Helm, Sedlacek, & Prieto, 1998).

These studies point to the significance of college environments in shaping students sense of race-based belonging. Among Latino/a populations, research studies have focused on satisfaction with diversity or with the racial climate. Using a sample of academically talented Latino students, Hurtado (1994) identified predictors of engagement based on whether students’ perceived racial/ethnic tension on their PWI campuses. Latino/a students who attributed societal inequalities for Latino/as to greater systematic inequalities, discussed racial issues, and were involved in Latino/a student groups were more likely to perceive racial tension on campus and less likely to develop a sense of belonging to the institution (Hurtado, 1994). Thus, perceptions of a hostile climate affects students from many different racial/ethnic groups in the transition to

college and perceptions of a poor racial campus climate can have a negative effect on students' ties to the academic and social arenas of college life (Zea, Reisen & Beil, 1997; Saenz, Marcoulides, Junn, & Young, 1999).

While, research has shown that MSIs facilitate the academic development and socialization of students of color in activities such as participation with peers, faculty and staff, this is not the typical experience of students of color attending PWIs, however, unwelcoming social climates can impact the development of race-based belonging (Carter, 1999). In a study by Mow and Nettles (1990), ninety percent of African-American students attending a PWI claimed that feelings of alienation and loneliness promoted reasons for dropping out. This finding was replicated by Ancis, Sedlacek, and Mohr (2000) who reported that students of color who viewed themselves as invisible and not a part of the broader campus culture at PWI campuses faced more negative experiences than any other group. Thus, developing a sense of race-based belonging is a critical factor in students of color success while attending PWIs and may possibly explain why African American students attending PWIs dropped out at a much higher rate than their white classmates and were less likely to complete four-year degree programs in four years than their African American counterparts attending MSIs (Braddock, 1981; Carter, 1999). In addition, students' of color perceptions of discrimination may also explain the relationship between students' sense of control and engagement and the ways in which this relationship can become a fundamental barrier to students' social and academic adjustments while attending a PWI.

It is important to note that there is a striking pattern to these research studies. They confirm, with great consistency that students of color perceive the campus climate

very differently. Students of color who experience negative events and/or have perceptions of unfair treatment at PWIs and may find it difficult to develop a sense of race-based belonging to the institution; which may ultimately impact the engagement and retention process (Suarez-Balcazar, Orellana-Damacela, Portillo, Rowen, & Andrews-Guillen, 2003; Vega & Rumbaut, 1991). Therefore, studying the development of race-based belonging at PWIs allows researchers to assess which forms of social interaction (academic or social) further enhance students' affiliation and identification with college and reveal how campus constituents perceive and experience various aspects of climate, as well as subsequent influence on outcomes. In addition, research has not examined how race-based belonging might serve as a mediator for students' sense of control and may impact the engagement/retention process for students in a PWI environment.

Perceived familial support

Research has demonstrated that parenting behaviors and family relationships are strongly related to student engagement, which appears to be a consistent finding across ethnic and socioeconomic groups (Wentzel, 1998). Regarding family relationships, studies have considered how social support-in particular family support can also impact student engagement. In one study, students perceived social support from family members was related to greater student engagement (academic and behavioral), whereas perceived barriers, including family and social barriers was associated with less student engagement (Kenny, Blustein, Chaves, Grossman, & Gallagher, 2003). In other research, positive relationships were significantly related to higher levels of student engagement (psychological and behavioral) among middle-class African American students (Sirin & Rogers-Sirin, 2004). Brewster and Bown (2004) examined Latino students' perceived

engagement to school and problem behaviors beyond the effects of familial support and found that levels of familial support significantly impacted engagement even after controlling for campus support.

The social adjustment of students of color and the factors that impact this relationship have also received considerable attention in both foundational and recent research on college student development. The impact of students' of color perceptions of familial support and its impact on their adjustment to college have been studied by Kenny and Rice (1995) and Mattanah, Hancock, and Brand (2004). According to Goldberg (2000), attachment theory maintains that attachments, affectional ties to one's caregivers that elicit care, protection, and investment are of primary importance in stressful situations. While, all college students are faced with the task of separating from family relationships, for students of color, this separation can compromise a significant part of their social network, and a need to establish a completely new group of friends in the college environment (Gerdes & Mallinckrodt, 1994; Pascarella & Terenzini, 2005). Social support from the family of origin has been identified as a system that may mediate the experience of distress and provide a buffer against the various stressors experienced by students of color attending PWIs (Solberg & Villareal, 1997). Gandara (1995) asserted that students of color tend to rely on the emotional support of their family to help them deal with college stressors. This is particularly important when specific family members are needed as agents of support. Contemporary research that has examined the factors that may influence distress in students of color has not systematically addressed the potential impact of these sources of support on engagement and persistence.

Several research studies have considered the role of family support in the persistence rates of students of color, however these findings are mixed. Gonzalez, Jovel, and Strover (2005) and Aguilar (1996) found that parents were supportive of their children's educational attainment but did not want these educational opportunities to take their children away from their families. While parents are often supportive of their children receiving a college education, they are often unaware of student demands and expectations (Vasti, 2003). In addition, spending time with family enabled students to persist but also created a significant source of stress for students as they worked to negotiate their family and student roles (Vasti, 2003). However, in a study conducted by Sy (2006), students of color that spent more time with their families had higher GPA's and slightly lower levels of stress. It should be noted that there was evidence that if students were expected to carry out family obligations like language brokering (Sy, 2006) and caring for children and the family (Capello, 1994; Chacon, Cohen, & Strover, 1986), they experienced more stress. Overall, parental support contributed to academic success and persistence (Rodriguez, 2000).

Research on the experiences of students of color has highlighted that support systems may moderate the distress that some students report while transitioning into the college experience and support from students' families has been identified as providing a buffer against stressors. Investigators have also explored psychosocial factors in relation to academic achievement (Lee, 1984; Ting & Robinson, 1998). For example, in a study conducted by Lee (1994) researchers examined psychological and social factors that might have an influence on how well African American students perform academically. After academically and socially successful students were identified by teachers, the

students were interviewed to determine what their feelings were concerning, family, school, friends and themselves. A questionnaire was developed from the interviews and was distributed to a random sample of students. Results showed that students who had strong support from family and friends as well as positive attitudes toward school and their social network tended to have higher standardized test scores, which are generally accepted as measures of academic achievement or success in school (Lee, 1984).

While it is reasonable to expect that students will differ in terms of sense of control and levels of race-based belonging, even little is known about the moderating impact of familial support on the engagement/retention process. The relationship between student sense of control, student engagement, and race-based belonging may be impacted by students' perceived familial support which appears to be an important process in students' academic success. Race and ethnicity are all factors that affect student engagement and retention and are often cited as the reason for the low completion rates of students of color (Furr and Elling, 2002).

For students of color, racial and ethnic identity (Adan & Felner, 1995), community and campus involvement, and the negotiation of family support and relationships (Schneider & Ward, 2003) are key aspects of the transition to college process, indicating that social connections and contexts are important. While, this relationship is not going to work the same for all students of color, it might be even more difficult for students with low familial support to navigate an institution. Among students of color, disparities in graduation rates are often confounded by several factors that impede the educational process and pose significant problems to academic success during college such as family obligations, financial obstacles, and their inability to establish a

connection within an institution and its representatives (Gray, Vernez, & Rolph, 1996; Hagy & Staniec, 2001). According to Pascarella, Pierson, Wolniak, & Terenzini, (1991) students of color are also more likely to be first generation and are often seen as different from students who come from homes where a parent has attended college or graduated with a four-year degree because when compared to students who have at least one parent who graduated from college. A sense of family obligation and sacrifice is another major theme that seems to be a significant factor in the attrition rates of students of color.

Given the challenges and personal hurdles that many students face in order to attend college, it is imperative to understand how students sense of control predicts engagement/retention, the mediating role of race-based belonging, and the moderating role of perceived familial support on this relationship in order to help keep students on track in their academic and social adjustment to college.

Engagement and Persistence

While the racial achievement gap precedes college, it persists in college, irrespective of pre-college achievement and impacts engagement and retention levels (Bowen & Bok, 1998; Massey, Charles, Lundy & Fisher, 2002). There has been recent interest in exploring factors related to student engagement due to increasing recognition that it is crucial to engage students for high levels of academic performance (e.g., Blum & Libbey, 2004; Klem & Connell, 2004). Student engagement predicts school completion for students and beyond the impacts of socioeconomic status, achievement test scores, and retention (Reschly & Christenson, 2006). Student engagement is related to academic success after controlling for family and personal factors (Finn & Rock, 1997). Students' expectations and aspirations are socially constructed through their

interactions with institutional agents and significant others in their lives (McDonough & Calderone, 2006). Much of this evidence appropriately accounts for students' race or ethnicity, which leads to the conclusion that students from all racial/ethnic backgrounds benefit from engagement practices such as interacting with faculty, active learning, and graduation rates overall (Swail, Cabrera, Lee, & Williams, 2005; Terenzini, Yaeger, Bohr, Pascarella, & Nora, 1997; Turner, 1992).

Tinto (1993) and others (Brown, 1995) maintain that students who are integrated and involved, who feel satisfied with the academic and social systems and congruent with the mainstream of campus life are more likely to graduate. Likewise, the corollary is also true. The more socially isolated the student feels, the less likely that student will persist in college (Astin, 1993). In his comprehensive review of student engagement and persistence, Tinto (1993) concluded that too often students of color attending predominantly white institutions face difficulties gaining access to their campuses' cultural mainstream. However, little is known about whether the same factors influence the engagement and retention of underrepresented students in predominantly White institutions (PWIs) and whether this process differs by ethnic group (Knapp, Kelly-Reid, & Whitmore, 2006).

One specific area continually researched in higher education is that students of color benefit differentially depending on the type of educational institution that they attend and the benefits of attending minority-serving institutions has been well-examined over the past few decades (Brower & Ketterhagan, 2004; Harper, Carini, Bridges, & Hayek, 2004). For example, relative to African Americans attending HBCUs, African American students attending PWIs have lower persistence rates, lower academic

achievement levels, poorer overall psychosocial adjustment, and lower graduation rates (Allen, Epps, & Haniff, 1991). Research results from Berger and Milem (2000) reported that Historically Black Colleges and Universities (HBCUs) found significantly higher ratings in psychological functioning, sense of control and achievement orientation. In a later study, (Chen, Ingram, & Davis, 2007), sampled seniors from HBCUs and PWIs using the National Survey of Student Engagement (NSSE). The purpose of the study was to compare student engagement and satisfaction at HBCUs and their self-identified PWIs. The dependent variables used included the NSSE Benchmarks of Effective Educational Practices, Learning Scales and Satisfaction Scales. The independent variable for the study was represented by HBCU status and the covariables were identified as (a) public and private colleges and institutions, (b) student enrollment, (c) size of the institution, and (d) average faculty salary. The overall findings of the study indicated that students of color attending HBCUs versus PWIs experienced higher levels of engagement and student satisfaction in spite of having limited resources.

Further, we know far less about possible motivational and psychosocial processes that may foster or hinder their campus integration. Several strands of research have documented how students benefit differentially depending on the type of institution they attend. For example, among students of color attending MSIs, student sense of control had compensatory effects for underserved and minority students such that African American and Latino/a college students achieved and/or persisted at higher levels than their White counterparts as their engagement increased (Cruce, Wolniak, Seifert, & Pascarella, 2006; Kuh, Kinzie, Cruce, Shoup, & Gonyea, 2007).

Thus, research has suggested that students that attend an MSI are more likely to successfully navigate the institution and will experience significant positive outcomes compared to students that attend predominantly white institutions, who often report experiencing impediments to student acclimation process (Hurtado, Milem, Clayton-Pederson, & Allen, 1998). While, students of color that attend PWIs are more likely to report challenges and impediments or are least likely to report engaging in practices that produce meaningful engagement, it can be argued that these impediments can lead to disengagement and impact college retention (Feagin, Vera, & Imani, 1996). These findings are in stark contrast to students of color who attend MSIs and report that their institutions purport to specifically, serve, support, and affirm students of color and engage these students in educationally appropriate tasks and behaviors (Hurtado, et al., 1998).

Recent studies on student persistence at PWIs suggest that experiences in college may account for some of the difficulties that students of color experience face (Astin, 1993; Bowen & Bok, 1998; Pascarella & Terenzini, 1991). Considering that minority serving colleges and institutions graduate a higher percentage of their students of color and that graduates of these colleges account for a disproportionate percentage of minority professionals compared to graduates of PWIs, the assumption is that minority serving institutions are providing students of color with something that PWIs are not; something that aids in the engagement and retention process (Fleming, 1984). Studies investigating the engagement and retention experiences of students of color attending PWIs have indicated that many of these students often experience their PWI environments as hostile or marginalizing (Gloria, Castellanos, Lopez & Rosales, 2005) and as a result many

students face difficulty adjusting to college. Continued empirical support for the association between discrimination and marginalization and decreases in engagement and retention among students of color is necessary as research understanding the experiences of students of color attending PWIs and HSIs has been mixed (Nora and Cabrera, 1996).

Drawing on the work of Stanton-Salazar (1997), student engagement refers to the resources that students of color can use to cross the “cultural border” that divides students’ community experiences and their experiences at PWIs. Thus, engagement refers to roles of institutional agents, who act on behalf of students and use all the resources at their disposal to help students navigate bureaucracies, develop a sense of belonging in college, and overcome barriers to their educational progress. Stanton-Salazar (2001) lists six potential types of support that institutional agents can provide to help students navigate the university environment: (1) Funds of knowledge: for example, information about resources and how colleges operate, (2) Bridging: acting as a human bridge to opportunities, (3) Advocacy: acting on behalf of students to promote their interests, (4) Role modeling: modeling behaviors associated with effective participation in academic domains, (5) Emotional and moral support, and (6) Advice and guidance. Research has indicated that because the university environment can be seen as a possible context for one’s social support system, it can influence students’ attitudes about persistence in higher education (Trent, Lee, & Owens-Nichols, 2006). For students of color, uncertainty about belonging may stem from the underrepresentation of students of color at selective colleges and the lack of available role models, mentors, and advocates and while support from family and friends is vital for academic perseverance, students need support from university faculty, staff, and the administration as well (Pak,

Bensimon, Malcolm, Marquez, & Park, 2006). Dowd & Melguizo (2006) found a significant correlation between persistence in higher education and the extent to which students felt university personnel were there to listen and help. Additionally, there is evidence that students' perception of the campus environment is correlated with their academic achievement.

Overview of the Present Study

While research on freshman adjustment has often addressed the issue of student retention and the various reasons that students of color leave a university at some point during or following their first year, there is an important need to gain a comprehensive understanding of students' experiences, challenges, situations, and opportunities in their first year of college and to explore how these either enhance or hinder their overall academic, social, and personal adjustment. While, the literature is beginning to redress the imbalance between students of color experiences at MSIs compared to PWIs, there is little research that has examined whether an awareness of being a member of a visible or non-visible minority in PWIs may leave students feeling vulnerable to additional negative stressors beyond the transition itself and whether the factors that predict engagement and retention in MSIs can be replicated in PWIs.

While first year students may make competent decisions about numerous dilemmas that they encounter, there may also be certain aspects of their undergraduate experience over which they believe they have little or no control. It is the interplay, negotiation, and resolution of these events that may profoundly impact a student's adjustment to his/her first year of college. The primary focus of this study is freshman adjustment and the current research study sought to isolate the role of a sense of control

in the engagement and retention process. Substantial research, both classic and current, documents the variables and experiences that impact freshman adjustment, which offers meaningful contributions to this research. Specifically, this study seeks to identify if high levels of a sense of control impacts the engagement and retention of students of color attending PWIs.

This paper provides a unique contribution to the existing literature simply by examining the motivational impact of a sense of control on the engagement and retention experiences of students of color attending PWIs and builds on and adds to the body of literature examining the higher educational experiences of students of color.

Specifically, this research seeks to answer the following questions:

1. What is the relationship between a sense of control on students of color engagement?
2. Does race-based belonging (students perceptions of racial prejudice and discrimination on campus) mediate the relationship between a sense of control and engagement?
3. How are students' perceptions of familial support helping them negotiate their college experiences by moderating the relationship between a sense of control and engagement/retention and race-based belonging?

This study examines a theoretically informed but exploratory model of the relationship among sense of control, race-based belonging, perceived familial support and engagement/retention by proposing a new theoretical model called Student Engagement and Retention Model (SERM). The Student Engagement and Retention Model posits that students' sense of control is a key factor in predicting levels of engagement and retention.

The SERM model was derived from a detailed review of the engagement and retention literature, which purports that a sense of control increases rates of persistence to degree completion (Gloria, Castellanos, Lopez, & Rosales, 2005) and enables students to form strong social support networks (Coffman & Gilligan, 2002) and increases rates of persistence to degree completion. In essence, it is proposed that the steps between the ways in which students of color perceive that they can control their experiences at a predominantly white institution, is related to the likelihood that they will become engaged in an institution, which is fundamentally linked to their sense of race-based belonging such that students' perceptions of racial prejudice and discrimination on campus can impact these relationships. In addition, this perspective will also provide further insight into the ways in which perceived familial support may impact their engagement and the likelihood that they will graduate from college.

Thus, the first step of the study was to examine and validate the structures of the SERM model. The second step of the study was to examine whether the proposed model predicted different engagement patterns among students of color. I hypothesize that the model (see Figure 1) would be a good fit with the data. Specifically, given the literature to support the relationship between students' sense of control and engagement/retention. It is also hypothesized that race-based belonging would mediate the relationship between sense of control and engagement/retention. Similarly, students who report high levels of a sense of control will report higher levels of engagement at the end of their freshman year and an increased likelihood of graduating, regardless of their perceptions of discrimination, which is termed race-based belonging to the institution (path c). The relationship between students' sense of control and engagement will be mediated by race-

based belonging such that students who report that their campus environments are not inclusive will report significantly lower levels of engagement at the end of their freshman and senior year (path a and path b). Finally, increases in perceived familial support will moderate the relationship between students' sense of control, engagement/retention and race-based belonging and these students will be able to develop a connection to the institution (path x).

This hypothesized model builds on previous scholarship on students' race-based belonging and the engagement/retention process (Hurtado & Carter, 1997; Nora, Kramer, & Itzen, 1996; Nora, 2004). Findings from this model will attempt to address the ambiguity of prior findings regarding the engagement and retention experiences of students of color attending predominantly white institutions.

Prior empirical and theoretical research students on student engagement and persistence have guided this study on the appropriate methodology and theoretical frameworks in higher education. This study aimed to go beyond the works of previous researchers who examined persistence at higher education institutions to expand the existing knowledge base by analyzing persistence patterns and a sense of control to predict the engagement of freshman students based on their race-based belonging at PWIs. Empirical studies on the persistence and engagement of students of color at PWIs are limited to academic achievement. The intent of this study is to contribute knowledge to the field by examining how student demographics, a sense of control, race-based belonging and perceived familial support, predict engagement at PWIs. Furthermore, this study can also assist faculty, advisors, and administrators with refining their programs to

strengthen retention and improve academic success of first-time degree seeking freshmen students.

Chapter 3: Method

Data Collection

This study was submitted to the Institution Review Board (IRB) of The Graduate Center of the City University of New York to protect the rights of human subjects participating in the study. There was no more than minimal risk to subjects participating in the study where the magnitude of harm or discomfort anticipated are no greater, in and of themselves, than those ordinarily encountered in daily life. An exempt IRB review was obtained since the project only involved the secondary analyses of data. Participants' responses to questionnaire items were anonymous in that there were no documents or identifiers linking participants' identities to their responses. The computer files were password protected and only the principal investigator has access to the password. Computer files were backed up onto a CD and the CD was maintained in the locked cabinet. Data collected from this study that is published or presented will be reported only as grouped data, and no participants will be identified. CDs and written documents will be destroyed three years after completion of the research study.

This study utilized the National Longitudinal Survey of Freshman (NLSF) a longitudinal data set (1999-2003) that was collected by the Office of Population Research at Princeton University. The National Longitudinal Survey of Freshman followed for four academic years, a nationally representative sample of students who began their postsecondary education in 1999. The NLSF was developed to provide comprehensive data to test different theoretical explanations for minority underachievement in higher education.

The National Longitudinal Survey of Freshman (NLSF) is a public dataset and in order to obtain access to the dataset I registered to become an authorized user of the data

with the Office of Population Research at Princeton University where this dataset is stored. From this archive, I downloaded the dataset to my computer. All data was obtained as SPSS (Statistical Program for the Social Sciences) files and were only analyzed in SPSS. These files were kept in a password-protected file and only the principal investigator had access to the files.

Sampling and Participants

For the purposes of this research study, a secondary analysis of the existing data was performed only on the data collected from African American and Latino students. The NLSF data presented here are only from the first wave of data collection collected at two points (Fall and Spring) during students' freshman year and their persistence patterns based on their four-year graduation.

