Latino College Students Attending Highly Selective Universities:

The Role of Ethnic Identity

BY

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DISSERTATION

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This thesis is dedicated to aspiring students of all grade levels, proficiency levels, and those who aspire despite their immigration status, without them it would never have been accomplished.

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SUMMARY

Latinos trail behind their non-Latino White peers in academic achievement from early childhood through higher education. While attention has been paid to improving high school completion and college enrollment rates, far less attention has been given to college completion. Although Latinos' college enrollment rates have dramatically increased their completion rates have remained relatively stagnant (Fry, 2002; U.S. Department of Education, 2012a). It is important to address this difference as college education continues to be a predictor of household income, lower rates of delinquency, and better health outcomes (Machin & Vujić, 2006; Machin, Marie, & Vujić, 2011; Meara et al., 2008; U.S. Department of Labor, 2009; U.S. Bureau of Labor Statistics, 2013). Furthermore, Latinos' academic underachievement continues to be a concern beyond the first immigration generation, affecting foreign-born and U.S. born Latino students, which raises concerns about the type of barriers Latinos face and the conditions necessary for their academic success (Fry, 2003; Laird, DeBell, & Chapman 2006).

One condition to consider is school climate as Latinos are increasingly attending educational systems that have historically served White students (Suro, & Singer, 2002). This shift in demographics has led a growing number of researchers focusing on cultural aspects of school climate to examine and explain minority students' academic achievement (Valenzuela, 1999; Castillo et al., 2006; Charles, Fischer, Mooney, & Massey, 2009). Other growing areas of research include examining the influence of ethnic/racial identity on student achievement and examining academic achievement from a Latino perspective (Castillo et al., 2006; Esparza & Sanchez, 2008; Flores-González, 1999; Quiroz, 2001; Sellers, Chavous, & Cooke, 1998; Rivas-

Drake & Mooney, 2009; Shih, Pttinsky, & Ambady, 1999; Steele & Aronson, 1995; Spencer, Steele, & Quinn, 1999; Torres, 2003; Valenzuela, 1999).

Accordingly, this study addresses three emerging areas of inquiry: (1) understanding the extent to which Latinos experience academic achievement from a culturally specific perspective, (2) understanding the effect culturally inclusive schools have on various academic outcomes, and (3) understanding the role unique dimensions of ethnic identity have on the relationship between school climate and academic outcomes. The empirical research on these areas of interest has produced mixed results, which may be partially due to ethnic identity and academic outcomes being defined and measured differently from one study to another, making it difficult to make comparisons from one study to another.

This study examined ethnic identity from a multi-dimensional perspective to develop a comprehensive understanding of the unique effects of different dimensions of ethnic identity on various student outcomes. Additionally, this study examined academic achievement from a multi-cultural perspective. Common measures of academic achievement include grade point averages, standardized test scores, or degree completion, all of which tend to be based on performance criteria. However, for some Latinos, what it means to be educated is based on performance criteria as well as culturally specific criteria, such as the ability to obtain a formal education while maintaining strong familial/community ties (Nieto, 1996; Valenzuela, 1999). Research that considers this dual nature of what it means to be educated from a Latino perspective has largely been ignored, which makes sense given funding dollars are closely tied to performance based measures of academic achievement. However, for some Latinos, it will

continue to be important for education systems to consider factors that both facilitates academic performance and affirms students' cultural/familial values. Overall, this study helps fill the void in research as it pertains to the impact of school climate and ethnic identity on Latino college students' success.

Methods: This study utilized quantitative data from the National Longitudinal Survey of Freshman (NLSF) to test the hypothesis that unique dimensions of ethnic identity moderate the relationship between perceptions of school climate and academic achievement among a national sample of Latino college students attending selective universities (n=917). Also, the data were used to examine academic achievement from both a performance-based perspective and from a Latino perspective. The multivariate analyses were comprised of hierarchical multiple linear and logistic regressions.

Results: A sizeable amount of students, 44.6% to 57.4%, reported some loss of connectedness to family, community, or their ethnic group membership while going to college and there was a main effect between perceptions of school climate and five of eight outcome variables (timely degree completion, increased academic aspirations and three culturally related outcomes; family, community, and ethnic membership ties). Finally, seven outcome variables (cumulative college GPA, timely degree completion, degree completion within six years, increased aspirations, reduced aspirations, plus cost to ethnic group membership) were uniquely predicted by an interaction effect between school climate and at least one ethnic identity moderator. More specifically after controlling for twelve background factors (high school GPA, self-efficacy, self-esteem, public assistance, household income, parent homeownership, gender, mother foreign born, both parents foreign born, first generation college student, woman most responsible for

care education level, man most responsible for care education level), (1) the effect of school climate on cumulative college GPA was dependent on students' assimilationist beliefs; (2) the effect of school climate on degree completion within four years was dependent on students' familist beliefs and to a lesser extent students' assimilationist beliefs; (3) the effect of school climate on degree completion within six years was dependent on students' familist beliefs and to a lesser extent students' centrality and private regard scores; (4) the effect of school climate on increased academic aspirations was dependent on students' humanist beliefs and to a lesser extent students' centrality scores; (5) the effect of school climate on reduced academic aspirations was dependent on students' oppressed minority beliefs; (6) the effect of school climate on students' connection to family tended to be dependent on students' oppressed beliefs; and (7) the effect of school climate on students' ethnic group membership tended to be dependent on students' nationalist beliefs. Some of these effects were only marginally significant.

Implications: This study supports the emerging trend in educational research to take into consideration the influence of cultural school climate factors as well as students' ethnic identity in order to explain minority students' academic achievement. The findings from this study have the potential to inform programs geared towards promoting academic achievement from a Latino cultural perspective and programs promoting Latinos' academic achievement in predominantly White educational institutions (PWI's) that are increasingly serving Latinos. Institutions interested in supporting Latinos academic achievement from a culturally sensitive perspective may start to foster discussions between and among students, families, and school staff to develop guidelines/methods for balancing family responsibilities with schooling/learning responsibilities

in a culturally affirming manner, which may help reduce students ‘sense of loss to family; thus supporting academic achievement from a Latino perspective. Additionally, education institutions that provide a culturally inclusive learning environment may find it helps Latino students complete their degree in a more timely fashion, which may help reduce the amount of tuition debt students graduate with and also give students an opportunity to join the workforce sooner to generate a college reflective income. Furthermore, practitioners may use the findings from this study to identify students who could benefit most from a culturally inclusive environment; some students may come to rely more heavily on people or resources outside of their family like resources and relationships within their schools.

Chapter 1. Introduction

Since 1980 the U.S. Latino population has more than doubled. In 2010, Latinos comprised 16% of the total U.S. population (Humes, Jones, & Ramirez, 2011). With regards to U.S. Latinos, some are born in the U.S. and others originate from a number of other countries including Cuba, Guatemala, Mexico, and Puerto Rico. Latinos can be Asian, Black, White, or any combination thereof. The term Latino will be used rather than Hispanic because it reflects more of a self-determination label. The term Hispanic was officially created by the U.S. Bureau of the Census to designate people of Spanish origin in the U.S., which denotes a historical lineage to the colonization of the indigenous peoples of the Americas by the Spanish. However, not all Latinos speak Spanish, claim their Spanish heritage, or have Spanish ancestry (Alcoff, 2005; Comas-Díaz, 2001; Oboler, 1992). For this study, Latino is defined as individuals from Spanish speaking Latin America, Spain, and the Caribbean.

Latinos/as lag behind in educational attainment from early childhood education through higher education compared to their non-Latino White peers. Presently, Latinos' college enrollment rates are at an all-time high, but their degree completion rates remain low (Fry, 2002). While considerable attention has been paid to Latino students' high school completion, much less attention has been paid to their college completion rates. This study examines the influence of ethnic identity and school climate on Latino college students' academic achievement by utilizing data from the National Longitudinal Survey of Freshman (NLSF). The NLSF sample is comprised of first-time in college Latino students from low and high socioeconomic backgrounds enrolled at 28 highly selective institutions across the nation.

A. Background and Significance of the Problem

Latino students are dropping out of high school at more than double the rate of their Non-Latino White peers; for example, in 2009, the Latino high school dropout rate was 17.6%

compared to 5.2% for Non-Latino Whites (Chapman, Laird, & KewalRamani, 2011). Also, Latino high school students consistently score lower than their Non-Latino White peers on standardized college readiness examinations, such as the ACT and SAT (U.S. Department of Education, 2010a, b; 2011a). Furthermore, Latinos are less than half as likely as their Non-Latino White peers (13% versus 29.3%) to complete a bachelor's degree or higher (Ogunwole, Drewery, & Rios-Vargas, 2012). Progress is being made with respect to increasing both college enrollment and the number of degrees awarded to Latina/o students, however, there is still a gap. Therefore, more attention must be paid to increasing Latino students' retention and college degree attainment.

There are a number of reasons for focusing on Latino college completion rates: (1) Latinos are an increasingly large population in the U.S. and in higher education (Humes et al., 2011); (2) education is and will continue to be an important predictor of household income (U.S. Department of Labor, 2009; U.S. Bureau of Labor Statistics, 2013); (3) research consistently shows that higher levels of educational attainment are related to reduced rates of delinquency and better physical and mental health outcomes (Cutler, Deaton, & Lleras-Muney, 2006; Lorant et al., 2003; Machin & Vujic, 2006); and (4) persistent academic underachievement is found across Latino generations (Fry, 2002). The fact that persistent academic underachievement exists past the second immigration generation (U.S.- born children of foreign-born parents) raises concerns about the kind of barriers Latino students may encounter as well as conditions that may facilitate academic success. One area to examine is the climate within the school system (Valenzuela, 1999). Additionally, a growing number of scholars have focused on cultural variables such as ethnic/racial identity to explain minority students' academic achievement and perceptions of school climate (Castillo et al., 2006; Flores-González, 1999; Quiroz, 2001; Sellers et al., 1998a;

Shih et al., 1999; Steele & Aronson, 1995; Spencer, Steele, & Quinn, 1999; Torres, 2003; Valenzuela, 1999).

1. Increasing population size in the U.S. and in college. Latinos are the largest and the fastest growing minority population in the nation (Humes et al., 2011). Latinos now make-up 16% of the total U.S. population and they are steadily increasing in numbers. From 2000 to 2010 the Latino population increased by 43%. Moreover as of 2010, Latinos make up nearly 22% of all pre-K-12 students enrolled in U.S. public schools compared to 9.9% in 1986 (U.S. Department of Education, 2011b, 2002). Educational institutions from early childhood through higher education that have historically served primarily White students are now increasingly serving more Latino students (Davis & Bauman, 2011; U.S. Department of Education, 2012a).

Despite increased enrollment, Latinos have among the lowest college degree completion rates of all major U.S. racial/ethnic groups (U.S. Department of Education, 2012b,). Latino college degree completion rates have failed to keep pace with population growth and increased college enrollment. According to Fry from the Pew Hispanic Center (2002), from 1997 to 2000 Latino high school graduates enrolled in college at a higher percentage than the total U.S. high school graduate population (N=166 million; 10.25% versus 7%). Thus, 1.2 million of the 11.7 million Latino high school graduates compared with 12.3 million of the 166 million total U.S. high school graduate population enrolled in college. Recent procedural changes to U.S. Homeland Security policy (June 15, 2012) may further increase college enrollment rates among foreign-born Latinos. A directive, known as Deferred Action for Childhood Arrivals (DACA) is expected to impact at least 1.7 million undocumented immigrants under age 30, approximately 85% of them being Latino (Passel & Lopez, 2012). Certain undocumented immigrants who arrived to the United States as children and who meet other guidelines, such as obtaining a high

school diploma/GED or enrolling in school, can request relief from deportation and obtain authorization to work (U.S. Department of Homeland Security, 2012). This authorization to work expands the types of programs of study that undocumented students can pursue in college, such as teaching and the health professions, which otherwise may not be open to them.

The fact that Latinos have been enrolling in college at record high rates demonstrates the great value they place on higher education. In 2011, the number of 18- to 24-year old Latinos enrolled in college (public and private) reached an all-time high; yet, they continue be underrepresented. For instance, Latinos made-up 16.5% of these traditional aged college enrollees, but they are 20% of the U.S. population of 18 to 24-year olds (Fry & Lopez, 2012). Furthermore, only 35% of Latino high school graduates in this age group enrolled in college compared to 46% of Whites (Fry, 2002). Additionally, Latinos were less likely than Non-Latino White peers to attend college on a full-time basis (75% versus 85%), more likely to enroll in two-year colleges (40.2% versus 24.3%), and attend school later in life or over the age of 24 years (32.2% versus 27.4%) (Fry, 2002).

2. Education as indicator of household income. In 2012, Latinos had among the highest labor force participation rates (66.4%) across race/ethnic groups for persons over 16 years of age (U.S. Bureau of Labor Statistics, 2013). On the other hand, Latinos have low annual median incomes. In 2011, the median income for Latinos was $38,624 compared to $55,412 for Non-Latino Whites (DeNavas-Walt, Proctor, & Smith, 2012). Moreover, Latinos live in poverty at a higher rate than their Non-Latino White peers (25.3% versus 9.8%). This discrepancy in individual and household income between Latinos/as and Non-Latino Whites may be related to the differences in educational attainment. For example, in 2008, occupations with higher paying wages tend to require a bachelor's degree or higher for entry, but only 16% of Latinos held a

bachelor's degree compared to 34% of Whites (U.S. Department of Labor, 2009). In 2008, 15% of employed Latino men 16 years and older held managerial, professional and related positions compared to 34% of employed White men (U.S. Department of Labor, 2009). Similarly, only 24% of employed Latina women held these types of positions compared to 41% of employed White women (U.S. Department of Labor, 2009). That Latinos lag behind in occupations with higher paying wages may be directly related to the fact that Latinos are less likely than non-Latinos to obtain a college degree.

3. Education as an important predictor of general well-being. Increasing academic achievement among Latinos, which is the largest ethnic minority group in the U.S., has the potential to strengthen the nation's economy and well-being. Educational systems are major instruments in improving people's economic and social development (Freire, 1986). In 2006, the Alliance for Excellent Education estimated that raising the nation's high school and college graduation rates of minority students to the levels of Whites (conservative graduation rate of 78%) could generate more than $310 billion in additional income for the U.S. economy by 2020 (Amos, 2006). Additionally, persons with higher levels of education have decreased likelihood of imprisonment, delinquency, and re-incarceration, which has benefits both to the individual and society as a whole (Gavazzi, Yarcheck, Sullivan, Jones, & Khurana, 2008; Machin et al, 2011**;** Machin & Vujic, 2006; Temple & Reynolds, 2007). Increased levels of education and household income are also related to longer life expectancy and earlier detection of diseases (Mandelblatt, Andrews, Kao, Wallace, & Kerner, 1996; Meara, Richards, & Cutler, 2008; Cutler, Deaton & Lleras-Muney, 2006). On the other hand, persons with lower socioeconomic status, which includes lower levels of education, are more likely to report poor health, depression, and anxiety (Lorant, et al., 2003; Mokdad et. al., 2003). That Latino college completion rates remain

low and education is an important predictor of income and general well-being supports the need to examine factors that influence Latinos academic underachievement.

4. Factors related to Latinos academic achievement. The majority of research regarding Latinos' academic achievement has focused on high school completion. Now, however, more researchers are realizing the importance of focusing on Latino college students' success because Latino college enrollment rates are at an all-time high, but degree completion rates remain low. Academic achievement is commonly measured by using academic performance criteria, such as grades, standardized test scores, and school completion. Additionally, researchers commonly use these criteria to compare and contrast individuals and groups academic achievement. As a contrast to these common measures of academic achievement, qualitative studies highlight that for some Latinos, academic achievement is defined more from a collectivist or more specifically from a familialismo perspective, which includes obtaining a formal education while maintaining strong community and familial ties (Nieto, 1996; Hill & Torres, 2010; Valdés, 1996; Valenzuela, 1999). Research that measures academic achievement from a collectivist perspective is sparse; thus, the dual nature of what it means to be educated from a Latino perspective has largely been ignored.

Latino cultures generally adhere to collectivist beliefs in which individuals tend to value group identity, interdependence, and making decisions that benefit the welfare of the group more so than themselves. A component of collectivism, familialismo, has been consistently identified as being at the center of Latino cultures in which Latinos place special emphasis on group solidarity among family members including the nuclear and extended family (Cortes, 1995; Esparza & Sanchez, 2008; Marin, 1993; Nieto, 1996; Sabogal, Marín, Otero-Sabogal, Marín, & Perez-Stable, 1987; Steidel & Contreras, 2003; Valenzuela, 1999). Where collectivism is more

about performing on behalf of an in-group from a Latino perspective the primary in-group tends to be the family unit. In an attempt to explain the achievement gaps across ethnic groups, many scholars have noted that school climate and ethnic identity play a role in student success (Castillo et al., 2006; Charles, Fischer, Mooney, & Massey, 2009; Cheryan & Bodenhausen, 2000; Hurtado & Carter, 1997; Valenzuela, 1999, 2000).

The concept of school climate is complex. It is a multidimensional construct and can be examined in various ways. School climate can refer to the physical/structural aspects of the learning environment or to the social aspects of the learning environment, and both are interrelated. Historically, the school climate literature focused on factors, such as facilities, academic instruction, discipline and relationships (Zullig, Koopman, Patton, & Ubbes, 2010). Only recently has research begun to address cultural and diversity aspects of school climate. While the majority of research has focused on k-12 students, college students are increasingly becoming the focus of examination. This knowledge is timely since colleges and universities, especially those that have been predominantly White, now have student populations that are more ethnically diverse.

For the most part, research shows that positive learning environments are related to positive student outcomes, such as increased satisfaction with school, greater self-esteem, and higher grade point averages (Charles et al, 2009; Way & Robinson, 2003; Strayhorn, 2008). However, research has also produced mixed results; for instance, Hurtado and Carter's (1997) study with Latino college students did not find a significant relationship between grade point average and school climate. Additionally, Charles, Fischer, Mooney, and Massey's (2009) study with college students found that the racial school climate was positively related to students' accumulated college credits, but not departure from school. A review of the literature suggests a

need to examine whether the impact of school climate on Latinos academic achievement varies in relationship to their ethnic identity.

The construct of ethnic identity is multidimensional; it can refer to dimensions such as salience (amplified sense of ethnic identity), private regard (how positively individuals view their own ethnic groups), public regard (how positively individuals think other ethnic groups view their specific ethnic groups), and ideology (set of beliefs individuals adhere to). The research connecting ethnic identity to academic achievement has also produced mixed results. Some research suggests ethnic identity may buffer the negative effects of stereotypes and prejudices on academic achievement (Altschul, Oyserman, & Bybee, 2006; Miller, 1999), while other research suggests ethnic identity may increase students' vulnerability (Castillo et al., 2006; Operario & Fiske, 2001; Spencer et al., 1999). The mixed results may be partially due to the various conceptualizations and measures of ethnic identity. Consequently, it is difficult to draw strong comparisons from one study to another.

Sellers, Smith, Shelton, Rowley, and Chavous (1998) recommend examining ethnic identity from a multiple dimensional perspective, such as examining ethnic salience, regard, centrality, and ideology simultaneously to learn about the way unique dimensions of ethnic identity manifest in persons' lives. Since the literature on ethnic identity has mainly focused on understanding African Americans' racial/ethnic identity in relation to school experiences, more research on Latinos' educational experiences is needed. Differences in Latino students' academic achievement may be explained by examining the interaction effect between ethnic identity and school climate while simultaneously examining multiple dimensions of ethnic identity.

B. Purpose and Significance of the Study

This study analyzed data from the National Longitudinal Survey of Freshman (NLSF) to examine the extent to which unique dimensions of ethnic identity influence the relationship between perceptions of school climate and academic achievement for Latino college students. The NLSF tested theoretical explanations of minority students' underachievement in higher education, such as peer group influences, oppositional culture, and stereotype threat (fear of reinforcing negative stereotypes) via a survey method (Massey, Charles, Lundy, & Fischer, 2003). One analysis of the NLSF data found that perceptions of racial climate (i.e., how culturally inclusive the environment is perceived to be) significantly predicted Latino and African American students' academic achievement (Charles et al., 2009). This analysis found within group differences in perceived racial climate. These within group differences may be partially explained by differences in students' ethnic identity.

Research pertaining to the relationship between ethnic identity and academic success has produced at times no association and at other times a positive association (Lockett & Harell, 2003; Massey & Fischer, 2005; Operario & Fiske, 2001). These varied findings may be partly due to different conceptualizations of ethnic identity. Previous research mainly focused on only one or two dimensions of ethnic identity as opposed to examining multiple dimensions simultaneously. Sellers et al. (1998b) recommend examining ethnic identity from a multidimensional perspective to learn about the impact unique dimensions of ethnic identity have on persons' lives, such as behavioral and adaptational outcomes. This study examined multiple dimensions of ethnic identity to learn about the unique effect each may have on Latinos' academic achievement and whether these dimensions of ethnic identity moderated the relationship between school climate and academic achievement.

This study helps fill the void in research as it pertains to the impact of school climate and ethnic identity on Latino college students' success. Additionally, findings from this study provide insight into developing culturally-targeted policies and practices that increase Latinos' academic achievement in higher education.

Chapter 2. Conceptual Framework and Research Hypotheses

The conceptual framework for this study was informed by Valenzuela's (1999) theory of subtractive/additive schooling and Sellers et al. (1998b) Multidimensional Model of Racial Identity. Together, they provided a lens to examine the moderating effect of ethnic identity on the relationship between school climate and academic outcomes.

The theory of subtractive/additive schooling posits that a subtractive learning environment can impede Latino student's academic achievement and an additive school climate facilitates academic achievement. Valenzuela's theory of subtractive/additive schooling was supported by her three-year ethnographic study at a predominantly Mexican/Mexican-American high school in Houston, Texas. A subtractive climate devalues students' cultural differences and is characterized by uncaring relationships between teachers and students. Additive schooling encompasses concepts of a caring relationship between teacher and student as well as concepts of cultural inclusivity.

Sellers et al.'s (1998b) Multidimensional Model of Racial Identity (MMRI), was originally intended for understanding how African Americans make sense of their racial identity and how their racial identity influences their interactions with their environment. Recently, researchers have been applying this model to other racial/ethnic groups, including Latinos (Fuligni, Witkow, & Garcia, 2005; Johnson, Robinson Kurpius, Rayle, Arredondo, & Tovar-Gamero, 2005; Rivas-Drake, Hughes, & Way, 2008).

I used both of the aforementioned theories to develop a guiding conceptual model for understanding and examining factors that contribute to Latinos academic achievement. In this section, I provide a summary of the aforementioned theories followed by my conceptual model, and research hypotheses.

A. School Climate: Additive/Subtractive Schooling

School climate is multidimensional and can be examined through observable physical aspects of the environment or self-reported perceptions of social interactions within the environment. The theory of additive/subtractive Schooling (Valenzuela, 1999) provides a cultural conceptual lens for examining school climate. Additive schooling encompasses concepts of a caring relationship between teacher and student as well as concepts of cultural assimilation and social capital. Subtractive environments divest students of their culture and are not characterized by caring relationships between teachers and students.

The concept of additive schooling refers to a learning environment that is culturally inclusive. The more additive the school climate, the more schools acknowledge that a caring relationship between the teacher and the student is important for engaging students in their learning. According to Valenzuela (1999), student progress is nurtured by an education that accentuates respect, responsibility, and sociality and a climate that affirms students' bicultural identities and values. Subtractive schooling environments, on the other hand, divest students of their culture. Subtractive schooling is characterized by uncaring relationships between teachers and students and assimilative policies/practices that dismiss students' culture and beliefs such as what it means to be educated from a Latino perspective.

For some Latinos, what it means to be well-educated is based on an individual's ability to obtain a formal education while maintaining familial ties or fulfilling her/his social/familial responsibilities (Esparza & Sanchez, 2008; Nieto, 1996; Valenzuela, 1999). Students may find themselves in a cross-cultural dilemma of feeling like they must choose between mainstream values of success or their cultural values of success. For some Latinos, there may be a cultural cost of schooling, such as feeling less part of their family or community. Weakened family or

community ties can lead to weakened exchanges of resources or social capital between students, student groups, and across immigrant generations. Additive school environments attempt to minimize this cross-cultural dilemma by reducing the "normative differences" between the students and their environment (Valenzuela, 1999).

B. Ethnic Identity: Multidimensional Model of Racial/Ethnic Identity

There are varied conceptualizations of ethnic identity. Three primary perspectives from which ethnic identity has been conceptualized include: social identity, ego-identity, and acculturation perspectives (Umaña-Taylor, Diversi, & Fine, 2002). From a social identity perspective, researchers focus on the perceptions that people in society have of ethnic groups and how those perceptions influence ethnic group identification or membership. From an ego identity perspective, researchers focus on exploration of ethnic identity and achievement of a positive/secure identity over time. From an acculturation perspective, researchers focus on the extent to which ethnic group values coexist with mainstream values/culture. Overall, theorists differ in their conceptualizations about what is an optimal racial/ethnic identity.

This study utilizes Sellers et al.'s (1998b) Multidimensional Model of Racial Identity (MMRI) and adapts it for understanding and examining Latinos' ethnic identity. The MMRI takes into account the experiential meaning of being a member of a specified racial group, including the cultural and historical experiences of oppression. The four dimensions that comprise the MMRI include: salience, centrality, regard, and ideology. Together, these dimensions incorporate the three above mentioned conceptualizations of ethnic identity. The MMRI acknowledges that ethnic identity is comprised of the perceptions that a person has about how others in society regard their ethnic group, the regard that an individual has of their own ethnic group, and the experiential meaning of what it means to be part of their ethnic group with

respect to beliefs, values and attitudes and also in relation to others in society. Overall, theorists differ in their conceptualizations about what is an optimal racial/ethnic identity. I adapted this model to focus on ethnic rather than racial identity as race is more of a classification system based on physical features like skin color, whereas ethnicity is characterized more by common nationality, language, and culture (Betancourt & Lopez, 1993; Ford & Airhihenbuwa, 2010; Yosso, 2005). For the purposes of this study salience and public regard were excluded from the model because the NLSF did not contain an adequate measure of these constructs. I also adapted the MMRI model by including the dimension of familist/familialismo in the conceptualization and operationalization of ethnic ideology (see Figure 1). In this section, I describe each of the dimensions of this adapted model.

Schematic Representation of the Multidimensional Model of Ethnic Identity

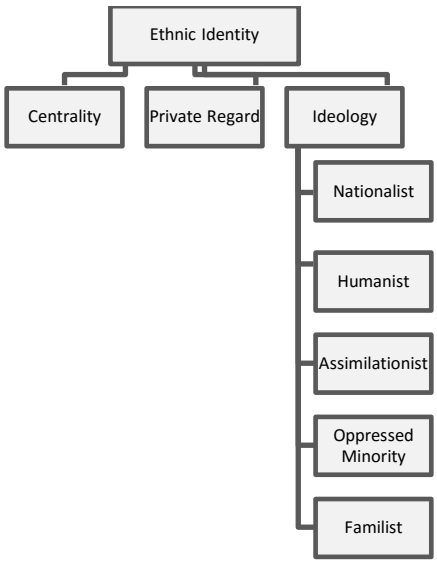


Figure 1. Schematic Representation of the Multidimensional Model of Ethnic Identity without salience and public regard, and with an additional ideological dimension of familialismo (Adapted from Sellers et al., 1998 Multidimensional Model of Racial Identity).

Centrality refers to the extent ethnic identity is central to an individual's self-concept (e.g. a Latino with high centrality would report feeling close in ideas to others in their ethnic group). This dimension is the most stable dimension across situations/contexts because it refers to the extent to which a person normally defines herself or himself with regard to ethnicity. Private regard refers to how positive and negative an individual views his or her own ethnic group (Private Regard). This view may impact how an individual makes sense of his or her learning environment.

Ethnic ideology refers to an individual's philosophy (e.g. set of beliefs, opinions, and attitudes) about the way in which members of their ethnic group should act and interact with society. Under the MMRI a student's ideological beliefs can be characterized as nationalist, humanist, assimilationist, and/or oppressed. This study adapted the MMRI by including another relevant ideological belief system among Latinos, that of familialismo (Cortes, 1995; Esparza & Sanchez, 2008; Steidel & Contreras, 2003).

The nationalist ideology is characterized by a preference for one's own ethnic social environment. The humanist ideology emphasizes similarities among all humans, not distinguishing persons on the basis of characteristics of race, gender, class, etc. The assimilationist ideology is characterized by an emphasis on similarities between one's own ethnic group and the rest of U.S. society, often viewed as non-Latino White America. The oppressed minority ideology links the oppression of one's own ethnic group to that of other minority groups. A familialismo ideology refers to the extent to which a student feels responsible to uphold the family name, and reports making choices or sacrifices for the welfare of the family more so than their own individual needs (Cortes, 1995; Esparza & Sanchez, 2008; Steidel & Contreras, 2003).

Famililist beliefs are at the center of Latino cultures. Latinos place special emphasis on group solidarity among family members, including the nuclear and extended family (Marin, 1993; Rodriguez & Kosloski, 1998; Rodriguez, Mira, Paez, & Myers, 2007; Sabogal et al., 1987). Familialismo is a component of collectivism in that individuals value group identity, interdependence, and making decisions that benefit the welfare of the group/ family more so than themselves. All in all, students' ideologies can guide the way they make sense of their learning environment, and thus, have implications for their academic outcomes.

C. Guiding Conceptual Model

The theory of subtractive/additive schooling and the adapted MMRI were incorporated into my guiding conceptual model to examine the effects of perceptions of school climate on academic outcomes and the moderating effects of ethnic identity dimensions on the relationship between perceptions of school climate and academic outcomes for Latino college students (see Figure 2). The illustration in Figure 2 is adapted from Wu and Zumbo's (2008) depiction of a conceptual path diagram for understanding moderating effects.

Displayed in Figure 2, the independent variable of perceptions of school climate was hypothesized to be positively associated with academic outcomes. Students with more positive or more culturally inclusive perceptions of their school climate were expected to have more positive academic outcomes than those with less inclusive perceptions (Valenzuela, 1999). Additionally, as shown in Figure 2, the relationship between perceptions of school climate and academic outcomes was hypothesized to be dependent on ethnic identity (moderator variable). Ethnic identity was comprised of multiple dimensions, such as how central ethnic identity is to person's self-concept, how a person views his/her ethnic group, and the cultural beliefs/values that he/she holds to interact with his/her environment (Sellers et al., 1998b).

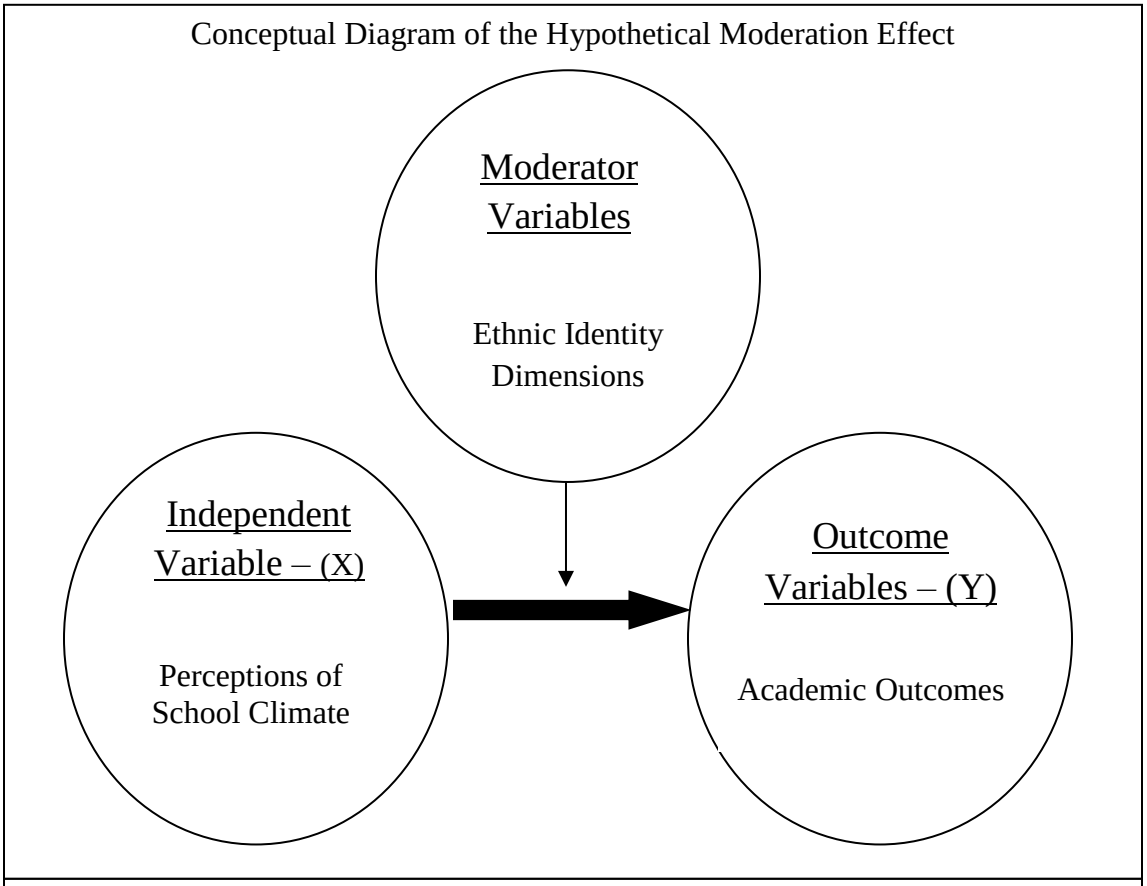


Figure 2. Conceptual diagram for hypothetical moderation effect of unique dimensions of ethnic identity on the relationship between perceptions of cultural climate and academic outcomes.

A more inclusive school climate was hypothesized to be associated with more positive academic outcomes when students had high ethnic identity centrality and adhered more closely to nationalist beliefs, oppressed minority beliefs, or familialismo beliefs and when students had

low private regard, humanist beliefs, or assimilationist beliefs. For example, students who experience their ethnic identity as more central to their ethnic identity were expected to benefit more from a culturally inclusive environment than those who do not experience their ethnic identity as central to their self-concept. Another example, students who had low private regard or viewed their ethnic group less positively were expected to benefit more from a culturally inclusive environment than those with an already more positive view of their ethnic group.

D. Research Questions and Hypotheses

In summary, the theories and research related to additive/subtractive schooling, the Multidimensional Model of Racial Identity, and familialismo ideology were used to develop two main research questions and nine subordinate hypotheses aimed at understanding Latinos academic achievement:

Research question one. Are perceptions of a culturally inclusive school climate associated with positive academic outcomes?

H_1: Latino/a college students who perceive their school climate to be more culturally inclusive will have more positive academic outcomes (i.e. higher grade point averages; greater odds of timely degree completion, degree completion within six years, and increased academic aspirations; decreased odds of reduced academic aspirations, familial cost, communal cost, and ethnic group membership cost).

Research question two. Do unique dimensions of ethnic identity moderate the relationship between perceptions of school climate and academic outcomes?

Perceptions of a more culturally inclusive school climate are associated with positive academic outcomes when:

H_2: centrality is high.

H_3: private regard is low.

H_4: nationalist ideology is high.

H_5: humanist ideology is low.

H_6: assimilationist ideology is low.

H_7: students adhere to an oppressed minority ideology.

H_8: when familialismo ideology is high.

Chapter 3. Literature Review

The main bodies of literature that informed this study were research on academic achievement, Latino educational attainment, school climate, and ethnic identity. The literature was published in the last 30 years and describes studies, theories, models and demographic trends related to the scope of Latinos' educational attainment and achievement gap.

The first section of this chapter explores how academic achievement has been understood, defined and measured by empirical research and government agencies like the National Center for Education Statistics (NCES). The second section examines Latinos' educational attainment from early childhood through higher education. The third section reviews the literature on how school climate has been defined and measured over time. One model and two theories of school climate were investigated in-depth for the purpose of developing a conceptual framework to help understand and explain Latino's academic underachievement,: (1) Tinto's model of persistence (1987, 1993), (2) Valenzuela's theory of additive schooling (1999), and (3) Ogbu's cultural ecological theory (1978, 1987). The fourth section begins with Umaña-Taylor, Diversi, and Fine's (2002) review of how ethnic identity has been conceptualized in 21 empirical studies from 1969-1989. Then, the multidimensional model of racial identity (MMRI) is described, followed by research that connects the MMRI constructs to perceptions of school climate and academic achievement.

This literature review ends with a summary of what is currently known about school climate and ethnic-identity factors that support or contribute to college-degree completion for Latina/o students. A conclusion is provided regarding current gaps in this knowledge base.

A. Understanding Academic Achievement

Academic achievement is a relevant and important topic for the U.S. on a domestic and international level. Academic achievement has been defined and measured in various ways. Measures of academic achievement in published studies consist of coursework- and college-completion rates, degree-completion time, average accumulated college credits, grade-point averages, test-percentile scores, and attendance (Anderson & Mezuk, 2012; Driscoll, 1999; Fry, 2003a; Ramirez, 2012; Zarate, Bhimji, & Reese, 2005). The U.S. Department of Education (2013) collects and analyzes data every year to monitor secondary and post-secondary school performance of students, conceptualized as graduation, attendance, and enrollment rates; diplomas and degrees conferred; and test results in various subjects over time and across different groups. Some of the most prominent forms of assessing academic achievement are grade-point averages, degree completion, and timely completion. Less prominent forms of academic achievement (non-performance based) include students' academic aspirations over time and students' perceptions that the cost of going to college does not conflict with their cultural definitions of what it means to be well-educated, which is tied to cultural values of strong familial and community ties. These issues are especially important when examining the concept of education from a Latino perspective. Some Latinos, when describing *lo que es ser buen educado* (what it means to be well-educated) describe an individual who is not only formally educated, but someone who also demonstrates moral and social responsibility to the family or community (Nieto, 1996; Valenzuela, 1999). These values exemplify the concept of familialismo, which means students uphold the welfare of the family over their own individual needs (Esparza & Sanchez, 2008; Steidel & Contreras, 2003). By measuring academic

achievement in wide-ranging ways, atypical but important outcomes of higher education for Latino college students may become apparent.

1. Latino population growth in education institutions. Overall, Latinos are an increasingly large population in the U.S., and recent demographic trends demonstrate that Latinos are establishing themselves in suburban residential settings rather than only in Latino niches in urban areas (Suro & Singer, 2002). The Latino population grew in the suburbs by 83.6% between 1980 and 1990; and today, the majority of Latinos live in the suburbs (Suro & Singer, 2002). Since Latinos are now more geographically distributed than before, they are increasingly attending educational institutions that do not have experience working with Latinos. Increasingly Latino students are attending educational institutions that are predominately White and non-Latino from early childhood through higher education. The majority of the increase in college enrollment rates for Latinos has occurred in the community college sector (Fry, 2002; Kurlaender, 2006). More than half (53%) of the Hispanic-Serving Institutions (HSI) are community colleges, denoting a shift in community college demographics (Contreras, Malcom, & Bensimoon, 2008). To be defined as a Hispanic-Serving institution, a higher education institution must meet at least two criteria, as established by the U.S. Department of Education (2011c): (1) be an eligible institution that is nationally-recognized by an accrediting agency and (2) have an enrollment of undergraduate full-time equivalent students that are at least 25 percent Latino students. Nearly half (48%) of all Latinos enrolled in college attend a Hispanic Serving Institution (Stearns, Watanabe, & Snyder, 2008).

Being defined as an HSI does not necessarily mean the institution is adequately addressing the needs of Latinos. Unlike Historically Black Colleges (HBCUS), HSIs were not founded on the premise of serving the Latino population. HBCUs played an important role

during the post-Civil War period in educating African Americans when the cultural norm consisted of separate but equal systems of education (Freeman, 1998). On the other hand, Hispanic Serving Institutions are defined as such because of a shift in demographics (as mentioned previously); and from one year to the next, an institution could lose its eligibility status from the U.S. Department of Education (Contreras, Malcom, & Bensimoon, 2008). One benefit of this classification system is that the U.S. Department of Education can award federal grant dollars to eligible HSI's, such as Title III or Title V funds to expand educational opportunities for Latino students and improve their student outcomes (U.S. Department of Education, 2014).

2. Latinos educational achievement. Latinos lag behind in educational attainment from early childhood education through higher education. Although they make up the largest minority group of the early childhood population, the U.S. Department of Education (2010c) reported that Latinos under age five were less likely to be enrolled in center-based programs/care (49.3%), than their Non-Latino White peers (60.1%). By grade four, there is a 24-point score gap between White and Latino students' reading comprehension test scores (U.S. Department of Education, 2011a). The reading score gap narrows for students in eighth grade, but the percentage of Latino students (36%) reading below a basic 8th grade reading comprehension level is still substantially higher than non-Latino White students (15%) (U.S. Department of Education, 2011a). In 2010, 21.2% of Latinos aged 25 and older had less than a ninth-grade education compared to 2.4% for non-Latino Whites (U.S. Census Bureau, 2011a). Furthermore, for Latinos aged 25 and older, 38.6% did not have a high-school diploma compared to 8.2% of non-Latino Whites (U.S. Census Bureau, 2011a).

When it comes to college, Latinos are more likely than their non-Latino White peers to both enroll in community colleges and attend colleges/universities on a part-time basis (Contreras et al., 2008; Fry, 2002). Some researchers propose that attending a community college or attending college on a part-time basis may be a risk factor for dropping out. Of those Latinos who enroll in a community college, only 27% transfer to a four-year institution, and less than half of that number earn bachelor's degrees (Fry 2002; NCES, 2000). Other researchers suggest that community colleges themselves are not the risk factors; rather, the reasons students *choose* to attend a community college are the underlying risk factors. For instance, Latino college students may be opting for tuition that is more affordable, a schedule that is more flexible, and a college that is closer to home because of their low-household income, employment status, and familial ties (Fry, 2002). Affordable tuition is especially important for undocumented students because they are not eligible for federal/state aid and are eligible for a limited number of scholarships.

Over the five-year period of 2006-2010, 13.0% of Latinos earned a bachelor's degree in comparison to 29.3% of non-Latino Whites (Ogunwole et al., 2012). Latinos comprised 4.8% of the Master's degrees conferred in 2012 compared to 9% for African Americans and 79.9% for Non-Latino Whites (U.S. Department of Education, 2012a). It is important to note that more Latina women than Latino men obtain graduate degrees. Latinas obtained 64% of Master's degrees conferred to Latinos between 2009 and 2010 (U.S. Department of Education, 2012a).

3. Persistent academic underachievement across Latino generations. While some Latinos are born in the U.S., others originate from Spanish-speaking areas of Latin America and the Caribbean. The three largest Latino ethnic groups in the U.S. are of Mexican, Puerto Rican, and Cuban descent, respectively (Ennis, Rios-Vargas & Albert, 2010). Although the majority of

Latinos in the U.S. are of Mexican descent (63%), in the five-year time span from 2006 to 2010 only 9.1% had a bachelor's degree or higher, compared to 15.9% of Puerto Rican descent, and 25% of Cuban descent (Ennis et al., 2010; Ogunwole et al., 2012). Latinos in the U.S. are from mixed generational backgrounds. A first-generation Latino in the U.S. is considered foreign born; whereas, a 1.5 generation Latino is foreign born but raised in the U.S. since childhood; a second-generation Latino is U.S. born with at least one U.S. born parent; a third-generation Latino is U.S. born with U.S. born parents, etc. (Fry, 2002; US Census, 2011b). In 2010, first-generation Latinos in the U.S. comprised 37% of all Latinos, second-generation Latinos comprised 30%, and third-generation and beyond comprised 32% of all Latinos (US Census Bureau, 2010). Latinos born in the U.S. are more likely than immigrant Latinos to have completed high school, but Latino immigrant youth and U.S.-born Latino youth have similar secondary school performance outcomes when they are educated in the U.S. (Driscoll, 1999; Fry, 2003a,b; Laird, DeBell, & Chapman, 2006).

Research shows that despite generation, Latino youth drop out of school at relatively similar rates when educated in U.S. schools; 13.7% for U.S. born and second-generation or higher versus 14.7% for foreign-born Latinos (Laird et al., 2006). The most common way to calculate the dropout rate is to sum the number of students who have not finished high school and the number of students who are not currently enrolled in school and dividing it by the number of persons in the respective high school going age bracket; for Latinos 16 to 19 years of age the estimated dropout rate is 30% (Fry, 2003b). However, this computation does not take into consideration that some of these Latinos arrived in the U.S. at the age of 16 or older and never enrolled in U.S. schools. Therefore, Fry (2003b) estimates the Latino drop-out rate is approximately 15% for youth between the ages of 16 and19, excluding those who had never

enrolled in U.S. schools. This rate is twice that of non-Latino Whites. Foreign-born Latino youth perform almost as well as native-born Latino youth at the secondary-school level. This finding is rather interesting considering first-generation Latinos have lower family income, lower English proficiency levels, and lower parental education.

Feliciano (2011) examined patterns of intergenerational social mobility for immigrant groups from over 17 countries and found that how mobility is defined can lead to different interpretations of generational differences in educational attainment. Children of immigrants are often characterized as moving upward if they surpass their immigrant parents' post-migration/U.S. educational status or if they surpass their White U.S. peers and downward if they do not. However, if the relative U.S. educational status of children of immigrants were to be compared to their parents' relative pre-migration status then their mobility would be characterized as going downward. In general, Latino immigrant parents, except for Puerto Ricans, tend to have *relatively* higher pre-migration educational/social status in their home country than their children's educational/social status in the U.S. For instance, a foreign born parent that holds at least an eighth grade education can signify a relatively high educational status in their country of origin, but not necessarily in the U.S. That is, immigrant children may be surpassing their parent's educational/social status in literal terms, but not necessarily in relative terms. For instance, immigrant children with high school diplomas may be surpassing their parent's education level, but in the U.S. a high school diploma does equate to the relative high educational status of earning an eight grade education their parent's experienced in their home country. Additionally, Feliciano found that parents' socioeconomic status in the U.S. was only related to their children's college aspirations when their parents held relatively low social status in their home country, but not when their parents held relatively high social status in their

home country. This study suggests that immigrants' relative pre-migration status may explain some of the educational differences in upward mobility across generations.

There are also apparent differences in upward mobility across generations in college-enrollment rates. Among 18 to 24 year olds, second-generation Latinos (U.S. born children of foreign-born parents) enroll into college at a higher rate (42%) than their first-generation (26%) and third-generation peers (36%) (Fry, 2002). Among 25 to 44 year olds, second-generation Latinos completed some college at a higher rate (48.8%) than their 1.5 generation peers (foreign-born, but arrived to the U.S. by age 13) (Fry & Lowell, 2006). Understanding academic achievement across Latino generations is complex, and only recently have researchers started looking at these generational differences.

Rivas-Drake and Mooney (2008b) utilized the Latino sample from the NLSF to examine within-group differences in self-reported grade-point averages during students' freshman and sophomore years in college. After accounting for previous academic achievement, freshmen grade-point average was not significantly related to being foreign born or having an immigrant parent. However, sophomores grade-point average was positively related to being foreign born. Later, Rivas-Drake and Mooney (2009) utilized the Latino sample from the NLSF to examine within group differences in grade-point average, amount of time spent on academics, and time spent on extracurricular activities from freshman year in college to junior and senior years. Having an immigrant parent was not related to any of these three outcomes, and being foreign born was not included in this study. Having an immigrant parent does not distinguish between first-generation immigrants and second-generation U.S. Americans because both generations could have had an immigrant parent. Additionally, being foreign born does not distinguish students who arrived in the U.S. as children (1.5 generation) from those that arrived 16 years of

age or older (mainly schooled outside of the U.S). Nevertheless, being foreign born is positively related to students' grade-point average their sophomore year but not their freshman year. Maybe foreign-born sophomores were more academically and socially integrated by their sophomore year compared to their freshman year.

Recently researchers started looking at generational differences in assimilation and ethnic identity. Vasquez (2012) conducted an ethnographic study with three generations of middle-income Mexican American families in California. She found that attachment to ethnic identity could be 'distilled' and be (re)ignited from one generation to another. Families could be "educationally, financially, and occupationally successful *and* either loosely or strongly adhere to their ethnic heritage" (p. 231). Assimilation and racial/ethnic identity were influenced by spouse, phenotype, name, gender, social class, family teachings, social contexts, institutions, immigration/citizenship status, and historical context. As a consequence, assimilation and ethnic identity developed unevenly across generations. With respect to influences of institutions on ethnic identity, schools were often a person's "first-realizations-of-race" and served as spaces for navigating racial/ethnic identities.

B. Understanding School Climate

The concept of school climate is complex because it can be examined in various ways and because it is a multidimensional construct. School climate can refer to the physical/structural aspects (i.e., number of computers, age of the building, size of the student body, racial/ethnic make-up of the student body/ structural diversity) or to the social aspects of the learning environment (i.e., racial-tensions, quality of teacher-student relationship, educational curriculum), and each is related to the other. For example, larger schools tend to have lower school achievement and higher dropout rates, and the students who are most affected by

attending large schools tend to be racial minority groups and students from low socioeconomic backgrounds (Jewell, 1989; see also Cotton, 1996; Leithwood & Jantzi, 2009).

In a recent content analysis of school climate, Hart and Fellabaum (2008) reviewed 118 campus-climate studies from a national clearinghouse database and found: (1) the majority of campus-climate research was conducted by institutional employees; (2) the most common research methods used in the studies were quantitative and mixed methods; (3) the most prevalent characteristics considered in the studies consisted of gender and race/ethnicity; and (4) the majority of studies focused on the faculty or the faculty in combination with the students.

Zullig, Koopman, Patton, and Ubbes (2010) examined school-climate literature published from the 1950's to the 2000's and found five common domains of school climate: order/safety/ discipline (i.e., perceived safety, fairness of disciplinary policies, respect for peers and authority); academic factors (i.e., norms, instruction, recognition) social relationships (i.e., teacher-student, student-peer, helpfulness of staff); facilities (i.e., school temperature, noise level, classroom arrangement); and connectedness (i.e., engaged learners, valued learners, feelings about school).

From a diversity perspective, Hurtado, Arellano, Griffin, and Cuellar (2008) reviewed over 90 campus-climate instruments for their attention to four climate factors: structural diversity, psychological, behavioral, and historical legacy of the climate. They found that the three most common dimensions of school climate measured structural diversity, psychological climate, and behavioral dimensions. The dimension of structural diversity has to do with numerical representation of various racial/ethnic groups. Psychological climate refers to the perceptions and attitudes between and within racial/ethnic groups. Behavioral climate is characterized by intergroup relations/interactions on campus. Hurtado et al. (2008) found that the

least addressed dimension in the literature was the institution's legacy of inclusion or exclusion, such as an institution's priority or mission to recruit more ethnically diverse students.

School climate can be assessed by measuring the objective, perceived, or psychological school climate (Hart & Fellabaum, 2008; Peterson & Spencer, 1990). The objective climate refers to observable dimensions of the organization including behavioral interactions within the organization. The perceived climate refers to members' perceptions of explicit organizational behavior, such as perceptions about academic administrative support. The psychological or felt climate refers to how members feel about their organizations or their roles in them, such as their satisfaction with instruction or programs.

Each aspect of the environment can be examined on various levels, like classroom, school, or state. For instance, Freeman, Anderman and Jensen (2007) found that sense of belonging at the university-classroom level was positively associated with students' academic self-efficacy, motivation, and perceptions of the value of academic tasks. At the institutional level, they found being accepted by both fellow students and university personnel were most important to students' sense of belonging. Similarly, school climate can be examined from different perspectives, like the students', faculties', or sub-groups' perspective (e.g., race/ethnicity, gender, sexual orientation). Moreover, researching school climate is possible from various perceptions across different levels. For example, it is possible to obtain both a student's perspective and a faculty's perspective about their perceived social relationships and their felt connectedness at both the classroom and university levels. In addition, school climate can be examined through a researcher's framework (e.g., examining school climate from a diversity perspective).

1. Theories and research on school climate and academic achievement. Broadly speaking, places can limit peoples' exploration of identity and make them feel distant and alienated but places can also give individuals a sense of belonging and safety (Gustafson, 2001b; Manzo, 2003, 2005). Multiple places constitute our lifeworld, but school climate is of central importance for most children, adolescents, and young adults who are making sense of their identity and who will likely be interacting with school environments on a daily basis from at least kindergarten age to high school age. Cohen, McCabe, Michelli, and Pickeral (2009) define school climate as "the quality and character of school life" (p. 10). More specifically, Cohen and colleagues refer to school climate as group experiences of school life reflected in the school's norms, goals, values, interpersonal relationships, and even teaching and learning practices, as well as organizational structures. For Latinos, the schooling experience can involve a struggle of negotiating two cultural expectations: accepting dominant academic achievement values of individual success and competition but not to the extent that they turn away from their families' or communities' overall success (Covington, 2000; Nieto, 1996). Additionally, minorities, including Latinos, may find that being able to connect to a place can occur at the individual level and the group level, such as when ethnic and racial groups have shared meanings/experiences of a place (Henderson-King & Stewart, 1999; Low, Taplin, Scheld, & Fischer, 2002; Manzo 2005; Taylor, 2000; Valenzuela, 1999; Virden & Walker, 1999). Both, qualitative and quantitative research support the idea that school climate can either promote or impede students' academic achievement and sense of well-being (Hurtado & Carter, 1997; Osterman, 2000; Spady, 1971; Valenzuela, 1999; Way & Robinson, 2003).

Research has consistently found that children who attend schools with positive school climates are more likely to have higher self-esteem, to be less emotionally distressed, and less

likely to feel alienated (Bachman & O'Malley, 1986; Hoge, Smit, & Hanson, 1990; Kuperminc, Leadbeater, Emmons, & Blatt, 1997; Roeser, Eccles, & Strobel, 1998; Way & Robinson, 2003). Research with middle school students has found that well maintained schools affect school pride and community morale, which in return affects day-to-day achievement (Rosario & Vargas, 2005). Additionally, learning environments characterized by positive social relationships are related to enhanced learning, academic motivation, and better social adjustment (Murray & Greenberg, 2006; Osterman, 2000; Ryan & Patrick, 2001). Students' positive interactions with their learning environment are often related to students' increased sense of belonging (Osterman, 2000).

a. Theories and research on integration and persistence. Tinto's model of persistence is one of the most widely known and studied models of student persistence at the college level (1987; 1993). In his model, dropping out of college is viewed as a process where students' poor academic performance and lack of social support lead to social alienation and academic disengagement (1993). His model posits that an institution's job is to provide an environment that promotes student learning by helping students to integrate into their institution's academic and social life. Moreover, "it hinges on the establishment of a healthy, caring educational environment which enables all individuals, not just some, to find a niche in one or more of the many social and intellectual communities of the institutions" (1993, p. 204-5). More recently, Tinto (2006) named four environmental conditions as helpful for promoting student learning and integration: 1) high academic expectations for student learning; 2) accessible academic, social, and financial support 3) timely feedback about learning; and 4) conditions that increase student involvement with tasks and their peers.

Charles, Fischer, Mooney, and Massey (2009) utilized the NLSF data to test Tinto's model of persistence that students' social and academic integration leads to better academic outcomes and persistence. They found that departure from college, through the end of sophomore year, was negatively related to college satisfaction, peer support for social life, studying with peers and being part of Greek club life. Also, they found that the likelihood of leaving college was reduced with accumulation of credits and a living situation conducive to studying. With respect to grade point average, they found that student reports of peer support for academics were negatively associated with grade point average through the end of sophomore year in college whereas peer support for social life and students' involvement with campus and/or community organizations were positively related to grade point average during the same time period.

Hurtado and Carter (1997) examined the extent to which Latinos' college experience contributed to their sense of belonging. Their study utilized data from a previous survey of high achieving Latino college students. They found that increased sense of belonging was related to more frequent outside of class discussions of course content with faculty and other students and student reports of tutoring other students. However, students' sense of belonging was not significantly related to grade point average, working on an independent research project, working with a faculty member on a research project, or having been a guest in a professor's home. Hurtado and Carter suggest that the quality of interactions between faculty and student may play a more important role in the students' sense of belonging to college than the frequency of these interactions. Additionally, they suggest that increasing a student's sense of belonging can potentially help students acquire skills and knowledge necessary for college and that merging

students' social and academic interactions may contribute to their overall sense of belonging in college.

In a related study, among a sample of Latino and White college students, Strayhorn (2008) found that social and academic experiences (i.e. grades, time spent studying, and extent of interactions with diverse peers) affected Latino students' sense of belonging differently than their non-Latino White peers. For instance, the amount of time spent studying was negatively associated with White students' sense of belonging, but positively associated with Latino students' sense of belonging. Also, Strayhorn (2008) found that the extent to which students interacted with diverse peers was positively related to both groups' sense of belonging. There was a larger effect on Latino students' sense of belonging. Latinos are likely to find a sense of belonging differently from their White counterparts; not only do they assess if they belong at the individual level but also as a member of their ethnic group (Bollen & Hoyle, 1990; Hurtado & Carter, 1997).

For the most part, increased sense of belonging tends to be associated with positive outcomes for students (Freeman, Anderman, & Jensen, 2007; Hurtado & Carter, 1997; Spady, 1971; Strayhorn, 2008; Valenzuela, 1999). It is important to address the educational context that fosters a sense of belonging. Institutions can play the role of helping to reduce "normative" differences between students and their environment in various ways. Institutions can broaden the type of student clubs/organizations available to reach more students or students who have previously felt left out, such as forming a Latin American student club. Institutions and practitioners can help students develop healthy self-concepts and foster a more critical understanding of their cultural experience with culturally affirming policies, curriculum, and discussions (McCoy & McKay, 2006). For instance, practitioners can makes use of books,

literature, and other media to engage individuals in a discussion about how their experiences are similar or different from the characters or circumstances of the media using a culturally relevant lens. This discussion can be used as an opportunity to validate cultural experiences, help individuals understand their biases, emotions and situation, and empower individuals to identify strategies to improve their situation or emotional state (Ford, 2000; McCoy & McKay, 2006; Robinson & Howard-Hamilton, 1994).

The theory of additive schooling provides some insight into what a supportive school environment may look like for Latino students (Valenzuela, 1999). This theory is based on social capital theory, caring concepts, and assimilation concepts and is supported by Valenzuela's 3 year ethnographic study with Latino students in a predominantly Mexican high school in Houston, Texas (Valenzuela, 1999). It asserts that a positive school climate is one that emphasizes (1) a sense of moral and social responsibility, (2) one in which students' "progress" is nurtured by authentic caring relationships, especially with teachers, and (3) one that is culturally inclusive (Valenzuela, 1999).

A caring relationship between teacher and student and instruction that accentuates "how one should live in the world" to include "respect, responsibility, and sociality" are considered positive factors for student engagement for at least three Latino ethnic groups: Mexican, Puerto Ricans and Central Americans (Suarez-Orozco, 1989, Quiroz, 1996; Valdes, 1996; Valenzuela, 1999; Fuligni, Tseng, & Lam 1999, Fuligni, Witkow & Garcia, 2005). These groups share the common cultural belief of familialismo or social responsibility to the family unit. Valenzuela's (1999) theory is not very different from Tinto's (1993) assertion that a caring environment will help integrate students into academic and social life. However, it is different from Tinto's integration model in that the theory of additive schooling focuses more on what the learning

environment can do from a socio-cultural perspective to integrate students into their environment with culturally sensitive and affirming practices.

b. Theories and research on the culture of resistance. Additive schooling affirms students' bicultural identities and values in order to demonstrate they authentically care about their students. According to Valenzuela's (1999) theory, additive schooling is an essential element in order for Latino students to become engaged and complete their studies. On the other hand, the less additive the school or more subtractive the school, the less institutional policies and practices affirm student's culture and language. Examples of subtractive schooling include prohibiting students from speaking their native language or teachers describing families as "holding back" their children because of their familialismo beliefs, putting their family's welfare before their own individual success (Freire, 1986; Valdes, 1996; Valenzuela, 1999; Villenas & Deyhle; 1999; Rumberger & Rodriguez, 2002). Students may find themselves in situations where they feel they have to choose between family, culture and school success (Covington, 2000; Nieto, 1996; Valdes, 1996; Valenzuela, 1999). Some Latino students begin to devalue their culture and embrace mainstream values resulting in fractured cultural and ethnic identities. Others may become resistant towards school because what they "care about" is different from what institutions "care about" and they "oppose the schooling process that disrespects them; they oppose not education, but schooling" (Valenzuela, 1999; p.5). Through formal and informal structures, subtractive institutions can alienate students and fracture their cultural identities. Additionally, subtractive institutions, through formal and informal structures, can create social, linguistic, and cultural divisions among the students and between the students and staff.

Charles et al. (2009) utilized the entire sample (White, Black, Asian, and Latino students) from the NLSF data and found that racial climate significantly predicted amount of credits

accumulated and college satisfaction, but not college departure or GPA through sophomore year. For the Latino and African American respondents, racial climate significantly predicted graduating on time but not for the White and Asian respondents. In addition, they found within group variation in perceptions among the Latino and African American respondents. Additional factors related to academic outcomes included family stress and college satisfaction. High levels of family stress were significantly related to fewer credits accumulated and lower GPA, but this stress did not predict college departure nor college satisfaction. Finally, they found that college satisfaction was significantly related to graduating on time for all respondents.

Valenzuela (1999) borrows from Coleman's (1988) theory of social capital and exchange theory to explain how academic achievement is best understood as a collective process in which individual goals are attained through supportive networks or social exchanges. Individuals outside of the networks lose out on the resources that reside within the supportive networks and vice versa. Therefore, educational institutions can promote and impede the dissemination of knowledge and resources. For example, students with mainstream beliefs might receive more attention (consciously or subconsciously) from their teachers; students with non-mainstream ideas may not receive as much support. Also, when students group themselves by immigration generational status or ideological beliefs they may limit the exchange of knowledge/resources with other peer groups, such as belonging to a study group or borrowing a friends' computer software (Valenzuela, 1999). Another example might be when students experience a reduction in their ability to effectively communicate with their parents because their educational institution opposes dual language programs so students may not fully develop proficiency in the language used by their parents.

This theory of resistance or oppositional culture is not new. In the early 1980's, anthropologist John Ogbu (1978, 1987) explained minorities' academic performance in terms of a culture of resistance to mainstream values and institutions because of their relegated status in society. This theory of oppositional culture identifies two kinds of minority groups: voluntary and involuntary. The former includes immigrant minorities who enter a host country freely seeking to improve their conditions. The latter includes involuntary minorities who through enslavement or conquest are relegated to secondary/inferior social status. Voluntary minorities can develop an assimilationist position where cultural differences mark the beginning phase of adapting to the customs and attitudes of the dominant culture and belonging. Moreover, this process is believed to improve their well-being. Involuntary minorities can develop a rebellious position against mainstream values and institutions and withdraw or display aggression; they might engage in what Ogbu calls "cultural inversion" (Fordham & Ogbu, 1986). Ogbu suggests that involuntary minorities can come to perceive mainstream knowledge and participation as a betrayal of their ethnic group loyalty. For example, studying hard might be seen as "acting White" and betraying their cultural heritage. However, Valenzuela (1999) found that in her study cultural inversion had greater value in explaining self-representation differences (ethnic labels preferred and clothing attire preferred) instead of attitudes toward academic achievement.

Importantly, while immigrant parents may have voluntarily migrated to the U.S., that does not automatically mean their children will feel like voluntary minorities. Currently, much discussion is being paid in politics, policy, and the news media with respect to offering U.S. Citizenship and social benefits to children of immigrant parents who were brought to the U.S. without the permission of the Federal U.S. government. These children may feel like U.S. Americans, but they and/or their family do not have the same civil rights and do not have access

to the same societal benefits such as right to vote or work without fear of deportation as a U.S. Citizen, which may in return affect how they perceive their sense of being a voluntary minority or an involuntary minority.

Massey et al. (2003) utilized the NLSF data to test the theory of oppositional theory to learn if academic performance for Latinos and African Americans was impacted by the burden of being seen as "acting White" by their peers. They posited that minority students who perform well academically are vulnerable to experiencing a state of "racelessness". That is, they risk being rejected by other minority students because academic success is equated with "acting White" or betraying their ethnic group and at the same time they are not really accepted as White either; henceforth "racelessness". They measured and tested the vulnerability of "racelessness" in two ways. The first method was by selecting Latino and Black respondents who reported being very self-conscious about how others in their ethnic group viewed them and who simultaneously reported having friends that perceived studying hard outside of class as "uncool". The second method they used was selecting Latino and Black respondents who reported an exclusive ethnic group identity, such as Black or Latino (as opposed to American or both identities) and who simultaneously rated Blacks' intelligence level the lowest on a scale from 1 to 5. The data did not provide support for oppositional theory for grade point average, amount of dropped courses, or amount of failed courses, at least not the way it was conceptualized and measured.

Horvat and Lewis (2003) explored the "burden of acting White" explanation among a sample of female African-American high achieving high school students through interviews and observations. They found that high achieving students downplayed their academic achievements when interacting with low achievers but not when interacting with supportive academic peers. Additionally, high achieving students were not social outcasts as many were involved in

extracurricular activities and/or clubs. Horvat and Lewis highlight the ability of students becoming effective in managing friendships and expectations to help them succeed academically while maintaining a Black identity. Researchers arguing against the "burden of acting White" explanation have also highlighted that Latinos want to succeed academically while maintaining their Latino identity (Ainsworth-Darnell & Downy, 1998; Conchas, 2001; Flores-Gonzalez, 1999; Mehan, Hubbard, & Villanueva,, 1994).