Participants were 1051 African American/Black (683=females and 368=males) and 998 Latino/Latino respondents (523=female, 475=male) with a mean age of 18 years (SD=1.24), ranged from 17 to 19 years, who were attending liberal arts, public and private research universities with student populations that are listed as greater than 65% White. At wave 1, 966 (95.7%) African American/Black students resided in on-campus dormitories, 12 resided (1.2%) resided in off-campus dormitories, 2 (.2%) resided in on-campus apartments, 6 (.6%) resided in off-campus apartments, 1 (.1%) resided in a fraternity/sorority, 22 (2.2%) reported residing with their parents or relatives and 42 (4%) students did not report any housing information. In terms of Latino/a students, at wave 1, 903 (96.9%) resided in on-campus dormitories, 15 (1.6%) resided in off-campus dormitories, 1 (.1%) resided in an on-campus apartment, 6 (.6%) resided in off-campus apartments, 3 (.3%) resided in a fraternity/sorority, 7 (.7%) resided with parents or

relatives and 63 (6.3%) students did not report any housing information. The baseline survey consisted of face-to-face interviews with first-time, incoming students before their first semester of college (interviews were conducted before or during students fall semester of their freshman year). Follow-up surveys were conducted via telephone interviews in the spring semester of each academic year beginning in their freshman year, all the way up to students' senior year.

Instrumentation

Survey items in the NLSF were developed based on established themes in the educational, sociological, and psychological literature on engagement, and college students developing a sense of community. As a whole, the NLSF instruments include over a 1000 questions grouped into various sections, however, in this study only items that relate to students' background characteristics, sense of control, perceptions of race-based belonging, familial support, engagement and retention were included.

Validity and Reliability of Instruments

A reliability analysis was used to assess the reliability and internal consistency of the scores obtained from the summated scale scores of the measures. Reliability pertains to the accuracy or precision of an instrument to measure what it was created to measure and internal consistency measures the degree to which items on an instrument or scale measure a similar construct (Trochim, 2006). The reliability of the scales was determined using Cronbach's alpha or coefficient alpha. According to Westhuis and Thayer (1989), coefficient alpha is the best measure of internal consistency because it provides a good estimate of the major source of measurement error, set the upper limits

of reliability, and provides the most stable estimate of reliability. Thorndike (1967) provided general guidelines for assessing the adequacy of reliability estimates for a scale. Thorndike (1967) suggested that reliability estimates of .40 to .50 are sufficient for describing groups. Other researchers (Ary, Jacobs, & Razevieh, 1996; Hair, Anderson, Tatham & Black, 1995) suggest that the adequacy of a measure's reliability also depends upon the intended use of the measure and results should be interpreted within that framework. The statistical significance of coefficient alpha will be judged by the test value of .70 and $\alpha = .05$ as established by Kaplan and Sacuzzo (2005).

Independent variables:

Sense of Control. The NLSF assessed a sense of control for college using standard measures of self-efficacy developed by Sherer, Madduz, Mercandante, Prentice-Dunn, Jacobs, & Rogers (1982) to measure the degree of confidence regarding students' belief in their ability to make life decisions. In the original study, the self-efficacy scale was developed to measure the degree of self-efficacy of college students enrolled in a general psychology class (Sherer et al., 1982). A five-point Likert type scale inventory was utilized to measure the degree of self-efficacy of the students who participated in this study. The students responded to the items with a 5-point Likert type scale from strongly agree to strongly disagree. The sum of the scores indicated a general level of self-efficacy. The higher the score on the scale indicated a higher degree of self-efficacy. Choi (2005) and Imam (2007) both reviewed the self-efficacy scale (Sherer et al, 1982), and reported reliability with a Coefficient Alpha of .86.

The scale was created from questions asking about agreement or disagreement with statements such as "I don't have control over the direction of my life" and "every

time I try to get ahead something stops me”. Participants completed a 6-item instrument to assess their perceptions and beliefs about competence in a new context. Participants were asked to report how strongly they believed in their capabilities to plan and execute courses of action to reach their aim. For all responses participants rated whether they agreed or disagreed with the statements on a 5-point Likert scale “1” (Strongly disagreed) to “5” (Strongly Agree) with items such as “*Something stops me from getting ahead*”, “*I am certain I can make plans work*”, and “*If I work hard I can do well*”. The overall Cronbach’s alpha reliabilities for the subscale equal .69.

Race-based belonging (Perceptions of racial prejudice and discrimination on campus). Perceptions of racial prejudice and discrimination on campus and in the classroom have been found to have a direct impact on withdrawal decisions, while at the same time affecting students’ social and academic experiences at the institution. Based on participants’ experiences at their respective campuses, they were asked to indicate how comfortable they felt on campus. Participants completed a 12-item measure of that measured students perceptions of prejudice on campus. Participants’ reported their perceptions of prejudice on campus or the degree to which they reported feeling uncomfortable or self-conscious because of their race or ethnicity on a Likert scale, ranging from “1” (Never), “2” (Rarely), “3” (Sometimes), “4” (Often), and “5” (Very Often) and items such as: “*How often, if ever, have any of your college professors made you feel uncomfortable or self-conscious because of your race or ethnicity?*” “*Walking around campus, how often, if ever, have you been made to feel uncomfortable or self-conscious because of your race or ethnicity?*” “*Except for security guards at building entrances, how often, if ever, have the campus police asked you to present*

identification”, *How often, if ever, have you heard derogatory remarks made by fellow students about your ethnic group?*” It should be noted that low scores on this measure are a positive attribute such that students feel as though they belong in their institution, while high scores are indicative of a negative attribute such that students are either directly or indirectly perceiving hostility and discrimination on campus. The overall Cronbach’s alpha reliability for the scale equals .826.

Perceived Familial Support. Participants read a list of six items that described their families attitudes towards their college attendance. Respondents were asked to report, on a scale of zero to ten, where (0) “indicates completely unimportant” and (10) “indicates completely important,” with statements such as “*I want to make my parents proud of me*”, “*I don’t want to embarrass my family*” and “*My family is making sacrifices for my education*”. The overall Cronbach’s alpha reliability for the scale equals .716.

Dependent variables:

Engagement. In this scale sixteen items are used to assess the three dimensions of the construct: Faculty/Student (5 items), Campus Resources (6 items), and Student/Groups (5 items). These items were scored on a 10-point Likert scale from 1 (never) to 10 (always). Higher scores on the three dimensions reflect stronger levels of engagement. will be selected to survey participants’ engagement within their respective institutions. Participants were asked to rate how important each statement was to them on a scale of (0) “No Importance”, between (1-9), (10) “Utmost importance”, (98) “Don’t know”, or (97) “Refused”. Items included statements such as, “*I want to learn the material*”, “*Attend classes regularly*”, “*Study hard*”, “*Get good grades*”, “*Do community*

work or volunteer". The Cronbach's alpha reliabilities for the faculty subscale equals .760, campus subscale equals .580, and student subscale equals .524.

Control Variables. Control variables included parental education and socioeconomic status, whether students were born in the U.S., students SAT verbal/SAT math score and the type of college attended (liberal arts college, private research university, or public research university), since research has indicated that these factors are well known structural differences that shape student experiences in higher education and because they will also serve as a control for sample biases.

Data Analysis

To address the research questions developed for this study several types of data analyses procedures were performed. All procedures were performed using the statistical software package SPSS, including obtaining descriptive statistics, constructing the variables from the selected items in the questionnaire, factor analyses, correlations, and calculating reliability coefficients for the means for the constructed variables. As mentioned in the previous section, four variables (a sense of control, race-based belonging, perceived familial support, and engagement) were constructed using the average of the constituent items scores in the questionnaire for each variable.

As seen in Table 1, six items were used for a sense of control, twelve items for race-based belonging, six items for perceived familial support, five items for faculty engagement, six items for campus engagement, and five items for student engagement. All analyses will be conducted on persisters and non-persisters, and then on African American and Latino/a persisters and non-persisters in order to examine additional differences based on race/ethnicity. Table 4 illustrates that all of the Cronbach's alphas

were statistically consistent among groups to suggest that the items associated with each variable hung together. It is also important to point out the alphas for persisters and non-persisters were reasonably close to those for the whole sample. For example, on race-based belonging, the full sample Cronbach's alpha was .826, for .808 for persisters and .839 for non-persisters. This suggests that the scores produced from the average of the constituent items scores were equally reliable measures for all groups.

Three hypotheses were tested in the present study. The first hypothesis tests whether a sense of control is positively associated with engagement. The means, standard deviations, and range of scores were calculated for each group for all items and scales. An independent samples t-test was conducted in order to determine if respondents were statistically different on the variables of interest and by persistence patterns. The test compared the means for a sense of control, race-based belonging, perceived familial support and engagement levels for persisters and non-persisters and then by race/ethnicity. I subsequently ran a Pearson product-moment correlation analysis to estimate the strength and direction of the linear relationships between the mean of a sense of control, race-based belonging, perceived familial support and engagement. Positive significant correlations between variables could support my hypothesis that a sense of control is positively associated with engagement.

The second hypothesis examines whether that race-based belonging will mediate the relationship between students' sense of control and engagement. To test hypothesis two, Baron and Kenny's test for mediation was used (Baron & Kenny, 1986). According to Baron and Kenny (1986), a mediator is a variable that specifies how the association occurs between an independent variable and an outcome variable. Baron and Kenny

(1986) state that the following conditions must be present to establish mediation, 1) the independent variable (a sense of control) must be significantly related to the mediator (race-based belonging), 2) the independent variable (a sense of control) must be significantly related to the dependent variable (engagement-faculty, campus, and student level), and 3) the mediator (race-based belonging) must be significantly related to the dependent variables (engagement-faculty, campus, and student level). Given that perfect mediation virtually never occurs, the Sobel Test (1982) can then be used to determine whether the amount of partial mediation occurring is significant. Separate models will be created for Persisters and Non-Persisters, and then African American and Latino/a persisters versus African American and Latino/a non-persisters.

Hypothesis two, proposed that, when the effects of the mediator, race-based belonging was controlled for, the magnitude and significance of the relationship between the independent variable, a sense of control and the dependent variable, engagement, would diminish. Using Baron and Kenny's (1986) criteria for mediation, I first have to test whether there was a significant association between the independent (sense of control) and the dependent (faculty, campus or student engagement) variables. For each mediating model, a series of three regressions will be conducted according to Baron and Kenny's (1986) method for testing a mediation model, controlling for the effect of the demographic covariates (whether or not students were born in the United States, SAT scores, parental education and socioeconomic status and campus type). As a way to quantify the degree of reduction in regression coefficients, each mediation model will be assessed with the Sobel test, a statistical method for determining the influence of a mediator on an outcome variable (MacKinnon & Dwyer, 1993).

The third hypothesis examines whether perceived familial support will moderate the relationship between students' sense of control and engagement. To test hypothesis 3, whether or not, perceived familial support moderates the relationship between a sense of control and engagement; the potentially moderating influence of perceived familial support will be explicitly explored for each of the primary outcomes of interest through multileveled regression equations. The dependent variables, faculty, campus and student engagement will be separately regressed simultaneously on the independent variable, a sense of control and the moderator variable, perceived familial support in the first step, followed by their interactions. A moderator effect would be indicated and directly interpretable if the interaction proved significant while controlling for the main effects.

Three separate regression equations will be computed to test the potential moderator of a perceived familial support on a sense of control and engagement because of my interest in faculty, campus and student engagement. In each case, the predictor (a sense of control) and the moderator (perceived familial support) will be entered on the first step of each equation. In order to test the interaction between the independent variable (a sense of control) and the proposed moderator (perceived familial support, an interaction term will be created (sense of control * perceived familial support). Then, if the addition of the new interaction term results in a significant increase in R^2 it can be claimed that there is a moderating effect of perceived familial support on the relationship between a sense of control and engagement. The moderating variable will be mean-centered in order to eliminate multicollinearity (Aiken & West, 1991). These models will be analyzed for persisters and non-persisters only, and then by African American and Latino/a persisters and non-persisters.

Chapter Four includes a description of additional steps taken to clean up and prepare the data for the study.

Chapter 4: Results

In this chapter, I include a description of the sample, results of the data analyses and the results of the study. The results of the study are organized by the research questions posed. Thus, the purpose of the study was to examine the first year experiences of persisters and non-persisters to: 1) explore the relationship between a sense of control and engagement, 2) the mediating role of race-based belonging on the relationship between a sense of control and engagement, and 3) the moderating effect of perceived familial support. In order to further examine group differences, I also analyzed the hypotheses for persisters and non-persisters by race/ethnicity.

Data Screening and Preparation.

The data used for this study was coded and analyzed using the Statistical Package for the Social Sciences (SPSS) version 16.0. The accuracy of the raw data file was verified by confirming each case. All variables of interest were examined for missing values, outliers and assumptions of relevant multivariate analyses and appropriate steps were taken to correct for violations of the assumptions of the statistical tests (e.g., normal distribution of variables, multicollinearity) (Tabachnick & Fidell, 2001). Standard approaches to address missing data were explored as needed, including the use of dummy variable imputation, listwise deletion and multiple imputation techniques. Once the data was prepared for analyses, descriptive statistics were obtained for all categorical and continuous variables used in the study. These statistics included frequencies, means, standard deviations, correlations and reliabilities. The sample used in this study only consisted of African American and Latinos students who participated in the National Longitudinal Survey of Freshman (NLSF). These groups were then grouped by their

persistence patterns based on whether or not they graduated from their original or transfer institution within four years.

Sample description

Frequency counts were used to describe respondents' demographic characteristics. Following the deletion of cases with a significant number of missing data for key variables in the study and those with missing responses to the questions associated with the dependent variable, the total sample was reduced to 1009 African American participants and 934 Latino participants. The sample was split into persisters and non-persisters based on the variable, GRADTIME, which measured whether or not students graduated within four years from their original institution or an institution that they transferred to.

Persisters:

Persisters refer to students who graduated within 4 years from the original or transfer institution. In total 1360 (70.3%) students of color graduated within 4 years from the original or transfer institution.

In terms of race/ethnicity, 584 (58%) African American participants graduated within 4 years. In terms of race/ethnicity and gender, 418 (71%) African American females and 166 (28%) African American males graduated within 4 years. Among African Americans, 394 (65%) of persisters attended private research universities, 147 (24%) attended public research universities, and 64 (11%) attended a liberal arts college. African American persisters reported that the average annual household income for their families was below or at least \$25,000-\$34,999 (23%), \$35,000-49,000 (13.4%), \$50,000-\$74,999 (19.2%) or \$75,000 or higher (40.2%). An overall SAT score was

computed based on the sum of students' math, verbal and composite SAT scores. There were differences in SAT scores based on persistence rates, race/ethnicity and gender. Overall, African American persisters (N=473) scored an average SAT score of 958.94 (SD=520.97). In terms of gender, African American male (N=139) persisters reported an average SAT score of 1004.22 (SD=507.69) and African American females (N=334) reported an average SAT score of 940.09 (SD=526.00).

In total, 711 (76%) Latino/a participants graduated within 4 years. In terms of gender, 385 (54%) Latinas and 326 (46%) Latinos graduated within 4 years. Among Latino/as persisters, 486 (64%) graduated from a private research universities, 186 (24%) attended a public research university, and 83 (11%) attended a liberal arts college. Latino/a persisters reported that the average annual household income for their families was below or at least \$25,000-\$34,999 (5.4%), \$35,000-\$49,000 (8.5%), \$50,000-\$74,999 (14.7%) or \$75,000 or higher (68.1%). Overall, Latino/a persisters (N=641) reported higher SAT scores of 1190.66 (SD=479.04). In terms of gender, Latinos (N=296) reported higher SAT scores with an average SAT score of 1235.82 (SD=475.11) and Latinas (N=345) reported an average SAT score of 1151.91 (SD=479.69).

Non-Persisters:

Non-persisters refer to students who did not graduate from the original or transfer institution within 4 years. In total 688 (35.5%) students of color did not graduate within 4 years from the original or transfer institution.

In terms of race/ethnicity, 425 (42%) of African American participants did not graduate. In terms of gender, 243 (24%) of African American females and 182 (18%) of African American males did not graduate. Among African Americans student who did

not graduate within 4 years, 226 (50%) attended a public research university, 192 (43%) attended a private research university, and 28 (6%) attended a liberal arts college.

African American non-persisters reported that the average annual household income for their families was below or at least \$25,000-\$34,999 (28.7%), \$35,000-\$49,000 (14.6%), \$50,000-\$74,999 (31.8%) or \$75,000 or higher (31.8%). Overall, African American non-persisters (N=314) reported an average SAT score of 831 (SD=539.14). Male African American non-persisters (N=135) reported an average SAT score of 843.18 (SD=540.45). Female African American non-persisters (N=179) reported an average SAT score of 821.91 (SD=539.48).

In total, 223 (24%) Latino/as did not graduate. In terms of gender, 106 (11%) Latinas and 117 (13%) Latinos did not graduate within 4 years. Among Latina/os who did not graduate within 4 years, 117 (48%) attended a private research university, 109 (45%) attended a public research university, and 16 (7%) attended a liberal arts college. Latino/a non-persisters reported that the average annual household income for their families was below or at least \$25,000-\$34,999 (8.7%), \$35,000-\$49,000 (8.5%), \$50,000-\$74,999 (14.7%) or \$75,000 or higher (68.1%). As a group, Latino/a non-persisters (N=194) reported an average SAT score of 1096.90 (SD=525.27). In terms of gender, Latino non-persisters (N=102) reported an average SAT score of 1175.72 (SD=496.34) and Latinas (N=92) reported an average SAT score of 1009.52 (SD=545.04).

Table 2 displays the frequencies, means and standard deviations of the demographic characteristics for the entire sample, and separated by persistence rates, which was further broken down either by race/ethnicity and gender.

Factor Analysis and Psychometric Properties

For all students of color, a principal-components factor analysis was conducted for all of the relevant measures (factor loadings for each measure are presented in Table 3). Cronbach's alpha was used to assess the internal consistency reliability for a sense of control, race-based belonging, the perceived familial support, and faculty, campus, and student engagement (Cronbach alphas for each measure are presented in Table 4).

Persisters:

Among persisters, the sense of control measure has good psychometric properties and predictive utility. Factor analyses indicated that all 6 items of the sense of control composite loaded on a stable, single factor with an eigenvalue of 2.198 that accounts for 36% of the variance. For the full sample of students, the Cronbach's alpha for a sense of control was .690, and .698 for African American persisters, and .671 for Latino/a persisters.

The race-based belonging measure has good psychometric properties and predictive utility. Factor analyses indicated that all 12 items of the race-based belonging composite loaded on a single factor with an eigenvalue of 4.235 that accounts for 35% of the variance. For the full sample of students, the Cronbach's alpha for race-based belonging was .826, and .805 for African American persisters, and .723 for Latino/a persisters.

The perceived familial support measure also has good psychometric properties and predictive utility. Factor analyses indicated that all 6 items of the measure loaded on a single factor with an eigenvalue of 2.827 that accounts for 47% of the variance. For the

full sample of students, the Cronbach's alpha for perceived familial support was .716, and .803 for African American persisters and .763 for Latino/a persisters.

The faculty engagement measure has good psychometric properties and predictive utility. Factor analyses indicated that all 5 items of the measure loaded on a single factor with an eigenvalue of 2.645 that accounts for 52.89% of the variance. For the full sample of students, the Cronbach's alpha for faculty engagement was .760, and .756 for African American persisters and .768 for Latino/a persisters.

The campus engagement measure has moderate to low psychometric properties and predictive utility. Factor analyses indicated that all 6 items of the measure loaded on a single factor with an eigenvalue of 1.920 that accounts for 32.82% of the variance. For the full sample of students, the Cronbach's alpha for campus engagement was .580, and .566 for African American persisters and .447 for Latino/a persisters.

The student engagement measure has mediocre psychometric properties and predictive utility. Factor analyses indicated that 4 of the 5 items of the measure loaded on a single factor with an eigenvalue of 2.212 that accounts for 44.24% of the variance. For the full sample of students, the Cronbach's alpha for student engagement was .524, and .578 for African American persisters and .378 for Latino/a persisters.

Non-persisters:

Among non-persisters, the sense of control measure has good psychometric properties and predictive utility. Factor analyses indicated that all 6 items of the sense of control composite loaded on a stable, single factor with an eigenvalue of 2.328 that accounts for 38% of the variance. The Cronbach's alpha for a sense of control among African American non-persisters was .644 and .739 for Latino/a non-persisters.

The race-based belonging measure has good psychometric properties and predictive utility. Factor analyses indicated that all 12 items of the measure composite loaded on a stable, single factor with an eigenvalue of 4.698 that accounts for 39% of the variance. The Cronbach's alpha for race-based belonging among African American non-persisters was .799 and .892 for Latino/a non-persisters.