Flores-Gonzalez (1999) conducted a year-long ethnographic study with Puerto Rican high academic achieving students enrolled in an urban, large minority, and low- income high school in Chicago. The main finding from her study was that high academic achievers were among the most popular students at their school and less likely to be picked on by their peers or called out for acting White. Moreover, Puerto Rican high academic achieving students obtained a positive "schoolboy/girl" identity which appeared to spare them from the peer pressure that other students encountered. Additionally, Flores-Gonzalez (1999) found that this group of high achievers received special attention from staff and were tracked into scholar and honor programs that separated them from students in general student programs. In at least one case, a high achieving student described being bothered sometimes by the attention high achieving scholars received because it highlighted the staff's neglect of students in general education programs. This study provides support for Valenzuela's (1999) assertion that institutions can impede the dissemination of knowledge and resources between groups of students; in this case between students who are more willing to adhere to mainstream values and those that don't adhere to the schoolgirl/boy identity. Also, this study contests the "burden of acting White" explanation because in this study high achieving students were popularized by their peers instead of

discredited. It is possible that for some Latinos with collectivist beliefs, academic achievement is viewed more positively because their actions uphold their ethnic groups' social status.

C. Understanding Ethnic Identity

Research on ethnic identity and how it relates to psychological well-being and academic achievement has also produced mixed results. Umaña-Taylor, Diversi, and Fine (2002) reviewed 21 empirical studies related to Latino adolescents' self-esteem and ethnic identity that were conducted between 1969 and 1998. They found that the conceptualization of ethnic identity varied. As a result, in some cases they found positive relationships between ethnic identity and self-esteem and in other conceptualizations there were inconsistent results. They found three primary perspectives from which ethnic identity has been conceptualized: social identity, ego-identity, and acculturation perspectives. From a social identity perspective, researchers focus on the perceptions that people in society have of ethnic groups and how those perceptions influence individuals' ethnic group identification or membership. From an ego identity perspective, researchers focus on individuals' exploration of ethnic identity and their achievement of a positive/secure identity over time. From an acculturation perspective, researchers focus on the extent to which individuals' ethnic group values coexist with mainstream values/culture. Overall, theorists differ in their opinion about what is an optimal racial/ethnic identity. Mainstream theories tend to focus on salience or centrality (strength/importance) of ethnicity to an individual's identity and their related affective and evaluative responses (Phinney, 1992). Underground theories tend to focus on how history and culture play a role in the experiential meaning associated with being from an ethnic/racial minority (Sellers et. al., 1998b).

1. Multidimensional model of racial identity. The Multidimensional Model of Racial Identity (MMRI) was developed for Blacks/African Americans, but it has been used with Latinos

and Asian Americans (Johnson et al, 2005). The MMRI includes four dimensions: salience, centrality, regard, and ideology.

Salience refers to a context or situation in which attention to one's identity difference becomes distinguishable (Sellers et. al., 1998b). For example, ethnic differences or class differences are amplified in a predominately White-middle class institution in which Latinos are a numerical minority and have historically been less well-off economically. Since salience of one's ethnic identity is dependent on situational or contextual cues, it is the most flexible dimension of ethnic identity.

Centrality refers to the extent ethnic identity is important to one's self concept (Sellers et al., 1998b). Centrality is regarded as the most stable dimension of ethnic identity across different situations or salience contexts. Even so, centrality is related to salience. Thus individuals who don't normally regard their ethnic identity as highly central to their self-concept are more likely to experience high centrality in the presence of a highly salient context, such as that of the previous example about Latinos attending a predominately White institution.

Regard refers to two types of perceptions about one's ethnic group, private and public regard. Private regard refers to the extent to which individuals view their own ethnic group positively. Public regard refers to the extent to which individuals think that other groups view their ethnic group positively.

Ideology refers to beliefs one might have about what it should mean to be a member of one's ethnic group. Under the MMRI such ideological beliefs include a nationalist, humanist, assimilationist, or oppressed minority ideology. A *nationalist* ideology is characterized by a preference for one's own ethnic social environment (Sellers et al., 1998b). A *nationalist ideology* can evolve as a mechanism of resistance to marginalization (Fernandez, 2002; Ogbu,

1998; Parham & Helms, 1985) and can also grow from deep appreciation and awareness of one's culture and in-group accomplishments. A *humanist ideology* emphasizes similarities among all humans not distinguishing persons on the basis of characteristics of race, gender, class, etc. Often those who harness a *humanist ideology* have macro concerns about the human race, such as hunger or peace and race is only of minor importance in how they lead their life (Sellers et al., 1998b). An *assimilationist ideology* is characterized by an emphasis on similarities between one's own ethnic group and the rest of American society, often viewed as White America (Sellers et al., 1998b). A social activist with this type of ideology would likely believe it is important to work within the system for social change as well as believe it is important to interact socially with Non-Latino Whites (Sellers et al., 1998b). The *oppressed minority* ideology links the oppression of one's own ethnic group to that of other minority groups, such as women, gay men, lesbians, and Native Americans.

Importantly, the MMRI model does not make the assumption that any one ideology (nationalist, humanist, assimilationist, and oppressed minority) is better than another, but it suggests that an individual's philosophy is mainly characterized by one ideology over the other three. For example, someone could somewhat agree with assimilationist beliefs, but more strongly agree with humanist beliefs. In total, the MMRI posits four ideological belief systems. Another ideology/belief system that may be relevant for understanding Latinos' ethnic identity is that of a *familialismo* ideology (Cortes, 1995; Esparza & Sanchez, 2008; Steidel & Contreras, 2003).

2. Relevance of a familialismo ideology. A familialismo ideology refers to an individual's strong identification with his/her family and sense of obligation to uphold the family's welfare above individual needs (Cortes, 1995; Esparza & Sanchez, 2008; Lugo Steidel

& Contreras, 2003). Burgess, Locke, and Thomes (1963) have characterized attitudinal familism as:

> 1) The feeling on the part of all members that they belong pre-eminently to the family group and that all other persons are outsiders; 2) complete integration of individual activities for the achievement of family objectives; 3) the assumption that land, money, and other material goods are family property, involving the obligation to support individual members and give them assistance when they are in need; 4) willingness of all members to rally to the support of a member if attacked by outsiders; and 5) concern for the perpetuation of the family as evidenced by helping adult off spring in beginning and continuing an economic activity in line with family expectations and in setting up a new household. (pp. 35-36)

Essentially, familialismo behaviors are geared towards maintaining family closeness, such as maintaining high levels of contact and communication with family members and providing/receiving help to/from family in times of need. Additionally, individuals who adhere to a familialismo ideology believe they have an obligation to actively protect and honor their family (Lugo Steidel & Contreras, 2003). Research has found that familialismo beliefs are less prevalent in individuals with higher levels of education and acculturation (Cortes, 1995; Sabogal, Marin, Otero-Sabogal, Marin, & Perez-Stable, 1987; Phinney, Ong, & Madden, 2000).

3. Research on the concept of ethnic identity and academic achievement. The majority of research regarding ethnic identity in relation to academic achievement and attitudes towards school has been conducted with Blacks/African Americans, maybe partly due to efforts to shrink the achievement gap between Whites and Blacks. The empirical research regarding Latinos' ethnic identity salience and ideological beliefs in relation to school attitudes or

academic achievement has steadily been increasing at the same time as their population growth has been increasing. The majority of research regarding Latinos' ethnic identity is related to other dimensions of the MMRI, such as centrality and regard. However, Latinos attending college/universities are more likely to attend predominantly White schools thus have an increased chance of experiencing their ethnic identity as more salient. They may also be at an increased risk for encountering White prejudice. With school transitions, students may experience increased ethnic identity salience because of changes in the racial composition of the school environment (French, 2000). Additionally, changes in the racial composition may influence the way they perceive their environment and their relationships with peers and staff (French, 2000). Thus, students from predominantly Latino high schools may experience greater ethnicity salience than those who attended more diverse/integrated high schools when they later attend predominantly White institutions. Massey and Fischer (2005) theorize that students raised in more integrated settings develop coping mechanisms to deal with negative stereotypes and prejudices and to a greater or lesser extent have learned how to overcome them. The literature review in this section focuses on ethnic identity research that aligns closely with the MMRI.

Torres (2003) conducted a qualitative study to investigate the influence attending a highly selective university can have on Latino/a students' ethnic identity development during their first two years of college. They found that students from diverse high schools tended to report a strong sense of ethnicity (centrality) and were more likely to report enjoying diversity on their college campus. Whereas, students who came from predominately Latino high schools began to see themselves as in the minority; prior to starting college they had not seen themselves this way. Additionally, they found the change in the environment for this group of students prompted stronger ties to their ethnic group. Furthermore, they found that students who came from

predominately White high schools tended to report being able to relate more with the majority culture but found the change in the environment presented them with a conflict of having to choose between two cultures. All of the students in this study spoke positively about their Latino ethnicity and credited their parents for their views on their ethnicity. With respect to differentiations related to generational status, first generation students tended to struggle more to balance college expectations with parental expectations and they also struggled more with fitting in with their peers; students felt caught in between two cultures the majority culture and their ethnic group culture. Similarly, Case and Hernandez (2013) conducted a qualitative study with Latino/a students during their first year enrolled in a leadership program at a predominately White faith-based college. They found that students' were more conscious of ethnic differences and more willing to use their ethnic perspective to give back to the community.

A number of studies have shown that attention to one's ethnic identity (ethnic identity salience) can undermine academic performance for ethnic minorities, women, low-income individuals, and even White men when they believe others have negative stereotypes about their performance or when they have low public regard (Cheryan & Bodenhausen, 2000; Croizet & Claire, 1998; Steele & Aronson, 1995; Spencer et al., 1999). This phenomenon is commonly referred to as "stereotype threat" (Steele & Aronson, 1995). Stereotype threat is also cited in the literature as the Salience-Perceived Threat Paradigm (Ethier & Deaux, 1990, 1994).

In an experimental study, Steele and Aronson (1995) found that African American college students performed more poorly than their White counterparts on a verbal test, but the differential performance between the two groups was eliminated when the test was administered under conditions that undermined the stereotypes of intellectual inferiority. Additionally, Spencer, Steele, and Quinn (1999) found that women performed worse than their male

counterparts on a math test, but when a math test was administered under conditions that undermined the negative stereotypes of intellectual inferiority, the differential performance between the two groups was eliminated. Similarly, when White college students were primed with undermining stereotypes that Asians outperform Whites, they performed worse on a math test (Aronson, Lustina, Good, & Keough, 1998). While the majority of the research suggests that students' intellectual performance is threatened when the salience of negative stereotyped social identities is high, Cheryan and Bodenhausen (1998) found that positive stereotypes can also negatively influence students' intellectual performance.

In an experimental study with Asian-American women enrolled at the undergraduate level, Cheryan and Bodenhausen (1998) randomly assigned students to one of three identity salient conditions (ethnic identity salient, gender identity salient, or a personal identity/control condition). They found that under the ethnic identity salient condition the performance of the women was markedly lower than those in the other two conditions even though the prevailing stereotype was positive; that Asians are good at math. Thus, research demonstrates that fear of confirming negative stereotypes and failing to confirm positive stereotypes undermine academic performance. Cheryan and Bodenhausen (1998) also found that participants' performance was partially influenced by ethnic identity salience by its influence on the students' ability to concentrate on the math problems. Conversely, in a comparable study, Shih, Pittinsky, and Ambady (1999) randomly assigned Asian American women college students to one of three salient conditions (ethnic identity salient, gender identity salient, or a no-identity salient/control condition) and found that those in the gender identity salient condition performed worse than the other two groups and that those assigned to the salient ethnic identity condition performed the best. It may be possible that the level of salience also plays a role in the direction of the

relationship because in the Cheryan and Bodenhausen's (2000) study the ethnic identity salient condition was more explicit than in Shih et al's (1999) study.

Massey and Fischer (2005) utilized the NLSF data to examine the effects of stereotypes on Latinos and African American students' academic performance. They found that reduced hours of study was associated with students' negative views of their ethnic group (low private regard/students internalizing negative stereotypes). Additionally, they found students' who believed others used negative stereotypes in making evaluation about them experienced greater performance anxiety or performance burden. African American and Latino males from affluent backgrounds with few in-group friends and weak ethnic identity were most at risk for viewing their own ethnic group negatively (experiencing low private regard). Whereas, African American and Latina females whose parents separated/divorced while growing up from well-educated family backgrounds with strong in-group identity and from integrated backgrounds were most at risk for believing others would use negative stereotypes when making evaluations about them. In this study, reduced hours of study and performance anxiety predicted G.P.A. for Latino and Black students, even after controlling for variables such as SES and high school academic preparation. However, performance anxiety or performance burden was not significantly related to grade point average when students reported the presence of diverse faculty in their classrooms. Negative views about one's ethnic group did not have a direct effect on grades. However, believing others would use negative stereotypes in making evaluations did have a direct effect on grades.

Some research suggests a strong ethnic identity may buffer the negative effects of stereotypes and prejudices on academic achievement (Altschul, Oyserman, & Bybee, 2006; Miller, 1999) while other research suggests it may increase vulnerability (Operario and Fiske,

2001; Castillo et al., 2006). In a longitudinal study, Altschul, Oyserman, and Bybee (2006) found that African American and Latino urban middle school students who initially reported strong connectedness to their racial-ethnic group (high centrality) and increased awareness that others may not value their group (high public regard) during the fall of their eighth grade later attained a better GPA through the 9th grade. On the other hand, Castillo et al (2006) found that Latino students attending predominately White institutions (PWIs) with a higher sense of commitment to their ethnic identity tended to perceive their college campus more negatively and furthermore found that these negative perceptions were related to feeling less committed to completing college. Castillo et al. (2006) posit that Latinos with stronger connections to their ethnicity tend to more easily detect cultural incongruence, resulting in students feeling less affirmed and less connected to completing college.

Similarly, Operario and Fiske (2001) conducted experimental research regarding the concept of centrality among ethnic minority and White respondents and found that participants with high centrality reported an increased personal vulnerability to discrimination than did individuals with low centrality. Furthermore, participants with high centrality showed stronger negative reactions to subtle prejudice than they did to explicit forms of prejudice. It may be possible that individuals with high centrality may be at an increased risk of reacting to perceptions of subtractive schooling. It is also possible that students with high centrality may have learned how to cope with explicit forms of discrimination and prejudice but not necessarily to subtle forms of discrimination and prejudice. Massey et al. (2003) found in their study of the NLSF data that African American and Latino students who reported an exclusive in-group identity label, such as "Black" or "Latino" and who rated African Americans' intelligence level as low did not have lower grade point averages, more dropped courses, or more failed courses.

Rivas-Drake and Mooney (2009) conducted a cluster analysis of Latino students' psychological profiles/beliefs about blocked opportunity and perceived social distance from non-Latino Whites to examine differences in grade point average, amount of time spent on academics and extracurricular activities with the NLSF data. Three profiles were identified and named: assimilators, accommodators, and resisters. These profiles draw on frameworks of immigrant adaptation processes and blocked opportunity. Students who maintained a sense of ethnicity distinctiveness and challenged society's opportunity structure for ethnic minorities, *resisters*, initially (sophomore year) spent less time on extracurricular activities than students with assimilator and accommodator frameworks, but by senior year they spent more time on extracurricular activities. Resisters did not have significantly different grade point averages from assimilators and accommodators. Students who forsook their ethnic distinctiveness in favor of mainstream beliefs, attitudes, and behaviors, *assimilators*, initially spent more time on extracurricular activities (sophomore year), but by senior year spent significantly less time on activities than resisters. Students who preserved their ethnic distinctiveness, acknowledged blocked opportunities, and endorsed the ideology of the importance of individual effort in overcoming discrimination, *accommodators*, did not differ significantly from assimilators and resisters on grade point average and time spent on academics and extracurricular activities. Rivas-Drake and Mooney's (2009) resister psychological profile was based on Latino students' perceptions about blocked opportunities for three ethnic minority groups: Latinos, African Americans, and Asian Americans. The resister profile is most similar to the MMRI's oppressed minority ideology. The assimilator profile is similar to the MMRI's assimilationist ideology. The accommodator profile is similar to the MMRI's assimilator and oppressed minority

ideologies; individuals endorse mainstream beliefs while simultaneously reporting awareness of racial discrimination.

The limited research on the influence of a familialismo ideology on Latinos' academic achievement suggests it is associated with positive academic outcomes. At the high school level, Esparza and Sanchez (2008) found familialismo was positively associated with Latino students missing fewer classes, having greater academic efficacy, and higher grades when mothers' educational level was low. At the college level, Phinney, Dennis, and Osorio (2006) found Latino students were more likely than their White peers to report a desire to help their family as a reason for going to college. Additionally, Ojeda, Navarro, and Morales (2011) found that family encouragement and familialismo were positively associated with college persistence intentions among a sample of Latino college men. At the same time, Ojeda et al. (2011) suggest adherence to a familialismo ideology may adversely affect students' academic outcomes because of the potential of increased anxiety or pressure to do well in college.

D. Summary and Conclusion

The majority of research regarding Latinos' academic achievement has focused on high school completion. Now, however, more researchers are realizing the importance of focusing on Latino college students' success because Latino college enrollment rates are at an all-time high, but degree completion rates remain low. Academic achievement is commonly measured by using academic performance criteria, such as grades, standardized test scores (e.g., ACT/SAT scores), and school completion rates. Additionally, researchers commonly use these criteria to compare and contrast individuals and groups academic achievement. As a contrast to these common measures of academic achievement, qualitative studies highlight that for some Latinos, academic achievement is defined more from a familialismo and collectivist perspective, which

includes obtaining a formal education while maintaining strong familial and community ties (Nieto, 1996; Valenzuela, 1999). Research that measures academic achievement from a collectivist perspective is sparse; thus, the dual nature of what it means to be educated from a Latino or familist perspective has largely been ignored.

In an attempt to explain the achievement gaps across ethnic groups, many scholars have noted that school climate and ethnic identity play a role in student success (Betancourt & Lopez, 1993; Castillo et. al., 2006; Charles et al., 2009; Cheryan & Bodenhausen, 2000; Hurtado & Carter, 1997; Valenzuela, 1999). The concept of school climate is complex. It is a multidimensional construct and can be examined in various ways. School climate can refer to the physical/structural aspects of the learning environment (i.e., number of computers, age of the building, size of the student body, structural diversity) or to the social aspects of the learning environment (i.e., racial-tensions, quality of teacher-student relationship, educational curriculum), and both are interrelated. Historically, the school climate literature focused on factors, such as facilities, academic instruction, discipline and relationships (Zullig, et al. 2010). Only recently has research begun to address cultural and diversity aspects of school climate. Moreover, college students are increasingly becoming the focus of examination. This knowledge is timely since colleges and universities, especially those that have been predominantly White, now have student populations that are more ethnically diverse.

For the most part, research shows that positive learning environments are related to positive student outcomes, such as increased satisfaction with school, greater self-esteem, and higher grade point averages (Charles et al., 2009; Way & Robinson, 2003; Strayhorn, 2008). However, research has also produced mixed results; for instance, Hurtado and Carter's (1997) study with Latino college students did not find a significant relationship between grade point

average and school climate. Additionally, Charles et al.'s (2009) study with college students found that school climate was positively related to students' accumulated college credits, but not their departure from school. A review of the literature suggests a need to examine whether the impact of school climate on Latinos academic achievement varies in relationship to their ethnic identity.

The construct of ethnic identity is multidimensional; it can refer to dimensions, such as salience (amplified sense of ethnic identity), private regard (how positively individuals view their own ethnic groups), public regard (how positively individuals think other ethnic groups view their specific ethnic groups), and ideology (set of beliefs individuals adhere to). The research connecting ethnic identity to academic achievement has also produced mixed results. Some research suggests ethnic identity may buffer the negative effects of stereotypes and prejudices on academic achievement (Altschul, Oyserman, & Bybee, 2006; Miller, 1999), while other research suggests ethnic identity may increase students' vulnerability (Castillo et al., 2006; Operario & Fiske, 2001; Spencer et al., 1999). The mixed results may be partially due to the various conceptualizations and measures of ethnic identity. Consequently, it is difficult to draw strong comparisons from one study to another. Sellers et al. (1998b) recommend examining ethnic identity from a multiple dimensional perspective, such as examining ethnic salience, regard, centrality, and ideology simultaneously to learn about the way unique dimensions of ethnic identity manifest in persons' lives.

Since the literature on ethnic identity has mainly focused on understanding African Americans' racial/ethnic identity in relation to school experiences, more research on Latinos' educational experiences is needed. Differences in Latino students' academic achievement may be explained by examining the interaction effect between ethnic identity and school climate

while simultaneously examining multiple dimensions of ethnic identity. This study examines the moderating role of unique dimensions of ethnic identity on the relationship between perceptions of a culturally inclusive school climate and a variety of academic achievement outcomes (performance based measures and culturally mindful measures).

Chapter 4. Research Methodology

This study utilized secondary data to examine the role of ethnic identity on the relationship between school climate and academic outcomes. The first section of this chapter describes the source of the data and research design. The second section explains how academic outcomes, school climate, and ethnic identity are measured and how each measure was identified and reviewed for face validity. The third/last section describes the data analyses plan, including how missing data were handled and the steps involved in conducting multivariate analyses to test the moderation effect of ethnic identity on the relationship between school climate and academic outcomes.

A. Source of Data & Research Design

This study utilized publically available data from the National Longitudinal Survey of Freshman (NLSF). Fittingly, I obtained a determination from UIC's Institutional Review Board (IRB) that my proposed secondary data analysis did not constitute human subject research, which allowed me to proceed with my analysis without further submissions to the IRB. My IRB determination protocol application number is: 2013-0760 (See Appendix A).

The NLSF tested theoretical explanations of minority students' underachievement, such as peer group influences, oppositional culture, and stereotype threat in higher education using survey methodology (Office of Population Research, 2008). The primary investigators, Camille Charles and Douglas Massey developed a longitudinal database of ethnically diverse first-time freshman at 28 selective universities across the United States (Massey et al., 2003). Charles and Massey drafted a questionnaire that was informed by a review of the literature and by interviews with students, faculty, and administrators of the University of Pennsylvania. The survey was piloted

with freshman at the University of Pennsylvania and modified for the NLSF study (Massey et al., 2003).

The NLSF tested various theoretical explanations of ethnic minority students' academic underachievement. Data were collected in five waves. Retrospective data about childhood were collected in the baseline survey (Wave 1). Prospective information was collected in years one through four (Waves 2-5), the expected college completion time periods. A supplementary data file provides degree completion information.

The baseline survey (Wave 1) consisted of face-to-face interviews to gather students' background information, such as gender, household income, ethnicity, high school achievement, and racial/ethnic attitudes. Data collected at later times with the same students occurred through follow-up phone interviews. The first wave of data was collected prior to starting college (Fall 1999). Data from Wave 2 (Spring 2000; Freshman year) were collected after one semester of college and include information about the respondent's social, psychological, and academic experiences, such as social networks and students' perceptions of prejudice on campus. Data from Wave 5 (Spring 2003; Senior year) include information about support services utilized, extracurricular involvement, expected degree completion status, future plans for employment/higher education, grade point average, college satisfaction, as well as post education experience with respect to friends, family, community, and ethnic group relations.

Data from the supplementary data file include information about students' degree completion and whether they completed their degree within four years or six years. The NLSF verified self-reported graduation data from the registrar offices at the 28 universities and the National Student Clearinghouse (NSC), a nonprofit organization providing degree and enrollment verification.

For the current study, data from Wave 1 were utilized for background information about the sample and for variables that needed to be controlled, such as socioeconomic status and high school achievement. Also, data from Wave 1 were used to obtain measures for the moderator variables, student's ethnic identity dimensions. Data from Wave 2 were used to measure the independent variable (student's perception of the school climate) and students' self-reported academic aspirations at the start of college. In addition, data from Wave 2-5 were used to measure students' outcome variable of grade point averages. Finally, data from Wave 5 and supplementary data from the NSC were used to measure the students' remaining academic achievement outcome variables.

The NLSF data were collected from a national probability sample of 3,924 first-time students entering selective colleges and universities in 1999. The average acceptance rate at these institutions was 40% and ranged from an 11% to a 79% acceptance rate (U.S. News and World Report, 2000 as cited in Massey et al., 2003). Originally, the NLSF researchers asked 35 institutions to participate, but the final institutional participation rate was 80% (28 institutions). A total of 4,573 students were invited to participate; 3,924 completed the survey (85.8% response rate). The NLSF inclusion criteria specified that the respondent had to be a first-time freshman enrolled in one of the specified universities and be a U.S. citizen or resident alien. Equal numbers of Black, Hispanic, Asian, and White students were targeted for sampling from each institution (Massey et al., 2003). Institutions with a Black student body of 1000+ were assigned a target sample size of 280 respondents; those with a black student population size of 500-1,000 were assigned a target sample size of 200 respondents; institutions with 100-500 black students were assigned a target sample size of 80 respondents; and those with fewer than 100 Black students were assigned a target sample size of 40 respondents. The final NLSF sample

included 959 Asians, 998 Non-Latino Whites, 1,051 African Americans, and 916 Latinos. Students who left college or transferred to another institution were followed and retained in the survey to minimize response bias. Respondents received $15 for their participation.

The sample for the current study focused on the Latino subsample (n= 916). . Most of tis sample were enrolled at a private research institution (59.8%), followed by a public research institution (30.7%), and a liberal arts institution (9.5%). The response rate for the Latino subsample by Wave 2 was 94% (n=864), 88% (n=810) by Wave 2, 84% (n=765) by Wave 4, and 79% (n=721) by Wave 5. The analytical sample size for the current study varied by outcome variable or model: 699 for my college G.P.A. outcome variable, 708 for my degree completion variables, 671 for my academic aspiration variables, 452 for my familial cost of education variable, 451 for my communal cost of education variable, and 450 for my ethnic membership cost of education variable. Chapter five provides a missing value analyses.

B. Measures

This section operationally defines the outcome, independent, moderator and control variables for this study. Secondary data can be used by another researcher for a different purpose if the data set contains questions relating to the secondary study's variables of interest (Houston, 2004). To select measures for this study, I first reviewed the literature to learn how the constructs (i.e. academic achievement, school climate, and ethnic identity) have been defined and measured. Then, I selected items or scales from the NLSF data set that appeared to have strong face validity, particularly items that aligned with how the empirical literature has defined and measured this study's variables of interest (Charles et al., 2009; Esparza & Sanchez, 2008; Massey et al., 2003; Scottham et al., 2008; Sellers, Rowley, Chavous, Shelton, & Smith, 1997; Sellers et al., 1998a, b; Steidel & Contreras, 2003; Valenzuela, 1999). In total, two variables

were measured with multi-item scales that were created by Massey et al. (2003) for the NLSF and the remaining variables were measured with single-item measures. Appendix B provides a summary and description of this study's measures.

In terms of the outcome variables, all were measured with single items from the NLSF. These measures include: self-reported cumulative grade point average, degree completion within six years, degree completion within four years, academic aspirations (increased and reduced), and cultural cost of an education (cost of family, home community, and ethnic group). In total there are eight outcome variables.

The independent variable, cultural climate, was measured using the Campus Racial Climate Scale previously developed by Massey et al. (2003) for the NLSF. I reverse scored this scale, so higher scores represent a more culturally inclusive the climate.

The moderator variables were measured with one NLSF multi-item scale and six single-item measures. The NLSF multi-item stereotype internalization scale was a proxy measure for private regard. The remaining ethnic identity variables were measured with single items (i.e., centrality, nationalist ideology, humanist ideology, assimilationist ideology, oppressed minority ideology and familialismo ideology). In total, there are seven moderator variables.

In terms of control variables, all were measured with items that (1) previous research with the NLSF identified as important predictors of academic outcomes and (2) that were significantly related to at least one of my academic outcomes via bivariate analyses. These measures include: high school grade point average, self-esteem, self-efficacy, recipient of public assistance at least once since age six, household income, parent homeownership status, gender, mom's foreign born status, father's foreign born status, first generation college student status,

woman most responsible for care's education level, and man most responsible for care's education level. In total there were twelve control variables.

1. Outcome measures: Academic achievement. The current study examined eight measures of academic achievement: (1) cumulative grade point average; (2) degree completion within six years; (3) degree completion within four years; (4) increased academic aspirations between first semester in college and last semester enrolled or year four of college; (5) lowered academic aspirations between first semester in college and last semester enrolled or year four of college; (6) familial cost of a college education; (7) communal cost of a college education; and (8) ethnic membership cost of a college education. Most outcome variables were measured by using one items from the NLSF (self-reported cumulative grade point average, degree completion within six years, degree completion within four years, and familial, communal, and ethnic membership cost of a college education). Although all outcome variables were measured with single items, increased academic aspirations and lowered academic aspirations were constructed from data collected at different time points (evaluating if aspirations changed from freshman year in college to four years after start of college).

a. Cumulative grade point average refers to the self-reported cumulative grade point average for all courses completed by the end of year four or the last semester enrolled (i.e. Fall 1999 - Spring 2003). Data from Wave's 2-5. In the NLSF, respondents reported letter grades, I transformed them into numerical values to fit a four-point graded scale. For instance, an A=4, B=3, C=2, D=1, E/F/Failed=0. Then, I summed the grades and divided by the number of courses. For example, a student with four A's would earn 16 grade points and I would divide that by four (the number of courses taken) and obtain a 4.0 GPA. Thus, this variable is a continuous variable; the higher the score the greater the achievement. The lead researchers of the NLSF study

compared self-reported grade point average to the students' university registrars' records in the fall of the first academic semester (Massey et al., 2003). They found a high degree of reliability between self-reported grades and grades recorded by the university registrar; the reliability coefficient was .894. As a result, from that point forward the NSLF only provided self-reported grade point average.

b. Degree completion within six years is an item from supplementary data that the NLSF reported after utilizing data from the National Student Clearinghouse. This was measured as a dichotomous variable (1=yes and 0= no).

c. Degree completion within four years is an item from supplementary data from the NLSF reported after utilizing data from the National Student Clearinghouse. This was measured as a dichotomous variable (1=yes and 0= no). At times, I refer to this variable as timely degree completion.

d. Increased academic aspirations refers to whether academic aspirations increased between the first semester in college (Wave 1) and last semester enrolled (Wave 2-4) or year four of college (Wave 5). Aspirations at year four of college or the last semester enrolled ranged from less, the same, or higher than originally anticipated freshman year in college. This was coded as a dichotomous variable (1=yes, aspirations increased, 0= no, aspirations did not increase). During freshman year in college, respondents could choose from the following three college aspirations: taking college one year at a time, graduating from college, or going to graduate or professional school. During their senior year in college, respondents could choose from the following college/career expectations: expect to obtain less than a bachelor's degree (which is treated as equivalent to taking college one year at a time), expect to obtain a bachelor's degree (which is treated as equivalent to aspiring to graduate from college), expect to obtain a

master's degree or the equivalent, or expect a Ph.D. or the equivalent (which is treated as equivalent to aspiring to go to graduate or professional school).

Respondents who originally reported college aspirations of graduating from college and who by their last semester enrolled/senior year expected to obtain a master's degree were assigned a 1 because their aspirations increased. Also, respondents who originally aspired to take college one year at a time and who by their last semester enrolled/senior year expected to obtain a bachelor's degree or higher were assigned a 1 because their aspirations increased, too. On the other hand, respondents who originally reported college aspirations of going to graduate or professional school and who by their last semester enrolled/senior year expected less than a master's degree were coded a 0 because their academic aspirations decreased since their freshman year in college Additionally, respondents' who originally reported college aspirations of graduating from college and who by year four expected to obtain a bachelor's degree were assigned a 0 because their aspirations remained the same.

e. Reduced academic aspirations refers to whether academic aspirations lowered between first semester in college (Wave 1) and last semester enrolled (Wave 2-4) or year four of college (Wave 5). Aspirations at year four of college or the last semester enrolled could be less, the same, or higher than originally anticipated freshman year in college. This variable was coded as a dichotomous variable (1=yes, aspirations lowered, 0= no, aspirations did not lower). This variable was created from the same college aspiration items used to calculate increased aspirations.

Respondents who originally reported college aspirations of going to graduate or professional school and who by their last semester enrolled/senior year expected less than a master's degree were coded a 1 because their aspirations lowered since their freshman year in

college. Also, respondents who originally aspired to obtain a bachelor's degree take and who by their last semester enrolled/senior year expected to take college one year at a time were assigned a 1 because their aspirations lowered, too. On the other hand, respondents who originally reported college aspirations of graduating from college and who by their last semester enrolled/senior year expected to obtain a master's degree were assigned a 0 because their aspirations increased. Additionally, respondents' who originally reported college aspirations of graduating from college and who by year four expected to obtain a bachelor's degree were assigned a 0 because their aspirations had remained the same.

f. Familial cost of a college education refers to respondents' sense that going to college has made them feel less part of their family. This item was from Wave 5's relative benefits of a college education subsection of the NLSF. This item was rated on a 0 to 10 scale, ranging from totally disagrees to totally agree to the following statement, "my going to college has made me feel less a part of my family". This was measured as a continuous variable in the NLSF, but for the purpose of this study I dichotomized this variable because the distribution of the data was severely skewed. Evaluation of the Pearson skewness coefficient showed that the distribution was not skewed (.18), but the Fisher skewness coefficient showed moderate skewness (8.4). The distribution was positively skewed, even after Square root and Logarithm transformations. Data were transformed so respondents with a rating of 0 were coded 0 and respondents with a rating of 1or higher were coded a 1(1=yes, at least some familial cost was experienced post education, 0= no, no familial cost was experienced post education).

g. Communal cost of a college education refers to respondents' sense that going to college has made them feel less part of their home community. This item was from Wave 5's relative benefits of a college education subsection of the NLSF. This item was rated on a 0 to 10

scale, ranging from totally disagrees to totally agree to the following statement, "My going to college has made me an outsider in my home community". This was measured as a continuous variable in the NLSF, but for this study I dichotomized this variable because the distribution of the data was severely skewed (Pearson's skewness coefficient = .68; Fisher's skewness coefficient= 14.69). The distribution was positively skewed, even after Square root and Logarithm transformations. Data were transformed, so respondents with a rating of 0 remained 0 and respondents with a rating of 1 or higher were coded a 1. Thus, 1=yes, at least some familial cost was experienced post education and 0= no, no familial cost was experienced post education.

h. Ethnic membership cost of a college education refers to respondents' sense that others of their race or ethnicity resent their going to college. I selected one item from Wave 5's relative benefits of a college education subsection of the NLSF. This item was rated on a 0 to 10 scale, ranging from totally disagrees to totally agree to the following statement, "Other people of my race or ethnicity resent my going to college". This was measured as a continuous variable in the NLSF, but for this study I dichotomized this variable because the distribution of the data was severely skewed (Pearson's skewness coefficient = .68 & Fisher's skewness coefficient = 14.69). The distribution was positively skewed, even after Square root and Logarithm transformations. Data were transformed, so respondents with a rating of 0 were coded 0 and respondents with a rating of 1 or higher were coded a 1. Thus, 1=yes, at least some ethnic cost was experienced post education, 0= no, no ethnic cost was experienced post education.

2. Independent variable: School climate. School climate refers to the context in which students learn. According to Valenzuela (1999) a school climate that promotes learning through an additive schooling lens emphasizes a sense of moral and social responsibility, nurtures student progress by authentic caring relationships, and is culturally inclusive. For this study, only the

cultural inclusivity aspect of an additive school climate was measured. Measures of other aspects of an additive school climate (i.e. socially responsible and caring climate) could not be constructed from the available NLSF items. A culturally inclusive school climate refers to students' positive perceptions of the racial/cultural climate of their campus including interactions students have with peers and teachers.

In this study, the culturally inclusive school climate variable was measured with the NLSF's nine-item campus racial climate scale which asked students to rate how often, if ever, they were made to feel self-conscious of their race/ethnicity by a professor, peer, or other college staff, felt discouraged by a professor from speaking out in class because of their race or ethnicity, or heard derogatory remarks made by other college staff about their race/ethnicity (Charles et al., 2009). These data are from Wave 2. Items are rated on a scale from 1 to 5, ranging from never-to-often. I reverse scored the items before summing them to create the total scale score which range from 0 to 36. Higher scores represent more positive/culturally inclusive environments. The internal consistency reliability coefficient for the complete NLSF sample (Latinos, African Americans, Whites, and Asians) was .80 (Charles et al., 2009). For my study's Latino sample the internal consistency reliability coefficient was .75 (Table IV, Appendix B).

3. Moderator variables: Ethnic identity. I identified items or scales that appeared to have face validity or that closely aligned with my conceptualization of ethnic identity, which was informed by Sellers et al. (1998b) Multidimensional Model of Racial Identity (MMRI) and some of the literature regarding a familialismo ideology (Esparza & Sanchez, 2008; Ramirez et al., 2004; Steidel & Contreras, 2003). The MMRI includes four dimensions of ethnic identity: salience, centrality, regard (private regard and public regard) and ideology (nationalist, assimilationist, oppressed, and humanist). The familialismo ideology/belief system is included

because research suggests it is relevant for understanding Latinos ethnic identity and how Latinos relate to their environment (Esparza & Sanchez, 2008; Steidel & Contreras, 2003). Ethnic identity salience and public regard could not be measured from the available NLSF items. One ethnic identity dimension (private regard) is measured with Massey et al.'s multi-item scale (a three-item stereotype internalization scale) from the NLSF and the remaining six ethnic identity dimensions are measured with single-item measures (centrality, nationalist, humanist, assimilationist, oppressed minority, and familist ideology). In total, there are seven ethnic identity moderator variables (Table V, Appendix B).

a. Ethnic identity centrality refers to the extent to which ethnic identity is central to an individual's self-concept. This is measured with one item from W1 of the NLSF data. The respondents were asked if it should be more important for Hispanics/Latinos to be: 1) Hispanic, 2) American, or 3) that both identities should be equally important. This item was selected for its close alignment to Scottham, Sellers, and Nguyên's (2008) measurement of centrality from the MMRI. Centrality was measured with Likert-type scales of agreement with items such as, "I have a strong sense of belonging to Black people" and "if I were to describe myself to someone, one of the first things that I would say is that I am Black". For the purpose of this study, I transformed this item into a continuous variable; where 1 means Hispanic identity should be least important and 3 means Hispanic identity should be more important (1=American identity should be more important, 2=Both identities equally important, and 3=Hispanic identity should be more important) Thus, the higher the score the more ethnic identity is central/important to the respondent's self-concept.

b. Private regard refers to the extent one views his or her in-group positively. This is measured with Massey et al.'s (2009) NLSF's stereotype internalization scale, using data from

Wave 1 (comprised of 3-items). The NLSF's stereotype internalization scale asked respondents to rate Latinos, on a scale from 1 to 7, where 1 means tends to be unintelligent, lazy, give up easily and 7 means tends to be intelligent, hardworking, and tends to stick with it. I recoded the items from 1 to 7 to 0 to 6, then summed them to create the total scale score which ranges from 0 to 18; the higher the scores the more positively the respondent views their in-group. This particular scale was selected for its relative alignment to Sellers et al.'s (1997) measurement of private regard. They previously measured this construct with items like "I feel that Blacks have made major accomplishments and advancements" and "I feel good about Black people". The internal consistency reliability coefficient for the NLSF's stereotype internalization scale for the complete sample was .61 (Massey et al., 2009). The internal consistency reliability coefficient for this scale with the Latino sample was .63; lower than the common .7 threshold. A Cronbach's alpha of .63 is not unreasonable with a scale of only three items. If I were to use the Spearman-Brown formula to estimate the reliability coefficient of a measure twice as long, this would yield an estimated reliability coefficient of .77 (Pedhazur & Schmelkin, 1991). Plus, the scale does appear to have good face validity; each item is an indicator of how positive or negative respondents view their ethnic group.

c. Ethnic identity ideology refers to an individual's philosophy (e.g. set of beliefs, opinions, and attitudes) about the way in which members of their ethnic group should act and interact with society. For this study, five ideology variables were measured from Wave 1 items of the NLSF: Nationalist, assimilationist, minority oppressed, humanist, and familialismo. The first four variables are informed by Sellers et al.s' (1998) MMRI and the fifth is informed by the research on Latinos' familial beliefs/values (Esparza & Sanchez, 2008; Ramirez et al., 2004;

Steidel & Contreras, 2003). All of these variables were measured continuously except for the oppressed minority ideology, which is measured as a dichotomous variable.

i. The Nationalist ideology variable refers to the extent an individual prefers his/her own ethnic social environment. I identified an item rated on a scale, ranging from 1 (strongly agree) to 5 (strongly disagree) whether Hispanics or Latinos should live in predominantly Hispanic or Latino neighborhoods. I reverse scored the item, so the higher the nationalist score the more the respondent adhered to a nationalist ideology. This item is from W1 items regarding interactions with other racial and ethnic groups. This item was selected for its relative alignment with Sellers et al.'s (1997) measurement of nationalist beliefs with items like "Blacks students are better off going to schools that are controlled an organized by Blacks" and "Black people should surround their children with Black art, music, and literature".

ii. The humanist ideology variable refers to the extent one's viewpoint emphasizes the similarities among all humans. I identified an item rated on a scale of 1 to 5, whether the respondent strongly agreed or strongly disagreed with the statement that Hispanic or Latino men should not date White women. The higher the humanist ideology score the more the respondent adhered to a humanist ideology. This item was from W1's interactions with other racial and ethnic groups subsection questionnaire. This item aligned with Sellers et al.'s (1997) measurement of a humanist ideology, such as items like "Blacks should have the choice to marry interracially" and "being an individual is more important than identifying oneself as Black".

iii. The assimilationist ideology variable refers to the extent an individual prefers to work within mainstream society or adapt to mainstream values. I identified an item that rated on a scale of 0 to 10, whether the respondent strongly disagreed or strongly agreed with the statement that Hispanics who do what is considered "proper" will be accepted and eventually get ahead.

The higher the assimilationist score the more the respondent adhered to an assimilationist ideology. This item was from Wave 1's questions regarding respondents' interactions with other racial and ethnic groups. This item was selected for its relative alignment to the MMRI's measures of assimilationist ideology with items like "Blacks should act more like Whites to be successful in this society" and "Blacks should try to work within the system to achieve their political and economic goals" (Sellers et al., 1997; Scottham et al., 2008).

iv. The oppressed minority ideology variable refers to the extent an individual adheres to a marginalized sense of group identity and views similarities between their ethnic group's experience with oppression and that of other minority groups. I constructed a dichotomous variable from two NLSF items. The first item rated on a scale from 0 to 10, whether the respondent strongly disagreed or strongly agreed that when two qualified people, one Latino and one White, are considered for the same job, the Latino won't get the job no matter how hard he/she tries. The second item rated on a scale from 0 to 10, whether the respondent strongly disagreed or strongly agreed that when two qualified people, one Black and one White, are considered for the same job, the Latino won't get the job no matter how hard he/she tries. These two items were from W1's interactions with other racial and ethnic groups subsection questionnaire. They were selected for their relative alignment to Sellers et al. (1997) measurement of oppressed minority ideology. Sellers et al. (1998b) measured oppressed minority ideology with items like, "the racism Blacks have experienced is similar to that of other minority groups", "the dominant society devalues anything not White male oriented", and "there are other people who experience racial injustice and indignities similar to Black Americans". For the purpose of this study, I constructed a new variable from the above mentioned two items, so that respondents who agreed at least some with *both* items (scored a 1 or greater on the 0 to 10

scales) were given a value of 1 and those who did not agree (scored a 0 on the 0 to 10 scales) were given a value of 0. Thus, respondents who agreed that both a Latino and a Black person would not get a job over a White person were assigned a value of 1, which was used as an indication the respondent adhered to an oppressed minority ideology. Respondents who did not agree that both a Latino and a Black person would not get a job over a White person were assigned a value of 0, indicating he respondent did not adhere to an oppressed minority ideology.

v. The familialismo ideology variable refers to the extent to which an individual feels or believes it's important to uphold the family name and consider the family's welfare when making everyday decisions. I identified an item rated on a scale from 0 to 10, whether the respondent thought it was of no importance whatsoever to of the utmost importance to consider the sacrifices his or her family has made for their education, when thinking about "how to try" in his or her college studies. The higher the familialismo ideology score the more the respondent adhered to a familialismo ideology. This item was from Wave 2's respondent's attitude towards college subsection questionnaire. This item was selected for its relative alignment to how Ramirez et al. (2004) measured familist ideals with items like, I owe it to my parents to do well in life and I think about what is good for my family before thinking about what is good for me.

4. Control variables. Previous research with the NLSF found the following variables to be important predictors of academic outcomes: 1) High school grade point average on a four-point graded scale; 2) self-esteem (i.e. ten item summed scale score); 3) self-efficacy (i.e. six item summed scale score); 4) recipient of public assistance at least once since age 6; 5) household income; 6) parent home ownership; 7) gender; 8) being foreign born; 9) having a mother who is foreign born; 10) having a father who is foreign born, 11) having both parents be foreign born; 12) being a first-generation college student; 13) highest education level achieved

by woman most responsible for respondent's care; 14) highest education level achieved by man most responsible for respondent's care; 15) type of college/university (i.e. Liberal Arts, Private, and Public) (Rivas-Drake & Mooney, 2008, 2009).

Self-efficacy was measured with one item, the NLSF's summed self-efficacy score, ranging from 0 to 24 whether respondents agreed with items such as "I don't have control over the direction of my life" and "every time I try to get ahead something stops me". The NLSF based this one-item summed score on six response items. Massey et al. (2003) reported the Cronbach's alpha for this measure, for the entire sample, was .69. Self-esteem was also measured with one item, the NLSF summed self-esteem score, ranging from 0 to 40 whether respondents agreed with items such as "I feel that I a person of worth equal to others" and "I am able to do things as well as most people". The NLSF based this one-item summed score on ten response items. Massey et al. (2003) reported the Cronbach's alpha for this measure, for the entire sample, was .85.

Only twelve of the above-mentioned variables were significantly related to at least one of my academic outcomes during the preliminary analyses, so type of college/university and having a father foreign born were not included in the multivariate analyses. In total, six controls were dichotomous and six were continuous variables; see codebook Table II, Appendix B.

C. Data Analysis Plan

The analysis is divided into two sections: The preliminary analysis and multivariate analysis. Each is detailed below.

1. Preliminary analysis. Descriptive statistics were reported for the entire NLSF's Latino sample. These statistics provide background information about the respondents' demographics and institutional characteristics. Means and standard deviations for all of the

continuous variables were presented in a table format. The distributions of dichotomous and ordinal variables were described in terms of frequencies and percentages in a separate table. There was one nominal variable with more than two categories, type of college enrolled, which was also described in terms of frequencies and percentages. Data were examined for skewness, kurtosis, outliers, violations of normality, missingness, and for multicollinearity.

Next I examined the bivariate associations between the prospective control variables and outcome variables. One of the prospective control variables, type of college enrolled, was measured at the nominal level with more than two categories. Thus, ci-square tests were conducted with dichotomous outcome variables and a one-way ANOVA was conducted with the continuous outcome variable. Pearson or point bi-serial correlation coefficients were computed between the remaining prospective control variables and eight outcome variables. Variables with a significant bivariate relationship with at least outcome variable were controlled for in all of the multivariate models.

Previous attrition analysis for this Latino sample revealed that men, students with lower high school GPA's, and students reporting that their parents did not own their home were overrepresented among those with missing data between Wave 1 and Wave 3 (Rivas-Drake & Mooney, 2008). These factors were treated as control variables in the multivariate analyses. Finally, I utilized the G*Power 3.1.7 Power Analyses software to conduct a priori sample size computation to determine if my sample size would be sufficient to detect a medium effect size for a linear and logistic regression analyses of the data. For the a priori linear multiple regression sample size computation, I used a medium effect size $f^2 = .15$, $\alpha = .05$, Power = .80, and 27 predictors (1 independent variable, 7 ethnic identity predictors, 7 interaction terms, and 12 control variables). A minimum sample size of 178 was required to detect a medium effect.

For the a priori logistic regression sample size computation, I used an odds ratio = 1.3, $\alpha = .05$, Power = .80, and $R^2 = .15$. A minimum sample size of 668 was required to detect a medium effect. Except for my cultural cost outcome regressions, my final analytical sample sizes were sufficient to detect a medium effect (n=671-708). In terms of the cultural cost regressions, I conducted a post hoc power analysis to compute the achieved power given the alpha, sample size and effect size. This produced a critical z value of 1.644 and an achieved power value of .652. As a result, the findings for the cultural cost variables should be interpreted with caution given the increased margin of error in estimates or the increased risk that the detected differences are related to chance alone. Future studies should include larger samples to reduce the margin of error in estimates.

2. Multivariate analyses. Hierarchical logistic regression and hierarchical multiple linear regression were employed, because the analyses included dichotomous dependent variables (i.e. degree completion, on-time degree completion, increased academic aspirations, and reduced academic aspirations) and one continuous dependent variable (i.e. grade point average). These analyses lend themselves to examining moderating effects of variables while taking into account the influence of control, independent, and moderator variables on the outcome variables in a step-by-step fashion. A summary of the final multivariate analyses plan is presented in Table I, Appendix C.

In the first step of the hierarchical logistic and linear multiple regression analyses, the twelve control variables were entered to predict the outcome variables. In the second step, the independent variable (i.e. culturally inclusive school climate) was entered and the moderator variables (i.e. ethnic identity: centrality, private regard, nationalist, assimilationist, humanist, oppressed minority, and familialismo) were entered on the third step. Seven interaction terms

between ethnic identity and culturally inclusive school climate were entered in the fourth and final step.

If the second step showed a statistically significant contribution to the prediction of the outcome, then a main effect hypothesis was supported between the outcome and the independent variable of cultural climate. If the fourth step showed a statistically significant contribution to the prediction of the outcome, then a moderation/interaction effect hypothesis was supported for the ethnic identity moderator variables as a set. Chapter five discusses results of these analyses. Both, the set of interaction terms and unique effect of individual interaction terms were examined. Results that approached marginal significance ($p \leq .1$) were also mentioned since this area of research is just now growing. Also, marginal effects can be helpful in guiding future research and formulating hypotheses (Fortune & Reid, 1999).

Chapter 5. Results

This chapter begins with the results of the univariate, missing value, and multicollinearity analyses, as well as the bivariate analyses of associations between the control and outcome variables. This is followed by the multivariate analysis section, which includes a discussion of the model assumptions and hypotheses testing for main effects and moderation effects. Finally, a summary of the key results is provided.

A. Preliminary Analysis Results

Descriptive statistics are reported for the entire NLSF's Latino sample (n=916), which is the sample for the current study. Information about the respondents' demographics and institutional characteristics are provided below, followed by the descriptive statistics for the outcome variables, the independent variable, and finally the moderator variables.

1. Sample characteristics. The respondents were predominantly women (58.1%) and U.S. born (80.5%); 19.5% of respondents were first generation American immigrants (born outside of the United States). Of those born in the United States, the majority were second generation Americans, that is, children of at least one foreign born parent; 53.2% reported at least one parent was foreign born. The remaining U.S. born respondents were third generation or higher; that is, children of at least one U.S. born parent, 46.8% reported that at least one parent was U.S. born (Table I). The top four nationalities among students with foreign born parents were Mexican (13%), Puerto Rican (5.3%), Cuban (4.9%), and Columbian (4.5%), respectively.

TABLE I- DESCRIPTIVE DATA FOR INSTITUTIONAL AND INDIVIDUAL CHARACTERISTICS

Variable	n=916
Type of college enrolled	
Liberal Arts	87 (9.5%)
Private	548 (59.8%)
Public	281 (30.7%)
Missing	0
Gender	
Female	532 (58.1%)
Male	384 (41.9%)
Missing	0
Foreign born	
Yes, foreign born	178 (19.5%)
No, not foreign born	737 (80.5%)
Missing	1 (<1%)
Mother foreign born	
Yes, mother foreign born	485 (53.1%)
No, mother not foreign born	428 (46.9%)
Missing	3 (<1%)
Father foreign born	
Yes, father foreign born	494 (54.8%)
No, father not foreign born	408 (45.2%)
Missing	14 (1.5%)
Both Parents foreign born	
Yes, both parents foreign born	355 (39.4%)
No, parents are not foreign born	546 (59.6%)
Missing	15 (1.6%)

Note: Percentages and frequencies are based on valid data.

The public NLSF data do not provide national origin information for students with U.S. born parents. For instance, in the publicly available data, students with U.S. born parents (3rd generation) were not asked about their country of origin. The majority of respondents reported the woman or man most responsible for raising them had at least some college education (62.3%) and 37.7% were first generation college students (see Table II). At least a quarter of the respondents reported the woman most responsible for raising them had completed college

(25.6%) and 22.9% had completed graduate school. Similarly, about a quarter of the respondents reported the man most responsible for raising the student had completed college (24.4%) and 34.6% had completed graduate school. Interestingly, 9.3% of the respondents reported the woman most responsible for taking care of them had less than a high school diploma and 10.8% of the respondents reported the man most responsible for their care had less than a high school education. This is interesting because these students managed to enroll into highly selective institutions despite the fact that the persons most responsible for their care did not complete high school.

TABLE II - DESCRIPTIVE DATA FOR PARENTAL EDUCATION

Variable	n=916
First generation college student (no parent some college)	
Yes	328 (37.7%)
No	541 (62.3%)
Missing	47 (5.1%)
Woman most responsible/mother's education level	
Grade school	53 (5.8%)
Some high school	32 (3.5%)
High school graduate	178 (19.5%)
Some college	177 (19.4%)
College graduate	233 (25.6%)
Some graduate school	29 (3.2%)
Graduate school graduate	209 (22.9%)
Missing	5 (<1%)
Man most responsible/father's education level	
Grade school	65 (7.4%)
Some high school	30 (3.4%)
High school graduate	127 (14.5%)
Some college	104 (11.4%)
College graduate	213 (24.4%)
Some graduate school	32 (3.7%)
Graduate school graduate	302 (34.6%)
Missing	43 (4.7%)

Note: Percentages and frequencies are based on valid data.

Participants reported high annual household incomes compared to the same time period when the national median income for Latinos was $33,675 (U.S. Census, 2000). A sizeable amount of respondents reported annual household incomes of $75,000 or higher (43.9%); 18.1% were from households with incomes between $50,000 and $74,999, 14.4% between $35,000 and 49,999, 9.3% between $25,000 and 34,999, and 14.3% under $25,000; 13.9% reporting being on public assistance at least once since age 6 (see Table III). Also, parental home ownership was reportedly high (80.7%).

TABLE III - DESCRIPTIVE DATA FOR ECONOMIC CAPITAL OR INCOME

Variable	n=916
Household income	
< $25,000	126 (14.3%)
$25,000 - $34,999	82 (9.3%)
$35,000 - $49,999	125 (14.3%)
$50,000 - $74,999	158 (18.1%)
$75,000+	384 (43.9%)
Missing	41 (4.5%)
Public assistance at least once since age six	
Yes	127 (13.9%)
No	780 (86.1%)
Missing	9 (<1%)
Parent homeownership	
Yes	739 (80.7%)
No	177 (19.3%)
Missing	0

Note: Percentages and frequencies are based on valid data.

Students were generally academically prepared at the start of enrollment; students' high school GPA ranged from 2.17 to 4.0, with an average GPA of 3.70 (SD = .32). Also, students'

reported high levels of self-esteem and self-efficacy at the start of college enrollment (see Table IV). On average, on a 0 to 24 scale, students self-efficacy score was 18.99 (SD = .2.98); the higher the scores the higher the respondent's self-efficacy. On average, on a 0 to 40 scale, students' self-esteem score was 32.55 (SD = 5.6) on a 0 to 40 scale; the higher the score the higher the respondent's self-esteem.

.

TABLE IV - DESCRIPTIVE DATA FOR ACADEMIC PREPARATION

Variable	n=916
High school grade point average	
M (SD)	3.7 (.32)
Missing	40 (4.4%)
Self-Efficacy	
M (SD)	18.99 (2.98)
Missing	0
Self-Esteem	
M (SD)	32.27 (5.63)
Missing	0

Note: Means, standard deviations, and percent missing based on valid data.

2. Outcome variables. There are eight measures of academic achievement. First, on a 4-point grade point scale, the mean reported cumulative grade point average was 3.03 (SD=.34; see Table V). The Pearson skewness coefficient (-.14) showed the distributions approached the shape of a normal curve and was not severely skewed. However, the Fisher skewness coefficient (-35.48), the histogram and normal Q-Q plot showed the distribution was negatively skewed. That is the majority of students earned at least a 3-point GPA or B average (69.1%), which is not surprising because the sample is comprised of students with high academic preparedness and

who enrolled at selective institutions. Approximately 34.5% of students earned a C average (2.0-2.99). Cumulative GPA was not transformed for the purpose of the multiple linear regressions since the sample size was large and the values were within expectations.

TABLE V - DESCRIPTIVE DATA FOR CUMULATIVE COLLEGE GRADE POINT AVERAGE

Outcome Variable	n=916
Cumulative college grade point average	
M (SD)	3.03 (.34)
Missing	27 (< 2.9%)

Note: Means, standard deviations, and percent missing based on valid data.

The majority of respondents (86%) successfully completed their undergraduate degree within six years of their start term and a sizeable proportion (67%) graduated within four years (see Table VI).

TABLE VI - DESCRIPTIVE DATA FOR THE DEGREE COMPLETION OUTCOME VARIABLES

Outcome Variables	n=916
Degree completion within six years	
Yes	787 (86%)
No	128 (14%)
Missing	1 (< 1%)
Degree completion within four years	
Yes	613 (67%)
No	302 (33%)
Missing	1 (< 1%)

Note: Percentages and frequencies based on valid data.

With respect to academic aspirations, more than one quarter (27.1%) of respondents reported increased aspirations since first semester enrolled and about 13.4% percent reported reduced aspirations since first semester enrolled (see Table VII). Largely, students' aspirations remained the same (59.5%) by year four of college or last semester interviewed.

TABLE VII - DESCRIPTIVE DATA FOR THE ACADEMIC ASPIRATIONS OUTCOME VARIABLES

Outcome Variable	n=916
Increased aspirations	
Yes	234 (27.3%)
No	623 (72.7%)
Missing	59 (6.4%)
Reduced aspirations	
Yes	114 (13.3%)
No	743 (86.7%)
Missing	59 (6.4%)

Note: Percentages and frequencies based on valid data.

Descriptive data for the cultural cost of education variables are provided in Table VIII. Most students reported at least some familial (57.4 %) and some communal cost (54.3%) post-college. The majority of respondents did not report an ethnic membership cost (55.4%) post-college. Overall, the responses were pretty evenly split between reporting at least some familial, communal, and ethnic membership cost and reporting none.

TABLE VIII- DESCRIPTIVE DATA FOR THE CULTURAL COST OUTCOME VARIABLES

Outcome Variables	n= 916
Familial cost of an education	
Yes	327 (57.4%)
No	243 (42.6%)
Missing	346 (37.8%)
Communal cost of an education	
Yes	309 (54.3%)
No	260 (45.7%)
Missing	347 (37.9%)
Ethnic membership cost of an education	
Yes	253 (44.6%)
No	314 (55.4%)
Missing	349 (38.1%)

Note: Percentages and frequencies based on valid data.

3. Independent variable. The independent variable, perceptions of a culturally inclusive school climate, had a theoretical score ranging from 0 to 36, but observed scores ranged from 18 to 36. Higher scores indicated a more culturally inclusive climate. On average, students' perceptions were positive (M=33.25, SD 3.23; see Table IX). The Pearson skewness coefficient (.22), the Fisher skewness coefficient (21.01), and the histogram and normal Q-Q plot confirmed the distribution was moderately skewed. Data transformations to lessen skewness were not necessary because multiple regression analysis only requires the outcome variable to have a normal distribution, not the predictors (Abu-Bader, 2011).

TABLE IX - DESCRIPTIVE DATA FOR THE CULTURAL CLIMATE INDEPENDENT VARIABE

Independent Variable	n=916
Culturally Inclusive Climate	
M (SD)	33.25 (3.23)
Missing	54 (5.9%)

Note: Mean, standard deviation, and percent missing based on valid data.

4. Moderator variables. The moderator variables were comprised of nine measures of ethnic identity, of which all but one were continuous variables: 1) centrality; 2) stereotype externalization; 3) private regard; 4) nationalist ideology; 5) humanist ideology; 6) assimilationist ideology; 7) oppressed minority ideology, and 8) familist ideology. Central tendencies and distribution statistics are provided in Table X. The majority of the continuous ethnic identity distributions were positively skewed. Data transformations to lessen skewness were not necessary because multiple regression analysis only requires the outcome variable to have a normal distribution, not the predictors (Abu-Bader, 2011).

TABLE X - DESCRIPTIVE DATA FOR ETHNIC IDENTITY MODERATOR VARIABLES

Moderator Variables	n=916
Centrality	
M (SD)	1.97 (.49)
Scale Range	0 to 3
Missing	10 (1.1 %)
Private regard	
M (SD)	10.42 (2.48)
Scale Range	0 to 18
Missing	38 (4.1%)
Nationalist	
M (SD)	.91 (.86)
Scale Range	0 to 4
Missing	10 (1.1%)
Humanist	
M (SD)	2.46 (.76)
Scale Range	0 to 3
Missing	9 (1.1%)
Assimilationist	
M (SD)	6.61 (2.44)
Scale Range	0 to 10
Missing	12 (1.3%)
Oppressed	
Yes	749 (83.3%
No	150 (16.7%)
Missing	17 (1.9%)
Familist	
M (SD)	7.04 (2.88)
Scale Range	0 to 10
Missing	54 (5.9%)

Note: Means, standard deviations, and percentages based on valid data.

With respect to centrality, generally respondents felt being Hispanic/Latino should be at least equally as important as being American. The mean centrality score was 1.97 (SD = .49). Responses could range from 1 to 3, where 1 means it's more important to be American and 3 means it should be more important to be Hispanic/Latino. Specifically, 75.8% felt it should be equally important for Hispanics/Latinos to be both American and Hispanic/Latino, followed by 13.6% who reported it should be more important to be American, and 10.6% who reported it should be more important to be Hispanic or Latino. The distribution of the data approached a normal curve. The Pearson's skewness coefficient was less than +/- .2 (.06) and the Fisher's skewness coefficient was within +/- 1.96 (-.86). Visual inspection of the Q-Q plot and histogram confirmed the distribution approached normality.

With respect to private regard, students' mean private regard score was 10.41 (SD = 2.48) on a theoretical scale that ranged from 0 to 18; actual scores ranged from 3 to 18. A sizeable amount of students tended to either agree to positive statements about their ethnic groups' intelligence, work ethic, and persistence (40.6% scores were higher than a ten) or at least not disagree with positive statements about Latinos (43.5% of scores were a nine) and 15.9% disagreed with positive statements about their ethnic group (scores were below a nine). Students generally did not disagree to positive statements about Latinos intelligence, work ethic, and ability to stick with things to the end. The Pearson's skewness coefficient for the private regard distribution approached the shape of a normal curve, (.17), but the Fisher's skewness coefficient indicated the distribution was positively skewed (7.72). Visual inspection of the Q-Q plot and histogram showed data tended to cluster below the mean and some data deviated from the straight line of the Q-Q plot. Overall, there was slight skewness.

In terms of nationalist ideology, students generally disagreed with the statement that Latinos should live in predominantly Latino neighborhoods. Students' mean nationalist ideology score was .91 (SD = .858) on theoretical scale that ranged from 0 to 4. This item was reverse scored; the higher the score the greater adherence to nationalist beliefs. Only 1.9% of the respondents strongly agreed with the statement that Latinos should live in predominantly Latino neighborhoods (scores of three and four), 26% neither agreed nor disagreed (score of two), 33% somewhat disagreed with the statement (had a score of one), and 39.1% strongly disagreed (had a score of zero). The Pearson's skewness coefficient was -.10, which falls within+=.20 and the Fisher's skewness coefficient was 5.5 which falls outside +=1.96. The visual inspection of the histogram and Q-Q plot confirmed the distribution was slightly positively skewed.

In terms of humanist ideology, students generally somewhat disagreed with the statement that Latino men should not date White women. The mean humanist ideology score was 2.46 (SD = .76) on a theoretical scale that ranged from 0 to 4. Actual scores ranged from 0 to 3. The higher the score the more the respondent adhered to a humanist ideology. The majority of students tended to somewhat disagree with the statement that Latino men should not date White women (61.1% scores were a three), 24.5% did not agree or disagree (scores were a two) and 14.5% agreed with this statement (scores were below a two). None of the respondents strongly disagreed with the statement. The Pearson's skewness coefficient (-7) and the Fisher's skewness coefficient (-13.7) showed the distribution was skewed and the histogram and Q-Q plot confirmed moderate negative skewness.

In terms of assimilationist ideology, students generally agreed with the statement that any Latino who is educated and does what is "proper" will be accepted and eventually get ahead. Students' mean assimilationist ideology score was 6.61 (SD = 2.44) on a theoretical rating scale

that ranged from 0 to 10. Actual scores ranged from 0 to 10. Nearly fifteen percent of respondents somewhat disagreed that any Latino who is educated and does what is "proper" will be accepted and eventually get ahead (14.6% had a score of 5 or lower), 51.4% somewhat agreed (had scores of six to nine), and 15.5% strongly agreed with the statement (had a score of ten). The Pearson's skewness coefficient (-.16) showed the distribution was not skewed, but the Fisher's skewness coefficient showed a negative skewness (-6.2). The histogram and Q-Q plot confirmed the negative skewness of the distribution.

The majority of respondents adhered to an oppressed minority ideology; 81.8% somewhat agreed that Latinos and African Americans are marginalized similarly as compared to only 16.4% of the respondents who totally disagreed that both groups are marginalized similarly. This was a dichotomous variable (0=totally disagreed that both groups are marginalized, 1=agreed that both groups are marginalized). Although, the distribution was not evenly split between the two response categories there appears to be sufficient number of cases for both response categories.