The perceived familial support measure has good psychometric properties and predictive utility. Factor analyses indicated that all 6 items of the measure composite loaded on a stable, single factor with an eigenvalue of 2.970 that accounts for 49.5% of the variance. The Cronbach's alpha for perceived familial support among African American non-persisters was .803 and .749 for Latino/a non-persisters.

The faculty engagement measure has good psychometric properties and predictive utility. Factor analyses indicated that all 5 items of the measure loaded on a stable, single factor with an eigenvalue of 2.554 that accounts for 51% of the variance. The Cronbach's alpha for faculty engagement among African American non-persisters was .756 and .732 for Latino/a non-persisters.

The campus engagement measure has good psychometric properties and predictive utility. Factor analyses indicated that all 6 items of the composite loaded on a stable, single factor with an eigenvalue of 2.090 that accounts for 34.82% of the variance. The Cronbach's alpha for campus engagement among African American non-persisters was .571 and .597 for Latino/a non-persisters.

The student engagement measure has good psychometric properties and predictive utility. Factor analyses indicated that all 5 items of the composite loaded on a stable, single factor with an eigenvalue of 2.264 that accounts for 45% of the variance.

The Cronbach's alpha for student engagement among African American non-persisters was .584 and .554 for Latino/a non-persisters.

Table 3 displays the factor loadings for each measure and Table 4 displays the Cronbach alpha for the entire sample, and separated by persistence rates, which was further broken down either by race/ethnicity.

Hypothesis Testing

Research Question 1: Is a sense of control positively associated with engagement, if so, which level, faculty, campus or student levels?

Sense of control

A paired t-test was used to compare differences between persisters and non-persisters. In terms of the impact of a sense of control, students of color who persisted had statistically significant higher levels of a sense of control ($M=4.20$, $SD=.48$) compared to non-persisters ($M=4.11$, $SD=.52$), $t(2046)=-3.596$, $p=.00$).

Persisters

Male and female African American persisters had higher mean scores on a sense of control ($M=4.23$, $SD=.53$ and $M=4.21$, $SD=.48$ respectively) followed by Latina and Latino persisters ($M=4.18$, $SD=.44$ and 4.18 , $SD=.52$ respectively). An equal variances t test failed to reveal a statistically reliable difference between African American (4.22 , $SD=.49$) and Latino persisters (4.18 , $sd=.48$), $t(1357)=1.479$, $p=.139$, $\alpha = .05$.

Non-persisters

African American females ($M=4.13$, $SD=.50$) and African American male ($M=4.13$, $SD=.54$) non-persisters had higher means compared to Latinas ($M=4.05$, $SD=.49$) and Latinos ($M=4.10$, $SD=.55$). An equal variances t test failed to reveal a

statistically reliable difference between African American ($M=4.13$, $SD=.52$) and Latino non-persisters ($M=4.08$, $SD=.52$), $t(685)=1.153$, $p=.249$; $\alpha = .05$.

Race-based belonging:

A paired t-test was used to compare differences between persisters and non-persisters. In terms of the impact of race-based belonging, students of color who persisted ($M=1.28$, $SD=.35$) reported statistically significant lower levels of race-based belonging versus non-persisters ($M=1.40$, $SD=.46$), ($t(1295)=5.486$, $p=.00$), which signifies that these students were less likely to report perceptions or experiences of racial prejudice and discrimination on their campus.

Persisters

Overall in terms of race/ethnicity and gender, persisters were least likely to report instances where they felt uncomfortable because of their race/ethnicity on campus but African American males ($M=1.50$, $SD=.46$) and females ($M=1.42$, $SD=.37$) reported higher instances of perceived discrimination compared to Latino ($M=1.20$, $SD=.27$) and Latina ($M=1.12$, $SD=.17$) persisters. Latino persisters were less likely to report that they felt discriminated against because of their race/ethnicity and reported lower means compared to African American persisters. An equal variances t test revealed a statistically reliable difference between African American ($M=1.16$, $SD=.23$) and Latino persisters ($M=1.44$, $SD=.40$), $t(1293)=15.701$, $p=.00$; $\alpha = .05$.

Non-persisters

Non-persisting African American males ($M=1.53$, $SD=.51$) and African American females ($M=1.50$, $SD=.50$) had the higher means followed by Latinos ($M=1.15$, $SD=.17$) and Latinas ($M=1.21$, $SD=.51$). Overall, regardless of race and gender, non-persisters

were more likely to report feeling self-conscious because of their race/ethnicity within campus settings. Differences in mean values also emerged when examining race-based belonging among non-persisters. African American non-persisters and Latino non-persisters were more likely to report that they felt that they were being discriminated against because of their race/ethnicity. An equal variances t test revealed a statistically reliable difference between African American ($M=1.51$, $SD=.45$) and Latino/a non-persisters ($M=1.18$, $SD=.39$), $t(645)=9.173$, $p=.00$; $\alpha = .05$.

Perceived familial support:

A paired t -test was used to compare differences between persisters and non-persisters. In terms of perceived familial support, students of color who persisted ($M=7.67$, $SD=1.46$) had statistically significant lower levels of perceived familial support compared to non-persisters ($M=7.83$, $SD=1.66$), $t(1940)=2.09$, $p=.03$.

Persisters

Among African American female persisters, the mean value for perceived support was ($M=8.27$, $SD=1.37$) and ($M=8.18$, $SD=1.55$) among African American males. Latinas reported lower mean values for perceived familial support ($M=7.28$, $SD=1.31$) and Latinos ($M=7.11$, $SD=1.33$) persisters. Overall, African American persisters reported higher mean values for perceived familial support compared to Latino/a persisters. An equal variances t test revealed a statistically reliable difference between African American ($M=8.24$, $SD=1.42$) and Latino/a persisters ($M=7.20$, $SD=1.32$), $t(1291)=13.634$, $p=.000$; $\alpha = .05$.

Non-persisters

Non-persisting Latina (M=7.59, SD=1.36) and Latinos (M=7.38, SD=1.52) reported lower mean values compared to non-persisting African American females (M=7.96, SD=1.76) and males (M=8.09, SD=1.72). Overall the African American mean values for perceived familial support was much higher among African American non-persisters than Latino non-persisters. An equal variances *t* test revealed a statistically reliable difference between African American (M=8.02, SD=1.74) and Latino/a non-persisters (M=7.48, SD=1.45), $t(645)=9.173$, $p=.000$; $\alpha = .05$.

Engagement: Faculty Level

A paired t-test was used to compare differences between persisters and non-persisters. In terms of the faculty engagement, a statistically significant difference was not found between students of color who persisted (M=3.40, SD=1.87) compared to non-persisters (M=3.52, SD=1.90), $t(1941)=1.35$, $p=.17$.

Persisters

African American female persisters (M=3.97, SD=2.00) had higher mean faculty engagement score followed African American male persisters (M=3.71, SD=1.89), Latina persisters (M=3.00, SD=1.68), and Latino persisters (M=2.98, SD=1.66). Overall, African American persisters had higher mean scores for faculty engagement than Latino/a persisters. An equal variances *t* test revealed a statistically reliable difference between African American (M=3.90, SD=1.97) and Latino/a (M=2.99, SD=1.67) persisters, $t(1293)=8.882$, $p=.000$; $\alpha = .05$.

Non-persisters

African American female non-persisters (M=3.85, SD=1.96) reported higher faculty engagement means followed by African American male non-persisters (M=3.71,

SD=1.31), Latina non-persisters (M=3.14, SD=1.67), and Latino non-persisters (M=2.91, SD=1.66). African American non-persisters reported significantly higher mean scores for faculty engagement compared to Latino/a non-persisters. An equal variances *t* test revealed a statistically reliable difference between African American (M=3.79, SD=1.96) and Latino/a (M=3.02, SD=1.67) non-persisters, $t(645)=4.970, p=.000; \alpha = .05$.

Engagement: Campus Level

A paired t-test was used to compare differences between persisters and non-persisters. In terms of campus engagement, there was a statistically significant difference between students of color who persisted (M=3.47, SD=1.79) compared to non-persisters (M=3.77, SD=1.71), $t(1941)=3.58, p=.00$.

Persisters

Overall African American female persisters (M=4.29, SD=1.84) reported higher mean scores for campus engagement followed by African male persisters (M=3.64, SD=1.61), Latina persisters (M=3.03, SD=1.65) and Latino persisters (M=2.86, SD=1.54). In terms of campus level engagement, African American persisters reported higher means than Latino/a persisters. An equal variances *t* test revealed a statistically reliable difference between African American (M=4.113, SD=1.80) and Latino/a persisters (M=2.95, SD=1.60), $t(1292)=12.163, p=.00; \alpha = .05$.

Non-persisters

Overall, African American female non-persisters (M=4.27, SD=1.81) reported higher campus engagement means followed by African American male non-persisters (M=3.97, SD=1.61), Latina non-persisters (M=3.37, SD=1.31), and Latino non-persisters (M=2.80, SD=1.45). African American non-persisters reported higher mean scores for

campus level engagement. An equal variances t test revealed a statistically reliable difference between African Americans ($M=4.14$, $SD=1.73$) and Latino/a non-persisters ($M=3.07$, $SD=1.41$), $t(646)=7.936$, $p=.00$; $\alpha = .05$.

Engagement: Student Level

A paired t -test was used to compare differences between persisters and non-persisters. In terms of student engagement, there were no statistically significant differences between students of color who persisted ($M=3.47$, $SD=1.79$) compared to non-persisters ($M=3.77$, $SD=1.71$), ($t(1941)=1.18$, $p=.23$).

Persisters

Overall, African American female persisters ($M=4.73$, $SD=1.61$) reported higher mean student engagement scores followed by African American male persisters ($M=4.23$, $SD=1.36$), Latina persisters ($M=3.94$, $SD=1.33$), and Latino persisters ($M=3.58$, $SD=1.53$). African American persisters reported higher mean student engagement scores. An equal t test revealed a statistically reliable difference between African Americans ($M=4.59$, $SD=1.56$) and Latino/a persisters ($M=3.77$, $SD=1.44$), $t(1292)=9.735$, $p=.000$; $\alpha = .05$.

Non-persisters

African American female non-persisters ($M=4.47$, $SD=1.69$) reported higher mean scores followed by African American male non-persisters ($M=4.42$, $SD=1.57$), Latina non-persisters ($M=3.98$, $SD=1.32$) and Latino non-persisters ($M=3.67$, $SD=1.36$). African American non-persisters reported higher mean student engagement scores followed by Latino/a non-persisters. An equal t test revealed a statistically reliable

difference between African Americans ($M=4.45$, $SD=1.64$) and Latino/a non-persisters ($M=3.81$, $SD=1.36$), $t(645)=4.932$, $p=.000$; $\alpha = .05$.

Correlations

In order to test hypothesis 1, a correlational analysis of the study variables was conducted using both Pearson Product Moment Correlation and chi square for nominal level data. In line with a conservative approach, a two-tailed test of significance set at .05 was used, even if the hypothesized relationship is directional (Polit & Beck, 2004). The correlation matrix was examined to determine if there were any demographic variables that were significantly correlated with the dependent variable and that need to be controlled in subsequent analyses. In addition, the correlation matrix was examined to determine if a sense of control, race-based belonging, and perceived familial support was significantly related to engagement. For each group, I calculated bivariate correlations between the measures. These values are presented in Table 4.

Persisters:

Among persisters, a sense of control was positively correlated with faculty engagement $r(1295)=.107$, $p=.000$. The relationship between a sense of control and campus engagement was not significant at the established .05 level, $r(1295)=.044$, $p=.117$. A sense of control was positively correlated with student engagement $r(1295)=.059$, $p=.035$. A sense of control was negatively correlated with race-based belonging $r(1295)=-.138$, $p=.000$. A sense of control was positively correlated with perceived familial support $r(1295)=.062$, $p=.025$.

In terms of differences based on race/ethnicity among African American persisters, the results reveal a positive correlation between a sense of control and faculty

engagement, $r(582)=.129, p \leq .05$ and a negative correlation between a sense of control and race-based belonging, $r(582)= -.251, p \leq .05$. Race-based belonging was correlated with perceived familial support $r(582)= .142, p \leq .05$, campus engagement $r(582)= .149, p \leq .05$, and student engagement $r(582)= .166, p \leq .05$. Perceived familial support was correlated with faculty engagement $r(582)=.094, p \leq .05$, campus engagement $r(582)=.161, p \leq .05$, and student engagement $r(582)=.190, p \leq .05$. Faculty engagement was correlated with campus engagement $r(582)=.352, p \leq .05$ and student engagement $r(582)=.278, p \leq .05$. Campus engagement was correlated with student engagement $r(582)=.407, p \leq .05$.

Among Latino/a persisters, a sense of control was correlated with faculty engagement, $r(709)=.069, p \leq .06$ and student engagement $r(709)=.097, p \leq .01$. The results reveal a marginally significant negative correlation between a sense of control and race-based belonging, $r(709)= -.070, p \leq .06$. Race-based belonging was only correlated with faculty engagement $r(709)= .094, p \leq .01$. Perceived familial support was correlated with student engagement $r(709)=.122, p \leq .001$. Faculty engagement was correlated with campus engagement $r(709)=.263, p \leq .05$ and student engagement $r(709)=.199, p \leq .05$. Campus engagement was correlated with student engagement $r(709)=.434, p \leq .05$.

Non-Persisters:

Among non-persisters, a sense of control was positively correlated with faculty engagement $r(648)=.130, p=.001$. The relationship between a sense of control and campus engagement was negatively correlated and was not significant at the established .05 level, $r(648)=-.004, p=.911$. The relationship between a sense of control and student engagement was not significant at the established .05 level $r(648)=.030, p=.441$. The

relationship between a sense of control and race-based belonging was negatively correlated $r(648)=-.086, p=.030$. A sense of control was also positively correlated with perceived familial support $r(648)=.109, p=.005$.

In terms of differences based on race/ethnicity, among African American non-persisters, the results reveal a negative correlation between a sense of control and faculty engagement $r(423)=.160, p\leq .01$ and race-based belonging, $r(423)= -.097, p\leq .05$ and a positive correlation between a sense of control and perceived familial support $r(423)= .119, p\leq .05$. Race-based belonging was correlated with faculty engagement $r(423)= .133, p\leq .01$, campus engagement $r(423)= .217, p\leq .01$ and student engagement $r(423)= .195, p\leq .01$. Perceived familial support was correlated with faculty engagement $r(423)=.114, p\leq .05$, marginally with campus engagement $r(423)=.082, p\leq .09$, and student engagement $r(423)=.165, p\leq .001$. Faculty engagement was correlated with campus engagement $r(423)=.417, p\leq .05$ and student engagement $r(423)=.402, p\leq .05$. Campus engagement was correlated with student engagement $r(423)=.475, p\leq .05$.

Among Latino/a non-persisters, the results revealed no correlations between a sense of control and any of the measures. Race-based belonging was negatively correlated with perceived familial support $r(221)= -.246, p\leq .01$. Perceived familial support was correlated with campus engagement $r(221)=.166, p\leq .05$ and student engagement $r(221)=.136, p\leq .05$. Faculty engagement was correlated with campus engagement $r(221)=.392, p\leq .01$ and student engagement $r(221)=.235, p\leq .01$. Campus engagement was correlated with student engagement $r(221)=.402, p\leq .01$.

Summary

Hypothesis 1 proposed that a sense of belonging would be significantly related to engagement (faculty, campus and student level). Among persisters, this hypothesis was partially supported such that a sense of control was significantly related to faculty and student engagement. However, among non-persisters, there was only a significant relationship between a sense of control and faculty engagement. Among non-persisters, a sense of control was not correlated with campus and student engagement.

In terms of race/ethnicity, a correlational analysis indicated a significant relationship between a sense of control and faculty engagement for African American persisters ($r=.129, p<.05$) and non-persisters ($r=.160, p<.001$). Among Latino/a persisters, a correlational analysis indicated a marginal relationship between a sense of control and faculty engagement ($r=.069, p<.06$) and a significant relationship between a sense of control and student engagement ($r=.097, p<.01$). There were no significant relationships between a sense of control and faculty, campus, and student engagement for Latino/a non-persisters.

In sum, hypothesis 1 was only supported for African American persisters and non-persisters for faculty level engagement and marginally for Latino/a persisters. Hypothesis 1 was also supported for Latino/a persisters such that campus level engagement was also significant.

Research Question 2: Does race-based belonging (students' perceptions of racial prejudice and discrimination on campus) mediate the relationship between a sense of control and engagement?

To test hypothesis two, does race-based belonging (students perceptions of racial prejudice and discrimination on campus) mediate the relationship between a sense of

control and engagement, Baron and Kenny's test for mediation was used (Baron & Kenny, 1986). Given that perfect mediation virtually never occurs, the Sobel Test (1982) can then be used to determine whether the amount of partial mediation occurring is significant. Using Baron and Kenny's (1986) criteria for mediation, I first had to test whether there was a significant association between the independent (sense of control) and dependent (faculty, campus or student engagement) variables. A sense of control was correlated with race-based belonging (students perceptions of racial prejudice and discrimination on campus), among persisters (African American and Latino/a combined) and non-persisters (African American and Latino/a combined), and I could examine the mediating model of race-based belonging on both these groups.

Mediation models for Persisters and Non-Persisters:

Among persisters, there was a significant association between a sense of control and faculty engagement as well as student engagement, so I could test for the mediating role of these models. Campus engagement was not correlated with a sense of control for persisters, therefore, I could not test the mediating role of this model for persisters.

For each mediating model, a series of three regressions were conducted according to Baron and Kenny's (1986) method for testing a mediation model, controlling for the effect of the demographic covariates (whether or not students were born in the United States, SAT scores, parental education, socioeconomic status and campus type). As a way to quantify the degree of reduction in regression coefficients, each mediation model was assessed with the Sobel test, a statistical method for determining the influence of a mediator on an outcome variable (MacKinnon & Dwyer, 1993).

Persisters: Faculty Engagement

Among persisters, a regression analysis, predicting faculty engagement from a sense of control was statistically significant, ($t=4.691$, $p=.000$). However, the regression was a poor fit, describing only 3.2% of the variance in faculty engagement, but the overall relationship was statistically significant was accounted for by the covariates and a sense of control (R-square=.032).

The second regression tested whether the independent variable, a sense of control predicted the mediating variable, race-based belonging. Findings indicated that the independent variable, a sense of control, was a significant predictor of the mediator, race-based belonging ($t=19.023$, $p=.000$). A sense of control accounted for 2.6% of the variance in faculty engagement (R-square=.026).

In the third regression, the covariates, were entered in the first step, followed by a simultaneous entry of the independent variable, a sense of control, and the mediating variable, race-based belonging, in the second step. Collinearity statistics, including the variance inflation factor and tolerance indicated no multicollinearity between predictors. Findings revealed, that, controlling for the effects of the mediator, race-based belonging, and covariates on the dependent variable, faculty engagement, the effect of the independent variable on the dependent variable became non-significant ($t=1.339$, $p=.181$).

The test statistic for the Sobel test is 1.33, with an associated p -value of .18. The fact that the observed p -value does not fall below the established alpha level of .05 indicates that the association between a sense of control and faculty engagement is not reduced significantly by the inclusion of the mediator, race-based belonging in the model; in other words, there is no evidence of mediation.

Persisters: Student Engagement

Among persisters, a regression analysis, predicting student engagement from a sense of control was statistically significant, ($t=8.191, p=.000$). However, the regression was a poor fit, describing only .09% of the variance in student engagement, but the overall relationship was statistically significant was accounted for by the covariates and a sense of control (R-square=.009).

The second regression tested whether the independent variable, a sense of control predicted the mediating variable, race-based belonging. Findings indicated that the independent variable, a sense of control, was a significant predictor of the mediator, race-based belonging ($t=19.023, p=.000$). A sense of control accounted for 2.2% of the variance in student engagement (R-square=.022).

In the third regression, the covariates, were entered in the first step, followed by a simultaneous entry of the independent variable, a sense of control, and the mediating variable, race-based belonging, in the second step. Collinearity statistics, including the variance inflation factor and tolerance indicated no multicollinearity between predictors. Findings revealed, that, controlling for the effects of the mediator, race-based belonging, and covariates on the dependent variable, student engagement, the effect of the independent variable on the dependent variable became non-significant ($t=1.674, p=.094$).

The test statistic for the Sobel test is 1.66, with an associated p -value of .09. The fact that the observed p -value does not fall below the established alpha level of .05 indicates that the association between a sense of control and student engagement is not

reduced significantly by the inclusion of the mediator, race-based belonging in the model; in other words, there is no evidence of mediation.

Non-Persisters: Faculty Engagement

Among non-persisters, there was a significant association between a sense of control and faculty engagement, so I could test for the mediating role of this model. Campus and student engagement were not correlated with a sense of control for non-persisters, therefore, I could not test the mediating role of this model for non-persisters.

Among non-persisters, a regression analysis, predicting faculty engagement from a sense of control was statistically significant, ($t=3.277$, $p=.001$). However, the regression was a poor fit, describing only 2.4% of the variance in faculty engagement, but the overall relationship was statistically significant was accounted for by the covariates and a sense of control (R-square=.024).