In terms of familialismo ideology, students generally reported it was somewhat important to consider the sacrifices their family was making for their education when thinking about trying in their college studies. Students' mean familialismo ideology score was 7.04 (SD=2.88) on a rating scale that ranged from 0 to 10. The higher the score the greater student's adhered to a familist ideology. Only five percent of respondents indicated that it was of no importance that their family was making sacrifices for their education when thinking about trying in their college studies (5.1% had a score of 0), 5% thought it was somewhat unimportant (5% had a score of one to five), 51.4% thought it was somewhat important (had scores of six to nine), and 27.8% thought it was of the utmost importance (had a score of ten). The Pearson's skewness coefficient

showed data were normally distributed (.10), but not based on Fisher's skewness coefficient (-18.45). The histogram and Q-Q plot, confirmed the distribution of familialismo ideology was negatively skewed.

B. Missing Value Analysis

This section includes a discussion about the amount of data missing by type of variable (control, independent, moderator, and outcome) followed by the results of the Little's MCAR tests, patterns of missing data, separate variance t-tests, and a description of how missing data was handled. Most of my variables had less than 6.4% data missing (see Appendix D).
In terms of outcome variables, the cultural cost of education variables had the most missing data (about 38%), followed by academic aspirations (about 6.5%), grade point average (2.9%), and degree completion (less than 1%). In terms of my independent variable, culturally inclusive school climate, 5.8% of cases had missing data. In terms of my ethnic identity moderators, familist ideology had the most missing data (5.9%), followed by academic aspirations (about 6.5%), grade point average (2.9%), and centrality (1%). In terms of my control variables, first generation college student had the most missing data (5.1%), followed by dad's highest education level (4.7%), household income (4.5%), high school GPA (4.4%), parents being foreign born (1.6%), and public assistance (1.0%). Although many variables had missing data, most variables were missing less than 6.5%.

Next, I tested the randomness of missing data with the Little's MCAR test with an expectation maximization (EM) algorithm with 100 iterations, using SPSS 21. I conducted two separate Little MCAR'S test, one for the regressions without the cultural cost outcome variables and one only for the regressions with the cultural cost outcome variables. I examined the cultural cost variables separately because the amount of cases missing for these three outcome

variables was great. Also, the results of one outcome model do not affect the results of the other outcome models. For the first test, I included all of my study's variables, except for the cultural cost outcome variables, and indicated which variables were the predictors (the IV and MVs). The null hypothesis that data were missing completely at random was rejected; X^2(df= 1370) =1573.856; p = .0), thus data was not missing completely at random (Appendix D). For the second Little's MCAR test , I included all my variables, but limited my dependent variables to only my cultural cost outcome variables, predictors (the IV and MVs) were indicated. The null hypothesis that data were missing completely at random was rejected, X^2(df= 1348) =1460.263; p = .017.

Then, I inspected the patterns of missing data which showed the most frequently occurring patterns were cases with no missing, followed by cases missing the cultural cost variables simultaneously, the increased aspirations and reduced aspirations variables simultaneously, and missing the first generation college student variable and dad's highest education level simultaneously (Appendix D). These patterns of missing are ignorable because missing data on one outcome variable does not affect the results of the other outcome models/regressions. Additionally, the last pattern of missing data makes sense since the first generation college student variable is in part compiled from the dad's highest education level variable.

Even so, the separate variance *t*-tests were inspected, which showed cases missing values on first generation college student was associated more with being on public assistance, lower household income, and less homeownership (Appendix D). Cases missing values on increased aspirations were associated with lower degree completion, timely completion, and higher mean scores of private regard. Cases missing values on lowered aspirations were associated with lower

degree completion, timely completion, and higher mean scores of private regard. Cases missing values on cultural climate was associated with higher familist cost. Cases missing values on familial cost was associated with higher mean scores of familist ideology. Cases missing values on communal cost was associated with higher mean scores of familist ideology. Cases missing values on familist ideology was associated more with being male. These patterns of missing occurred in less than 5.6% of the cases. In sum, these patterns of missing appear to be predictable from other variables in the data set.

With MAR, missingness can be inferred if the Little MCAR test is statistically significant but missing data is predictable from other variables in the data set (Tabachnick & Fidell, 2007; Graham, 2009). In addition, with MAR, missingness can be dependent on observed data, but not on unobserved data and not on the dependent variable. Consequently, optimal parameter estimates were expected whether missing data was handled with older methods (listwise deletion) or newer methods (multiple imputations). As a result, these patterns did not present a serious concern for bias.

I used the default option on SPPSS for handling missing data, listwise deletion or complete case analysis. I chose the conventional method of handling data, standard errors based on listwise deletion can be meaningful. However, this resulted in lower sample sizes for each outcome model. For instance, for the academic aspirations models, 245 of the 916 cases had at least one missing value on a variable (26.75%). To address concerns of biased estimates of standard errors and parameter estimates that may have resulted from deleting the cases with missing data, I ran additional regressions with all cases using imputed data. In particular, I ran additional regressions with imputed data using SPSS's multiple imputations (five imputations/default option). The dichotomous outcome models were estimated with logistic

procedures and the continuous outcome model (GPA) with normal linear regression procedures. Multiple imputations (MI) is a relatively new method for dealing with data missing in sizeable amounts and data missing at random (Graham, 2009). Studies have successfully utilized MI for data that were missing in a significant portion of the sample, between 16% up to 32% (Bennett, Hsieh, Stoops, 2010; Kenagy & Hsieh, 2005). A summary of the imputed results is provided in Appendix F. Essentially, with more cases certain predictors became more or less important in the prediction of particular dependent variables, but the direction of the relationships remained the same. Discrepancies in the results between the listwise-deletion sample and the imputed data sample are provided at the end of each results section, which is organized by outcome variable.

C. Multicollinearity Analyses

To test for multicollinearity, the correlation coefficients (Pearson or bi-serial correlation coefficients) among my independent variable (IV) and my Moderator Variables (MV's) were examined; the coefficients did not exceed .9 (Tabachnick & Fidell, 2007). The lowest correlation coefficient was between the familist ideology moderator variable and the humanist ideology moderator variable (-.003). The highest correlation coefficient was between the nationalist ideology moderator variable and the humanist ideology moderator variable (-.493). The correlation coefficient matrix is provided in Table I, Appendix E. Additionally, the interaction terms between the MV's and IV were centered to address or reduce concerns of multicollinearity in my regression analyses. This eliminated issues of multicollinearity; none of the tolerance values were smaller than .10 and none of the VIF scores exceeded 10 (Abu-Bader, 2011; Appendix E).

D. Bivariate Analysis Results

Pearson, point bi-serial, or chi-square correlation coefficients and as necessary a one-way ANOVA were used to examine the relationship between control variables and outcome variables. The results of the bivariate analyses were used to identify the number and type of control variables for the final multivariate analysis; those with a significant relationship with at least one dependent variable were controlled for in all multivariate models. The independent and moderator variables were included across all models, so whether or not they were significantly related to the outcome variable was not investigated.

There were 15 potential control variables. Six were continuous variables (i.e. high school GPA, self-esteem, self-efficacy, woman most responsible for care education level, man most responsible for care education level, and household income), eight were dichotomous variables (i.e. recipient of public assistance at least once since age 6, parent home ownership, gender, first generation college student, being foreign born, having a mother who is foreign born, having a father who is foreign born, and having both parents foreign born), and one was a nominal variable with more than two response categories (type of college enrolled into). In terms of outcome variables, cumulative college GPA is the only continuous variable and the remaining seven outcome variables are dichotomous variables (degree completion within four years, degree completion within six years, increased aspirations, decreased aspirations, and familial, communal, and ethnic membership cost of an education).

1. Control variables and cumulative college GPA. The bivariate analyses showed a statistically significant relationship between cumulative college GPA and eight of the fifteen potential control variables (See Table XI, below).

TABLE XI – BIVARIATE RESULTS BETWEEN CONTROL VARIABLES AND CUMULATIVE COLLEGE GPA

Control Variables	Test Statistic	Cumulative College GPA
High School GPA	Pearson's Correlation	.144*
Self-Esteem	Pearson's Correlation	.059
Self-Efficacy	Pearson's Correlation	.021
Since 6: ever on public aid	Point-biserial Correlation	-.128*
Parent owned home	Point-biserial Correlation	.110*
Gender	Point-biserial Correlation	-.066
First generation college student	Point-biserial Correlation	-.115*
Student foreign born	Point-biserial Correlation	.012
Mom foreign born	Point-biserial Correlation	-.059
Dad foreign born	Point-biserial Correlation	-.067
Both parents foreign born	Point-biserial Correlation	-.087*
Mother's education level	Pearson's Correlation	.176*
Father's education level	Pearson's Correlation	.159*
Household income	Pearson's Correlation	.116*
Type of college enrolled	F-value [df] (p-value)	.644[2] (.526)

Note: * *p*-value < .05

Cumulative college GPA was significantly related to the following eight control variables: (1) high school GPA (r = .14, p < .05), (2) being on public aid at least once since age six (r = -.13, p < .05), (3) parent homeownership (r = .11, p < .05), (4) being a first generation college student (r = -.12, p < .05), (5) having both parents be foreign born, (6) education level of mother or woman most responsible (r = .18, p <.05), (7) education level of father or man most responsible (r = .16, p <.05), and (8) on household income (r = .12, p <.05).

On the other hand, cumulative college GPA was not significantly related to the following control variables: self-esteem (r = .06, p > .05), self-efficacy (r =.02, p > .05), gender (r = -.07, p >.05), being foreign born (r = .012, p > .05), having a foreign born biological or adoptive mother (r = -.06, p >.05), having a foreign born biological or adoptive father ((r = -.02, p >.05), having both parents be foreign born (r = -.07, p > .05), and type of college ($F_{(df=2)}$ = .644, p > .05).

2. Control variables and degree completion. The bivariate analyses showed a significant relationship between degree completion and eight control variables (See Table XII).

TABLE XII – BIVARIATE RESULTS BETWEEN CONTROL VARIABLES AND DEGREE COMPLETION VARIABLES

Control Variables	Test Statistic	Degree Completion	
		4 years	6 years
HS GPA	Pearson's Correlation	.123*	.099*
Self-Esteem	Pearson's Correlation	-.007	.008
Self-Efficacy	Pearson's Correlation	-.017	.023
Since 6: ever on public aid	Point-biserial Correlation	-.129*	-.103*
Parent owned home	Point-biserial Correlation	.076*	.091*
Gender	Point-biserial Correlation	-.081*	-.078*
First generation college student	Point-biserial Correlation	-.133*	-.116*
Student foreign born	Point-biserial Correlation	-.036	-.024
Mom foreign born	Point-biserial Correlation	-.029	.009
Dad foreign born	Point-biserial Correlation	-.033	-.046
Both parents foreign born	Point-biserial Correlation	-.037	-.034
Mother's education level	Pearson's Correlation	.156*	.114*
Father's education level	Pearson's Correlation	.147*	.098*
Household income	Pearson's Correlation	.150*	.118*
Type of College	Chi-Square (p-value)	1.01 (.603)	2.13 (.344)

Note: * p-value < .05

Both degree completion within four years and six years were significantly related to the following eight control variables: (1) high school GPA (r =.12 and .09; $p < .05$), (2) been on public aid at least once since age six (r =-.13 and -.12; $p < .05$), (3) parent homeownership (r =.08 and .09; $p < .05$), (4) gender (r =-.08 and -.08; $p < .05$), (5) first generation college student (r =-.13 and -.12; $p < .05$), (6) mom's level of education (r =.16 and .11; $p < .05$), (7) dad's level of education (r =.15 and .1; $p < .05$), and (8) household income (r =.15 and .12; $p < .05$). On the other hand, both degree completion within four years and six years were not significantly related to the following control variables: (1) self-esteem (r = -.007 and .008, $p > .05$), (2) self-efficacy (r = -.02 and .02, $p > .05$), (3) being foreign (r = -.04 and -.02, $p > .05$), (4) having a biological or adoptive foreign born mother (r = -.03 and .009, $p > .05$), (5) having a biological or adoptive foreign born father (r = -.03 and -.05, $p > .05$), (6) having both biological or adoptive parents be foreign born (r = -.04 and -.03, $p > .05$), and (7) type of college ($X^2_{(df=2)} = 1.01$, $p > .05$ and $X^2_{(df=2)} = 2.13$, $p > .05$).

Overall, the bivariate analyses helped identify eight control variables for the multivariate analyses. The same control variables related to degree completion within six years were also related to degree completion within four years.

3. Control variables and academic aspirations. The bivariate analyses showed a significant relationship between academic aspirations and eight control variables (See Table XIII).

TABLE XIII – BIVARIATE RESULTS BETWEEN BETWEEN CONTROL VARIABLES AND ACADEMIC ASPIRATIONS

Control Variables	Test Statistic	Academic Aspirations	
		Increased	Lowered
High School GPA	Pearson's Correlation	-.058	-.050
Self-Esteem	Pearson's Correlation	-.073*	-.052
Self-Efficacy	Pearson's Correlation	-.176*	-.021
Since 6: ever on public aid	Point-biserial Correlation	.024	.055
Parent owned home	Point-biserial Correlation	.013	-.023
Gender	Point-biserial Correlation	.021	.078*
First generation college student	Point-biserial Correlation	-.052	.086*
Student foreign born	Point-biserial Correlation	-.026	-.016
Mom foreign born	Point-biserial Correlation	-.076*	.079*
Dad foreign born	Point-biserial Correlation	-.063	.039
Both parents foreign born	Point-biserial Correlation	-.083*	.059
Mother's education level	Pearson's Correlation	.033	-.101*
Father's education level	Pearson's Correlation	.014	-.084*
Household income	Pearson's Correlation	.049	-.066
Type of College	Chi-Square (p-value)	.140 (.932)	.838 (.658)

Note: * *p*-value < .05

Increased academic aspirations was significantly related to four control variables: (1) self-esteem (r =-.07, p < .05), (2) self-efficacy (r =-.18, p < .05), (3) having a foreign born mother (r =-.08; p < .05), and (4) having both parents be foreign born (r =-.08, p < .05). Increased aspirations was not significantly related to the following variables: (1) high school GPA (r = -. 06, p > .05), (2)) recipient of public aid at least once since age six (r = .02, p > .05), (3) parent homeownership (r = .01, p > .05), (4) gender (r = .02, p > .05), (5) first generation college student (r = -.05, ,p > .05), (6) being foreign born (r = -.02, p > .05), (7) having a father foreign born (r = -.06, p > .05), (8) woman most responsible for care education level (r = .03, p > .05), (9) man most responsible for care education level (r = .01, p > .05), (10) household income (r = .05, p > .05) and (11) type of college enrolled ($X^2_{(df=2)}$ = .14, p > .05).

Lowered academic aspirations was significantly related to the following five control variables: (1) gender (r = .08, p < .05), (2) first generation college (r =.09, p < .05), (3) having a foreign biological or adoptive mother (r =.08, p < .05) and (4) mom's level of education (r =-.10, p < .05), and (5) dad's level of education (r = -.08, p < .05).

Lowered aspirations was not significantly related to the following ten nominal variables: (1) high school GPA (r = -.05, p > .05), (2) self-esteem (r = -. 05, p > .05), 9), (3) self- efficacy (r = -. 02, p >.05), (4) been on public aid at least once since age six (r = .05, p > .05), (5) parent homeownership (r = .-.02, p > .05), (6) being foreign born (r = -.02, p > .05), 2), (7) having a foreign born biological or adoptive father (r = .04, p > .05), (8) having both biological or adoptive parents be foreign born (r = .06, p > .05), (9) household income (r = -.07, p > .05), and (10) type of college ($X^2_{(df=2)}$ = .83, p > .05).

Overall, the bivariate analyses helped identify eight control variables for the multivariate analyses. One of the eight was related to both increased and lowered aspirations, mom foreign born.

4. Control variables and cultural cost of an education. The bivariate analyses showed a significant relationship between the cultural cost of education variables and nine control variables (see Table XIV).

TABLE XIV – BIVARIATE RESULTS BETWEEN CONTROL VARIABLES AND CULTURAL COST OF EDUCATION VARIABLES

		Cultural Cost of Education Variables		
Control Variable	Test Statistic	Familial Cost	Communal Cost	Ethnic Cost
High School GPA	Pearson's Correlation	.016	.043	.010
Self-Esteem	Pearson's Correlation	-.102*	-.128*	-.120*
Self-Efficacy	Pearson's Correlation	-.151*	-.158*	-.140*
Since 6: ever on public aid	Point-biserial Correlation	.176*	.171*	.079
Parent owned home	Point-biserial Correlation	-.048	-.044	-.046
Gender	Point-biserial Correlation	.125*	.122*	.003
First gen. college student	Point-biserial Correlation	.100*	.120*	.202*
Student foreign born	Point-biserial Correlation	.019	.009	-.055
Mom foreign born	Point-biserial Correlation	.036	.008	.021
Dad foreign born	Point-biserial Correlation	.076	.030	.003
Both parents foreign born	Point-biserial Correlation	.093*	.065	.038
Mother's education level	Pearson's Correlation	-.053	-.086*	-.157*
Father's education level	Pearson's Correlation	-.104*	-.124*	-.197*
Household income	Pearson's Correlation	-.123*	-.173*	-.179*
Type of college	Chi-Square (p-value)	4.019 (.134)	.516 (.773)	2.198 (.333)

Note: * p-value < .05

a. Familial cost of an education. The analyses showed familial cost of an education was significantly related to the following eight variables: (1) self-esteem (r = -.10, p <.05), (2) self-efficacy (r = -.15, p < .05)., (3) being on public aid at least once since age 6 (r = .18, p < .05), (4) gender (r = .13, p <.05), (5) being a first generation college student (r =.1, p < .05), (6) having both parents be foreign born (r =.09, p < .05) (4), (7) education level of father or man most responsible (r =-.10, p < .05), and (8) household income (r =-.12, p < .05).

On the other hand, familial cost of an education was not significantly related to (1) high school GPA (r = .02, p > .05), (2) parental home ownership (r = .-.05, p > .05), (3) being foreign born (r = .02, p > .05), (4) having a foreign born biological or adoptive mother (r =.04, p = .059), and (5) having a foreign born biological or adoptive father (r = .08, p > .05), (6) education level

of woman most responsible for student's care (r = -.05, p > .05), and (7) type of college enrolled ($X^2_{(df=2)}$ = 4.01, p > .05).

b. Communal cost of an education. The analyses showed communal cost of an education was significantly related to the following eight variables: (1) self-esteem (r = -.13, p <.05), (2) self-efficacy (r = -.16, p < .05)., (3) being on public aid at least once since age 6 (r = .17, p < .05), (4) gender (r = .12, p <.05), (5) being a first generation college student (r =.12, p < .05), (6) education level of woman most responsible for student's care (r =-.09, p < .05), (7) education level of father or man most responsible (r =-.12, p < .05), and (8) household income (r =-.17, p < .05).

On the other hand, communal cost of an education was not significantly related to (1) high school GPA (r = .04, p > .05), (2) parental home ownership (r = -.04, p > .05), (3) being foreign born (r = .009, p > .05), (4) having a foreign born biological or adoptive mother (r =.008, p <.05), and (5) having a foreign born biological or adoptive father (r = .03, p > .05), (6) both parents being foreign born (r = .07, p > .05), and (7) type of college enrolled ($X^2_{(df=2)}$ = .51, p > .05).

c. Ethnic membership cost of an education. Ethnic membership cost of an education was significantly related to the following six variables: (1) self-esteem (r = -.12, p <.05), (2) self-efficacy (r = -.14, p < .05), (3) being a first generation college student (r =.20, p < .05), (4) education level of woman most responsible for student's care (r = -.16, p < .05), (5) education level of man most responsible for care (r = -.20, and (6) household income (r = -.18, p < .05). On the other hand, ethnic membership cost of an education was not significantly related to (1) high school GPA (r = .01, p > .05), (2) being on public aid at least once since age 6 (r = .08, p < .05), (3) parental home ownership (r = -.05, p > .05), (4) gender (r = .003, p > .05), (5) being

foreign born (r = -.06, p > .05), (6) having a foreign born mother (r = .02, p = .059), (7) having a foreign born father (r = .04, p > .05), (8) having both parents be foreign born (r = .04, p < .05), and (9) type of college enrolled ($X^2_{(df=2)}$ = 2.19, p > .05).

In terms of the cultural cost variables, the bivariate analyses helped identify twelve control variables for the multivariate analyses. The final analytical multivariate models are displayed in Table I, Appendix C. This table also shows which control variables had a statistically significant bivariate relationship with the outcomes.

D. Primary Analysis Results

In total, there were eight multivariate models (one for each outcome variable). Multiple linear hierarchical regression was used to examine the moderation effect of unique dimensions of ethnic identity on the relationship between school climate and cumulative college GPA and multiple logistic hierarchical regression was used for the remaining dichotomous outcome variables (degree completion, academic aspirations, and cultural cost of education variables). In total, 12 control variables were utilized in the regression models since they were significantly related to at least one of the outcomes.

This section is organized by outcome variable, where first a discussion of model assumptions is provided , then a step-by-step summary of the multivariate results follows (including main and moderation effects), and finally a discussion of the unique effects of individual interactions is provided. Table XV provides a summary of the final step of the multivariate results for all eight outcome variables.

TABLE XV: SUMMARY OF THE FINAL STEP OF THE MULTIVARIATE RESULTS FOR ALL EIGHT OUTCOME VARIABLES.

Models[a]:	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**	**M7**	**M8**
Dependent Variables[b]:	**D1**	**D2**	**D3**	**D4**	**D5**	**D6**	**D7**	**D8**
Step 1: Control Variables								
Student Demographics								
High School GPA	X**	X**	X**	X	X	X	X	X
Self-Efficacy	X	X	X	-X**	X	X	X	X
Self-Esteem	X	X	X	X*	-X**	X	-X*	X
Public Assistance	X	X	X	X	X	-X**	X	X
Household Income	X	X	X*	X	X	-X*	-X**	-X**
Parent Homeownership	X*	X	X	X	X	X	X	X
Gender: Male (Female)	-X**	X*	X	X	-X**	-X**	-X**	X
Mother Foreign Born	X	X	X**	X	-X*	X	X	X
Both Parents Foreign Born	X	X	X	X	X	X	X	X
First Generation College Student	X	X	X	X	X	X	X	X
Woman most responsible Education	X	X	X	X	X	X	X	X
Man most responsible Education	X**	X	X	X	X	X	X	-X**
Step 2: IVs								
Culturally Inclusive School Climate	X	X**	X	X**	X	-X**	-X**	-X**
Step 3: MVs								
Ethnic Identity								
Centrality	X	X	X	X	X	X	X	X
Private Regard	-X*	X	X	X	X	X	X	X
Nationalist	X	X	X	X	X	X	X	X
Humanist	X	X	X	X	X	X	X	X
Assimilationist	X	X	X	X	X	X	X	-X**
Oppressed Minority	X	X	X	X	X	X[c]	-X**	-X**
Familialismo	X	X	X	X	-X**	X	X	X
Step 4: Interaction Terms								
Culturally Inclusive Climate x Centrality	X	X	-X*	X*	X	X	X	X
Culturally Inclusive Climate x Private Regard	X	X	-X*	X	X	X	X	X
Culturally Inclusive Climate. x Nationalist	X	X	X	X	X	X	X	X*
Culturally Inclusive Climate x Humanist	X	X	X	-X**	X	X	X	X
Culturally Inclusive Climate x Assimilationist	X**	X*	X	X	X	X	X	X
Culturally Inclusive Climate x Oppressed	X	X	X	X	-X**	X	X	X
Culturally Inclusive Climate x Familialismo	X	-X**	-X**	X	X	X	X	X

[a]M1 – M8 = Models 1 through 8.

[b]D1 = GPA; D2 = Degree Completion (four years.); D3 = Degree Completion (six years.); D4 = Increased Academic Aspirations; D5 = Reduced Academic Aspirations; D6 = Familial Cost of an Education; D7 = Communal Cost of an Education; D8 = Ethnic Membership Cost of an Education.

[c] $p < .105$

**Variable significantly related to dependent variable in the multivariate analyses at the .05 level.

*Variable significantly related to dependent variable at the .1 level.

1. Cumulative Grade Point Average.

a. Model assumptions: Data were examined for linearity, homoscedasticity of variances, normality, independence of residuals, and multicollinearity. In terms of linearity, the normal Q-Q plot showed the conditional mean of GPA against predictors was constant across the 95% confidence interval of the straight regression line (see Figure 3). Also, simple scatterplots of GPA against the independent variable and each moderator variable showed linear relationships (see Appendix E). In addition, the plot of residuals against predicted values for cumulative college grade point average with a superimposed linear and lowess fit line and 95% confidence interval supported a linear relationship between cumulative college GPA and predictors; there were no large systematic deviations from the 0-line (see Figure 4). Figure 4 also showed the ratio of conditional variances at different values of the predictors did not exceed 10 and the variances were constant across the predictors; thus the data satisfied the assumption of homoscedasticity.

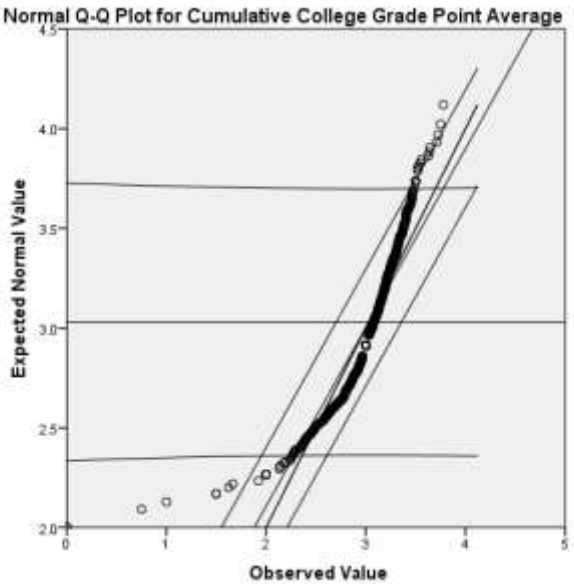


Figure 3. Normal quantile-quantile plot for cumulative college grade point average with a superimposed linear and lowess fit line and 95% confidence interval. Plot indicates regression equation is linear; data was constant across the 95% confidence interval of the straight regression line.

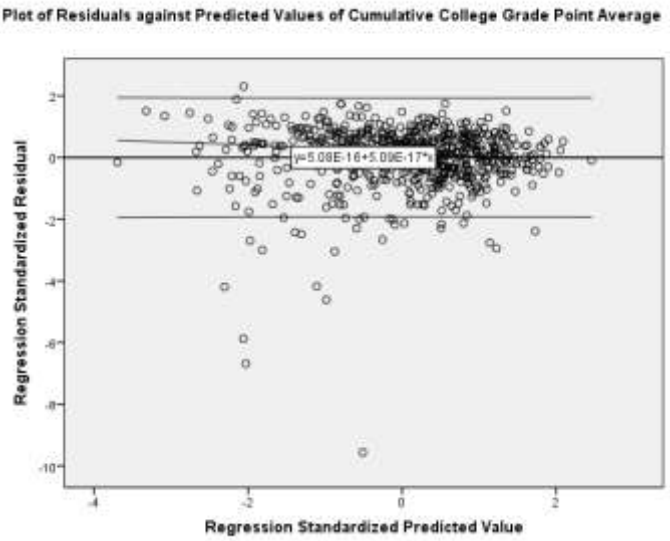


Figure 4. Plot of residuals against predicted values for cumulative college grade point average with superimposed linear and lowess fit Line and 95% confidence interval. Plot indicates a linear relationship between GPA and predictors.

In terms of normality, the histogram of the distribution of residuals of the regression equation against predicted values for cumulative college grade point average showed negative moderate skewness (see Figure 5). This was not a serious problem because of the relatively large sample size in my study and the abovementioned scatterplot showed the residuals of the regression equation against predicted scores did not largely deviate from normality (Cohen, Cohen, West, & Aiken, 2003). Also, values were within expectations of the sample and population or college students enrolled in highly selective schools.

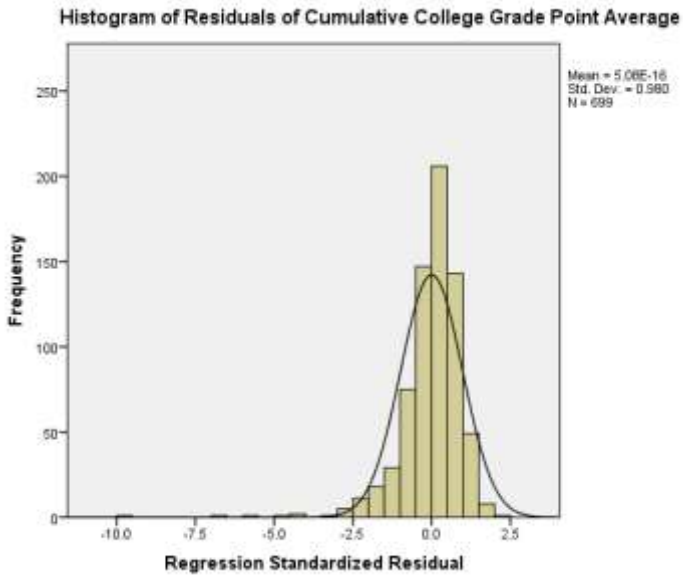


Figure 5. Histogram of residuals from the multiple regression analysis of cumulative college grade point average. The distribution of residuals is moderately skewed left or negatively.

In terms of the independence of residuals, the scatterplot of residuals of cumulative college GPA against the unique case ID's showed the errors were not grouped systematically or

to the manner in which data was collected. This suggests errors were independent of the college attended (see Figure 6).

There were no violations of multicollinearity between the control variables, independent variable, and moderator variables; tolerance values > .10 and VIF scores < 10 (see Table II, Appendix E).

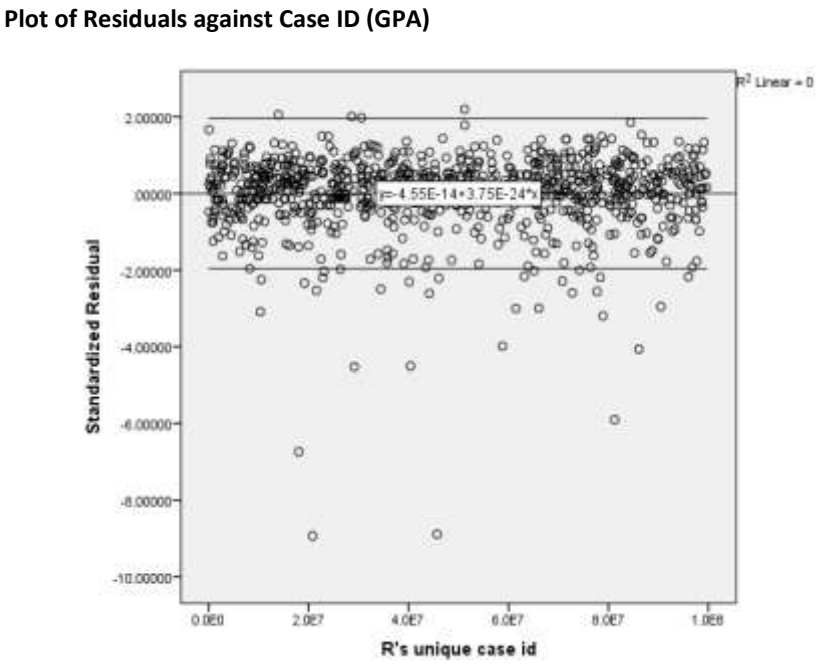


Figure 6. Plot of residuals against case ID's for cumulative college grade point average. Plot indicates independence of residuals.

b. Results: Cumulative college grade point average. Results were based on a dataset with 27 variables and a final analytical sample size of 699. The percentage of missing ranged from .3% for the mom foreign born variable to 5.9% for the familist ideology variable. The analytical sample size (n=699) reflects the use of listwise deletion. The model summary of each

step of the regression analyses is provided in Table XVI, which shows the relative contribution and predictive value of each variable as well as the set of predictors at each step.

Step one showed the set of control variables were significant predictors of cumulative college GPA (R^2 = .072, $F_{(12,686)}$ =4.425, p < .05). Step two showed the independent variable (culturally inclusive climate) did not explain significant additional variance in GPA (R^2 = .075, R^2_{change}= .003, F_{change} (1, 685) = 2.25, p =.134); thus there was not a main effect after accounting for the variance explained by the controls. Step three, which included the set of moderators (ethnic identity dimensions) did not explain significant additional variance in GPA (R^2 = .084, R^2 change = .009. F_{change} (7, 678) = .98, p = .45), at least not after accounting for the variance explained by previous steps. Step four, which included the set of interaction terms between the IV and MV's, showed no additional significant contribution to the prediction of cumulative college GPA beyond what had already been predicted in previous steps (R^2 = .094, R^2 change = .01, F_{change} (7, 671) = 1.06, p = .387). Thus, the set of interaction terms did not explain additional variance beyond the prediction of the controls, independent, and moderator variables.

TABLE XVI: STEP-BY-STEP REGRESSION RESULTS OF CUMULATIVE COLLEGE GPA WITH LISTWISE DELETION

Model One: Prediction of GPA **Dependent Variable: College GPA**	**Step 1** **b (SE)**	**Step 2** **b (SE)**	**Step 3** **b (SE)**	**Step 4** **b (SE)**
Step 1/block 1: Control Variables				
Student Demographics				
High School GPA	.129 (.038)**	.133 (.038)**	.131 (.038)**	.132 (.371)**
Self-Efficacy	-.001 (.005)	-.002 (.005)	.002 (.005)	-.003 (.006)
Self-Esteem	.002 (.003)	.001 (.003)	.002 (.003)	.002 (.003)
Public Assistance	-.016 (.039)	-.011 (.039)	-.009 (.039)	-.014 (.040)
Household Income	-.004 (.011)	-.006 (.011)	-.006 (.011)	-.006 (.011)
Parent Homeownership	.062 (.034)*	.060 (.034)*	.060 (.034)*	.063 (.034)*
Gender: Male (Female)	-.046 (.024)*	-.046 (.024)*	-.050 (.025)**	-.050 (.025)**
Mother Foreign Born	.003 (.037)	.003 (.037)	.004 (.037)	.005 (.037)
Both Parents Foreign Born	-.012 (.039)	-.009 (.039)	-.014 (.039)	-.016 (.040)
First Generation College Student	.035 (.046)	.043 (.046)	.052 (.047)	.047 (.047)
Woman most responsible Education	.016 (.010)	.017 (.010)	.017 (.010)	.018 (.010)
Man most responsible Education	.025 (.009)**	.025 (.009)**	.024 (.009)**	.024 (.009)**
Step 2/block 2: IVs				
Culturally Inclusive School Climate		.006 (.004)	.006 (.004)	. 009 (.009)
Step 3/block 3: MVs				
Ethnic Identity				
Centrality			.006 (.024)	.007 (.024)
Private Regard			-.009 (.005)*	-.009 (.005)*
Nationalist			.009 (.016)	.008 (.016)
Humanist			.021 (.018)	.019 (.018)
Assimilationist			.001 (.005)	.002 (.005)
Oppressed Minority			-.021 (.033)	-.020 (.033)
Familist			.006 (.004)	.006 (.004)
Step 4/block 4: Interaction Terms				
School Climate x Centrality				.001 (.007)
School Climate x Private Regard				-.002 (.002)
School Climate x Nationalist				-.007 (.005)
School Climate x Humanist				-.002 (.005)
School Climate x Assimilationist				.003 (.002)**
School Climate x Oppressed				.001 (.010)
School Climate x Familialismo				.000 (.001)
Intercept	2.315 (.166)**	2.117 (.212)**	2.120(.236)**	2.019 (.371)**
R^2	.072**	.075	.084	.094

*p<.10; p<.05**

Table XVI also shows the unique influence of the independent variable, moderators, and interactions in the model, only one moderator and one interaction term uniquely and significantly predicted college GPA. Private regard marginally and negatively predicted college GPA (Beta = -.009, $p < .1$), indicating higher levels of private regard (more positive views of their ethnic group) were associated with lower GPA mean scores. However, the unique interaction between private regard and school climate was not statistically significant. The interaction between assimilationist ideology and school climate was statistically significant (Beta = .003, $p = .051$). An illustration of this relationship is provided in Figure 7. Higher scores of perceptions of school climate (greater inclusivity) were associated with higher college GPA's, but this relationship was more pronounced for students with high assimilationist's beliefs than either students with low or medium assimilationist beliefs. Students low in assimilationist beliefs tended to have higher GPAs than those with high assimilationist beliefs, but only when scores of perceptions of school climate were low.

To illustrate the moderation effect, I recoded the assimilationist ideology variable into three categories: low, medium, and high. Scores below the mid-point were classified as low, midpoint scores were classified as medium, and scores above the mid-point were classified as high. The midpoint was used instead of the mean because of the skewed distribution. Then, I graphed predicted cumulative college GPA (Y axis) against the school climate variable (X axis) and the recoded assimilationist variable.

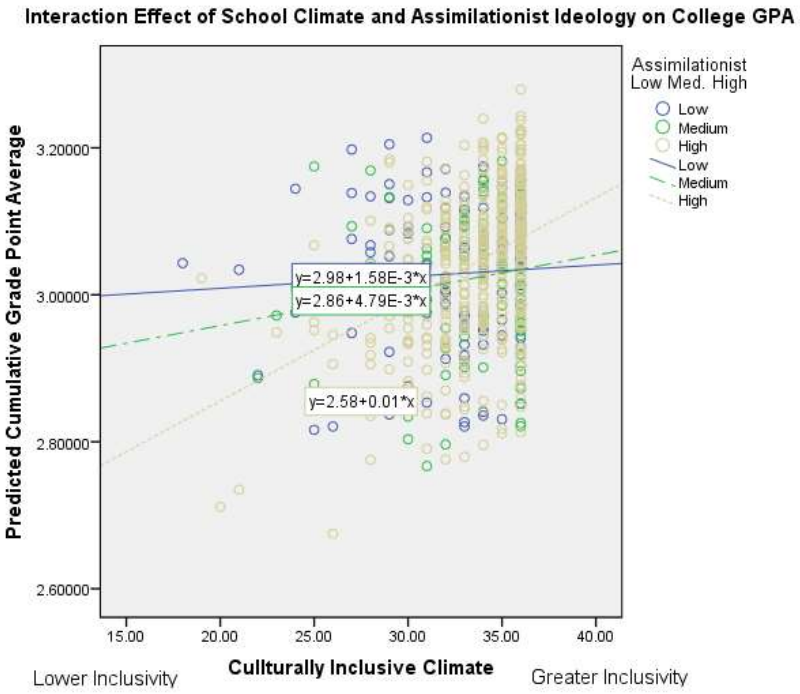


Figure 7. Illustration of the moderation effect of assimilationoist ideology on the relationshiip between inclusive cultural climate and cumulaive college GPA. Plot indicates the efffect of school climate on students' cumulative grade point average varies by students' level of adherence to assimilationist beliefs.

In terms of discrepancies in the results between imputed data and the listwise deletion data, with imputed data the interaction term between school climate and nationalist ideology approached a marginal significance. Additionally, the private regard moderator and the interaction between school climate and assimilationist ideology became even stronger predictors of cumulative college GPA.

2. Degree Completion within Four Years.

a. Model assumptions: Degree completion within four years. Data were examined for missing data, adequate observation-to-predictor ratio, outliers, linearity of the logit, and multicollinearity. The results of the hierarchical logistic regression analysis for degree completion within four years were based on a dataset with 27 variables and 708 observed cases. The percentage of missing values ranged from .1% for degree completion to 5.9% for familist ideology. The final ratio of cases to variables included 622 students with timely degree completion and 91 who did not complete their degree within four years. The ratio of cases to variables appears sufficient since the regression analyses did not show extremely large parameter estimates or standard errors, see Table XVII. Thus, there appears to be no reason to suspect too many empty cells or bias with outcome groups perfectly predicted by any variable (Tabachnick & Fidell, 2007). The plot of standardized residuals of timely degree completion against predicted values showed the majority of predictions were within a 3.3 standardized residual, which indicates few multivariate outliers (Figure 8; Tabachnick & Fidell, 2007). There was good model fit X^2 (8, N = 708) = 8.418, p = .394), using the Hosmer and Lemeshow goodness-of-fit test; thus independent variables demonstrated a linear relationship to the logit of GPA or no serious violations of linearity of the logit were detected. Figure 9 illustrates the S-shaped distribution of the data, which is characteristic of logistic regression with binary dependent variables. There were no violations of multicollinearity between the control variables, independent variable, and moderator variables; tolerance values > .10 and VIF scores < 10 (see Table III, Appendix E).

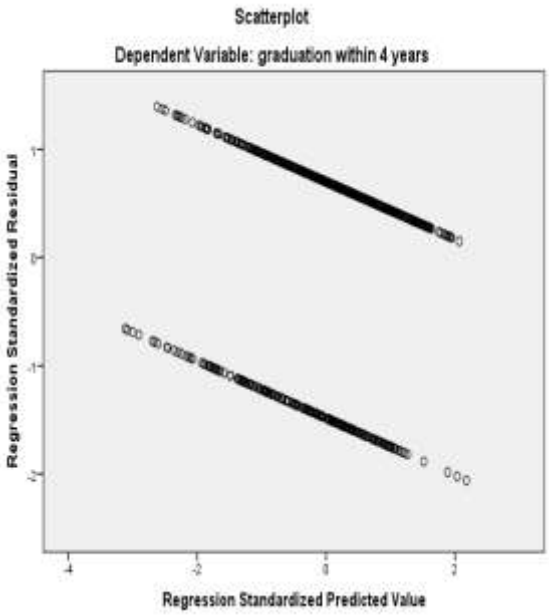


Figure 8. Plot of residuals against predicted value for timely degree completion. Plot indicates few multivariate outliers.

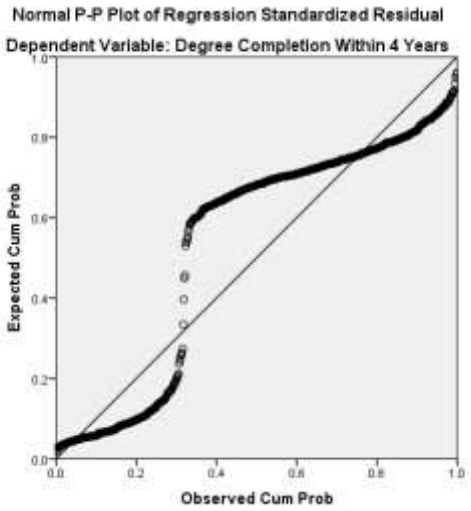


Figure 9. Normal probability plot of the residuals for timely degree completion. Plot indicates no serious violations of linearity in the logit observations of the residuals by the predicted scores; plot indicates an S-distribution.

b. Results: Degree completion within four years. Results were based on a dataset with 27 variables and a final analytical sample size of 708. The percentage of missing values ranged from .3% for the mom being foreign born variable to 5.9% for the familist ideology variable. The model summary of the four-step regression analyses is provided in Table XVII, which shows the relative contribution and predictive value for each variable and set of predictors at each step. Step one showed the set of control variables was statistically significant, (Nagelkerke R^2 = .072, X^2 (12, N = 708) = 37.114, p < .05), indicating the controls as a set reliably distinguished between students who completed their degree within four years and those who had not. Step two showed the independent variable (culturally inclusive climate) was also statistically significant, (Nagelkerke R^2 = .082, Nagelkerke R^2_{change}= .01, X^2 (1, N = 708) = 5.273, p < .05), indicating a main effect where perceptions of school climate reliably predicted timely degree completion beyond a control-only model. Step three, showed the set of moderators (ethnic identity dimensions) was not statistically significant, (Nagelkerke R^2 = .091, Nagelkerke R^2 change = .009, X^2 (7, N = 708) = 4.758, p = .689), indicating the set of ethnic identity dimensions did not reliably distinguish between students who completed their degree within four years and those who had not or at least not beyond a model run with the set of controls the independent variable. Step four, however, showed the set of interaction terms was marginally significant (Nagelkerke R^2 = .116, Nagelkerke R^2 change = .025, X^2 (7, N = 708) = 13.278, p = .066), indicating the moderators as a set tended to reliably predicted timely degree completion beyond a model run solely with the set of controls, the independent variable, and set of moderators.

The overall four step block model was statistically significant, X^2 (27, N = 708) = 60.422, p < .05), indicating the predictors as a whole reliably distinguished between students with timely

degree completion (within four years) and students without timely degree completion. However, the variance in timely degree completion accounted for is small, with Nagelkerke $R^2 = .116$.

Overall, classification was unimpressive. On the basis of the set of control variables alone, correction classification rates were 94.7% for students who completed their degree within four years and 13.8% for students who had not yet completed their degree; the overall correct classification rate was 68.8%. The improvement to 70.7% with the addition of the independent variable, moderators, and interaction terms reflected success rates of 93.3% for students with timely degree completion and 22.8% for students without timely degree completion. Cases were overclassified into the largest group, students completing their degree within four years, still, there was an improvement in the classification accuracy in terms of discriminating students who had not yet completed their degree (within four years).

Table XVII also shows the unique predictive value of the independent variable, moderators, and interaction terms, with regression coefficients, standard errors, and odds ratios. Results revealed a main effect between perceptions of school climate and degree completion, higher scores of inclusive perceptions (greater inclusivity) were associated with an increased probability of timely completion (Beta= .086, $p = .012$, OR= 1.090, CI = 1.019 – 1.165). In addition, the interaction between familist ideology and school climate was a significant predictor of timely completion (Beta= -.021, $p = .048$, OR= .979, CI .959 – 1.000), and there was a marginal interaction effect between assimilationist ideology and school climate (Beta= .021, $p = .076$, OR= 1.021, CI .998 – 1.044). Illustrations of these moderating effects are provided in Figures 10 and 11.

TABLE XVII STEP-BY-STEP REGRESSION RESULTS OF DEGREE COMPLETION WITHIN FOUR YEARS WITH LISTWISE DELETION

Models[a]:	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Dependent Variables[b]:	**β (SE) Odds Ratio**	**β (SE) Odds Ratio**	**β (SE) Odds Ratio**	**β (SE) Odds Ratio**
Step 1/block 1: Control Variables				
Student Demographics				
High School GPA	.793 (.258)** 2.209	.834 (.260)** 2.303	.867 (.263)** 2.380	.891 (.267)** 2.437
Self-Efficacy	-.002 (.038) .998	-.011 (.038) .989	-.006 (.039) .994	-.010 (.039) .990
Self-Esteem	-.003 (.020) .997	-.003 (.020) .997	-.001 (.020) .999	.000 (.020) 1.000
Public Assistance	.316 (.256) 1.371	.261 (.258) 1.299	.256 (.263) 1.292	.275 (.269) 1.316
Household Income	.130 (.072)* 1.139	.116 (.073) 1.123	.117 (.073) 1.124	.115 (.075) 1.122
Parent Homeownership	.107 (.232) 1.113	.129 (.233) 1.137	.104 (.235) 1.109	.150 (.239) 1.162
Gender: Male (Female)	.311 (.169)* 1.365	.320 (.170)* 1.377	.326 (.173)* 1.385	.308 (.175)* 1.361
Mother Foreign Born	-.171 (.272) .843	-.179 (.273) .836	-.153 (.275) .858	-.177 (.275) .838
Both Parents Foreign Born	.103 (.281) 1.108	.067 (.282) 1.069	.062 (.287) 1.064	.106 (.289) 1.112
First Generation College Student	-.040 (.272) .961	.015 (.275) 1.016	.028 (.279) 1.029	-.031 (.281) .969
Woman most responsible Education	.072 (.073) 1.075	.065 (.073) 1.067	.060 (.074) 1.062	.075 (.076) 1.078
Man most responsible Education	.067 (.066) 1.070	.053 (.067) 1.054	.052 (.067) 1.054	.059 (.068) 1.061
Step 2/block 2: IVs				
Culturally Inclusive School Climate		.064 (.028)** 1.066	.071 (.028)** 1.074	.086 (.034)** 1.090
Step 3/block 3: MVs				
Ethnic Identity				
Centrality			.023 (.170) 1.024	.014 (.175) 1.014
Private Regard			-.046 (.035) .955	-.049 (.036) .952
Nationalist			.066 (.114) 1.068	.074 (.116) 1.077
Humanist			.009 (.129) 1.009	.025 (.132) 1.026
Assimilationist			-.057 (.037) .944	-.050 (.037) .951
Oppressed Minority			.016 (.236) 1.016	-.036 (.238) .965
Famililist			.013 (.031) 1.013	.012 (.032) 1.012
Step 4/block 4: Interaction Terms				
School Climate x Centrality				- .058 (.007) .944
School Climate x Private Regard				-.011 (.002) .989
School Climate x Nationalist				-.009 (.005) .991
School Climate x Humanist				.018 (.005) 1.019
School Climate x Assimilationist				.021 (.002)* 1.021
School Climate x Oppressed				-.066 (.010 .937
School Climate x Familialismo				-.021 (.011)** .979
Intercept	-3.598 (1.132) .027**	-5.507 (1.412).004**	-5.385 (1.583) .005**	-6.079 (1.716) .002
Nagelkerke's R (Psuedo R^2)	.072**	.082**	.091	.116*
Hosmer and Lemeshow Model Fit Test	7.521 df[8] p=.482	4.993 df[8] p=.758	10.633 df[8] p=.223	9.809 df[8] p=.279

*p<.10; p<.05**

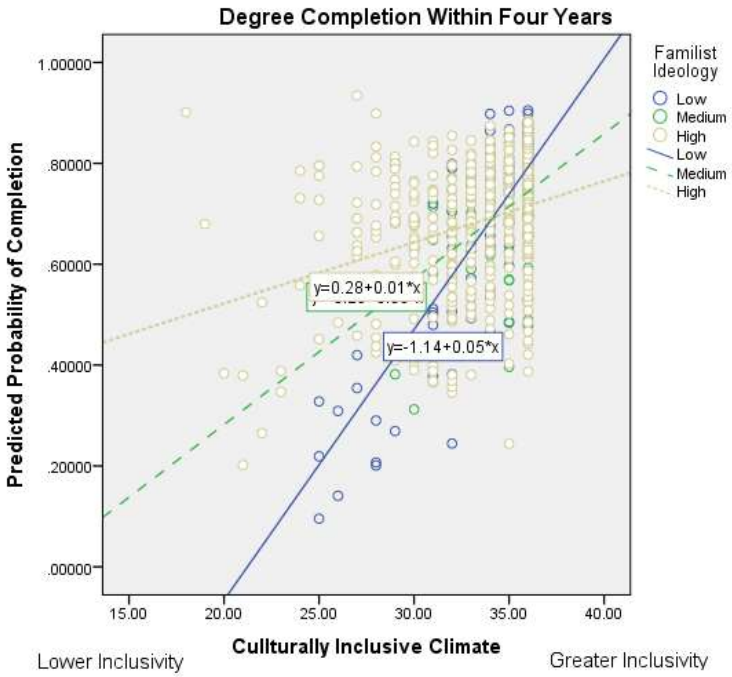


Figure 10. Illustration of the moderation effect of familist ideology on the relationshiip between cultural climate and degree completion wihin four years. Plot indicates efffect of perceptions of school climate on students' probability of timely degree completion varies by students' level of adherence to familist beliefs.

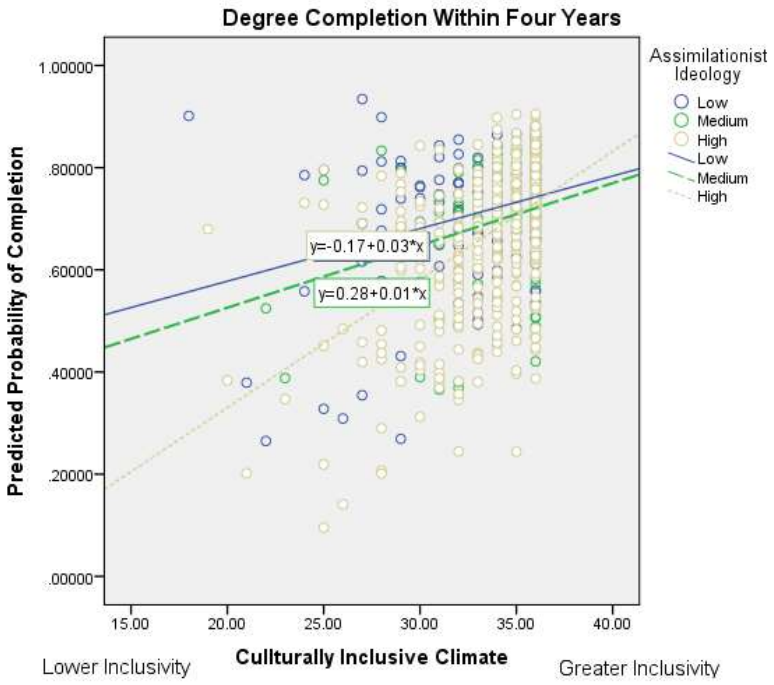


Figure 11. Illustration of the marginal moderation effect of assimilationist ideology on the relationship between cultural climate and degree completion within four years. Plot indicates the effect of school climate on timely degree completion is dependent on students' level of assimilationist beliefs.

Even though familist ideology and assimilationist ideology did not have a direct effect on timely completion, they did have interaction effects. The effect of students 'perceptions of school climate on the probability of degree completion (within four years) was dependent on students' level of familist beliefs. Higher scores of perceptions of school climate (greater inclusivity) were associated with an increased probability of timely completion. However, this relationship was more pronounced for students low in familist beliefs (rated family as less important as a reason for trying in their studies) than either students with medium or high scores (rated family with greater importance as a reason for trying in their studies). Additionally, the effect of perceptions of school climate on the probability of timely completion (within four years) was marginally

dependent on students' level of assimilationist beliefs. Higher scores of perceptions of school climate (greater inclusivity) were associated with increased probability of timely completion, but this relationship was more pronounced for students high in assimilationist beliefs (greater belief that if Latinos only do what is proper they will get ahead) than students with either low or medium scores (lesser belief that if Latinos only do what is proper they will get ahead). To illustrate these moderation effects, I recoded the continuous familist and assimilationist ideology variable into three categories: low, medium, and high. Scores below the mid-point were classified as low, midpoint scores were classified as medium, and scores above the mid-point were classified as high. Then, I graphed the probability of degree completion (Y axis) against the school climate variable (X axis) and the recoded familist and assimilationist variable.

In terms of discrepancies in the results between imputed data and listwise deletion data, with imputed data the interaction effect between school climate and assimilationist ideology became a stronger predictor of timely completion (from $p < .1$ to $p < .05$). Conversely, the interaction between school climate and familist ideology became a non-significant predictor of timely completion (from $p = .048$ to $p = .624$).

3. Degree completion within six years

a. Model Assumptions: Degree completion within six years. Data were examined for missingness, adequate observation-to-predictor ratio, outliers, linearity of the logit, and multicollinearity. Results of the hierarchical logistic regression analysis for degree completion (six years) were based on 27 variables and 708 observed cases. The percentage of missing values ranged from .1% for degree completion within six years to 5.9% for familist ideology. The final ratio of cases to variables included 618 students who completed their degree (six years) and 90 who had not. The results did not produce extremely large parameter estimates and standard

errors, indicating sufficient ratio of cases to variables (see Table XVIII). Thus, there appears to be no reason to suspect bias with outcome groups perfectly predicted by any variable (Tabachnick & Fidell, 2007). The plot of standardized residuals of degree completion (six years) against predicted values showed the majority of predictions were within a 3.3 standardized residual, indicating few multivariate outliers (Figure 13; Tabachnick & Fidell, 2007). There was good model fit, X^2 (8, N = 708) = 5.283, p = .727, using the Hosmer and Lemeshow goodness-of-fit test, indicating no serious violations of linearity of the logit. Figure 14 illustrates the S-shaped distribution of the data, which is characteristic of logistic regression with binary dependent variables. There were no violations of multicollinearity between the controls, independent variable, and moderator variables; tolerance values > .10 and VIF scores < 10; tolerance values > .10 and VIF scores < 10 (see Table III, Appendix E).

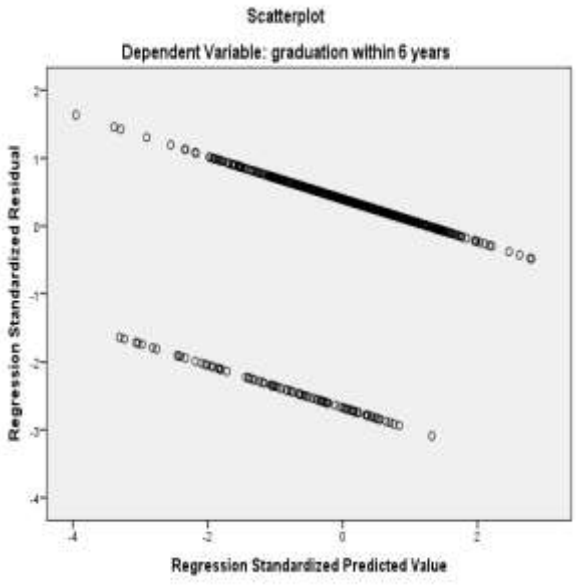


Figure 12. Plot of the residuals against predicted value for degree completion within six years. Plot indicates few multivariate outliers.

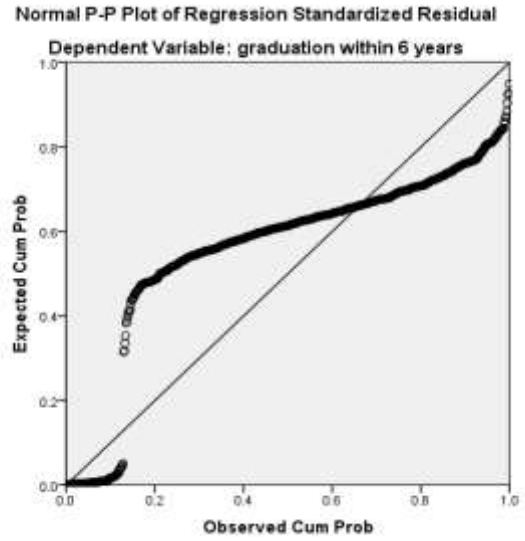


Figure 13. Normal probability plot of residuals for degree completion within six years against observed probability. Plot indicates an S-distribution.

b. Results: Degree completion within six years. Results were based on a dataset with 27 variables and a final analytical sample size of 708. The model summary of the four-step regression analyses is provided in Table XVIII, which shows the relative contribution and predictive value for each variable and set of predictors at each step. Step one showed the set of control variables was statistically significant, (Nagelkerke R^2 = .092, X^2 (12, N = 708) = 4.545, p < .05), indicating the controls as a set reliably distinguished between students who completed their degree within six years and those who had not yet competed their degree. Step two showed the independent variable (perceptions of a culturally inclusive climate) was not a significant predictor of degree completion, (Nagelkerke R^2 = .092, Nagelkerke R^2_{change}= .0, X^2 (1, N = 708) = 9.045, p = .73), indicating no main effect after accounting for the controls. Step three showed

the set of moderators was not statistically significant (Nagelkerke R^2 = .120, Nagelkerke R^2_{change}= .028, X^2 (7, N = 708) = 6.540, p = .13), indicating the moderators as a set did not reliably distinguish between students who completed their degree (within six years) and those who had not beyond a model run with the set of controls and independent variable. Step four, however, showed the set of interaction terms was statistically significant, (Nagelkerke R^2 = .164, Nagelkerke R^2 change = .044, X^2 (7, N = 708) = 17.718, p = .013), indicating the interaction terms as a set reliably predicted degree completion (within six years) beyond a model run solely with the set of controls, the independent variable, and set of moderators.

The overall four step block model was statistically significant, X^2 (27, N = 708) = 64.653, $p < .05$), indicating the model as a whole reliably distinguished between students who completed their degree (within six years) and those who had not. However, classification was unimpressive. On the basis of the set of control variables alone, correction classification rates were 100% for students who completed their degree within six years and 1.1% for students who had not yet completed their degree; the overall correct classification rate was 87.4%. Cases were classified into the largest group. The improvement to 87.7% with the addition of the independent variable, moderators, and interaction terms reflected success rates of 99.4% for students with timely degree completion and 7.8% for students without timely degree completion. Again, cases were overclassified into the largest group, but there was improvement in the accuracy of discriminating or prediction of students who had not yet completed their degree (within six years).

TABLE XVIII STEP-BY-STEP REGRESSION RESULTS OF DEGREE COMPLETION WITHIN SIX YEARS WITH LISTWISE DELETION

Models[a]:	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Dependent Variables[b]:	**β (SE) Odds Ratio**	**β (SE) Odds Ratio**	**β (SE) Odds Ratio**	**β (SE) Odds Ratio**
Step 1/block 1: Control Variables				
Student Demographics				
High School GPA	.716 (.336)** 2.046	.730 (.337)** 2.076	.780 (.347)** 2.181	.802 (.357)** 2.230
Self-Efficacy	.046 (.053) 1.047	.042 (.053) 1.043	.045 (.055) 1.046	.032 (.055) 1.032
Self-Esteem	-.019 (.027) .981	-.019 (.027) .981	-.021 (.028) .979	-.014 (.028) .986
Public Assistance	.466 (.316) 1.593	.449 (.318) 1.567	.339 (.332) 1.404	.402 (.344) 1.495
Household Income	.216 (.096)** 1.241	.212 (.096)** 1.237	.208 (.098)** 1.232	.195 (.102)* 1.215
Parent Homeownership	-.139 (.298) .870	-.130 (.299) .878	-.156 (.303) .855	-.081 (.311) .923
Gender	.349 (.236) 1.418	.355 (.236) 1.426	.390 (.241) 1.477	.375 (.246) 1.456
Mother Foreign Born	-1.083 (.502)** .339	-1.085 (.502)** .338	-1.113 (.509)** .329	-1.137 (.513)**.321
Both Parents Foreign Born	.783 (.510) 2.189	.774 (.511) 2.168	.764 (.520) 2.147	.816 (.527) 2.261
First Generation College Student	-.019 (.373) .982	-.001 (.375) .999	.049 (.388) 1.050	-.074 (.394) .928
Woman most responsible Education	.120 (.104) 1.127	.117 (.104) 1.124	.106 (.107) 1.111	.143 (.110) 1.153
Man most responsible Education	-.027 (.090) .973	-.032 (.090) .968	-.026 (.093) .974	-.034 (.096) .967
Step 2/block 2: IVs				
Culturally Inclusive School Climate		.019 (.038) 1.019	.030 (.039) 1.031	.042 (.041) 1.042
Step 3/block 3: MVs				
Ethnic Identity				
Centrality			-.355 (.233) .701	-.398 (.247) .672
Private Regard			-.039 (.050) . 961	-.038 (.050) .963
Nationalist			-.219 (.151) .803	-.219 (.158) .803
Humanist			-.280 (.181) .756	-.265 (.188) .767
Assimilationist			-.093 (.054)* .911	-.085 (.055) .919
Oppressed Minority			.297 (.361) 1.346	.293 (.370) 1.340
Familist			.035 (.042) 1.036	.026 (.044) 1.026
Step 4/block 4: Interaction Terms				
School Climate x Centrality				-.143 (.085)* .867
School Climate x Private Regard				-.031 (.017)* .970
School Climate x Nationalist				-.073 (.055) .929
School Climate x Humanist				-.018 (.062) .983
School Climate x Assimilationist				.007 (.015) 1.007
School Climate x Oppressed				-.043 (.122) .958
School Climate x Familialismo				-.028 (.013)** .972
Intercept	-2.581 (1.471) .076*	-3.135 (1.848) .043*	-1.204 (2.118) .300	-1.401 (2.127) .184
Nagelkerke's R (Psuedo R^2)	.094**	.095	.121	.159**
Hosmer and Lemeshow Model Fit Test	3.302 df[8] .914	11.831 df[8] .159	8.698 df[8] .368	8.656 df[8] .372

*p<.10; p<.05**

Table XVIII also shows the unique predictive value of the independent variable, moderators, and interaction terms, with regression coefficients, standard errors, and odds ratios. Again, perceptions of a culturally inclusive climate was not a significant predictor of degree completion within six years (Beta = .042, p =.375, OR= 1.042, CI = .951 – 1.143). However, marginal moderation effects appeared in the interaction between school climate and centrality, (Beta = -.143, p = .093, OR= .867, CI = .733 – 1.024), between school climate and private regard (Beta= -.031, p = .071, OR= .970, CI =.938- 1.003), and lastly between school climate and familist ideology (Beta= -.028, p = .036, OR= .972, CI =.947- .998). Illustrations of these moderation effects are provided in Figure 15, 16, and 17.

While there were no main effects between degree completion and school climate, nor degree completion and the ethnic identity moderators, there were interaction effects. The effect of perceptions of school climate on the probability of degree completion (within six years) was marginally dependent on students' level of centrality. Higher scores of perceptions of school climate (greater inclusivity) tended to be associated with increased probability of degree completion (within six years) for students with low and medium centrality scores (students' rating their ethnicity is less central or important to their self-concept), but associated with a decreased probability of completion for students with high centrality scores (students' rating ethnicity as more central or important to their self-concept).

The effect of perceptions of school climate on the probability of degree completion (within six years) was marginally dependent on students' private regard scores. Higher scores of perceptions of school climate (greater inclusivity) tended to be associated with increased probability of degree completion for students with medium and high private regard scores (students with more positive views about their ethnic group), but this relationship was even more

pronounced for students with low scores of private regard (students with more negative views of their ethnic group).