The second regression tested whether the independent variable, a sense of control predicted the mediating variable, race-based belonging. Findings indicated that the independent variable, a sense of control, was a significant predictor of the mediator, race-based belonging ($t=10.376$, $p=.000$). A sense of control accounted for 2.2% of the variance in faculty engagement (R-square=.022).

In the third regression, the covariates, were entered in the first step, followed by a simultaneous entry of the independent variable, a sense of control, and the mediating variable, race-based belonging, in the second step. Collinearity statistics, including the variance inflation factor and tolerance indicated no multicollinearity between predictors. Findings revealed, that, controlling for the effects of the mediator, race-based belonging, and covariates on the dependent variable, faculty engagement, the effect of the

independent variable on the dependent variable became non-significant ($t=1.570$, $p=.117$).

The test statistic for the Sobel test is 1.55, with an associated p -value of .12. The fact that the observed p -value does not fall below the established alpha level of .05 indicates that the association between a sense of control and faculty engagement is not reduced significantly by the inclusion of the mediator, race-based belonging in the model; in other words, there is no evidence of mediation.

Summary: Mediation models for Persisters and Non-persisters only

In sum, among persisters and non-persisters, race-based belonging, which can best be described as students' perceptions of racial prejudice and discrimination was significantly related to faculty engagement (and student engagement only among persisters). In addition, a sense of control was significantly related to race-based belonging. However, among persisters and non-persisters, race-based belonging did not fully mediate the relationship between a sense of control for both faculty engagement such that after controlling for race-based belonging, the relationship between a sense of control and faculty engagement was not impacted. A similar pattern was evidenced among persisters, such that race-based belonging did not fully mediate the relationship between a sense of control for student engagement such that after controlling for race-based belonging, the relationship between a sense of control and student engagement was not impacted. These results are presented in Figure 2.

In the following section, I will examine whether differences in the above mediation models among persisters and non-persisters may be the result of differences by race/ethnicity.

Mediation models for Persisters and Non-Persisters by Race/Ethnicity:

In order to further examine differences between persisters and non-persisters, I created separate models for African American and Latino/a persisters and non-persisters. Using Baron and Kenny's (1986) criteria for mediation, I first had to test whether there was a significant association between the independent (sense of control) and dependent (faculty, campus or student engagement) variables. A sense of control was correlated with race-based belonging (students perceptions of racial prejudice and discrimination on campus) among African American and Latino/a persisters and non-persisters, therefore, I could examine the mediating model of race-based belonging on these groups. A sense of control was correlated with faculty engagement for both African American and Latino/a persisters and only for African American non-persisters. Campus engagement was not correlated with a sense of control for persisters regardless of race/ethnicity, therefore, I could not test the mediating role of these variables. However, student engagement was correlated with a sense of control for Latino/a persisters, therefore, I could examine the mediating model of race-based belonging on this group.

For each mediating model, a series of three regressions were conducted according to Baron and Kenny's (1986) method for testing a mediation model, controlling for the effect of the demographic covariates (whether or not students were born in the United States, SAT scores, parental education, socioeconomic status and campus type). As a way to quantify the degree of reduction in regression coefficients, each mediation model was assessed with the Sobel test, a statistical method for determining the influence of a mediator on an outcome variable (MacKinnon & Dwyer, 1993).

African American Persisters: Faculty Engagement

Among African American persisters, a regression analysis, predicting faculty engagement from a sense of control was statistically significant, ($t=2.018$, $p=.044$). However, the regression was a poor fit, describing only 2.4% of the variance in faculty engagement, but the overall relationship was statistically significant was accounted for by the covariates and a sense of control ($R\text{-square}=.024$).

The second regression tested whether the independent variable, a sense of control predicted the mediating variable, race-based belonging. Findings indicated that the independent variable, a sense of control, was a significant predictor of the mediator, race-based belonging ($t=15.974$, $p=.000$). A sense of control accounted for 7.0% of the variance in faculty engagement ($R\text{-square}=.070$).

In the third regression, the covariates, were entered in the first step, followed by a simultaneous entry of the independent variable, a sense of control, and the mediating variable, race-based belonging, in the second step. Collinearity statistics, including the variance inflation factor and tolerance indicated no multicollinearity between predictors. Findings revealed, that, controlling for the effects of the mediator, race-based belonging, and covariates on the dependent variable, faculty engagement, the effect of the independent variable on the dependent variable became non-significant ($t=.391$, $p=.696$).

The test statistic for the Sobel test is .39, with an associated p-value of .69. The fact that the observed p-value does not fall below the established alpha level of .05 indicates that the association between a sense of control and faculty engagement is not reduced significantly by the inclusion of the mediator, race-based belonging in the model; in other words, there is no evidence of mediation. Hypothesis 2 was not supported for African American persisters.

Latino/a persisters: Faculty Engagement

Among Latino/a persisters, a regression analysis, predicting faculty engagement from a sense of control was statistically significant, ($t=5.529, p=.000$). However, the regression was a poor fit, describing only 7.6% of the variance in faculty engagement, but the overall relationship was statistically significant was accounted for by the covariates and a sense of control ($R\text{-square}=.076$).

The second regression tested whether the independent variable, a sense of control predicted the mediating variable, race-based belonging. Findings indicated that the independent variable, a sense of control, was a significant predictor of the mediator, race-based belonging ($t=15.192, p=.000$). The R-squared statistic was .013, indicating that a sense of control accounted for 0.13% of the variance in faculty engagement.

In the third regression, the covariates, were entered in the first step, followed by a simultaneous entry of the independent variable, a sense of control, and the mediating variable, race-based belonging, in the second step. Collinearity statistics, including the variance inflation factor and tolerance indicated no multicollinearity between predictors. Findings revealed, that, controlling for the effects of the mediator, race-based belonging, and covariates on the dependent variable, faculty engagement, the effect of the independent variable on the dependent variable became non-significant ($t=3.332, p=.001$).

The test statistic for the Sobel test is 3.2545, with an associated p -value of .001. The fact that the observed p -value does fall below the established alpha level of .05 indicates that the association between a sense of control and faculty engagement is reduced significantly by the inclusion of the mediator, race-based belonging in the model;

in other words, there is evidence of mediation. Hypothesis 2 was supported for Latino/a persisters.

The first regressions tested the independent relationship between faculty engagement and race-based belonging, controlling for the effect of the demographic covariates (whether or not students were born in the United States, SAT scores, parental education, socioeconomic status and campus type) for African American and Latino/a persisters. In the next section, I will test the independent relationship between student engagement and race-based belonging only for Latino/a persisters as this was the only group that this relationship was statistically significant for student engagement.

Latino/a persisters: Student Engagement

Among Latino/a persisters, the first regression analysis, predicting student engagement from a sense of control was statistically significant, ($t=4.988, p=.000$). However, the regression was a poor fit, describing only .02% of the variance in student engagement, but the overall relationship was statistically significant and was accounted for by the covariates and a sense of control ($R\text{-square}=.002$).

The second regression tested whether the independent variable, a sense of control predicted the mediating variable, race-based belonging. Findings indicated that the independent variable, a sense of control, was a significant predictor of the mediator, race-based belonging ($t=15.192, p=.000$). The R-squared statistic was .004, indicating that a sense of control accounted for .04% of the variance in student engagement.

In the third regression, the covariates, were entered in the first step, followed by a simultaneous entry of the independent variable, a sense of control, and the mediating variable, race-based belonging, in the second step. Collinearity statistics, including the

variance inflation factor and tolerance indicated no multicollinearity between predictors. Findings revealed, that, controlling for the effects of the mediator, race-based belonging, and covariates on the dependent variable, student engagement, the effect of the independent variable on the dependent variable was significant ($t=4.822, p=.000$).

The test statistic for the Sobel test is 4.58, with an associated p -value of .00. The fact that the observed p -value falls below the established alpha level of .05 indicates that the association between a sense of control and student engagement is reduced significantly by the inclusion of the mediator, race-based belonging in the model; in other words, there is evidence of mediation. Hypothesis 2 was supported for Latino/a persisters.

A sense of control was correlated with race-based belonging (students perceptions of racial prejudice and discrimination on campus) among African American and Latino/a non-persisters, therefore, I could examine the mediating model of race-based belonging on these groups. However, a sense of control was only correlated with faculty engagement for African American non-persisters. Campus engagement was not correlated with a sense of control for non-persisters regardless of race/ethnicity, therefore, I could not test the mediating role of these variables. A sense of control was correlated with student engagement for Latino/a non-persisters only.

African American Non-Persisters: Faculty Engagement

Among African American non-persisters, a regression analysis, predicting faculty engagement from a sense of control was statistically significant, ($t=2.350, p=.019$). However, the regression was a poor fit, describing only 5.4% of the variance in faculty

engagement, but the overall relationship was statistically significant was accounted for by the covariates and a sense of control (R-square=.054).

The second regression tested whether the independent variable, a sense of control predicted the mediating variable, race-based belonging. Findings indicated that the independent variable, a sense of control, was a significant predictor of the mediator, race-based belonging ($t=9.854, p=.000$). A sense of control accounted for 1.8% of the variance in faculty engagement (R-square=.018).

In the third regression, the covariates, were entered in the first step, followed by a simultaneous entry of the independent variable, a sense of control, and the mediating variable, race-based belonging, in the second step. Collinearity statistics, including the variance inflation factor and tolerance indicated no multicollinearity between predictors. Findings revealed, that, controlling for the effects of the mediator, race-based belonging, and covariates on the dependent variable, faculty engagement, the effect of the independent variable on the dependent variable became non-significant ($t=.795, p=.427$).

The test statistic for the Sobel test is .79, with an associated p -value of .42. The fact that the observed p -value does not fall below the established alpha level of .05 indicates that the association between a sense of control and faculty engagement is not reduced significantly by the inclusion of the mediator, race-based belonging in the model; in other words, there is no evidence of mediation. Hypothesis 2 was not supported for African American non-persisters.

Latino/a Non-Persisters: Student Engagement

Among Latino/as non-persisters, a regression analysis, predicting student engagement from a sense of control was statistically significant, ($t=2.998, p=.003$).

However, the regression was a poor fit, describing only .002% of the variance in student engagement, but the overall relationship was statistically significant was accounted for by the covariates and a sense of control (R-square=-.002).

The second regression tested whether the independent variable, a sense of control predicted the mediating variable, race-based belonging. Findings indicated that the independent variable, a sense of control, was a significant predictor of the mediator, race-based belonging ($t=6.397$, $p=.000$). A sense of control accounted for .283% of the variance in student engagement (R-square=.263).

In the third regression, the covariates, were entered in the first step, followed by a simultaneous entry of the independent variable, a sense of control, and the mediating variable, race-based belonging, in the second step. Collinearity statistics, including the variance inflation factor and tolerance indicated no multicollinearity between predictors. Findings revealed, that, controlling for the effects of the mediator, race-based belonging, and covariates on the dependent variable, faculty engagement, the effect of the independent variable on the dependent variable became non-significant ($t=3.365$, $p=.001$).

The test statistic for the Sobel test is 2.97, with an associated p -value of .002. The fact that the observed p -value does fall below the established alpha level of .05 indicates among Latino/a non-persisters the association between a sense of control and student engagement is reduced significantly by the inclusion of the mediator, race-based belonging in the model; in other words, there is evidence of mediation. Hypothesis 2 was supported for Latino/a non-persisters.

Summary: Mediation models for Persisters and Non-Persisters by Race/Ethnicity

In sum, among African American and Latino/a persisters, race-based belonging, which can best be described as students' perceptions of racial prejudice and/or discrimination was significantly related to faculty engagement. In addition, a sense of control was significantly related to race-based belonging for both groups. However, among African American persisters, race-based belonging did not fully mediate the relationship between a sense of control and faculty engagement. Among Latino/a persisters, race-based belonging fully mediated the relationship between a sense of control and faculty and student engagement. These results are presented in Figure 2.

Among African American and Latino non-persisters, race-based belonging, which can best be described as students' perceptions of racial prejudice and/or discrimination was significantly related to faculty engagement. In addition, a sense of control was significantly related to race-based belonging. However, among African American persisters, race-based belonging did not fully mediate the relationship between a sense of control and faculty engagement. Among Latino/a persisters, race-based belonging fully mediated the relationship between a sense of control and student engagement. These results are presented in Figure 2.

Research Question 3: Does perceived familial support moderate the relationship between a sense of control and engagement?

To test hypothesis 3, whether or not, perceived familial support moderates the relationship between a sense of control and engagement; the potentially moderating influence of perceived familial support was explicitly explored for each of the primary outcomes of interest through multileveled regression equations. Three separate regression equations were computed to test the potential moderator of a perceived

familial support on a sense of control and engagement (faculty, campus and student level). Table 5 illustrates the overall perceived familial support scores for persisters and non-persisters and then the perceived familial support scores for persisters and non-persisters by race/ethnicity. Table 6 provides the R^2 , ΔR^2 , df , and significance levels for each of the final statistically significant equations.

Moderation Analyses: Persisters and Non-Persisters

Persisters:

The first equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and faculty engagement. The first model was significant $F(2,1291)=16.246, p=.000$. However, when the interaction variable was added to model 2, the R square change is .000, $F(3,1290)=10.932, p=.000$. This change indicates that the presumed moderator perceived familial support does moderate the effects of a sense of control on faculty engagement.

The second equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and campus engagement. The first model was significant $F(2,1291)=31.571, p=.000$. However, when the interaction variable was added to model 2, the R square change is .000, $F(3,1290)=21.103, p=.000$. This change indicates that the presumed moderator perceived familial support does moderate the effects of a sense of control on campus engagement.

The third equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and student engagement. The first model was significant $F(2,1291)=38.537, p=.000$. However, when the interaction variable was added to model 2, the R square change is .056, $F(3,1290)=25.725, p=.000$. This

change indicates that the presumed moderator perceived familial support does moderate the effects of a sense of control on student engagement.

Non- Persisters:

The first equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and faculty engagement. The first model was significant $F(2,645)=8.285, p=.000$. When the interaction variable was added to model 2, the R square change is .001, $F(3,644)=5.755, p=.001$. This change indicates that the presumed moderator perceived familial support does moderate the effects of a sense of control on faculty engagement.

The second equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and campus engagement. The first model was not significant $F(2, 645)=6.958, p=.001$. When the interaction variable was added to model 2, the R square change is .001, $F(3,644)=4.858, p=.002$. This change indicates that the presumed moderator perceived familial support does moderate the effects of a sense of control on campus engagement.

The third equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and student engagement. The first model was significant $F(2,645)=11.040, p=.000$. However, when the interaction variable was added to model 2, the R square change is .033, $F(3,644)=7.367, p=.000$. This change indicates that the presumed moderator perceived familial support does moderate the effects of a sense of control on student engagement.

Summary: Moderation Analyses Persisters and Non-Persisters

Consistent with the hypothesis 3, the proposed moderator variable, perceived familial support did positively effect the relationship between the predictor variable, a sense of control on faculty, campus, and student engagement among both persisters and non-persisters. In the following section, I will examine differences in the moderation analyses by race/ethnicity.

Moderation Analyses: Persisters and Non-Persisters by Race/Ethnicity

African American Persisters:

The first equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and faculty engagement. The first model was significant $F(1, 581)=7.313, p=.001$. However, when the interaction variable was added to model 2, the R square change is .003, $F(2,580)=1.696, p=.193$. This change indicates that the presumed moderator perceived familial support does not moderate the effects of a sense of control on faculty engagement.

The second equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and campus engagement. The first model was significant $F(1, 581)=8.130, p=.001$. However, when the interaction variable was added to model 2, the R square change is .002, $F(2,580)=.952, p=.333$. This change indicates that the presumed moderator perceived familial support does not moderate the effects of a sense of control on campus engagement.

The third equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and student engagement. The first model was significant $F(1, 581)=10.879, p=.001$. However, when the interaction variable was added to model 2, the R square change is .000, $F(2,580)=.290, p=.590$. This change

indicates that the presumed moderator perceived familial support does not moderate the effects of a sense of control on student engagement.

Latino/a Persisters:

The first equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and faculty engagement. The first model was not significant $F(1, 707)=1.893, p=.151$. When the interaction variable was added to model 2, the R square change is .000, $F(2, 706)=.017, p=.897$. This change indicates that the presumed moderator perceived familial support does not moderate the effects of a sense of control on faculty engagement.

The second equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and campus engagement. The first model was not significant $F(1, 707)=1.527, p=.218$. When the interaction variable was added to model 2, the R square change is .001, $F(2,706)=.434, p=.510$. This change indicates that the presumed moderator perceived familial support does not moderate the effects of a sense of control on campus engagement.

The third equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and student engagement. The first model was significant $F(1, 707)=8.307, p=.001$. However, when the interaction variable was added to model 2, the R square change is .182, $F(2,706)=.290, p=.670$. This change indicates that the presumed moderator perceived familial support does not moderate the effects of a sense of control on student engagement.

African American Non-Persisters:

The first equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and faculty engagement. The first model was significant $F(1, 422)=7.582, p=.001$. However, when the interaction variable was added to model 2, the R square change is .002, $F(2,421)=.800, p=.371$. This change indicates that the presumed moderator perceived familial support does not moderate the effects of a sense of control on faculty engagement.

The second equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and campus engagement. The first model was not significant $F(1, 422)=1.668, p=.190$. However, when the interaction variable was added to model 2, the R square change is .003, $F(2,421)=1.44, p=.231$. This change indicates that the presumed moderator perceived familial support does not moderate the effects of a sense of control on campus engagement.

The third equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and student engagement. The first model was significant $F(1, 422)=6.040, p=.003$. However, when the interaction variable was added to model 2, the R square change is .003, $F(2,421)=1.202, p=.274$. This change indicates that the presumed moderator perceived familial support does not moderate the effects of a sense of control on student engagement.

Latino/a Non-Persisters:

The first equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and faculty engagement. The first model was not significant $F(1, 220)=.420, p=.657$. When the interaction variable was added to model 2, the R square change is .000, $F(2,219)=.068, p=.795$. This change

indicates that the presumed moderator perceived familial support does not moderate the effects of a sense of control on faculty engagement.

The second equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and campus engagement. The first model was significant $F(1, 220)=3.104, p=.047$. When the interaction variable was added to model 2, the R square change is .002, $F(2,219)=1.671, p=.197$. This change indicates that the presumed moderator perceived familial support does not moderate the effects of a sense of control on campus engagement.

The third equation (see Table 6) tested whether perceived familial support moderated the relationship between a sense of control and student engagement. The first model was significant $F(1, 220)=3.057, p=.05$. However, when the interaction variable was added to model 2, the R square change is .011, $F(2,219)=2.608, p=.108$. This change indicates that the presumed moderator perceived familial support does not moderate the effects of a sense of control on student engagement.

In sum, perceived familial support did not moderate the relationship between a sense of control and engagement (faculty, campus and student level) for persisters and non-persisters, regardless of race/ethnicity.

Summary: Moderation Analyses Persisters and Non-Persisters by Race/Ethnicity

Among both persisters and non-persisters regardless of race/ethnicity, perceived familial support did not moderate the effects of a sense of control on faculty, campus and student engagement. Possible reasons for these findings will be discussed in the following chapter.

Chapter 5: Discussion

Summary of findings and contributions to research on persistence

The model proposed in this study, the student engagement and retention model (SERM) is based on the premise that the engagement and retention literature will be improved by examining the ways in which institutional structures and contexts can be potent socializing forces that impact the ways in which students continue to engage in their educational journey. Although, education experiences both within and between institutions are not uniform, research has indicated that students of color who attend predominantly white institutions are particularly vulnerable to attrition if they perceive or experience racial issues on their campus (Massey et al., 2003). While an individual students' educational success is more than the sum of his or her campus experiences, factors such as personal will, and aspiration, as well as factors such as one's race can shape students opportunities for college success.

The purpose of this study was to examine the differential impact of a sense of control on the first year engagement experiences of African American and Latino/a persisters and non-persisters attending selective institutions. The model explored in this dissertation, the student engagement and retention model was tested via three hypotheses. The specific constructs under investigation include a sense of control, race-based belonging, perceived familial support and engagement (faculty, campus and student level). Thus, the first step of the study was to examine and validate the structures of the SERM model, by examining whether there was a significant relationship between students' sense of control and their level of engagement at the end of their first year. The second step of the study was to examine whether the proposed model predicted different

engagement patterns for persisters and non-persisters. I hypothesized that the model, pictured in Figure 1, would be a good fit with the data. Specifically, given the literature to support the relationship between students' sense of control and engagement/retention. It was also hypothesized that race-based belonging would mediate the relationship between sense of control and engagement/retention, such that students who report that their campus environments are not inclusive will report significantly lower levels of engagement at the end of their freshman year and senior year (path a and path b). Finally, increases in perceived familial support will moderate the relationship between students' sense of control, engagement/retention and race-based belonging and these students will be able to develop a connection to the institution (path x).