Finally, the effect of perceptions of school climate on the probability of degree completion (within six years) was dependent on students' scores of familist beliefs. Higher scores of perceptions of school climate (greater inclusivity) were associated with increased probability of completion for students with high familist beliefs (students rating family with greater importance as a reason for trying in their studies), but this relationship was even more pronounced for students with low and medium scores (students rating family with less importance as a reason for trying in their studies). To illustrate these moderation effects, I recoded the continuous familist and private regard variables into three categories: low, medium, and high. Scores below the mid-point were classified as low, midpoint scores were classified as medium, and scores above the mid-point were classified as high. Then, I graphed the probability of degree completion (Y axis) against the school climate variable (X axis) and the recoded familist variable. The centrality variable was not recoded because it only had three response categories.

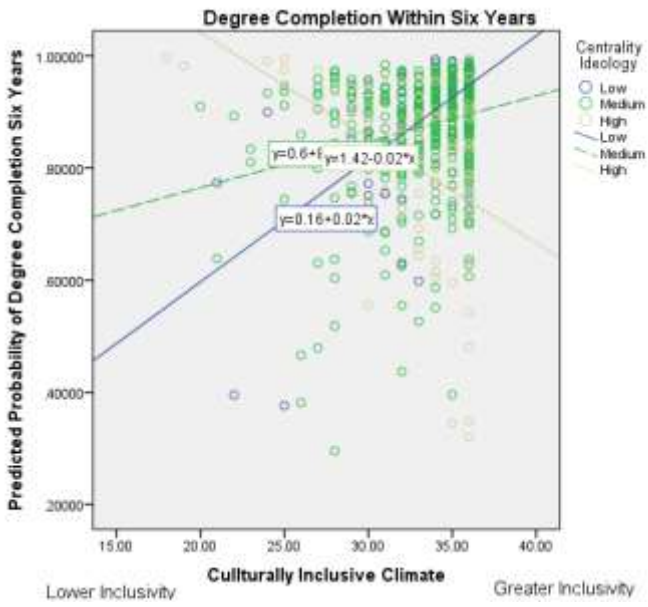


Figure 14. Illustration of the marginal moderation effect of centrality on the relationship between cultural climate and degree completion within six years. Plot indicates the effect of cultural climate on degree completion tends to be dependent on students' level of ethnic centrality.

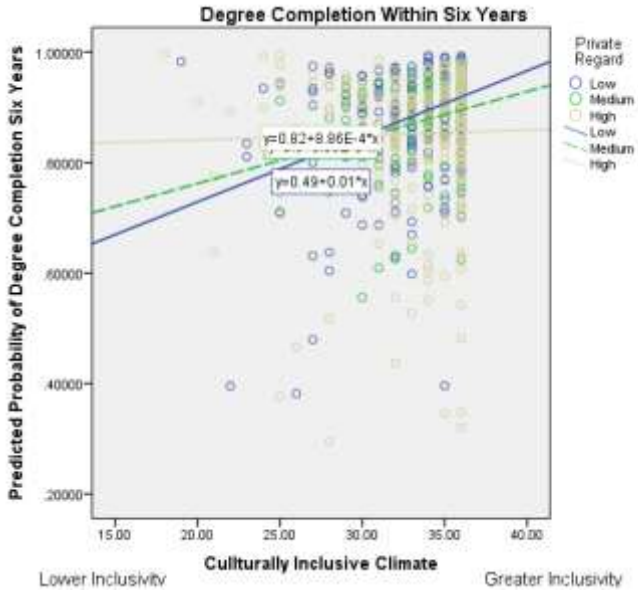


Figure 15. Illustration of the marginal moderation effect of private regard on the relationship between cultural climate and degree completion within six years. Plot indicates the effect of the cultural climate on degree completion tends to be dependent on students' level of private regard.

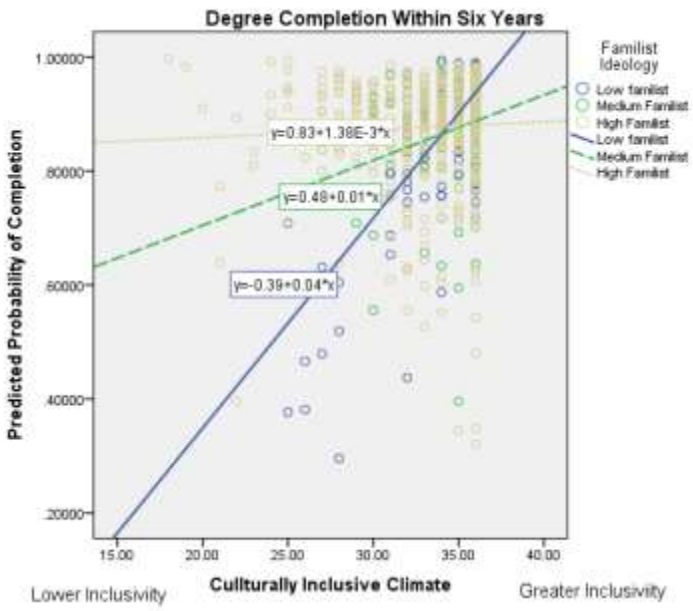


Figure 16. Illustration of the moderation effect of familist ideology on the relationship between cultural climate and degree completion within six years. Plot indicates the effect of perceptions of school climate on degree completion tends to be dependent on students' level of adherence to familist beliefs.

In terms of discrepancies between imputed data and listwise deletion data, with more cases, the interaction between school climate and centrality and school climate and familist ideology became weaker predictors of degree completion within six years (from $p = .093$ to $p = .149$ and $p = .036$ to $p = .107$, respectively).

4. Increased Academic Aspirations

a. Model assumptions: Increased academic aspirations. Data were examined for missingness, adequate observation-to-predictor ratio, outliers, linearity of the logit, and multicollinearity. The results of the hierarchical logistic regression analysis for degree completion were based on a dataset with 27 variables and 671 observed cases. The percentage of missing values ranged from .3% for the mom being foreign born variable to 6.4% for the increased academic aspirations variable. The final ratio of cases to variables included 191

students with increased academic aspirations and 480 who did not experience an increase. The regression analyses did not produce extremely large parameter estimates and standard errors, suggesting sufficient ratio of cases to variables (see Table XIX).

Thus, there appears to be no reason to suspect too many empty cells or bias with outcome groups perfectly predicted by any variable (Tabachnick & Fidell, 2007). The plot of standardized residuals of increased academic aspirations against predicted values showed the majority of predictions were within a 3.3 standardized residual, thus few multivariate outliers (Figure 17; Tabachnick & Fidell, 2007). In addition, there was good model fit X^2 (8, N = 671) = 8.459, p = .390), using the Hosmer and Lemeshow goodness-of-fit test, indicating no serious violations of linearity of the logit. Figure 18 illustrates the S-shaped distribution of the data, which is characteristic of logistic regression with binary dependent variables. Finally, there were no violations of multicollinearity between the controls, independent variable, and moderators; tolerance values > .10 and VIF scores < 10 (see Table IV, Appendix D).

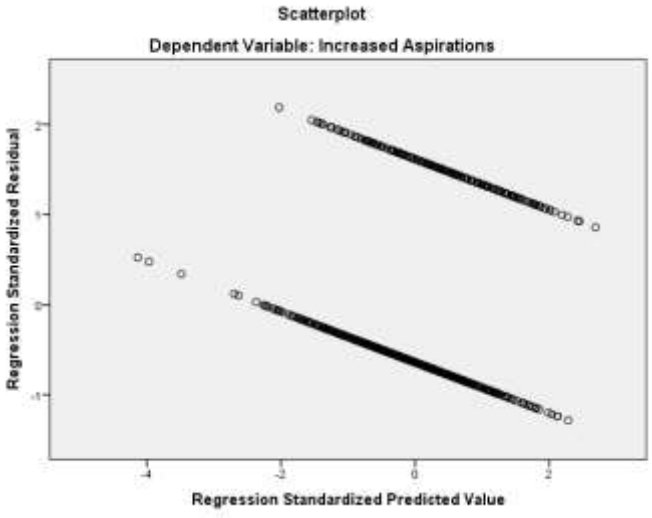


Figure 17. Plot of the residuals against predicted value for increased academic aspirations.

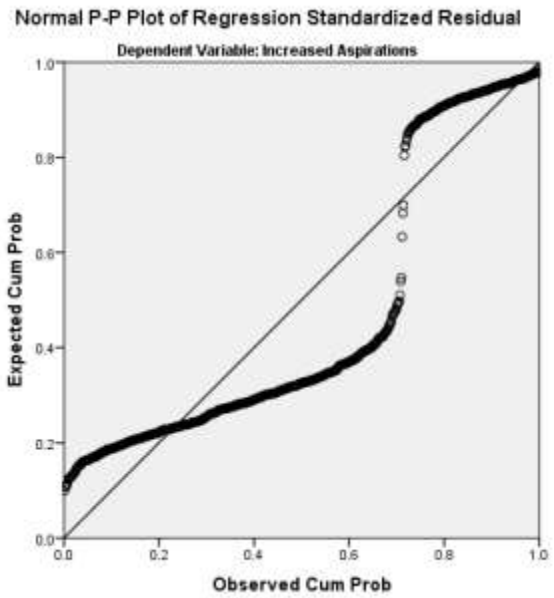


Figure 18. Normal probability pot of residuals for increased academic aspirations against observed probability. Plot indicates an S-distribution.

b. Results: Increased aspirations. The model summary of the four-step regression analyses is provided in Table XIX, which shows the relative contribution and predictive value for each variable and set of predictors at each step. Results were based on a dataset with 27 variables and a final analytical sample size of 671. Step one showed the set of control variables was statistically significant, (Nagelkerke R^2 = .069, X^2 (12, N = 671) = 33.305, $p < .05$), indicating the control variables as a set reliably distinguished between students who reported increased academic aspirations since first enrolled into college and those who had not (aspirations remained the same or lowered). Step two showed the independent variable (culturally inclusive climate) was also statistically significant, (Nagelkerke R^2 = .079, Nagelkerke R^2_{change}= .01, X^2 (1, N = 671) = 4.740, $p < .05$), indicating a main effect where perceptions of school climate reliably predicted increased aspirations beyond a control-only

model. Step three, however, showed the set of moderators (ethnic identity dimensions) was not statistically significant, (Nagelkerke R^2 = .089, Nagelkerke R^2 change = .01, X^2 (7, N = 671) = 4.95, p = .666), indicating the set moderators as a set did not reliably distinguish between students with increased aspirations and those whose aspirations remained the same or lowered, or at least not after accounting for the set of controls and the independent variable. Step four, showed the set of interaction terms was marginally significant (Nagelkerke R^2 = .113, Nagelkerke R^2 change = .024, X^2 (7, N = 671) = 12.06, p = .099), indicating the interactions as a set only marginally predicted increased aspirations beyond a model run solely with the set of controls, the independent variable, and set of moderators.

The overall four step block model was statistically significant, X^2 (27, N = 671) = 55.055, $p < .05$), indicating the predictors as a whole reliably distinguished between students with increased academic aspirations since first enrolled and students whose aspirations did not increase (aspirations remained the same or lowered). However, the variance accounted for in increased academic aspirations is small, with Nagelkerke R^2 = .113. Also, classification was unimpressive. On the basis of the set of control variables alone, correction classification rates were 97.9% for students whose aspirations did not increase and 5.2% for students for students whose aspirations increased; the overall correct classification rate was 71.5%. The improvement to 73.8% with the addition of the independent variable, moderators, and interaction terms reflected success rates of 96.7% for students with increased aspirations and 16.2% for students whose aspirations did not increase (aspirations remained the same or lowered). Clearly cases were overclassified into the largest group, students whose aspirations did not increase; still, there was an improvement in the classification accuracy in terms of discriminating students whose academic aspirations had increased.

TABLE XIX STEP-BY-STEP REGRESSION RESULTS OF INCREASED ACADEMIC ASPIRATIONS WITH LISTWISE DELETION

Models[a]: Dependent Variables[b]:	Step 1 β (SE) Odds Ratio	Step 2 β (SE) Odds Ratio	Step 3 β (SE) Odds Ratio	Step 4 β (SE) Odds Ratio
Step 1/block 1: Control Variables				
Student Demographics				
High School GPA	-.369 (.269) .691	-.332 (.270) .717	-.383 (.274) .682	-.412(.278) .662
Self-Efficacy	-.181 (.041)** .835	-.192 (.041)** .825	-.187 (.042)** .830	-.200 (.043)** .819
Self-Esteem	.033 (.021) 1.034	.032 (.021) 1.033	.034 (.021)* 1.035	.037 (.021)* 1.038
Public Assistance	-.162 (.282) .850	-.242 (.285) .785	-.224 (.288) .799	-.254 (.292) .776
Household Income	.064 (.079) 1.067	.053 (.079) 1.055	.041 (.080) 1.041	.054 (.081) 1.056
Parent Homeownership	.218 (.249) 1.243	.243 (.250) 1.275	.229 (.253) 1.257	.274 (.258) 1.315
Gender: Male (Female)	.096 (.180) 1.101	.110 (.181) 1.116	.138 (.185) 1.148	.131 (.187) 1.140
Mother Foreign Born	-.055 (.269) .946	-.067 (.270) .935	-.042 (.272) .959	-.009 (.276) .991
Both Parents Foreign Born	.452 (.285) 1.571	.425 (.286) 1.530	.410 (.292) 1.507	.421 (.296) 1.524
First Generation College Student	.094 (.291) 1.099	.150 (.292) 1.162	.105 (.296) 1.111	.113 (.298) 1.119
Woman most responsible Education	.025 (.077) 1.026	.016 (.077) 1.016	.030 (.078) 1.030	.025 (.079) 1.025
Man most responsible Education	-.074 (.070) .928	-.088 (.070) .915	-.082 (.071) .921	-.093 (.071) .911
Step 2/block 2: IVs				
Culturally Inclusive School Climate		.069 (.033)** 1.072	.072 (.034)** 1.074	.086 (.039)** 1.090
Step 3/block 3: MVs				
Ethnic Identity				
Centrality			-.032 (.180) .968	-.064 (.184) .938
Private Regard			-.054 (.039) .948	-.056 (.040) .945
Nationalist			.023 (.119) 1.024	.030 (.123) 1.031
Humanist			.026 (.136) 1.026	.028 (.139) 1.028
Assimilationist			-.011 (.039) .989	-.003 (.040) .997
Oppressed Minority			-.428 (.267)* . 652	-.403 (.273) .668
Famililist			-.000 (.033) 1.000	.007 (.034) .007
Step 4/block 4: Interaction Terms				
School Climate x Centrality				.112 (.066)* 1 .119
School Climate x Private Regard				-.007 (.014) .993
School Climate x Nationalist				-.069 (.045) .933
School Climate x Humanist				-.114 (.051)** .893
School Climate x Assimilationist				.002 (.013) .002
School Climate x Oppressed				.068 (.090) . 070
School Climate x Familialismo				-.012 (.012) .988
Intercept	2.532 (1.196) 2.577**	.509 (1.526) 1.664	1.078 (1.728)2.939	.858 (1.863) 2.358
Nagelkerke's R (Psuedo R^2)	.069**	.079**	.089	.113*
Hosmer and Lemeshow Model Fit Test	3.286 df(8) p=.915	7.766 dff(8) p= .457	2.315df(8) p=.970	8.459 df(8) p=.390

*p<.10; p<.05**

Table XIX also shows the unique predictive value of the independent variable, moderators, and interaction terms, with regression coefficients, standard errors, and odds ratios. Results showed perceptions of school climate was a significant unique predictor of increased aspirations, (Beta = .086, *p* =.027, OR= 1.090, CI 1.010 – 1.176), where one unit increase in inclusive perceptions was associated with an increased probability of increased aspirations by 1.09. In addition, two interaction terms were significant predictors of increased aspirations. There was a marginal moderation effect between school climate and centrality, (Beta = .112, *p* = .09, OR= 1.119, CI .983 - 1.273), where a one unit increase in the interaction term increased the probability of increased aspirations by 1.119. Higher scores of perceptions of school climate (greater inclusivity) were associated with greater probability of increased aspirations for students with low and medium scores on humanist beliefs, but the reverse was true for students with high scores humanist beliefs. An illustration of this moderating effect is provided in Figure 19. Additionally, there was a moderation effect between school climate and humanist ideology, (Beta = -114, *p* =.025, OR= .893, CI .808 - .986), where a one unit increase in the interaction term decreased the probability of increased aspirations by .893. Higher scores of perceptions of school climate (greater inclusivity) were associated with greater probability of increased aspirations for students with low and medium scores on humanist beliefs, but the reverse was true for students with high scores humanist beliefs. An illustration of this moderating effect is provided in Figure 20.

To illustrate these moderation effects, I graphed the probability of increased aspirations (Y axis) against the school climate variable (X axis) by the centrality variable. The centrality variable was comprised of three response categories.). Then, I graphed the probability of degree completion (Y axis) against the school climate variable (X axis) by the recoded humanist

variable. I recoded the continuous humanist ideology variable into three categories: low, medium, and high. The original variable had four response categories: 0,1, 2, and 3. I collapsed the response categories of 0 (n=9) and 1 (n=122) to make a category of low. Then the remaining responses remained the same: Two comprised the medium group (n=222) and three comprised the high group (n=554).

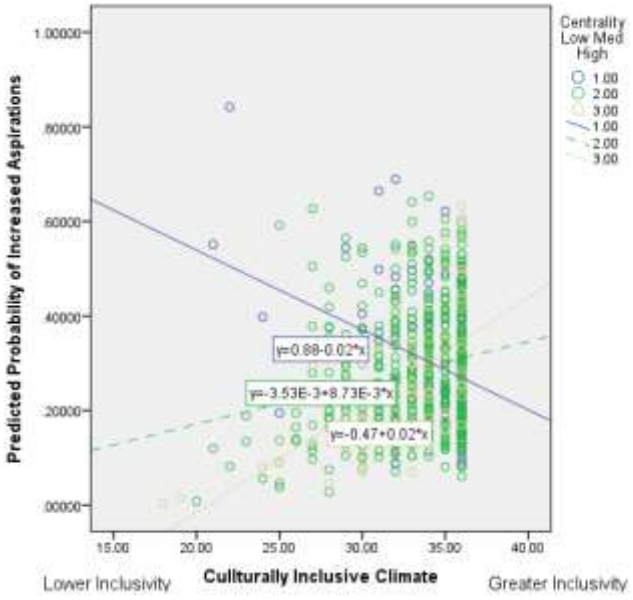


Figure 19. Illustration of the marginal moderation effect of centrality ideology on the relationship between cultural climate and increased academic aspirations. Plot indicates the effect of perceptions of school climate on increased aspirations tends to be dependent on students' level of centrality.

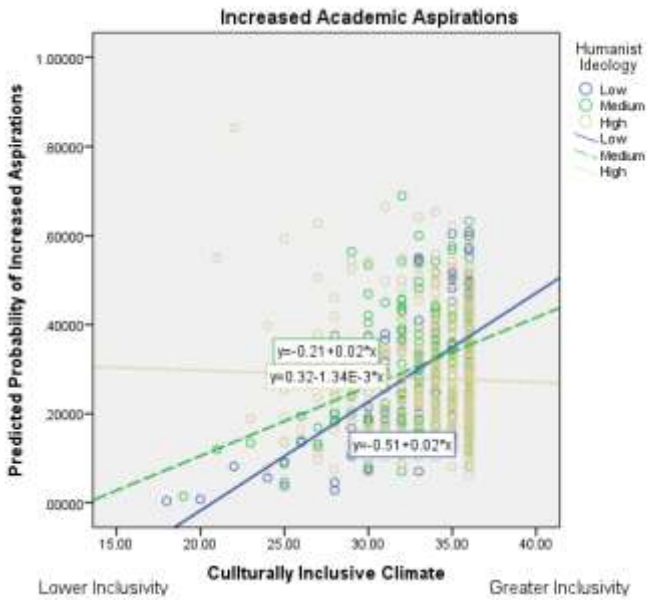


Figure 20. Illustration of the moderation effect of humanist ideology on the relationship between cultural climate and increased academic aspirations. Plot indicates the effect of perceptions of school climate on increased aspirations is dependent on students' level of adherence to Humanist beliefs.

In terms of discrepancies in the results between imputed data and listwise deletion data, with more cases, the private regard moderator became an even stronger predictor of increased aspirations, but the interaction between school climate and centrality and school climate and humanist ideology became weaker predictors of increased aspirations (from $p = .09$ to $p = .114$ and from $p = .025$ to $p = .072$, respectively). Overall, the differences in results were not all that dissimilar.

5. Reduced academic aspirations

a. Model assumptions: Reduced academic aspirations. Data were examined for missing data, adequate observation-to-predictor ratio, outliers, linearity of the logit, and multicollinearity.

The results of the hierarchical logistic regression analysis for reduced academic aspirations were based on a dataset with 27 variables and 671 observed cases. The percentage of missing values ranged from .3% for the mom being born variable to 6.4% for the reduced academic aspirations. The final ratio of cases to variables included 89 students with reduced aspirations and 582 who did not report lowered aspirations. The ratio of cases to variables appear sufficient since the regression analyses did not show extremely large parameter estimates or standard errors, see Table XX. There appears to be no reason to suspect too many empty cells or bias with outcome groups perfectly predicted by any variable (Tabachnick & Fidell, 2007). The plot of standardized residuals of lowered aspirations against predicted values showed the majority of predictions were within a 3.3 standardized residual, indicating no serious concerns of multivariate outliers (Figure 21; Tabachnick & Fidell, 2007). There was good model fit, X^2 (8, N = 671) = 3.873, p = .868), using the Hosmer and Lemeshow goodness-of-fit test; indicating no serious violations of linearity of the logit. Figure 22 illustrates the S-shaped distribution of the data, which is characteristic of logistic regression with binary dependent variables. Violations of multicollinearity between the controls, independent variable, and moderator variables were not detected; tolerance values > .10 and VIF scores < 10 (see Table IV, Appendix E).

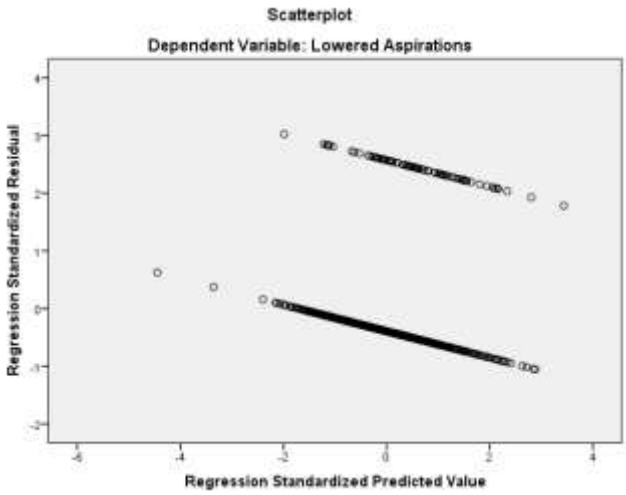


Figure 21. Plot of the residuals against predicted value for lowered academic aspirations. Plot indicates few multivariate outliers.

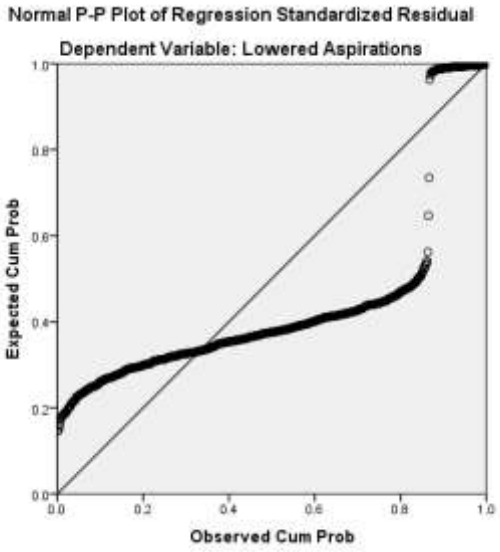


Figure 22. Normal probability plot of residuals for lowered academic aspirations against observed probability. Plot indicates an S-distribution.

TABLE XX STEP-BY-STEP REGRESSION RESULTS OF LOWERED ACADEMIC ASPIRATIONS WITH LISTWISE DELETION

Models[a]: Dependent Variables[b]:	Step 1 β (SE) Odds Ratio	Step 2 β (SE) Odds Ratio	Step 3 β (SE) Odds Ratio	Step 4 β (SE) Odds Ratio
Step 1/block 1: Control Variables				
Student Demographics				
High School GPA	-.277(.349) .758	-.280(.351) .756	-.176(.359) .839	-.096(.369) .909
Self-Efficacy	.080 (.053) 1.083	.080 (.053) 1.084	.074 (.054) 1.077	.085 (.055) 1.089
Self-Esteem	-.061 (.027)** .941	-.061 (.027)** .941	-.064 (.027)** .938	-.069 (.027)** .933
Public Assistance	-.314 (.342) .730	-.311 (.343) .733	-.215 (.355) .806	-.286 (.364) .752
Household Income	-.006 (.101) .994	-.006 (.102) .994	-.001 (.104) .999	.015 (.106) 1.015
Parent Homeownership	-.291 (.344) .748	-.292 (.345) .746	-.264 (.351) .768	-.193 (.363) .824
Gender	-.441 (.235)* .644	-.441 (.235)* .643	-.485 (.240)** .615	-.532 (.246)** .588
Mother Foreign Born	-.542 (.349) .582	-.541 (.349) .582	-.524 (.354) .592	-.640 (.358)* .527
Both Parents Foreign Born	.207 (.349) 1.230	.210 (.349) 1.233	.080 (.361) 1.083	.127 (.367) 1.135
First Generation College Student	.026 (.383) 1.026	.022 (.385) 1.022	.054 (.393) 1.056	-.018 (.402) .982
Woman most responsible Education	-.095 (.103) .909	-.094 (.103) .910	-.123 (.105) .884	-.109 (.108) .897
Man most responsible Education	-.014 (.090) .986	-.013 (.090) .987	-.011 (.093) .989	.001 (.095) 1 .001
Step 2/block 2: IVs				
Culturally Inclusive School Climate		-.004 (.039) .996	-.010 (.040) .990	-.047 (.046) .954
Step 3/block 3: MVs				
Ethnic Identity				
Centrality			-.040 (.237) .961	-.032 (.242) .968
Private Regard			.039 (.050) 1.040	-.034 (.051) 1.034
Nationalist			.164 (.157) 1.178	.179 (.159) 1.197
Humanist			.151 (.180) 1.163	.193 (.183) 1.213
Assimilationist			.028 (.051) 1.029	.025 (.052) 1.026
Oppressed Minority			.537 (.301)* 1.710	.266 (.364) 1.305
Familist			-.087 (.041)** .916	-.087 (.042)** .916
Step 4/block 4: Interaction Terms				
School Climate x Centrality				.014 (.077) 1 .014
School Climate x Private Regard				-.016 (.015) .984
School Climate x Nationalist				.052 (.048) 1.053
School Climate x Humanist				.018 (.045) 1.018
School Climate x Assimilationist				.008 (.015) 1.008
School Climate x Oppressed				-.329 (.150)** .720
School Climate x Familialismo				-.004 (.013) .996
Intercept	.744 (1.545) 2.104	.878 (1.933) 2.406	.420 (2.218) 1.522	1.207 (2.348) 3.344
Nagelkerke's R (Psuedo R^2)	.046	.046	.072	.095
Hosmer and Lemeshow Model Fit Test	5.401 df[8] p= .714	3.618 df[8] p=.890	12.206 df[8] p=.142	3.873 df[8] p=.868

*p<.10; p<.05**

b. Results: Reduced academic aspirations. Results were based on a dataset with 27 variables and a final analytical sample size of 671. Table XX shows the relative contribution and predictive value for each variable and set of predictors of the four-step regression analyses. None of the blocks in the four step model were significant. Step one showed the set of control variables was not statistically significant (Nagelkerke R^2 = .046, X^2 (12, N = 671) = 17.123, p = .145). Step two showed the independent variable (culturally inclusive climate perceptions) was not statistically significant (Nagelkerke R^2 = .046, Nagelkerke R^2 change = .0, X^2 (1, N = 671) = .013, p = .908). Step three showed the set of moderators was not statistically significant (Nagelkerke R^2 = .072, Nagelkerke R^2 change = .026, X^2 (7, N = 671) = 9.52, p = .217). Step four showed the set of interaction terms was not statistically significant (Nagelkerke R^2 = .095, Nagelkerke R^2 change = .023, X^2 (7, N = 671) = 8.96, p = .256). Finally, the overall four step block model was not statistically significant, X^2 (27, N = 671) = 35.617, p = .124), indicating even the predictors as a whole did not reliably distinguish between students with lowered academic aspirations and students who did not report lowered aspirations (aspirations remained the same or increased).

Table XX also shows the unique predictive value of the independent variable, moderators, and interaction terms, with regression coefficients, standard errors, and odds ratios. Perceptions of a culturally inclusive climate was not a significant predictor of lowered academic aspirations (Beta = -.047, p =.304, OR= .954, CI .872 – 1.044), but one ethnic identity moderator and one interaction term were statistically significant. Higher scores of familist beliefs were associated with decreased probability of lowered aspirations (Beta= -.087, p = .036, OR= .916, CI .845– .994). Additionally, the effect of school climate on reduced academic aspirations was dependent on students' adherence or lack of adherence to oppressed minority beliefs, where one

unit increase in the interaction term was associated with a decreased probability of reduced aspirations (Beta = -.329, *p* =.028, OR= .720, CI .536 - .965). Higher scores of perceptions of school climate (greater inclusivity) were associated with lower probability of reduced aspirations for students with oppressed minority beliefs, but with an increased probability of reduced aspirations for students not adhering to oppressed minority beliefs. An illustration of this moderation effect is provided in Figure 23.

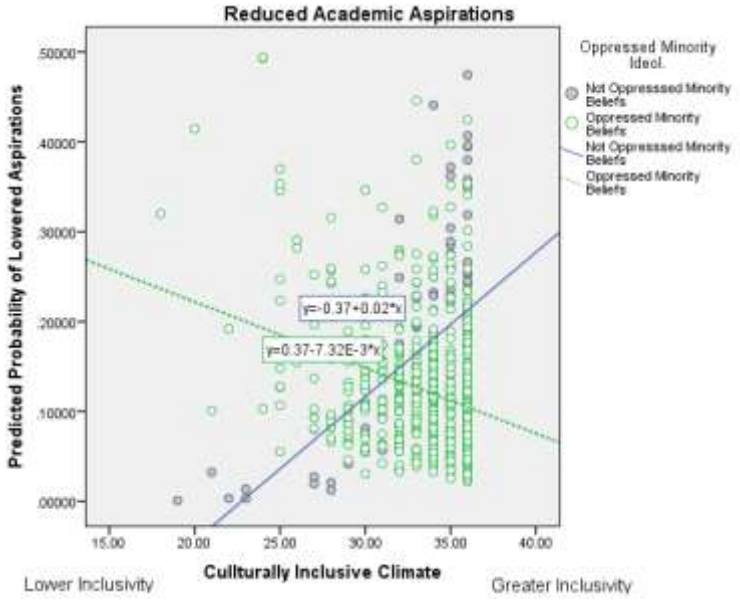


Figure 23. Illustration of the moderation effect of oppressed minority ideology on the relationship between cultural climate and lowered academic aspirations. Plot indicates the effect of perceptions of school climate on lowered aspirations is dependent on dependent on students' adherence to Humanist beliefs.

In terms of discrepancies between imputed data and listwise deletion data, with more cases, the oppressed minority moderator approached marginal significance (from *p* = .465 to *p* =.091). On the other hand, with more cases the interaction between school climate and the

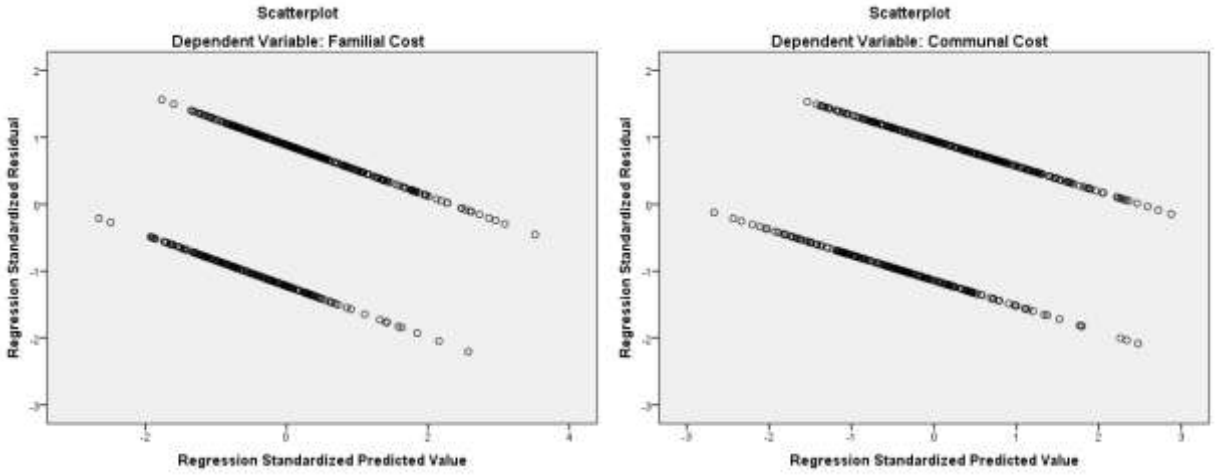
oppressed ideology became less important (p = .028 vs. p =.187). Overall, it appears oppressed minority beliefs has an effect on reduced aspirations.