Based on the theoretical and empirical literature, the following research questions were derived for this study:

1. Is a sense of control positively associated with engagement (faculty, campus and student level)?
2. Does race-based belonging mediate the relationship between a sense of control and engagement?
3. Does perceived familial support moderate the relationship between a sense of control and engagement (faculty, campus and student level).

Research Question 1

The first step of the study was to examine and validate the structures of the SERM model, by examining whether there was a significant relationship between students' sense of control and their level of engagement at the end of their first year. Overall, hypothesis 1 was partially supported among persisters, such that a sense of control was significantly

related to faculty and student engagement. Among non-persisters, there was only a significant relationship between a sense of control and faculty engagement. In terms of the impact of a sense of control, students of color who persisted had statistically significant higher levels of a sense of control compared to non-persisters, regardless of race/ethnicity. In addition, persisters reported higher faculty, campus and student engagement scores compared to non-persisters. In terms of race/ethnicity, a paired t-test revealed a statistically reliable difference between African American and Latino/a persisters and African American and Latino/a non-persisters for faculty, campus and student engagement.

In this study, a sense of control was defined as the extent to which individuals perceive that they have personal power and control over their life and environment (Zarit, Pearlin & Schaie, 2003). An impressive body of literature demonstrates the significant benefits of a sense of control, and that it is one of the most robust predictors of student engagement and academic success all across the educational levels (Wigfield, Eccles, Schiefele, Roeser, & Davis-Kean, 2006). Thus, students who report high levels of a sense of control are more likely to initiate and maintain constructive engagement, deal productively with obstructions and setbacks, seek help as needed and rebound from failure (Jang, Graves, Haley, Small, & Mortimer, 2003; Zarit et al., 2003).

Although a sense of control is typically viewed as an individual difference or personal disposition, social and interpersonal factors cannot be ignored. Despite a large body of research which has indicated that a sense of control can be impacted by contact with instructors, classroom contexts, and transition periods, it was difficult to construct a coherent picture of how a sense of control impacted the engagement and persistence

patterns of students of color attending predominantly white institutions (Koestner & McClelland, 1990; Schieman, 2003).

Based on research by Okech and Harrington, it may also be possible that experiences of inequality and discrimination might have impacted students' sense of control through the deprivation of opportunities that would foster higher levels of a sense of control (2002). This framework provides a central research question for future work to study the engagement and persistence patterns of students of color in order to potentially increase graduate rates. Engagement, the dependent variable in this study, was theoretically defined as the extent to which student participate in academic as well as nonacademic activities (Kuh, 1995; Terenzini et al., 1994). Student engagement represents the beliefs and information that students acquire that impact their academic involvement, involvement with faculty, peer groups and an institution (Astin, 1984). In this study, it appears that overall students of color benefited in many ways from out-of-class experiences such as faculty and student engagement, either by gains in critical thinking to relational and organization skills. It can be argued that by understanding the factors that facilitate student development and growth, we can further understand the variables that influence the transition of first year students of color attending selective institutions.

Research Question 2

Exposure to a climate of prejudice and discrimination in the classroom and on campus has gained attention as the main factor accounting for differences in engagement and persistence patterns among students of color. The role of perceived discriminatory behavior has been cited as a factor interfering with a student's integration into his or her

social and academic environment (Kim, 2002). Experiences of prejudice and discrimination are associated with psychological distress that can lead to the maladjustment of students of color at their respective institutions (Dovidio & Gaertner, 2000; Greenwald & Banaji, 1995). Unlike typical college stressors, the perception or experience of discrimination are considered unique in that they heighten the feeling of not belonging at the institution with a spillover effect on a students' integration and persistence. It is also important to note that in this study, the variable race-based belonging refers to students' perceptions of racial prejudice and discrimination on their campus. Thus, the relationship between a sense of control, race-based belonging and engagement carries important implications for the persistence patterns of students of color.

First, I examined these relationships among persisters and non-persisters by collapsing African American and Latino/a students by persistence patterns and found that race-based belonging did not mediate the relationship between a sense of control for faculty, campus and/or student engagement. Next, I examined these relationships among persisters and non-persisters by race/ethnicity. Race-based belonging did not mediate the relationship between a sense of control and faculty, student and campus engagement for African American persisters, but it did mediate the relationship between a sense of control and faculty engagement for Latino/a persisters. In addition, race-based belonging also mediated the relationship between a sense of control and student engagement for Latino/a persisters and Latino/a non-persisters. The mediation model, supported by the present analysis, elucidates internal mechanisms by which race-based belonging may impact the student engagement patterns of Latino/a students attending PWIs. The

findings suggest that a sense of control may protect individuals from the adversities of discrimination and enable them to remain resilient. While several pathways may exist between students race-based belonging and engagement, race-based belonging, for example may not only have direct effects on students' engagement, but also have indirect effects through a lowering of their sense of control. In other words, a sense of control may serve as an internal mechanism by which the experience of race-based belonging manifests its psychological consequences. Future work is necessary to examine these relationships, as well as differences by race/ethnicity and gender.

For students of color, the issue of belonging or feeling a part of a campus community is often a challenging one when they feel like they are part of a minority. With the majority of selective institutions remaining predominantly White, students of color often report feeling marginalized and isolated (Jones, Castellanos, & Cole, 2002; Nora & Cabrera, 1996). The environment of the college campus has a major impact on students of color perceptions of prejudice and discrimination on campus. These findings seem to support research by Hurtado and Carter (1997), which indicate that Latino/a student's subjective perceptions of racial prejudice and discrimination on campus mediates the relationship between student involvement and outcomes such as student commitment and persistence (Hausmann, Schofield, and Woods, 2007). In addition, findings from Gaertner and Dovidio's (2000) reanalysis of data from a study on racial climate at a large university which indicated that students' perceptions racial prejudice and discrimination on campus and to the university community mediated the relationship between satisfaction and intentions to finish their degree. Thus, understanding perceptions of the environment context and the subsequent academic comfort of racial

and ethnic minorities in higher education is particularly important when studying engagement and persistence (Gloria, Robinson, Kurpius, Hamilton, & Wilson, 1999).

Research Question 3

To test hypothesis 3, whether or not perceived familial support moderates the relationship between a sense of control and engagement, the potentially moderating influence of perceived familial support was explored for each of the primary outcomes through multileveled equations for persisters versus non-persisters, and then examined for persisters and non-persisters by race-ethnicity. Among persisters and non-persisters, perceived familial support positively moderated the relationship between a sense of control and faculty, campus, and student engagement. The findings suggest that increases in perceived familial support protects lead to increases in the engagement process. It may be possible that perceived familial support protects students from the challenges of college life and enables them to increase engagement process. The moderating or buffering effects of perceived familial support can help students who are particularly vulnerable to decreases in engagement.

The above findings support research by Aguinis (2004), which has shown that one needs very large sample sizes (over 200) to have reasonable power to detect moderator effects. However, when my sample size was reduced due to my examination of the moderating role of perceived familial support among persisters and non-persisters by race-ethnicity, the moderating effects of perceived familial support were no longer statistically significant. It may be that assumptions of normality might have been violated, especially in the smaller samples, leading to a reduced ability to detect true

relationships amongst variables (or due to the large number of variables being controlled) (Wilcox, 2005). Future work will examine these findings further.

While, all college students are faced with the task of separating from family during college, for students of color, this separation can compromise a significant part of their social network, and a need to establish a completely new group of friends in the college environment (Gerdes & Mallinckrodt, 1994; Pascarella & Terenzini, 2005). The perceived availability of social support buffers mental and physical health (Bolger, Zuckerman, & Kessler, 2000) and in the domains of achievement, students are especially sensitive to the quality of their social bonds. Research has demonstrated that family relationships are strongly related to student engagement, which appears to be a consistent finding across ethnic and socioeconomic groups (Wentzel, 1998). A growing body of literature suggests that family factors may be protective for students of color such as Latino/a college students and that students may benefit both academically and socially by these types of familial support (Schneider & Ward, 2003).

Considerable work has also focused on the role of familial support, and it has been found to be a key predictor that accounted for the academic resilience of students of color (Cabrera & Padilla, 2004; Schneider & Ward, 2003). However, in this study, perceived familial support only moderated the relationship between a sense of control and faculty, campus, or student engagement by persistence patterns but these patterns were not replicated when the sample was analyzed by persistence rates and race/ethnicity. This finding should not underscore the value of perceived familial support as a potential moderator for the experience of distress that students may report and/or provide a buffer

against the various stressors experienced by students of color attending PWIs. Future work is necessary to examine the moderating role of perceived familial support.

Limitations and critiques

This dissertation proposed that the student engagement and retention model could be an alternative to traditional models that examined the persistence experiences of students of color attending predominantly White and selective institutions. Thus, the variables, a sense of control, race-based belonging, perceived familial support and engagement were considered exploratory. While these variables produced some interesting results, overall it appears that the student engagement and retention model cannot be applied to the persistence experiences of all students of color attending predominantly White and selective institutions because several limitations exist that restrict its explanatory capabilities.

In this case, the analysis was based on several measures that were included in the NLSF. It is important to recognize that there were several limitations associated with this study. The first limitation dealt with the data related to the instrument, the NLSF. When using secondary data, the researcher is limited to the items included in the instrument. These data were collected from students attending institutions defined by Bowen and Bok (1998) as highly selective. There are any number of definitions of highly selective colleges and universities. Another definition might have led to different results. Another limitation of this study was related to self-reported responses. Students were asked to report information such as their sense of control, race-based belonging, parental support, and engagement patterns. Their responses may not reflect candid answers to the survey questions. If this was the case, the results may have been influenced. There may be other

types of race-based belonging, perceptions of familial support and non-cognitive variables that were not addressed in this instrument.

Another limitation of this study is the distribution of its sample, such that students were attending various institutions throughout the United States, and I had no way of determining whether the relationships that I was examining might have been stronger at particular institutions versus others. This study also focused only on whether or not students graduated from the original or transfer institution within four years. It should be noted that most bachelor's granting institutions are "four year" colleges in name only and that a large majority of students don't graduate on time by that measure. Among a solid majority of beginning, degree-seeking, four-year students, approximately 63% get a bachelor's degree within six years (Carey, 2004). Nationally, only 37% of all beginning, degree-seeking four-year students receive a bachelor's degree in four years (Carey, 2004). It would also be interesting to examine the relationships between the variables reported as students continued through college and the ways in which these variables change over time. However it should be noted that research has shown that models of student persistence during the freshman year are similar to those for students in their later years of college regardless if they graduated in four or six years (Barefoot, 2004; Bean, 1985).

Cohen et al. (2003) note that, "what is properly obtained from exploratory research are not conclusions, but hypotheses to be tested in subsequent investigations". In terms of the student engagement and retention model, it may be possible that the inclusion or exclusion of additional items may have differentially weighted the alphas of some subscales of the engagement variables. In addition, the alphas for variables such as

campus and student engagement were particularly low. Thus, the model set the values of the alpha and beta at .05 and -2 without any discussion as to why these values were chosen. Future scale development for the engagement variables should consider several revisions to the scale's layout that may improve measurement sensitivity, and provide an alternative approach to understanding the unique contribution of each level of engagement. As discussed earlier, it is plausible that these values may change depending on the inclusion of additional items. It might be possible that higher alphas would also strengthen the integrity and depth of the quantitative results. These results suggest that future research would be a necessary to examine other measures of campus and student engagement.

One last major area of concern is that variable race-based belonging denotes a positive attribute such that high scores may refer to students being able to develop trusting relationships with the institution and its representatives compared to students with low scores. However, in this study the race-based belonging scale can be best described as a measure of campus race-culture related to hostility and discrimination that really measures students' perceptions of hostility and discrimination. Thus, low scores on the race-based belonging measure can be a positive attribute because it indicates that students are not perceiving hostility and discrimination within their institutions contexts. However, high scores on the race-based belonging measure is a very negative attribute because it indicates that the student perceives hostility and discrimination within their institutional contexts.

Despite these limitations, this study made a valuable contribution to the literature on persisters and non-persisters students.

Future Research

Some areas for future study include testing different variables in the student engagement and retention model such as the various ways in which students become part of their respective institutions. Another area that needs to be addressed is testing the model among different groups. While the data came from a large equally distributed source of African American, Asian, Caucasian and Latino/a students, I only focused on the experiences of African American and Latino/a students. It would be easy to expand the study to other groups to see if the model tends to duplicate itself. The next logical step would be to expand the model into different categories within these groups such as low-income, first generation students. I expect to expand on the current research in theoretical as well as practical directions.

Future work, should also examine the types of messages that students are receiving from institutional representatives. For often, it is through the power of faculty, advisors and other institutional representatives who can manipulate the social and institutional conditions in and out of school that can determine who “makes it” and who does not. The support provided by these institutional agents can and should be linked to engagement patterns because it is only through trusting and close relationships with these representatives that students will increase persistence rates.

Conclusion

The general goal of the present discussion has been to question the applicability of traditional models of retention to students of color, African American and Latino in particular. An increasingly important area of psychological research is aimed at understanding the factors that prevent students from attaining high achievement and

fulfilling their potential. The issue of minority student adjustment and well-being in colleges and universities has been the focus of a great deal of social science research during the past decade (Steele and Aronson, 1995; Thompson, Anderson and Bakeman, 2000; Bowen and Bok, 1998; Mendoza Denton, Downey, Purdie, Davis and Pietrzak, 2002; Walton and Cohen, 2004; Cohen and Sherman, 2005). This dissertation is a focused attempt to examine whether the environmental demands and pressures that may impact the engagement patterns and persistence rates of students of color attending selective institutions might be impacted by a sense of control. While individuals and groups might differ in their ability to persist in college, the causes for these types of differences and the types of factors that impact this process are of the utmost importance.

This dissertation is an attempt to extend this body of work to examine the ways in which individuals may forge a sense of resiliency for themselves. Unfortunately, there is a great need for continued systematic research, not only because of its scientific value but also because of its ability to improve the higher education experiences of students of color. In addition, the unique significance behind developing a new engagement and retention model is that this particular framework examines the experiences of a subgroup of students that are typically considered as high risk within the engagement and retention literature. The results of this study may be utilized to develop improved training models, environments, and implementation strategies to promote the engagement and retention of students.

It is important to note that the literature on PWIs have traditionally referred to students of color as a homogenous sample data and that this model is challenging this framework by proposing that students' sense of control impacts their ability to navigate

an institution which affects their level of engagement, and that race-based belonging can mediate this process, while also predicting that perceived family support can moderate these relationships. Indeed, a significant proportion of students of color manage to achieve positive outcomes despite adverse experiences (Werner & Smith, 2001) and by exploring the protective resources that enable some students to achieve positive outcomes in the face of inequalities, we can also probe the hypothesis that institutional and family level influences can serve to modify the effects of low engagement in a positive direction. Thus, it can be argued that the engagement/retention process may be different for some students, while also highlighting how the constructs of this model may manifest themselves among students of color attending PWIs, contributing to a differential process.

While a large body of research has characterized students of color as having lower persistence and graduation rates, and lower scores on standardized assessment measures which are often indicative of higher drop-out rates, this study will allow us to examine the experiences of educationally prepared students of color and the interaction between their ability to navigate their institution, and the effect of race-based belonging on engagement and retention. In addition, one might also infer from this theoretical model that when students feel as though they are a part of an institution yet experience familial support, this affective state may impact their integration and might lead to a decreased risk of departure. In terms of academic and life-skills, this support can lead to increases in GPA, personal satisfaction and increased graduation rates. By understanding the entry characteristics of newly matriculated college students and their developmental experiences, we are better equipped to facilitate student development and growth.

Determining or confirming an accurate retention path for African American and Latino/a persisters and non-persisters at PWIs is only the first and most important step in providing institutions the information needed to develop not only specific programs to attract students of color but also more effective programs that are more conducive to retaining them. Given the disparity between enrollment and subsequent degree completion for students of color, it is essential to identify and measure different forms of college going particularly for at-risk subgroups of students of color. Of particular interest is whether this relationship is even more attenuated in environments where these students are a significant minority. The present study sought to extend this focus by examining the factors that influence the ways in which students of color navigate through their college experiences by means of a multi-institutional national study of the influence of college experiences on student's academic engagement and retention during the freshman year of college.

While research on the freshman adjustment process has often addressed the issue of student retention and the various reasons that students of color leave a university at some point during or following their first year, there is an important need to gain a comprehensive understanding of students' experiences, challenges, situations, and opportunities in their first year of college and to explore how these either enhance or hinder their overall academic, social, and personal adjustment. Findings from this dissertation can provide academic institutions with useful knowledge and recommendations on student development policies to better serve students and also serve as the basis to begin a dialogue in the college communities about the experiences of students of color attending predominantly White selective universities.

Appendix A: Colleges and Universities in the NLSF Study

List of Colleges and Universities included in Study Sample

Institution Name	City, State
Barnard College	New York City, NY
Bryn Mawr College	Bryn Mawr, PA
Columbia University	New York City, NY
Denison College	Granville, OH
Emory University	Atlanta, GA
Georgetown University	Washington, DC
Kenyon College	Gambier, OH
Miami University	Oxford, OH
Northwestern University	Evanston, IL
Oberlin College	Oberlin, OH
Penn State University	State College, PA
Princeton University	Princeton, NJ
Rice University	Houston, TX
Smith College	Northampton, MA
Stanford University	Palo Alto, CA
Swarthmore College	Swarthmore, PA
Tufts University	Somerville, MA
Tulane University	New Orleans, LA
University of California-Berkeley	Berkeley, CA
University of Michigan-Ann Arbor	Ann Arbor, MI
University of North Carolina-Chapel Hill	Chapel Hill, NC
University of Notre Dame	South Bend, IN
University of Pennsylvania	Philadelphia, PA
Washington University	St. Louis, MO
Wesleyan University	Middletown, CT
Williams College	Williamstown, MA
Yale University	New Haven, CT

TABLES

Table 1
Factors and Independent, Dependent, Mediating, and Moderating Variables used in the study

Item	Response Range	Scale Scores	
		Minimum	Maximum
Independent Variable: Sense of control (students belief that they have the motivation and tools necessary to achieve goals in college).			
1. Don't have control over life.	Strongly disagree to strongly agree	1	5
2. Good luck more important than hard work.	Strongly disagree to strongly agree	1	5
3. Something stops me from getting ahead.	Strongly disagree to strongly agree	1	5
4. Certain I can make plans work.	Strongly agree to strongly disagree	1	5
5. Feel left out of things going on around me.	Strongly disagree to strongly agree	1	5
6. If I work hard I can do well.	Strongly agree to strongly disagree	1	5
Total		6	30
Cronbach's Alpha	.690		

Mediating Variable: **Race-based belonging** (students perceptions of discrimination on campus).

1. In your college classes, have other students ever made you feel uncomfortable self-conscious because your race or ethnicity?	Never to Very Often	1	5
2. In your college classes, have any of your professors made you feel uncomfortable or self-conscious because of your race or ethnicity?	Never to Very Often	1	5
3. Walking around campus, how often, if ever, have you been made uncomfortable or self-conscious because of your race or ethnicity?	Never to Very Often	1	5
4. Except for security guards at building entrances, how often, if ever, have the campus police asked you to present identification?	Never to Very Often	1	5
5. How often, if ever, have you heard derogatory remarks made by fellow students about your ethnic group?	Never to Very Often	1	5
6. How often, if ever, have you heard derogatory remarks made by professors about your ethnic group?	Never to Very Often	1	5
7. How often, if ever, have you heard derogatory remarks by other college staff about	Never to Very Often	1	5

Table 1, (continued)

Item	Response Range	Scale Scores	
		Minimum	Maximum
your racial or ethnic group?			
8. How often, if ever, have you experienced any other form of harassment on campus simply because of your race or ethnicity?	Never to Very Often	1	5
9. How often, if ever, have you experienced harassment from members of your own race or ethnic group because you interacted or associated with members of some other group?	Never to Very Often	1	5
10. Have you ever felt you were given a bad grade by a professor because of your race or ethnicity?	Never to Very Often	1	5
11. Have you ever felt you were discouraged by a professor from speaking out in class because of your race or ethnicity?	Never to Very Often	1	5
12. Have you even been discouraged from a course of study by your advisor or professor? because of your race or ethnicity?	Never to Very Often	1	5
Total		12-60	
Cronbach's Alpha	.826		
Moderating variable: Perceived Familial Support (students perceptions of family support and interdependence).			
1. I want to make my parents proud of me.	Completely unimportant to extremely important	0	10
2. I don't want to embarrass my family.	Completely unimportant to extremely important	0	10
3. My family is making sacrifices for my education.	Completely unimportant to extremely important	0	10
4. How important is it to your parents that you work hard in college?	Completely unimportant to extremely important	0	10
5. How important is it to your parents that you get good grades in college?	Completely unimportant to extremely important	0	10
6. How important is it to your parents that you graduate from college?	Completely unimportant to extremely important	0	10
Total		0 -60	
Cronbach's Alpha	.775		

Table 1, (continued)

Item	Response Range	Scale Scores	
		Minimum	Maximum
Dependent variable: Indices of Engagement (Students environmental interactions with institutional representatives).			
Faculty Engagement:			
1. Ask professors questions in class	Never to Always	0	10
2. Ask questions in lecture	Never to Always	0	10
3. Ask professors questions after class	Never to Always	0	10
4. See professor in office and ask questions	Never to Always	0	10
5. See professors in office and talk	Never to Always	0	10
Total		0	50
Cronbach's Alpha	.760		
Campus Engagement			
1. Study in library	Never to Always	0	10
2. Look for book/article in library	Never to Always	0	10
3. Use campus computer lab	Never to Always	0	10
4. Use web for class research	Never to Always	0	10
5. Visit an academic advisor about progress	Never to Always	0	10
6. Visit a financial aid counselor	Never to Always	0	10
Total		0	60
Cronbach's Alpha	.541		
Student Engagement			
1. Study with other students	Never to Always	0	10
2. Study alone	Never to Always	0	10
3. Organize groups	Never to Always	0	10
4. Get tutoring help	Never to Always	0	10
5. Get academic help from peers	Never to Always	0	10
Total		0	50
Cronbach's Alpha	.524		

Table 2
 Sample and Demographic Characteristics for African American and Latino/a Non-Persisters and Persisters

Variable		Non-Persisters	Persisters	Entire Sample
<i>Ethnic identification:</i>				
	Black/African American	425 (42%)	584 (58%)	1009
	Latino/a or Hispanic	223 (24%)	711 (76%)	934
<i>Born in the U.S.</i>				
	African American			
	Yes	406 (94%)	543 (95%)	
	No	29 (.06)	48 (.08%)	
	Latino/a or Hispanic			
	Yes	205 (92%)	699 (98%)	
	No	16 (7%)	33 (2%)	
<i>Gender</i>				
	African American females	255 (57.2)	428 (70.7)	
	African American males	191 (42.8)	177 (29.3)	
		Total N= 446 (100%)	Total N= 605 (100%)	
	Latinos	129 (53.3)	345 (45.7)	
	Latinas	113 (46.7)	410 (54.3)	
		Total N= 242 (100%)	Total N= 755 (100%)	
<i>College Type</i>				
	Liberal Arts:	African American	28 (6.3%)	64 (10%)
	Private Research:	African American	192 (43%)	394 (65.1%)
	Public Research:	African American	226 (50.7%)	147 (24.3%)
	Liberal Arts:	Latino/a	16 (6.6%)	83 (11%)
	Private Research:	Latino/a	117 (48.3%)	486 (64.4%)
	Public Research:	Latino/a	109 (45%)	186 (24.2%)

Table 2, continued
 Sample and Demographic Characteristics for Non-Persisters and Persisters

Control Variables	Non-Persisters	Persisters
<i>Socioeconomic identification: n (%)</i>		
African Americans		
Low-income (less than \$34,999)	134 (23%)	123 (28.7%)
Working class (\$35,000-49,000)	78 (13.4%)	62 (14.6%)
Middle class (\$50,000-74,999)	112 (19.2%)	135 (31.8%)
Upper class (\$75,000 or more)	135 (31.8%)	234 (40.2%)
Latino/as		
Low-income (less than \$34,999)	19 (8.7%)	38 (5.4%)
Working class (\$35,000-49,000)	18 (8.5%)	60 (8.5%)
Middle class (\$50,000-74,999)	32 (14.7%)	104 (14.7%)
Upper class (\$75,000 or more)	151 (68.1%)	484 (68.1%)
<i>SAT scores</i>		
African Americans	M=831, SD=539.14 (N=314)	M=958.94, SD=520.97 (N=473)
Latino/as	M=1096, SD=525.27 (N=194)	M=1190.66, SD=479.04 (N=345)
<i>Mother's Parental Education*:</i>		
African American	M=4.76 years, SD=1.46	M=5.01, SD=1.52
Latino/a	M=5.16 years, SD=1.36	M=5.66, SD=1.34
<i>Father's Parental Education*:</i>		
African American	M=4.75, SD=1.58	M=5.13, SD=1.57
Latino/a	M=5.55, SD=1.56	M=6.06, SD=1.29

*Parental Education coded as: 1) Grade school, (2) Some high school, (3) High school graduate, (4) Some college, (5) College graduate, (6) Some post-graduate, 7=Graduate or Professional Degree.

Table 3
Standardized Factor Loadings for Persisters and Non-Persisters.

Measure	Persisters	Non-Persisters
Sense of control		
Item 1	.522	.463
Item 2	.418	.338
Item 3	.579	.465
Item 4	.705	.328
Item 5	.447	.360
Item 6	.721	.373
Faculty Engagement		
Item 1	.743	.750
Item 2	.692	.689
Item 3	.823	.807
Item 4	.759	.722
Item 5	.601	.586
Campus Engagement		
Item 1	.607	.563
Item 2	.740	.706
Item 3	.599	.531
Item 4	.537	.584
Item 5	.407	.610
Item 6	.492	.528

Table 3, cont'd
 Standardized Factor Loadings for Persisters and Non-Persisters.

Measure	Persisters	Non-Persisters
Student Engagement		
Item 1	.869	.857
Item 2	-.385	-.263
Item 3	.821	.807
Item 4	.338	.513
Item 5	.721	.739
Perceived Familial Support		
Item 1	.737	.726
Item 2	.606	.633
Item 3	.498	.546
Item 4	.790	.802
Item 5	.759	.766
Item 6	.684	.717
Race-based belonging		
Item 1	.720	.603
Item 2	.721	.692
Item 3	.726	.690
Item 4	.201	.349
Item 5	.603	.635
Item 6	.553	.631
Item 7	.594	.676
Item 8	.671	.669
Item 9	.537	.569
Item 10	.582	.676
Item 11	.611	.745
Item 12	.395	.463

Table 4

Cronbach Alpha for Independent and Dependent Variables for African American and Latino/a Non-Persisters and Persisters

Measure	African American		Latino		Entire Sample
	Non-Persisters	Persisters	Non-Persisters	Persisters	
Sense of Control Items: 6	.644 (N=446)	.644 (N=604)	.739 (N=242)	.671 (N=752)	.690
Race-based belonging Items: 12	.799 (N=425)	.805 (N=584)	.892 (N=223)	.723 (N=711)	.826
Perceived familial support Items: 6	.803 (N=425)	.778 (N=582)	.749 (N=223)	.763 (N=709)	.716
Faculty Engagement Items: 5	.756 (N=425)	.757 (N=584)	.732 (N=223)	.768 (N=711)	.760
Campus Engagement Items: 6	.571 (N=425)	.566 (N=583)	.597 (N=223)	.447 (N=710)	.580
Student Engagement Items: 6	.584 (N=425)	.578 (N=584)	.554 (N=223)	.378 (N=711)	.524

Table 5

Means (SDs) and Partial Correlations Among Study Measures and Non-Persisters and Persisters.

Measure	M (SD)	1	2	3	4	5	6
African American Non-Persisters (N=425)							
1. Sense of Control	4.13 (.52)	1					
2. Race-based belonging	1.51 (.45)	-.097*	1				
3. Perceived familial support	8.02(1.74)	.119*	-.042	1			
4. Faculty Engagement	3.79 (1.96)	.160*	.133*	.114*	1		
5. Campus Engagement	4.14 (1.73)	-.023	.217*	.082*	.417*	1	
6. Student Engagement	4.45 (1.64)	-.007	.195*	.165*	.402*	.475*	1
African American Persisters (N=584)							
1. Sense of Control	4.22 (.49)	1					
2. Race-based belonging	1.44 (.49)	-.251*	1				
3. Perceived familial support	8.24 (1.42)	.039	.142*	1			
4. Faculty Engagement	3.90 (1.97)	.129*	.056	.094*	1		
5. Campus Engagement	4.11 (1.80)	.041	.149*	.161*	.352*	1	
6. Student Engagement	4.59 (1.56)	-.006	.166*	.190*	.278*	.407*	1
Latino/a Non-Persisters (N=223)							
1. Sense of Control	4.08 (.52)	1					
2. Race-based belonging	1.18 (.39)	-.110	1				
3. Perceived familial support	7.48 (1.45)	.078	-.246*	1			
4. Faculty Engagement	3.02 (1.67)	.055	-.059	-.024	1		
5. Campus Engagement	3.07 (1.41)	.009	-.047	.166*	.392*	1	
6. Student Engagement	3.81 (1.36)	.102	-.101	.136*	.235*	.402*	1
Latino/a Persisters (N=711)							
1. Sense of Control	4.18 (.48)	1					
2. Race-based belonging	1.16 (.23)	-.070*	1				
3. Perceived familial support	7.20 (1.32)	.057	.008	1			
4. Faculty Engagement	2.99 (1.67)	.069*	.094*	-.018	1		
5. Campus Engagement	2.95 (1.60)	.019	.010	.064	.263*	1	
6. Student Engagement	3.77 (1.44)	.097*	-.043	.122*	.199*	.434*	1

* Correlation is significant at the 0.01 level (2-tailed).

Table 6

Moderation Analyses for Persisters

Step and measure	R^2	ΔR^2	F for ΔR^2	df	p
Dependent variable: faculty engagement					
Step 1: Sense of control	.025	.022	16.246	2,1291	.000
Step 2: Sense of control x Perceived Familial Support	.025	.021	10.932	3,1290	.000
Dependent variable: campus engagement					
Step 1: Sense of control	.216	.047	31.571	2,1291	.000
Step 2: Sense of control x Perceived Familial Support	.216	.047	21.103	3,1290	.000
Dependent variable: student engagement					
Step 1: Sense of control	.056	.030	38.537	2,1291	.000
Step 2: Sense of control x Perceived Familial Support	.056	.030	25.725	3,1290	.000

Notes: Standardized regression coefficient; * $p < .01$, ** $p < .05$.

Moderation Analyses for Non-Persisters

Step and measure	R^2	ΔR^2	F for ΔR^2	df	p
Dependent variable: faculty engagement					
Step 1: Sense of control	.025	.022	8.285	2,645	.000
Step 2: Sense of control x Perceived Familial Support	.025	.021	5.755	2,645	.001
Dependent variable: campus engagement					
Step 1: Sense of control	.021	.018	6.958	2,645	.001
Step 2: Sense of control x Perceived Familial Support	.021	.017	4.858	3,644	.002
Dependent variable: student engagement					
Step 1: Sense of control	.033	.055	11.040	2,645	.033
Step 2: Sense of control x Perceived Familial Support	.033	.054	7.367	3,644	.000

Notes: Standardized regression coefficient; * $p < .01$, ** $p < .05$.

Table 6, continued

Moderation Analyses for African American Persisters

Step and measure	R^2	ΔR^2	F for ΔR^2	df	p
Dependent variable: faculty engagement					
Step 1: Sense of control	.025	.021	7.313	2,581	.001
Step 2: Sense of control x Perceived Familial Support	.027	.022	1.696	1,580	.193
Dependent variable: campus engagement					
Step 1: Sense of control	.027	.024	8.130	2,581	.000
Step 2: Sense of control x Perceived Familial Support	.029	.024	.952	1,580	.333
Dependent variable: student engagement					
Step 1: Sense of control	.036	.033	10.879	2,581	.000
Step 2: Sense of control x Perceived Familial Support	.037	.032	.290	1,580	.590

Notes: Standardized regression coefficient; * $p < .01$, ** $p < .05$

Moderation Analyses for Latino/a Persisters

Step and measure	R^2	ΔR^2	F for ΔR^2	df	p
Dependent variable: faculty engagement					
Step 1: Sense of control	.005	.003	1.893	2,707	.151
Step 2: Sense of control x Perceived Familial Support	.005	.001	.017	1,706	.897
Dependent variable: campus engagement					
Step 1: Sense of control	.001	.004	1.527	2,707	.218
Step 2: Sense of control x Perceived Familial Support	.001	.001	1.434	1,706	.510
Dependent variable: student engagement					
Step 1: Sense of control	.023	.020	8.307	2,707	.000
Step 2: Sense of control x Perceived Familial Support	.023	.019	.182	1,706	.670

Notes: Standardized regression coefficient; * $p < .01$, ** $p < .05$.

Table 6, continued

Moderation Analyses for African American Non-Persisters

Step and measure	R^2	ΔR^2	F for ΔR^2	df	p
Dependent variable: faculty engagement					
Step 1: Sense of control	.035	.030	7.582	2,422	.001
Step 2: Sense of control x Perceived Familial Support	.037	.030	.800	1,421	.371
Dependent variable: campus engagement					
Step 1: Sense of control	.008	.003	1.668	2,422	.190
Step 2: Sense of control x Perceived Familial Support	.011	.004	1.44	1,422	.231
Dependent variable: student engagement					
Step 1: Sense of control	.028	.023	6.040	2,422	.003
Step 2: Sense of control x Perceived Familial Support	.031	.024	1.202	1,421	.274

Notes: Standardized regression coefficient; * $p < .01$, ** $p < .05$.

Moderation Analyses for Latino/a Non-Persisters

Step and measure	R^2	ΔR^2	F for ΔR^2	df	p
Dependent variable: faculty engagement					
Step 1: Sense of control	.004	-.005	.420	2,220	.657
Step 2: Sense of control x Perceived Familial Support	.004	-.010	.000	1,219	.795
Dependent variable: campus engagement					
Step 1: Sense of control	.027	.018	3.057	2,220	.049
Step 2: Sense of control x Perceived Familial Support	.038	.025	2.608	1,219	.108
Dependent variable: student engagement					
Step 1: Sense of control	.027	.018	3.057	2,220	.049
Step 2: Sense of control x Perceived Familial Support	.038	.025	2.608	1,219	.108

Notes: Standardized regression coefficient; * $p < .01$, ** $p < .05$.

Figure 1. The Student Engagement and Retention Model

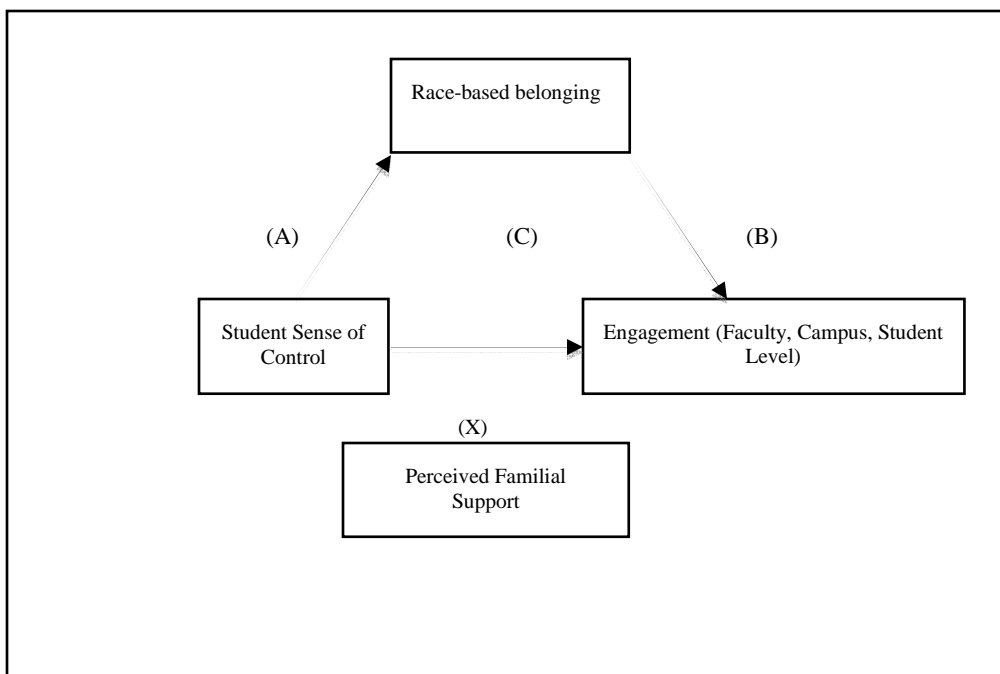
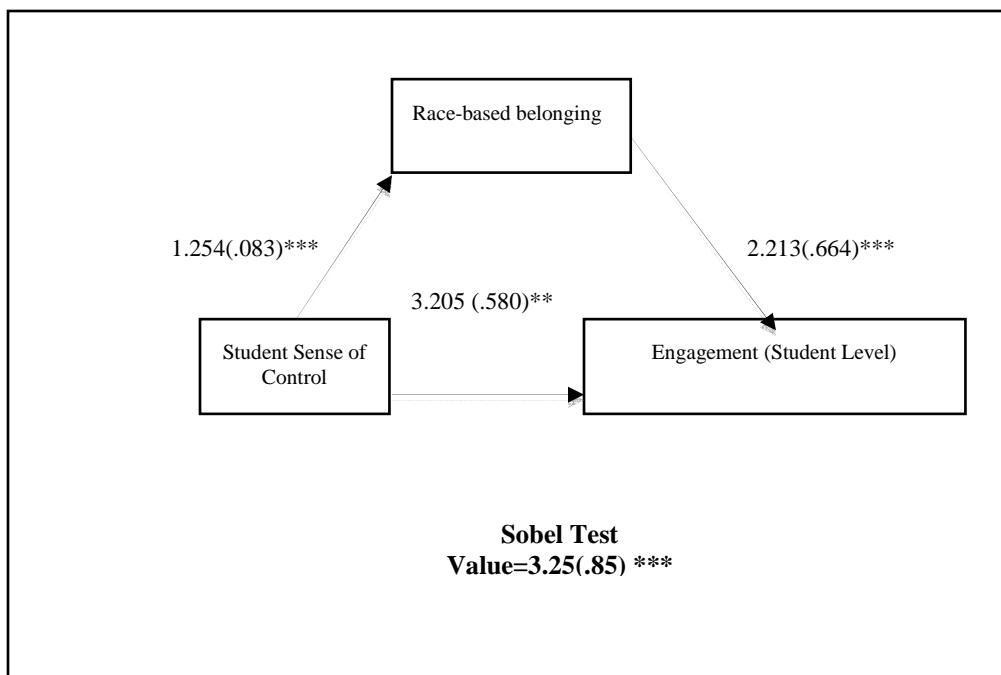


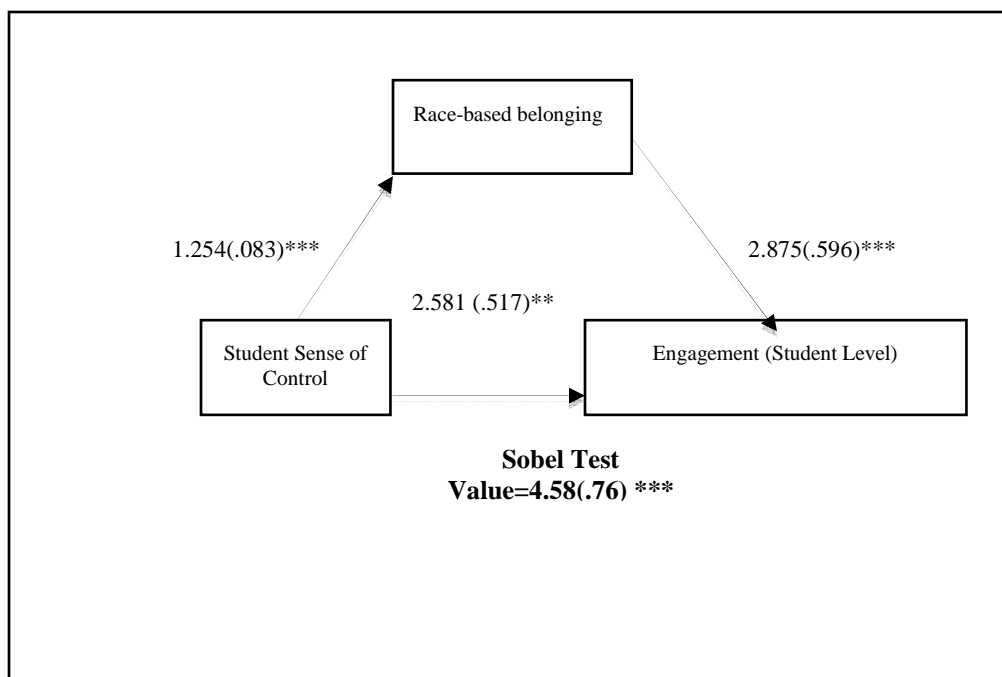
Figure 2. Mediating effects of race-based belonging in the relationship between a sense of control and faculty engagement for Latino/a persisters.



Note: Numbers indicate unstandardized regression coefficients and standard errors in parentheses. All analyses were conducted with a control for the effect of the demographic covariates such as whether or not students were born in the United States, SAT scores, parental education, socioeconomic status and campus type.

* $p < .05$, ** $p < .01$, *** $p < .001$

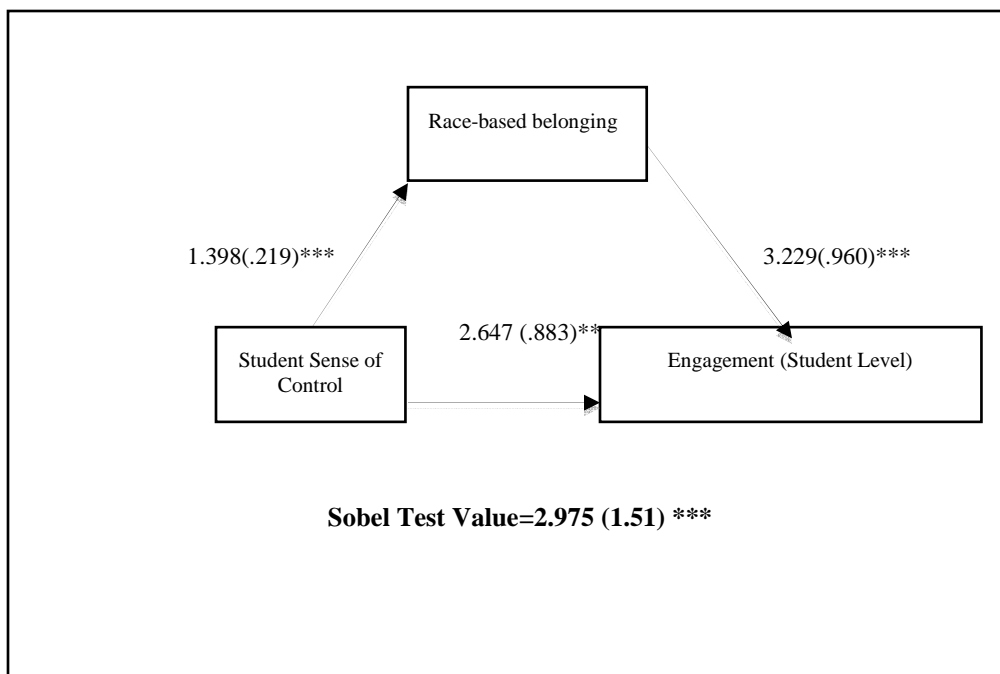
Figure 3. Mediating effects of race-based belonging in the relationship between a sense of control and student engagement for Latino/a persisters.



Note: Numbers indicate unstandardized regression coefficients and standard errors in parentheses. All analyses were conducted with a control for the effect of the demographic covariates such as whether or not students were born in the United States, SAT scores, parental education, socioeconomic status and campus type.

* $p < .05$, ** $p < .01$, *** $p < .001$

Figure 4. Mediating effects of race-based belonging in the relationship between a sense of control and student engagement for Latino/a non-persisters.



Note: Numbers indicate unstandardized regression coefficients and standard errors in parentheses. All analyses were conducted with a control for the effect of the demographic covariates such as whether or not students were born in the United States, SAT scores, parental education, socioeconomic status and campus type.

* $p < .05$, ** $p < .01$, *** $p < .001$

References

- Adan, A. & Felner, R.D. (1995). Ecological congruence and adaptation of minority youth during the transition to college. *Journal of Community Psychology*, 23, (3), 256-269.
- Aguilar, M.A. (1996). Promoting the educational achievement of Mexican American young women. *Social Work Education*, 18(3), 145-156.
- Aguinis, H. (2004). *Test score banding in Human Resource Selection: Legal, technical, and societal issues*. Westport, CT: Greenwood Publishing Group, Inc.
- Aiken, L. & West, S. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Allen, W. R. (1992). The color of success: African American college students outcomes at predominantly White and historically Black public colleges and universities. *Harvard Educational Review*, 62(1), 26-44.
- Allen, W.R., Epps, E., & Haniff, N.Z. (1991). Race, Gender, and Academic Performance in U.S. Higher Education. In W.R. Allen, E. Epps, and N.Z. Haniff (Eds.) *College in Black and White: African American Students in Predominantly White and in Historically Black Public Universities*. Albany, NY: State University of New York Press.
- Allen, W. R. & Jewell, J. O. (2002). A backward glance forward: Past, present, and future perspectives on historically Black colleges and universities. *The Review of Higher Education*, 25(3), 241-261.
- Anaya, G. (1996). "College Experiences and Student Learning: The Influence of Active Learning, College Environments, and Co-Curricular Activities." *Journal of*

- College Student Development*, 37(6), 611–622.
- Ancis, J. R., Sedlacek, W. E., & Mohr, J. J. (2000). Student perceptions of the campus cultural climate by race. *Journal of Counseling and Development*, 78, 180-185.
- Ary, D., Jacobs, L., & Razavieh, A. (1996). *Introduction to research in education*. (5th ed.). Ft. Worth, TX: Holt, Rinehart, and Winston, Inc.
- Astin, A. W. (1984). Student involvement: A developmental theory of higher education. *Journal of College Student Personnel*, 25, 297–308.
- Astin, A.W. (1985). *Achieving educational excellence: A critical assessment of priorities and practices in higher education*. San Francisco: Jossey Bass.
- Astin, A.W. (1991). *Assessment for excellence: The philosophy and practice of assessment and evaluation in higher education*. New York: American Council on Education/Macmillan.
- Astin, A.W. (1993). *What matters in college? Four critical years revisited*. San Francisco: Jossey-Bass.
- Baldwin, D. R., Chambliss, L. N., & Towler, K. (2003). Optimism and stress: An African American college student perspective. *College Student Journal*, 37, 276-285.
- Baldwin, J. A., Duncan, J. A., & Bell, Y. (1987). Assessment of African self-consciousness among Black college students from two college environments. *Journal of Black Psychology*, 13 (2), 27-41.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1–26.

- Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (2001). Self-efficacy beliefs as shapers of children's aspirations and career trajectories. *Child Development, 72*(1), 187-206.
- Barefoot, B. O., & Gardner, J. N. (1993). *The freshman orientation seminar: Extending the benefits of traditional orientation*. In M.L. Upcraft, R. H. Mullendore, B. O. Barefoot, & D. S. Fidler (Eds.), *Designing successful transitions* (pp. 141–153). Columbia, SC: National Resource Center for the Freshman Year Experience.
- Barefoot, B.O. (2004). Higher education's revolving door: Confronting the problem of student drop out in US colleges and universities. *Open Learning 19* (1): 9-18.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.
- Barone, R. P. & Saunders, S. A. (2010) Review of the book Diversity's promise for higher education: Making it work. *Journal of College Student Development, 51*, 601-603.
- Baumeister, R. R., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497-529.
- Bean, J.P., & Eaton, S.B. (2000). A psychological model of college student retention. In J.M. Braxton (Ed.). *Rethinking the Departure Puzzle: New Theory and Research on College Student Retention*. Nashville, TN: Vanderbilt University Press.
- Berger, J. B., and Milem, J. F. (1999). "The Role of Student Involvement and Perceptions

- of Integration a Causal Model of Student Persistence.” *Research in Higher Education*, 40(6), 641–664.
- Biasco, E, Goodwin, E. A., & Vitale, K. L. (2001). College students' attitudes toward racial discrimination. *College Student Journal*, 35, 523-528.
- Blum, R.W., & Libbey, H. P. (2004). Executive summary: Wingspread declaration on school connections. *Journal of School Health*, 74, 231 – 234.
- Bolger, N., Zuckerman, A., & Kessler, R. C. (2000). Invisible support and adjustment to stress. *Journal of Personality and Social Psychology*, 79(6), 953–961.
- Bonous-Hammarth, M., & Boatsman, K. (1996, April). Satisfaction guaranteed? Predicting academic and social outcomes for African American college students. Paper presented at the Annual Conference of the American Educational Research Association, New York.
- Bowen, W. G., & Bok, D. (1998). *The shape of the river: Long-term consequences of considering race in college and university admissions*. Princeton, NJ: Princeton University Press.
- Braddock, J. H. (1981). Desegregation and black student attrition. *Urban Education*, 15(4), 403-418.
- Branscombe, N., & Ellemers, N. (1998). Coping with group-based discrimination: Individualistic versus group-based strategies. In J. K. Swim & C. Stangor (Eds.), *Prejudice: The target's perspective* (pp. 243-265). San Diego, CA: Academic Press.
- Braxton, J. M., Milem, J. F., and Sullivan, A. S. (2000). “The Influence of Active Learning on The College Departure Process: Toward a Revision of Tinto’s

- Theory.” *Journal of Higher Education*, 71(5), 569–590.
- Brewster, A. B., & Bowen, G. L. (2004). Teacher support and the school engagement of Latino middle and high school students at risk of school failure. *Child & Adolescent Social Work Journal*, 21, 47 – 67.
- Brower, A. M. & Ketterhagen, A. (2004). Is there an inherent mismatch between how black and white students expect to succeed in college and what their colleges expect from them? *Journal of Social Issues*, 60, 95-116.
- Brown, O. B. (1995). *Debunking the Myth: Stories of African-American University Students*. Bloomington, IN: Phi Delta Kappa.
- Cabrera, A. F., Nora, A., Terenzini, P. T., Pascarella, E., & Hagedorn, L. S. (1999). Campus racial climate and the adjustment of students to college. *Journal of Higher Education*, 70(2), 134-160.
- Cabrera, N., & Padilla, A.M. (2004). Entering and succeeding in the culture of college: The Story of Two Mexican Heritage Students. *Hispanic Journal of Behavioral Sciences*, 26, 152-169.
- Capello, D.C. (1994). Beyond financial aid: Counseling Latina students. *Journal of Multicultural Counseling & Development*, 22(1), 28-36
- Caraway, K., Tucker, C. M., Reinke, W. M., & Hall, C. (2003). Self efficacy, goal orientation, and fear of failure as predictors of school engagement in high school students, *Psychology in the Schools*, 40, 417–427.
- Carey, K. (2004). A matter of degrees: Improving graduation rates in four-year colleges and universities. *A Report by the Education Trust*, May, 2004.
- Carter, D.F. (1999). The impact of institutional choice and environments on African

- American and White students' degree expectations. *Research in Higher Education*, 40 (1), 17-41.
- Chacon, M. A., Cohen, E. G., & Strover, S. (1986). Chicanas and Chicanos: Barriers to progress in higher education. In M. A. Olivas (Ed.), *Latino college students* (pp. 296–324). New York: Teachers College Press.
- Cheatham, H. E., Slaney, R. B., & Coleman, N. C. (1990). Institutional effects on the psychosocial development of African-American college students. *Journal of Counseling Psychology*, 37(4), 453-458.
- Chen, P. D., Ingram, T., & Davis, L. K. (2007, November). *Engaging African American students: Compare student engagement and student satisfaction at HBCU's and their self-identified PWI's using National Survey of Student Engagement (NSSE) data*. Paper presented at the 32nd Annual Conference of the Association for the Study of Higher Education, Louisville, KY.
- Choi, N. (2005). Self-efficacy and self-concept as predictors of college students' academic performance. *Psychology in the Schools*, 42(2), 197-205. Retrieved from EBSCO host database).
- Choy, S. (2001). *Students whose parents did not go to college: Postsecondary access, persistence, and attainment*. Washington, DC: U.S. Department of Education, National Center for Educational Statistics.
- Chung, Y. B. (2002). Career decision-making, self-efficacy, and career commitment: Gender and ethnic differences among college students. *Journal of Career Development*, 28(4), 277-284.
- Coffman, D. L., & Gilligan, T. D. (2002). Social support, stress, and self-efficacy:

- Effects on students' satisfaction. *College Student Retention*, 4, 53-66.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. New York: Academic Press.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.
- Cohen, G. L., & Sherman, D. K. (2005). Stereotype threat and the social and scientific contexts of the race achievement gap [response]. *American Psychologist*, 60, 270-271.
- Contreras, F.E. & Bensimon, E.M. (2005, November). *An equity-based accountability framework for Hispanic Serving Institutions*. Paper presented at the Annual Meeting of the Association for the Study of Higher Education, Philadelphia, PA.
- Crocker, J., & Major, M. (1989). Social Stigma and Self-Esteem: The Self-Protective Properties of Stigma. *Psychological Review* 96:608–30.
- Cruce, T. M., Wolniak, G. C., Seifert, T. A., & Pascarella, E. T. (2006). Impacts of good practices on cognitive development, learning orientations, and graduate degree plans during the first year of college. *Journal of College Student Development*, 47, 365–382.
- D'Augelli, A. R., & Hershberger, S. L. (1993). African American undergraduates on a predominately white campus: Academic factors, social networks, and campus climate. *Journal of Negro Education*, 62, 67-81.
- Davies, G. (2001). Higher education is a public health issue. *Chronicle of Higher Education*.

- Davis, J. E. (1994). College in black and white: Campus environment and academic achievement of African American males. *Journal of Negro Education, 63*(4), 620-633.
- Davis, T.M., & Murrell, P.H. (1993). A structural model of perceived academic, personal, and vocational gains related to college student responsibility. *Research in Higher Education, 34*, 267-290.
- Davis, M., Dias-Bowie, Y., Greenberg, K., Klukken, G., Pollio, J. R., Thomas, S. P., & Thompson, C.L. (2004). "A fly in the buttermilk": Descriptions of university life by successful black undergraduate students at a predominantly white southeastern university. *The Journal of Higher Education, 75*(4), 420-445.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum Press.
- Dovidio, J. F., & Gaertner, S. L. (2000). Aversive racism and selection decisions: 1989 and 1999. *Psychological Science, 11*, 315–319.
- Dowd, A. C., & Melguizo, T. (2008). Socioeconomic stratification of community college transfer access in the 1980s and 1990s: Evidence from HS&B and NELS. *The Review of Higher Education, 31*(4), 377–400.
- Elliot, A.J., & Dweck, D.S. (2005). Competence as the Core of Achievement Motivation. *Handbook of Competence and Motivation*. NY: Guilford Press.
- Feagin, J. R., Vera, H., & Imani, N. (1996). *The agony of education: Black students at White colleges and universities*. New York: Routledge.
- Finn, J. D., & Rock, D. A. (1997). Academic success among students at risk for school failure. *Journal of Applied Psychology, 82*, 221 – 234.

- Fleming, J. (1984). *Blacks in College: A comparative study of student success in black and white institutions*. San Francisco: Jossey Bass.
- Flowers, L. & Pascarella, E.T. (1999). The effects of college racial composition on African American college students' orientations toward learning for self-understanding. *Professional Educator*, 22(1), 33-47.
- Flowers, L. (2002). The impact of college racial composition on African American students' academic and social gains: Additional evidence. *Journal of College Student Development*, 43 (3), 403-410.
- Folkman, S., Lazarus, R. S., Dunkel-Schetter, C., DeLongis, A., & Gruen, R. (1986). The dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. *Journal of Personality and Social Psychology*, 50, 992.
- Freeman, K. (1997). Increasing African American's participation in higher education: African American high-school students' perspectives. *Journal of Higher Education*, 68, 523-550.
- Furr, S. R., & Elling, T. W. (2002). African-American students in a predominantly white university: Factors associated with retention. *College Student Journal*, 36(2), 188-203.
- Gaertner, S. L., and Dovidio, J. F. (2000). *Reducing Intergroup Bias: The Common Ingroup Identity Model*, Psychology Press, Philadelphia, PA.
- Gandara, P. (1995). *Over the ivy walls: The educational mobility of low-income Chicanos*. Albany: State University of New York Press.
- Garcia, P. (2001). *Understanding obstacles and barriers to Hispanic baccalaureates*. Funded by the Hispanic Scholarship Fund, San Francisco, CA; RAND

Corporation, Arlington, VA.

- Gerdes, H., & Mallinckrodt, B. (1994). Emotional, social, and academic adjustment of college students: A longitudinal study of retention. *Journal of Counseling and Development, 72*(3), 281-289.
- Gloria, A.M., Castellanos, J., Lopez, A.G., & Rosales, R. (2005). An examination of academic nonpersistence decisions of Latino undergraduates. *Hispanic Journal of Behavioral Sciences, 27*, 161-183.
- Gloria, A. M., Robinson Kurpius, S. E., Hamilton, K. D., & Wilson, M. S. (1999). African American academic nonpersistence at a predominately White institution: Issues of social support, university comfort, and self-beliefs. *Journal of College Student Development, 40*, 257-26.
- Goldberg, S. (2000). *Attachment and development*. London: Arnold.
- Gonzalez, K.P., Jovel, J.E., & Stoner, C. (2004). Latinas: The new Latino majority in college. *New Directions for Student Services, 105*, 17-27.
- Gossett, B. J., Cuyjet, M. J., & Cockriel, I. (1998). African Americans' perception of marginality in the campus culture. *College Student Journal, 32*, 22-32.
- Gray, M.J., Vernez, G., & Rolph, E. (1996). Student access and the "new" immigrants: assessing their impact on institutions. *Change, September/October*, 41-47.
- Greer, T., & Chwalisz, K. (2007). Minority-related stressors and coping processes among African American college students. *Journal of College Student Development, 48*(4), 388-404.
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review, 102*, 4-27.

- Gurin, P., & Epps, E. (1975). *Black consciousness, identity, and achievement*. New York: John Wiley and Sons.
- Hagy, A.P. & Staniec, F.O. (2002). Immigrant status, race, and institutional choice in higher education. *Economics of Education Review*, 21, 381-392.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multivariate data analysis* (4th ed.). New Jersey: Prentice Hall.
- Harper, S.R., Carini, R.M., Bridges, B.K., & Hayek, J. (2004). Gender differences in student engagement among African American undergraduates at historically Black colleges and universities. *Journal of College Student Development*, 45, 271-284.
- Harvey, W. (2002). *Minorities in Higher Education, 2001-2002, Nineteenth Annual Status Report*, Washington, DC: American Council on Education, 2002.
- Hausmann, L.R., Schofield, J.W., Woods, R.L. (2007). Sense of belonging as a predictor of intentions to persist among African American and White First-Year College Students. *Research in Higher Education*, 48 (7), 803-839.
- Helm, E. G., Sedlacek, W. E., & Prieto, D. O. (1998). The relationship between attitudes toward diversity and overall satisfaction of university students by race. *Journal of College Counseling*, 1, 111-120
- Hoffman, K., Liagas, C, & Snyder, T. D. (2003). National Center for Education Statistics. *Status and trends in the education of Blacks*. Washington, DC: U.S. Department of Education.
- Hubbard, S.M., & Stage, F.K. (2009). Attitudes, perceptions, and preferences of faculty at Hispanic serving and predominantly Black institutions. *The Journal of Higher*

- Education*, 80 (3), 270-289.
- Hurtado, S. (1992). The campus racial climate: Contexts of conflict. *Journal of Higher Education*, 63 (5), 539-569.
- Hurtado, S. (1994). The institutional climate for talented Latino students. *Research in Higher Education* 35(3): 21-41.
- Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino students' sense of belonging. *Sociology of Education*, 70, 324-345.
- Hurtado, S., Carter, D.F. & Spuler, A. (1996). "Latino Student Transition to College: Assessing Difficulties and Factors in Successful College Adjustment." *Research In Higher Education*, 37:135-157.
- Hurtado, S., Milem, J., Clayton-Pederson, A., & Allen, W. (1998). Enhancing campus climates for racial/ethnic diversity: Educational policy and practice. *The Review of Higher Education*, 21(3), 279-302.
- Hurtado, S., & Ponjuan, L. (2005). Latino educational outcomes and the campus climate. *Journal of Hispanic Higher Education*, 4(3), 235–251.
- Imam, S.S. (2007, May). Sherer et al, General self-efficacy scale: Dimensionality, internal consistency, and temporal stability. *Proceedings of the Redesigning Pedagogy: Culture, Knowledge and Understanding Conference*. Singapore, China.
- Jang, Y., Graves, A.B., Haley, W.E., Small, B.J., Mortimer, J.A. Determinants of a sense of mastery in African American and White older adults. *Journal of Gerontology: Social Sciences*. 2003.

- Johnson, S.C. & Arbona, C. (2006). The relation of ethnic identity, racial identity, and race-related stress among African American college students. *Journal of College Student Development, 47* (5), 495-507.
- Johnson-Bailey, J. Valentine, T., Cervero, R.M., & Bowles, T.A. (2009). Rooted in the Soil: The Social Experiences of Black Graduate Students at a Southern Research University. *The Journal of Higher Education*. March/April.
- Jones, L. (2001). Creating an affirming culture to retain African-American students during the postaffirmative action era in higher education. In L. Jones (Ed.), *Retaining African Americans in Higher Education: Challenging Paradigms for Retaining Students, Faculty and Administrators*. Sterling, VA: Stylus.
- Jones, L., Castellanos, J., & Cole, D. (2002). Examining the ethnic minority student experience at predominantly White institutions: A case study. *Journal of Hispanic Higher Education, 1*(1), 19-39.
- Kaplan, R., & Sacuzzo, D. (1997). *Psychological testing: Principles, applications, and issues* (4th ed.). Pacific Grove, CA: Brooks/Cole.
- Kenny, M. E., Blustein, D. L., Chaves, A., Grossman, J. M., & Gallagher, L. A. (2003). The role of perceived barriers and relational support in the educational and vocational lives of urban high school students. *Journal of Counseling Psychology, 50*, 142-155.
- Kenny, M. E., & Rice, K. G. (1995). Attachment to parents and adjustment in late adolescent college students: Current status, applications, and future considerations. *The Counseling Psychologist, 23*, 433-456.
- Kim, M. (2002). Historically Black vs. White institutions: Academic development among

- Black students. *Review of Higher Education*, 25(4), 385-407.
- Kim, M. M., Rhoades, G., and Woodard, D. (2003). Sponsored research versus Graduating students?: Intervening variables and unanticipated findings in public research universities. *Research in Higher Education* 44(1): 51--81.
- Klem, A.M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health*, 74, 262 – 273.
- Knapp, L. G., Kelly-Reid, J. E., & Whitmore, R. W. (February 2006). *Enrollment in Postsecondary Institutions, Fall 2004: Graduation Rates, 1998 & 2001 Cohorts; and Financial Statistics, Fiscal Year 2004*.
- Koestner, R., & McClelland, D.C. (1990). *Perspectives on competence motivation*. In L.A. Pervin (Ed.), *Handbook of personality: Theory and research* (pp. 527-548). New York: Guilford Press.
- Kuh, G. D. (1995). The other curriculum: Out-of-class experiences associated with student learning and personal development. *Journal of Higher Education*, 66, 123–155.
- Kuh, G. D. (2001). Assessing What Really Matters to Student Learning: Inside the National Survey Student Engagement.” *Change*, 33(3), 10–17.
- Kuh, G. D., Kinzie, J., Cruce, T. M., Shoup, R. & Gonyea, R. M. (2007, Revised). *Connecting the dots: Multi-faceted analyses of the relationships between student Engagement results from NSSE, and the institutional practices and conditions that foster student success*. Bloomington, IN: Indiana University Center for Postsecondary Research.
- Lachman, M.E., & Weaver, S.L. (1998). The sense of control as a moderator of social

class differences in health and well-being. *Journal of Social and Personality Psychology*, 74, 763-773.

Latino Association of Colleges and Universities (2001). Information about Latinos.

Latinos in higher education. Retrieved Sept. 1, 2010,

http://www.hacu.net/data_statistics.html.

Lee, C. (1984). An investigation of psychosocial variables related to academic success for rural Black adolescents. *Journal of Negro Education*, 53 (4), 424-434.

Lent, R. W., Brown, S. D., & Larkin, K. C. (1986). Self-efficacy in the prediction of academic performance and perceived career options. *Journal of Counseling Psychology*, 33(3), 265-269.

Lett, D.F. & Wright, J.V. (2003). Psychological Barriers Associated with Matriculation of African American Students in Predominantly White Institutions. *Journal of Instructional Psychology*, 30, 189-196.

Lewis, A. E., Chesler, M., Forman, T., & (2000). The impact of "colorblind" ideologies on students of color: Intergroup relations at a predominately white university. *The Journal of Negro Education*, 69(1-2), 74-92.

Locks, A. M., S. Hurtado, N. A. Bowman, and L. Oseguera. 2008. "Extending Notions of Campus Climate and Diversity to Students' Transition to College." *The Review of Higher Education*, 37:257-285.

Lopez, D.J. (2005). Race-related stress and sociocultural orientation among Latino students during their transition in a predominately White, highly selective institution. *Journal of Hispanic Education*, 4, 354-365.

MacKinnon, D., & Dwyer, J. H. (1993). Estimating mediated effects in prevention

- studies. *Evaluation Review*, 17, 144-158.
- Mallinckrodt, B (1988). Student retention, social support, and dropout intention: Comparison of Black and White students. *Journal of College Student Development* 19(1): 60–64.
- May, G. S. (2002). *A Retrospective on Undergraduate Engineering Success for Underrepresented Minority Students* (A report produced under contract to the National Action Council of Minorities in Engineering, Inc.). Atlanta, GA: Georgia Institute of Technology.
- Massey, D. S., Fischer, C., Lundry, G., and Charles, C. Z. (2003). *The Source of the River: The Social Origins of Freshmen at America's Selective Colleges and Universities*, Princeton University Press, Princeton, NJ.
- Mattanah, J. F, Hancock, G. R., & Brand, B. L. (2004). Parental attachment, separation-individuation, and college student adjustment: A structural equation analysis of mediational effects. *Journal of Counseling Psychology*, 51, 213-225.
- McClelland, D., Atkinson, J.W., Clark, R.A., & Lowell, E.L. (1953). *The achievement motive*. New York: Appleton-Century-Crofts.
- McDonough, P. M., and Calderone, S. (2006). The meaning of money: Perpetual differences between college counselors and low-income families about college costs and financial aid. *American Behavioral Scientist*, 49(12), 1703-1716.
- Mendoza-Denton. R., Downey, G. Purdie, V.J., Davis, A. and Pietrzak, J. (2002). Sensitivity to status-based rejection: Implications for African American students' college experience. *Journal of Personality and Social Psychology*, 83, 896-918.

- Moore, J. L. (2001). Developing academic warriors: Things that parents, administrators, and faculty should know. In L. Jones (Ed.), *Retaining African Americans in Higher Education: Challenging Paradigms for Retaining Students, Faculty and Administrators*. Sterling, VA: Stylus.
- Mow, S., & Nettles, M. (1990). Minority student access to, and persistence and performance in, college: A review of the trends and research literature. In J. Smart (Ed.), *Higher education handbook of theory and research*, VI, (pp. 35-105). Bronx, NY: Agathon.
- National Center for Education Statistics (NCES). 2003. *The Condition of Education 2003*. NCES 2003-067. Washington, DC: U.S. Department of Education.
- Nelson Laird, T. F., Shoup, R., Kuh, G. D., & Schwarz, M. J. (2007). The effects of discipline on deep approaches to student learning and college outcomes. *Research in Higher Education*, 46, 9-494.
- Nettles, M., & Perna, L. (1997). *The African American Education Data Book. Volume III: The Transition from School to College and School to Work*. Frederick D. Patterson Research Institute of the College Fund/UNCF, Washington, DC.
- Nettles, M. T., Thoeny, A. R., & Gosman, E. J. (1986). Comparative and predictive analyses of black and white students' college achievement and experiences. *Journal of Higher Education*, 57, 289-318.
- Neville, H.A., Heppner, P.P., Ji, P., & Thye, R. (2004). The relations among general and race-related stressors and psychoeducational adjustment in Black students attending predominantly White institutions. *Journal of Black Studies*, March.
- Noguera, P. A. (2003). Joaquin's dilemma: Understanding the link between racial identity

and school-related behaviors. In M. Sadowski (Ed.), *Adolescents at School: Perspectives on Youth, Identity, and Education*. Cambridge, MA: Harvard Education Press.

- Nora, A. (2004). The role of habitus and cultural capital in choosing a college, transitioning from high school to higher education, and persisting in college among minority and nonminority students. *Journal of Higher Education*, 3, 180-208.
- Nora, A., & Cabrera, A. F. (1996). The role of perceptions of prejudice and discrimination on the adjustment of minority students to college. *Journal of Higher Education*, 67(2), 120-148.
- Nora, A., Kramer, B., & Itzen, R. (1996, November). Persistence among non-traditional Latino college students: A causal model. Paper presented at the annual meeting of the *Association for the Study of Higher Education*, Albuquerque, NM.
- Oates, G. (2004). The color of the undergraduate experience and the Black self-concept: Evidence from longitudinal data. *Social Psychology Quarterly*, 67(), 16-32.
- Outcalt, C. L. & Skewes-Cox, T. E. (2002). Involvement, interaction, and satisfaction: The human environment at HBCUs. *The Review of Higher Education*, 25(3), 331-347.
- Ogbu, J. U. (1990). Minority education in comparative perspective. *Journal of Negro Education*, 39(1), 45-60.
- Okech, A.P., & Harrington, R. (2002). The relationship among Black consciousness, self-esteem, and academic self-efficacy in African American men. *Journal of Psychology*, 136, 214-224.

- Pak, J., Bensimon, E. M., Malcom, L., Márquez, A., & Park, D.K. (2006). *The life histories of ten individuals who crossed the border between community colleges and selective four year colleges*. Los Angeles, CA: University of Southern California.
- Pascarella, E.T. (2001). Identifying excellence in undergraduate education: Are we even close? *Change*, 33(1), 18-23.
- Pascarella, E.T., Pierson, C.T., Wolniak, G.C., & Terenzini, P.T. (2004). First-Generation college students: Additional evidence on college experiences and outcomes. *The Journal of Higher Education*, 75(3).
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: a third decade of research*. San Francisco: Jossey-Bass.
- Pascarella, E.T., & Terenzini, P.T. (1991). *How college affects students: Findings and insights from twenty years of research*. San Francisco: Jossey-Bass.
- Phillips-Morrow G, Burris-Kitchen D, Der-Karabetian A. (2000). Assessing campus climate of cultural diversity: a focus on focus groups. *Journal of the College Student*, 34, 589–602.
- Pike, G. R., & Kuh, G. D. (2006). Relationship among structural diversity, informal peer interactions and the perceptions of the campus environment. *The Review of Higher Education*, 29 (4), 425-450.
- Polit, D.F. & Beck, C.T. (2004). *Nursing research: Principles and methods*. (7th ed.) Philadelphia: Lippincott, Williams, & Wilkins.
- Porter, Judith R., and Robert E. Washington. 1982. "Black Identity and Self-Esteem: A Review of Studies of Black Self-Concept 1968–1978." Pp. 224–34 in *Social*

- Psychology of the Self-Concept*, edited by Morris Rosenberg and Howard B. Kaplan. Arlington Heights, IL: Harlan Davidson.
- Provasnik, S., & Shafer, L. L. (2004). Historically Black colleges and universities, 1976 to 2001. (NCES Publication N. 2004-062). Washington, DC: *U.S. Department of Education, National Center for Education Statistics*.
- Rankin, S.R. & Reason, R.D. (2005). Differing perceptions: How students of color and white students perceive campus climate for underrepresented groups. *Journal of College Student Development*, 46 (1), 43-61.
- Reid, L. D., & Radhakrishnan, P. (2003). Race matters: The relation between race and general campus climate. *Cultural Diversity and Ethnic Minority Psychology*, 9, 263–275. Rosenberg, Morris. 1979. *Conceiving the Self*. New York: Basic Books.
- Reschly, A. L., & Christenson, S. L. (2006). Prediction of dropout among students with mild disabilities: A case for the inclusion of student engagement variables. *Remedial and Special Education*, 27, 276 – 292.
- Richardson, R., & Skinner, E. (1988). Making It In A Majority University: The Minority Graduate's Perspective. *Change*, May/June 1988, pp. 37-42
- Rodriguez, A.L., Guido-DiBrito, R., Torres, V., & Talbot, D. (2001). Latina college students: Issues and challenges for the 21st century. *NASPA Journal*, 37, 511-527.
- Rotter, J.B. (1982). *The development and applications of social learning theory: Selected papers*. New York: Praeger Publishers.
- Ruble, D. N., & Seidman, E. (1996). *Social transitions: Windows into social psychological processes*. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 830 – 856). New York: Guilford.

- Ruggiero, K. M., & Taylor, D. M. (1995). Coping with discrimination: How disadvantaged group members perceive the discrimination that confronts them. *Journal of Personality and Social Psychology, 68*, 826-838.
- Sáenz, T., Marcoulides, G. A., Junn, E., & Young, R. (1999). The relationship between college experiences and academic performance among minority students. *International Journal of Educational Management, 13*(4), 199–207.
- Saenz, V.B., Nagi, H.N., & Hurtado, S. (2007). Factors influencing positive interactions across race for African American, Asian American, Latino, and white college students. *Research in Higher Education, 69*, 60-73.
- Schieman, S. (2003). Perceived, generalized, and learned aspects of personal control. In S.H. Zarit, L. I. Pearlin, & K.W. Schaie (Eds.). *Personal control in social and life Course contexts*. (pp. 71-82). New York: Springer.
- Schneider, M. E., & Ward, D. J. (2003). The role of ethnic identification and perceived social support in Latinos' adjustment to college. *Latino Journal of Behavioral Sciences, 25*, 539–554.
- Seligman, M.E.P. (1975). *Helplessness: On depression, development, and death*. San Francisco: Freeman.
- Seymour, E., and N.M. Hewitt. 1997. *Talking About Leaving: Why Undergraduates Leave the Sciences*. Boulder, CO: Westview Press.
- Sherer, M., Maddux, J.E., Mercandante, B., Prentice-Dunn, S., Jacobs, B. and Rogers, R.W. (1982). The self-efficacy scale: construction and validation. *Psychological Report, 51*, 663-671.
- Shorey, H.S., Cowan, G. & Sullivan, M.P. (2002). Predicting Perceptions of

- Discrimination Among Hispanics and Anglos. *Hispanic Journal of Behavioral Sciences*, 24:3–22.
- Sirin, S. R., & Rogers-Sirin, L. (2004). Exploring school engagement of middle-class African American adolescents. *Youth & Society*, 35, 323 – 340.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhardt (Ed.), *Sociological Methodology 1982* (pp. 290-312). Washington DC: American Sociological Association.
- Solberg, V. S., & Villareal, P. (1997). Examination of self-efficacy, social support, and stress as predictors of psychological and physical distress among Hispanic college students. *Hispanic Journal of Behavioral Sciences*, 19, 182-201
- Stanton-Salazar, R. (1997). A social capital framework for understanding the socialization of racial minority children and youths. *Harvard Educational Review*, 67(1), 1-40.
- Steele, C. (1999). A threat in the air: How stereotypes shape intellectual identity and performance. In J. Eugene Y. Lowe (Ed.), *Promise and Dilemma: Perspectives on Racial Diversity and Higher Education*. Princeton, NJ: Princeton University Press.
- Steele, C. M., & Aronson, J. (1995). Stereotype threat and intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, 69, 797-811.
- St. John, E. P., Hu, S., Simmons, A., Carter, D. F., & Weber, J. (2004). What difference does a major Make? The influence of college major field on persistence by African American and white students. *Research in Higher Education*, 45(3), 209-232.

- Suarez-Balcazar, Y., Orellana-Damacela, L., Portillo, N., Rowan, J. M., & Andrews-Guillen, C. (2003). Experiences of differential treatment among college students of color. *Journal of Higher Education*, 74, 428-445.
- Swail, W.S., Cabrera, A., Lee, C. & Williams, A. (2005). *Latino Students and the Educational Pipeline*. Washington, DC: Educational Policy Institute.
- Sy, S. (2006). Family and work influences on the transition to college among Latina adolescents. *Hispanic Journal of Behavioral Sciences*, 28, 368-386.
- Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics* (3rd ed.). New York: HarperCollins.
- Terenzini, P. T., Rendon, L. I., Upcraft, M. L., Millar, S. B., Allison, K. A., Gregg, P. L., & Jalomo, R. (1994). The transition to college: Diverse students, diverse stories. *Research in Higher Education*, 35, 57-73.
- Terenzini, P.T., Yaeger, P., Bohr, L., Pascarella, E.T., & Nora, A. (1997). *African American college students: Experiences in HBCUs and PWIs and learning outcomes*. Paper presented at the annual meeting of the Association for Institutional Research (May, 1997).
- The Posse Foundation. (2009). Celebrating Twenty Years: 2009 Annual Report [Annual Report]. Retrieved from <http://www.possefoundation.org/m/posse-annual-report-09.pdf>
- The White House, Office of the Press Secretary. (2010). The President Donates Nobel Prize Money to Charity [Press release]. Retrieved from <http://www.whitehouse.gov/the-press-office/president-donates-nobel-prize-money-charity>

- Thompson, C. P., Anderson, L. P. & Bakeman, R. A. (2000). Effects of racial socialization and racial identity on acculturative stress in African American college students. *Cultural Diversity & Ethnic Minority Psychology*, 6, 196-210.
- Thorndike, R.L. (1967). *Reliability*. In D.N. Jackson & S. Messick (Eds.), *Problems in human assessment* (pp. 217-240). New York: McGraw-Hill.
- Tierney, W. G. (1992). An anthropological analysis of student participation in college. *Journal of Higher Education*, 63(6), 603-618.
- Ting, S.-M. R., & Robinson, T. L. (1998). First-year academic success: A prediction combining cognitive and psychosocial variables for Caucasian and African American students. *Journal of College Student Development*, 39, 599-610
- Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago: University of Chicago Press.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.
- Tracey, T. J., & Sedlacek, W. E. (1984). Noncognitive variables in predicting academic success by race. *Measurement and Evaluation in Guidance*, 16, 171-178.
- Tracey, T. J., & Sedlacek, W. E. (1985). The relationship of noncognitive variables to academic success success: A longitudinal comparison by race. *Journal of College Student Personnel*, 26, 410.
- Tracey, T. J., & Sedlacek, W. E. (1987). Predicting college graduation using noncognitive variables by race. *Measurement and Evaluation in Counseling and Development*, 19, 177-184.
- Trent, W.T., Lee, H.S., & Owens-Nichols, D. (2006). Perceptions of financial aid among

students of color: Examining the role(s) of self-concept, locus of control, and expectations. *American Behavioral Scientist*, 49, 1739-1761.

Trochim, W. M. K. (2006). *The nomological network: What is the nomological network?* Retrieved November 8, 2007, from <http://www.socialresearchmethods.net/kb/nomonet.php>

Turner, G. Y. (1992). College students' self-awareness of study behaviors. *College Student Journal*, 26, 129-134.

Upcraft, M.L., Gardner, J. & Barefoot, B. (2005). *Challenging and Supporting the First-Year Student: A Handbook for Improving the First Year of College*; San Francisco: Jossey-Bass.

Utsey, S.O., Chae, M.H., Brown, C.F. & Kelly, F. (2002). Effect of Ethnic Group Membership on Ethnic Identity, Race-Related Stress, and Quality of Life. *Cultural Diversity and Ethnic Minority Psychology*, 8(4), 366-377.

van Laar, C. (2000). The paradox of low academic achievement but high self esteem in African American students: An attributional account. *Education Psychology Review*, 72(1), 33-61.

Vasti, T. (2003). Influences on ethnic identity development of Latino college students in the first two years of college. *Journal of Student Development*, 44 (4), 532-547.

Vega, W., & Rumbaut, R. 1991 Ethnic minorities and mental health. *Annual Review of Sociology*, 17, 351-381.

Walton, G.M., & Cohen, G.L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology*, 92, 82-96.

Warburton, E.C. Bugarin, R., & Nunez, A. (2001) *Bridging the Gap: Academic*

- Preparation and Postsecondary success of first-generation students*. Washington, DC: National Center for Educational Statistics Document. NCES 2001-153.
- Wentzel, K. R. (1998). Social relationships and motivation in middle school: The role of parents, teachers, and peers. *Journal of Educational Psychology*, 90, 202 – 209.
- Werner & Smith. 2001. *Journeys from childhood to midlife: Risk, resilience, and recovery*. Ithaca, NY: Cornell University Press.
- Westhuis, D., & Thayer, B. A. (1989). Development and validation of the clinical anxiety scale: A rapid assessment instruments for empirical practice. *Educational and Psychological Research*, 49, 153-163.
- White, E. R., Goetz, J. J., Hunter, M. S., & Barefoot, B. O. (1995). Creating successful transitions through academic advising. In M.L. Upcraft & G. L. Kramer (Eds.), *First-year academic advising: Patterns in the present, pathways to the future* (pp. 25–34). Columbia: University of South Carolina.
- White, W. F., & Shahan, J. M. (1989). College student motivation and retention system. *College Student Journal*, 23, 230–233.
- Wigfield, A., Eccles, J. S., Schiefele, U., Roeser, R., & Davis-Kean, P. (2006). Development of achievement motivation. In W. Damon (Series Ed.) & N. Eisenberg (Volume Ed.), *Handbook of child psychology, 6th Ed. Vol.3. Social, emotional, and personality development* (pp. 933-1002). New York: Wiley.
- Wilcox, R. R. (2005). *Introduction to Robust Estimation and Hypothesis Testing* (2nd Edition). San Diego, CA: Academic Press.
- Wilson, W. J. (Ed.). (1996). *Ghetto-related behavior and the structure of opportunity*. New York: Alfred A. Knopf.

Wratcher, M. A. (1991). Freshmen academic adjustment at a competitive university.

College Student Journal, 25, 170–177.

Zea, M. C., Reisen, C. A., & Beil, C. (1997). Predicting intention to remain in college among ethnic minority and nonminority students. *Journal of Social Psychology*,

137(2) 149–160.

Zarit, S., Pearlin, L., & Schaie, W. (2003). *Personal control in social and life course contexts*. New York: Springer.