7. Cultural cost of education variables: Familial, communal, and ethnic cost

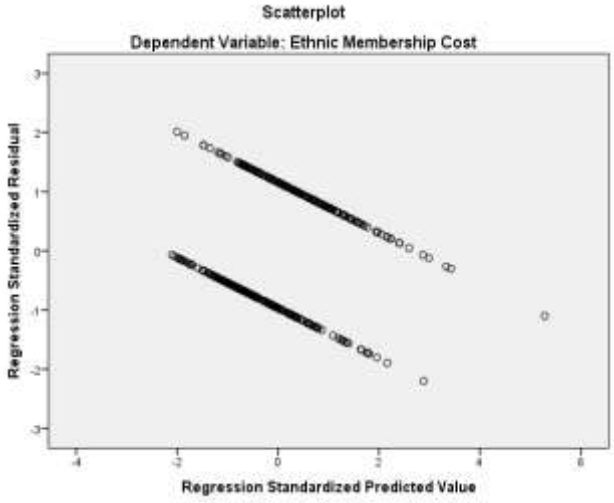
a. Model assumptions: Cultural cost of education variables. Data were examined for missingness, adequate observation-to-predictor ratio, outliers, linearity of the logit, and multicollinearity. The percentage of missing values ranged from .3% for the mom being foreign born variable to 38.1% for the ethnic membership cost variable. The results of the hierarchical logistic regression analyses were based on data with 27 variables. The sample size ranged from 450 for the ethnic membership cost of education variable to 451 for the familial cost of education to 452 for the familial cost of education variable**.** The regressions did not produce extremely large parameter estimates, indicating no apparent reason to suspect bias of outcome groups being perfectly predicted by any one variable, see Tables XXI – XXIII. Although these regressions had a lot of missing data, as mentioned earlier, data appear to be missing at random or due to observed variables that my study controls for (see earlier missing value analyses discussion). The plots of the standardized residuals of the cultural cost of education variables against predicted values showed few multivariate outliers, see Figure 24 (Tabachnick & Fidell, 2007). The Hosmer and Lemeshow goodness-of-fit tests did not detect serious violations of linearity in the logit observations for communal cost of an education, (X^2 (8, N = 451) = 12.133, p = .145), and ethnic cost of an education ,(X^2 (8, N = 450) = 9.424, p = .308), but the model did not fit the data for familial cost of an education (X^2 (8, N = 452) = 17.594, p = .024). Nevertheless, Figure 25 illustrates all three cultural cost distributions approached S-curve distributions, which are characteristic of logistic regression with binary dependent variables (Tabachnick & Fidell, 2007).

Finally, there were no violations of multicollinearity between the controls, independent variable, and moderator variables; tolerance values > .10 and VIF scores < 10 (Table V, Appendix E).

Scatterplots of Standardized Residuals against Predicted Values of Cultural Cost of Education Variables



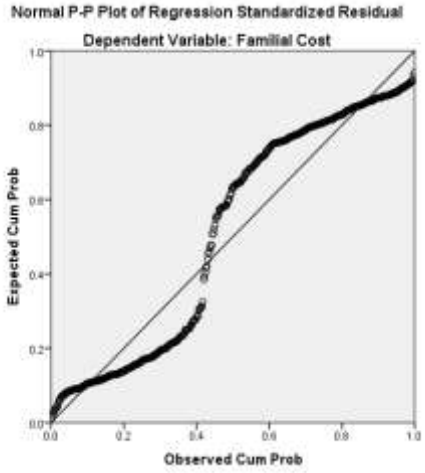
a) Residuals of Familial Cost b) Residuals of Communal Cost



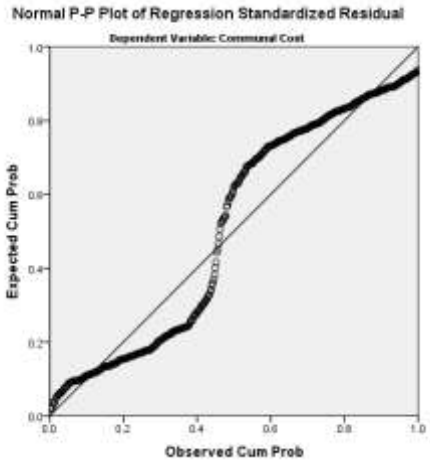
c) Residuals of Ethnic Membership Cost

Figure 24. Plot of residuals against predicted values for cultural cost of education variables. Plots shows most cases had standardized residuals of less than 3.3, indicating few multivariate outliers.

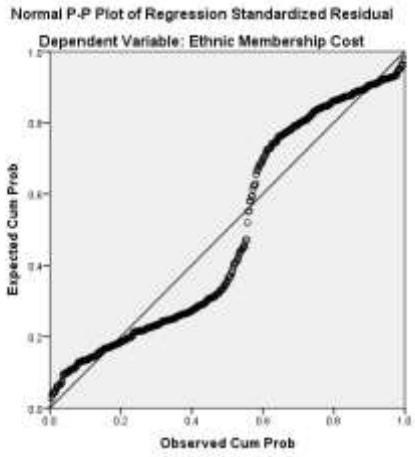
Normal Probability Plots for the Cultural Cost of Education Variables.



a) Probability Plot for Familial Cost



b) Probability Plot for Communal Cost



c) Probability Plot for Ethnic Membership Cost

Figure 25. Normal probability plots for Cultural Cost of Education Variables (familial cost, communal cost, and ethnic membership cost). Plots Indicate Distributions Approach S-Curve Distributions.

TABLE XXI STEP-BY-STEP REGRESSION RESULTS OF FAMILIAL COST OF EDUCATION WITH LISTWISE DELETION

Models[a]: Dependent Variables[b]:	Step 1 β (SE) Odds Ratio	Step 2 β (SE) Odds Ratio	Step 3 β (SE) Odds Ratio	Step 4 β (SE) Odds Ratio
Step 1/block 1: Control Variables				
Student Demographics				
High School GPA	.022 (.317) 1.023	-.004 (.318) .996	-.087 (.325) .917	-.029 (.327) .971
Self-Efficacy	-.068 (.047) .934	-.058 (.048) .943	-.058 (.049) .944	-.065 (.050) .937
Self-Esteem	-.026 (.024) .975	-.024 (.024) .976	-.027 (.025) .973	-.027 (.025) .973
Public Assistance	-1.098 (.395)** 333	-1.020 (.396)** 361	-1.020 (.400)** 361	-1.053 (.407)** 349
Household Income	-.176 (.090)* .839	-.167 (.090)* .846	-.174 (.091)* .840	-.163 (.093)* .850
Parent Homeownership	-.271 (.292) . 763	-.308 (.295) . 735	-.284 (.302) . 753	-.225 (.309) .798
Gender: Male (Female)	-.557 (.209)** .573	-.561 (.210)** .571	-.529 (.218)** .589	-.549 (.222)** .578
Mother Foreign Born	.143 (.302) 1.154	.187 (.304) 1.206	.160 (.309) 1.174	.138 (.315) 1.148
Both Parents Foreign Born	-.493 (.325) .611	-.476 (.328) .621	-.433 (.336) .648	-.489 (.345) .613
First Generation College Student	.588 (.330)* 1.800	.548 (.332)* 1.729	.461 (.338) 1.586	.421 (.343) 1.524
Woman most responsible Education	-,044 (.090) .957	-.034 (.091) .967	-.006 (.092) .994	.004 (.093) 1.004
Man most responsible Education	-.129 (.080) .879	-.117 (.080) .890	-.114 (.081) .892	-.116 (.083) .890
Step 2/block 2: IVs				
Culturally Inclusive School Climate		-.094 (.038)** .910	-.104 (.040)** .901	-.139 (.047)** .870
Step 3/block 3: MVs				
Ethnic Identity				
Centrality			.024 (.214) 1.025	.056 (.218) 1.057
Private Regard			-.025 (.044) .976	-.022 (.045) .978
Nationalist			-.134 (.151) .874	-.175 (.155) .840
Humanist			-.024 (.165) .977	-.017 (.166) .983
Assimilationist			.052 (.045) 1.053	.054 (.046) 1.055
Oppressed Minority			-.369 (.277) .691[c]	-.453 (.280) .635[c]
Famililist			.009 (.037) 1.009	.005 (.038) 1.005
Step 4/block 4: Interaction Terms				
School Climate x Centrality				-.085 (.077) .919
School Climate x Private Regard				-.004 (.015) .996
School Climate x Nationalist				.064 (.048) 1.066
School Climate x Humanist				-.053 (.045) .948
School Climate x Assimilationist				.012 (.015) 1.013
School Climate x Oppressed				-.152 (.150) .859
School Climate x Familialismo				.004 (.013) 1.005
Intercept	5.113(1.446)166.246**	7.887(1.856)2662.135**	8.564(2.098)5237.759**	9.686 (2.250) 16087.639**
Nagelkerke's R (Psuedo R^2)	.142**	.159**	.170	.187
Hosmer and Lemeshow Model Fit Test	7.469df(8) p=.487	4.778df(8) p=.781	9.792 df(8) p=.280	17.594 df(8) p=.024
Number of Cases: 452				

*$p < .10$; $p < .05$**

[a]M1 – M8 = Models 1 through 8.

[b]D1 = GPA; D2 = Degree Completion (four years.); D3 = Degree Completion (six years.);
D4 = Increased Academic Aspirations; D5 = Reduced Academic Aspirations; D6 = Familial Cost of an Education; D7 = Communal Cost of an Education; D8 = Ethnic Membership Cost of an Education.

[c]$p < .105$

TABLE XXII STEP-BY-STEP REGRESSION RESULTS OF COMMUNAL COST OF EDUCATION WITH LISTWISE DELETION

Models[a]: Dependent Variables[b]:	Step 1 β (SE) Odds Ratio	Step 2 β (SE) Odds Ratio	Step 3 β (SE) Odds Ratio	Step 4 β (SE) Odds Ratio
Step 1/block 1: Control Variables				
Student Demographics				
High School GPA	.315 (.313) 1.338	.275 (.314) 1.317	.257 (.321) 1.294	.291 (.324) 1.338
Self-Efficacy	-.071 (.047) .958	-.060 (.047) .942	-.046 (.049) .955	-.043 (.049) .958
Self-Esteem	-.042 (.024)* .958	-.041 (.024)* .960	-.041 (.024)* .959	-.043 (.025)* .958
Public Assistance	-.408 (.345) .739	-.319 (.348) .727	-.299 (.353) .742	-.302 (.358) .739
Household Income	-.242 (.090)** .793	-.231 (.090)** .794	-.238 (.091)** .788	-.232 (.092)** .793
Parent Homeownership	-.394 (.287) .634	-.449 (.292) .638	-.473 (.299) .623	-.456 (.303) .634
Gender	-.513 (.206)** .569	-.521 (.207)** .594	-.549 (.216)** .577	-.563 (.219)** .569
Mother Foreign Born	.379 (.304) 1.599	.433 (.306) 1.542	.457 (.311) 1.579	.469 (.317) 1.599
Both Parents Foreign Born	-.387 (.325) .643	-.373 (.327) .689	-.390(.337) .677	-.442(.344) .643
First Generation College Student	.289 (.324) 1.218	.239 (.326) 1.270	.215 (.333) 1.240	.197 (.336) 1.218
Woman most responsible Education	-.011 (.089) 1.028	.003 (.089) 1.003	.025 (.091) 1.025	.028 (.092) 1.028
Man most responsible Education	-.103 (.078) .914	-.088 (.079) .915	-.090 (.080) .914	-.090 (.081) .914
Step 2/block 2: IVs				
Culturally Inclusive School Climate		-.103 (.037)** .902	-.103 (.039)** .903	-.136 (.045)** .873
Step 3/block 3: MVs				
Ethnic Identity				
Centrality			.091 (.211) 1.095	.075 (.213) 1.078
Private Regard			.011 (.044) 1.011	.010 (.044) 1.010
Nationalist			.029 (.149) 1.030	.018 (.151) 1.018
Humanist			-.037 (.164) .964	-.034 (.164) .966
Assimilationist			.016 (.045) 1.016	.016 (.046) 1.016
Oppressed Minority			-.599 (.279)** .549	-.653 (.281)** .521
Famililist			-.025 (.037) .975	-.026 (.038) .974
Step 4/block 4: Interaction Terms				
School Climate x Centrality				.047 (.072) 1.048
School Climate x Private Regard				.008 (.016) 1.008
School Climate x Nationalist				.020 (.052) 1.021
School Climate x Humanist				-.014 (.053) .986
School Climate x Assimilationist				.005 (.015) 1.005
School Climate x Oppressed				-.134 (.096) .875
School Climate x Familialismo				-.003 (.013) .997
Intercept	3.810(1.400) 45.161**	6.903(1.816) 994.845**	6.575(2.015) 717.064**	7.650 (2.152) 2100.836
Nagelkerke's R (Psuedo R^2)	.127**	.149**	.164	.173
Hosmer and Lemeshow Model Fit Test	10.951df(8) p=.205	9.354 df(8) p=.313	5.432 df(8) p=.711	12.133 df(8) p=.145
Number of Cases: 451				

*$p < .10$; $p < .05$**

[a]M1 – M8 = Models 1 through 8.

[b]D1 = GPA; D2 = Degree Completion (four years.); D3 = Degree Completion (six years.);
D4 = Increased Academic Aspirations; D5 = Reduced Academic Aspirations; D6 = Familial Cost of an Education; D7 = Communal Cost of an Education; D8 = Ethnic Membership Cost of an Education.

[c]$p < .105$

TABLE XXIII STEP-BY-STEP REGRESSION RESULTS OF ETHNIC MEMBERSHIP COST OF EDUCATION WITH LISTWISE DELETION

Models[a]: Dependent Variables[b]:	Step 1 β (SE) Odds Ratio	Step 2 β (SE) Odds Ratio	Step 3 β (SE) Odds Ratio	Step 4 β (SE) Odds Ratio
Step 1/block 1: Control Variables				
Student Demographics				
High School GPA	.322 (.312) 1.380	.255 (.318) 1.290	.246 (.328) 1.279	.261 (.332) 1.299
Self-Efficacy	-.042 (.046) .959	-.021 (.047) .980	.002 (.049) 1.002	.001 (.050) 1.001
Self-Esteem	-.042 (.023)* .959	-.040 (.024)* .961	-.037 (.024) .964	-.040 (.025) .961
Public Assistance	-.119 (.324) .888	.023 (.338) 1.023	.028 (.347) 1.029	.022 (.354) 1.022
Household Income	-.184 (.087)** .832	-.170 (.089)* .844	-.185 (.090)** .831	-.186 (.092)** .831
Parent Homeownership	-.082 (.281) .922	-.173 (.291) .841	-.278 (.301) .757	-.234 (.307) .791
Gender	-.062 (.203) .940	-.071 (.207) .931	-.105 (.218) .901	-.114 (.221) .892
Mother Foreign Born	.006 (.304) 1.006	.091 (.309) 1.096	.187 (.317) 1.206	.169 (.321) 1.184
Both Parents Foreign Born	.302 (.327) 1.353	.342 (.334) 1.407	.304 (.347) 1.356	.315 (.354) 1.370
First Generation College Student	.341 (.318) 1.407	.261 (.326) 1.299	.326 (.337) 1.386	.340 (.342) 1.406
Woman most responsible Education	-.085 (.087) .919	-.062 (.089) .940	-.052 (.092) .950	-.058 (.093) .943
Man most responsible Education	-.188 (.078)** .829	-.169 (.081)** .844	-.174 (.083)** .840	-.177 (.084)** .838
Step 2/block 2: IVs				
Culturally Inclusive School Climate		-.166 (.038)** .847	-.149 (.039)** .862	-.149 (.045)** .861
Step 3/block 3: MVs				
Ethnic Identity				
Centrality			.295 (.216) 1.343	.303 (.219) 1.354
Private Regard			-.030 (.045) .971	-.028 (.045) .972
Nationalist			.020 (.150) 1.020	.015 (.152) 1.016
Humanist			-.147 (.164) .863	-.139 (.166) .870
Assimilationist			-.089 (.046)* .915	-.097 (.047)** .908
Oppressed Minority			-.701 (.300)** .496	-.713 (.303)** .490
Famililist			-.014 (.037) .986	-.019 (.037) .981
Step 4/block 4: Interaction Terms				
School Climate x Centrality				-.076 (.076) .926
School Climate x Private Regard				.010 (.017) 1.010
School Climate x Nationalist				.106 (.054)* 1.112
School Climate x Humanist				.057 (.059) 1.059
School Climate x Assimilationist				.015 (.017) 1.015
School Climate x Oppressed				-.038 (.101) .963
School Climate x Familialismo				-.001 (.013) .999
Intercept	2.484(1.384) 11.992*	7.464(1.838) 1744.284*	7.222(2.047) 1368.729**	7.411 (2.173) 1654.064**
Nagelkerke's R (Psuedo R^2)	.105**	.161**	.197**	.211
Hosmer and Lemeshow Model Fit Test	9.226 df(8) p=.324	9.590 df(8) p=.295	12.294df(8) p=.139	9.424 df(8) p=.308
Number of Cases: 450				

*$p < .10$; $p < .05$**

[a]M1 – M8 = Models 1 through 8.

[b]D1 = GPA; D2 = Degree Completion (four years.); D3 = Degree Completion (six years.);
D4 = Increased Academic Aspirations; D5 = Reduced Academic Aspirations; D6 = Familial Cost of an Education; D7 = Communal Cost of an Education; D8 = Ethnic Membership Cost of an Education.

[c]$p < .105$

b. Results: Cultural cost of education

i. In terms of familial cost of education, results were based on a dataset with 27 variables and a final analytical sample size of 452. The percentage of missing values ranged from .3% for the mom being foreign born variable to 37.8% for the familial cost variable. The final ratio of cases to variables included 262 students who reported at least some familial cost (students reporting feeling less part of their family) and 190 who had not. Table XXI shows the relative contribution and predictive value for each variable and set of predictors of the four-step regression analyses. Step one showed the set of controls was statistically significant (Nagelkerke R^2 = .142, X^2 (12, N = 452 = 50.487, p = .0), indicating the controls as a set reliably distinguished between students who reported familial cost and those who had not. Step two showed the independent variable (culturally inclusive climate) was also statistically significant, (Nagelkerke R^2 = .159, Nagelkerke R^2 change = .017, X^2 (1, N = 452) = 6.373, p = .012), indicating a main effect where perceptions of school climate reliably predicted students' who reported familial cost and those who had not beyond a control-only model. Step three showed the set of moderators was not statistically significant, (Nagelkerke R^2 = .170, Nagelkerke R^2 change = .011, X^2 (7, N = 452) = 4.26, p = .749), indicating the set of moderators did not reliably distinguish between students who reported familial cost and those who had not or at least not after accounting for the set of controls and independent variable. Step four showed the set of interaction terms was not statistically significant (Nagelkerke R^2 = .187, Nagelkerke R^2 change = .017, X^2 (7, N = 452) = 6.571, p = .475), indicating the interaction terms as a set did not reliably predict familial cost beyond a model run solely with the set of controls, the independent variable, and set of moderators.

Overall, the four step block model was statistically significant, (X^2 (8, N = 452) = 67.691, $p < .024$), indicating the predictors as a whole reliably distinguished between students who reported familial cost and those who had not. However, the variance explained is small, with Nagelkerke $R^2 = .187$. Overall, classification was unimpressive. On the basis of the set of controls alone, correction classification rates were 78.2% for students with reported familial cost and 47.4% for students without reported familial cost; the overall correct classification rate was 65.3%. The improvement to 66.2% with the addition of the independent variable, moderators, and interaction terms reflected success rates of 77.1% for students with familial cost and 51.1% for students without reported familial cost. Cases were overclassified into the largest group, students with familial cost; still, there was an improvement in the prediction accuracy in terms of discriminating students without reported familial cost.

Table XXI also shows the unique predictive value of the independent variable, moderators, and interaction terms, with regression coefficients, standard errors, and odds ratios. Again, results revealed culturally inclusive climate perceptions was a significant predictor of familial cost, (Beta= -.139, $p = .003$, OR= .870, CI = .794 - .954), indicating higher scores of perceptions of school climate were associated with a decreased probability of reporting familial cost or students' feeling less part of their family. Both the oppressed minority ideology variable and the interaction term between school climate and the oppressed minority ideology came *close* to having a marginal significant effect on familial cost (Beta= -.453, $p = .105$, OR= .635, CI = .367 – 1.10; Beta= -.152, $p = .104$, OR= .859, CI = .716 – 1.03). An illustration of this near marginal moderating effect is provided in Figure 26.

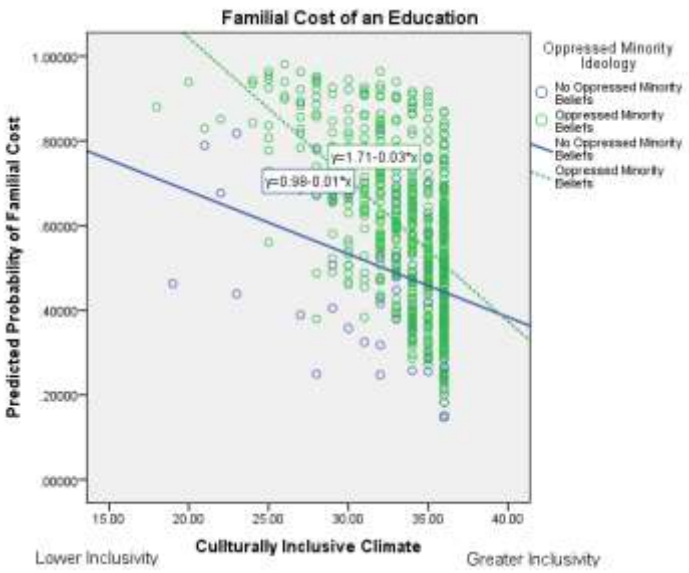


Figure 26. Illustration of the influence of oppressed minority ideology on the relationship between cultural climate and familial cost of an education. Plot indicates the effect of perceptions of school climate on the probability of familial cost tends to depend on students' oppressed minority beliefs (p= .104).

Additionally, students with oppressed minority beliefs tended to have a decreased probability of reporting familial cost (feeing less part of their family) than students without oppressed minority beliefs and while higher scores of inclusive perceptions were associated with lower probability of reporting familial cost this effect tended to be more pronounced for students with oppressed minority beliefs than students without oppressed minority beliefs.

In terms of discrepancies in the results between imputed data and listwise deletion data, with imputed data the oppressed minority moderator and the interaction between school climate and oppressed minority ideology were weaker predictors of familial cost (from p = .105 to p= .227 and from p = .104 to p = .647, respectively). Generalizations should be limited to samples with similar characteristics and missingness. Also, further studies should explore if the number of imputations from five to ten changes the results. For instance, the results of one of the five

imputations showed the interaction between school climate and oppressed ideology was marginally significant (p = .076). Conclusions with pooled data from ten imputations rather than five may produce different conclusions or confirm the conclusions produced with the listwise deletion data.

ii. In terms of communal cost of education, results were based on a dataset with 27 variables and 451observed cases. The percentage of missing values ranged from .3% for the mom being foreign born variable to 37.9% for the communal cost of an education variable. The final ratio of cases to variables included 246 students with reported communal cost (students reporting their going to college made them feel like an outsider of their home community) and 205 without communal not. Table XXII shows the relative contribution and predictive value for each variable and set of predictors of the four-step regression analyses. Step one showed the set of controls was statistically significant (Nagelkerke R^2 = .127, X^2 (12, N = 451 = 45.125, p = .0), indicating the controls as a set reliably distinguished between students who reported communal cost and those who had not. Step two showed the independent variable (culturally inclusive climate) was also statistically significant, (Nagelkerke R^2 = .149, Nagelkerke R^2 change = .022, X^2 (1, N = 451) = 8.059, p = .005), indicating a main effect where perceptions of school climate reliably predicted students' who reported communal cost and those who had not beyond a control-only model. Step three showed the set of moderators was not statistically significant, (Nagelkerke R^2 = .164, Nagelkerke R^2 change = .015, X^2 (7, N = 451) = 5.831, p = .560), indicating the set of moderators did not reliably distinguish between students who reported communal cost and those who had not or at least not after accounting for the set of controls and independent variable. Step four showed the set of interaction terms was also not statistically significant (Nagelkerke R^2 = .173, Nagelkerke R^2 change = .009, X^2 (7, N = 451) = 3.577, p =

.827), indicating the interaction terms as a set did not reliably predict communal cost beyond a model run solely with the set of controls, the independent variable, and set of moderators. The overall four step block model was statistically significant, X^2 (27, N = 451) = 62.592, p <.01). However, the variance in increased academic aspirations accounted for is small, with Nagelkerke R^2 = .173. Overall, classification was unimpressive. On the basis of the set of control variables alone, correction classification rates were 70.7% for students with communal cost and 54.1% for students without communal cost; the overall correct classification rate was 63.2%. The improvement to 64.5% with the addition of the independent variable, moderators, and interaction terms reflected success rates of 72% for students with communal cost and 55.6% for students not reporting communal cost. There was small improvement in the classification accuracy in terms of discriminating both students with communal cost and without reporting communal cost.

Table XXII also shows the unique predictive value of the independent variable, moderators, and interaction terms, with regression coefficients, standard errors, and odds ratios. Again, results revealed a main effect between culturally inclusive perceptions of school climate and communal cost of education (Beta = -.136, *p* = .003, OR= .873, CI = .799 - .954), indicating higher scores of perceptions of school climate were associated with lower probability of communal cost. Additionally, one ethnic identity moderator was a significant predictor of communal cost. Students' adherence to oppressed minority beliefs was associated with a decreased probability of communal cost (Beta = -.653, p < .020, OR= .521, CI = .300 - .903). There were, however, no unique moderation effects.

In terms of discrepancies in the results between the listwise data and the imputed data, with imputed data the same main effects and interactions were found for communal cost.

iii. In terms of cost to ethnic group membership, results were based on a dataset with 27 variables and 450 observed cases. The percentage of missing values ranged from .3% for the mother being foreign variable to 38.1% for the ethnic membership cost variable. The final ratio of cases to variables included 206 students who reported ethnic membership cost (students reporting others of their ethnic group resent their going to college) and 248 who did not. Table XXIII shows the relative contribution and predictive value for each variable and set of predictors of the four-step regression analyses. Step one showed the set of controls was statistically significant (Nagelkerke R^2 = .105, X^2 (12, N = 450 = 36.791, p = .0), indicating the controls as a set reliably distinguished between students with a reported ethnic membership cost and those who had not. Step two showed the independent variable (culturally inclusive climate) was also statistically significant, (Nagelkerke R^2 = .161, Nagelkerke R^2 change = .056, X^2 (1, N = 450) = 20.809, p = .0), indicating a main effect where perceptions of school climate reliably distinguished between students with ethnic membership cost and those without beyond a control-only model. Step three showed the set of moderators was also statistically significant, (Nagelkerke R^2 = .197, Nagelkerke R^2 change = .036, X^2 (7, N = 450) = 14.320, p = .046), indicating the moderators as a set reliably distinguished between students who reported ethnic membership cost and those who had not, even after accounting for the set of controls and independent variable. Step four, however, showed the set of interaction terms was not statistically significant (Nagelkerke R^2 = .211, Nagelkerke R^2 change = .014, X^2 (7, N = 450) = 5.269, p = .627), indicating the interaction terms as a set did not reliably predict ethnic membership cost beyond a model run solely with the set of controls, the independent variable, and set of moderators.

The overall four step block model was statistically significant, X^2 (27, N = 450) = 77.190, p <.01), indicating the predictors as a whole reliably distinguished between students who reported an ethnic membership cost and those who had not. However, the variance accounted for is small, with Nagelkerke R^2 = .211. Overall, classification was unimpressive. On the basis of the set of control variables alone, correction classification rates were 46.8% for students with a reported ethnic membership cost and 46.8% for students who did not; the overall correct classification rate was 62.2%. The improvement to 66.9% with the addition of the independent variable, moderators, and interaction terms reflected success rates of 54.4% for students reporting an ethnic membership cost and 77.6% for students who did not. There was an improvement in the classification accuracy in terms of discriminating students with a reported ethnic membership cost as well students without ethnic membership cost.

Table XXIII also shows the unique predictive value of the independent variable, moderators, and interaction terms, with regression coefficients, standard errors, and odds ratios. Again, results revealed a main effect between perceptions of school climate and ethnic membership cost, (Beta = -.149, p = .001, OR = .861, CI = .788 - .941). Higher scores of perceptions of school climate were associated with a decreased probability of ethnic membership cost. Also, two ethnic identity moderators and one interaction term were significant predictors of ethnic membership cost. Higher scores of assimilationist beliefs were associated with a decreased probability of ethnic membership cost (Beta= -.097, p = .038, OR= .908, CI = .828 – .995) and so was students' adherence to oppressed minority beliefs (Beta= -.713, p = .019, OR= .490, CI = .270 – .888). The interaction between nationalist ideology and school climate significantly predicted ethnic membership cost (Beta = .106, p = .051, OR= 1.112, CI = 1.0 – 1.238). An illustration of this moderation effect is provided in Figure 27.

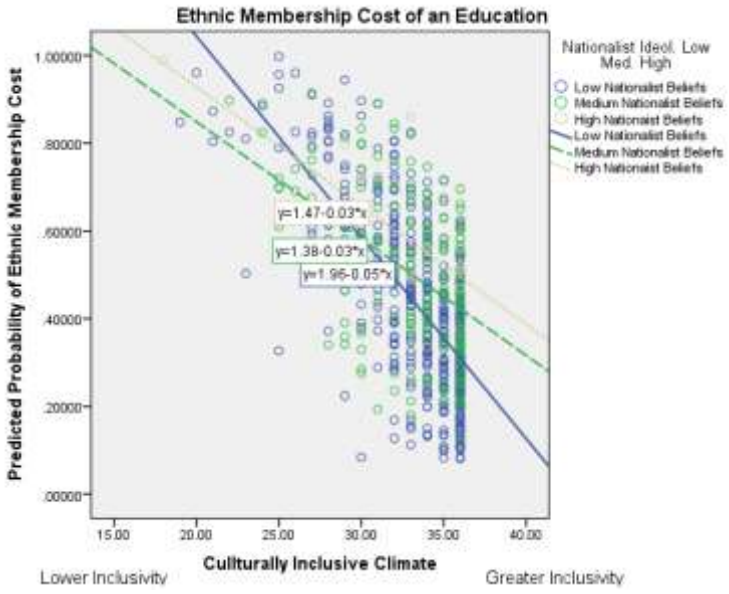


Figure 27. Illustration of the moderation effect of nationalist ideology on the relationship between cultural climate and ethnic membership cost of an education. Plot indicates the effect of perceptions of school climate on ethnic membership cost is dependent on the level of nationalist beliefs.

The effect of culturally inclusive perceptions of school climate on ethnic membership cost were dependent on students' level of nationalist beliefs; higher scores of perceptions of school climate were associated with decreased probability of ethnic membership cost, but this relationship was more pronounced for students with low nationalist beliefs than either students with high or medium scores of nationalist beliefs.

In terms of discrepancies between the imputed data and listwise deletion data, with imputed data cases, the significance of the interaction effect between school climate and nationalist ideology on ethnic membership cost became non-significant (from p= .051 to *p* =.338). Similarly, the assimilationist and oppressed minority moderators became less important,

but still marginally significant (from p= .038 to p = .086 and from p = .019 to p = .086, respectively). Additionally, the humanist moderator became an important predictor of ethnic membership cost (from p=.402 to p= .019). Generalizations should be limited to samples with similar characteristics and missingness and future studies should explore differences in the results with pooled data from ten imputations instead of five. For instance, the results of one of the five imputations showed the interaction between school climate and nationalist ideology was significant (p = .045). Thus, conclusions with pooled data from ten imputations rather than five may produce different conclusion or confirm the listwise deletion conclusions.

8. Summary of results. The majority of these students completed their degree, earned high grades, and sizeable amount of students reported some loss of connectedness to family, community, or their ethnic group membership while going to college. These results show main effects between perceptions of school climate and five of eight outcome variables (timely degree completion, increased academic aspirations and three culturally related outcomes; family, community, and ethnic membership ties). Finally, six outcome variables (cumulative college GPA, timely degree completion, degree completion within six years, increased aspirations, reduced aspirations, plus cost to ethnic group membership) were uniquely predicted by an interaction effect between school climate and at least one ethnic identity moderator. Some of the predictors did not reach the conventional level of statistical significance. Still, these unique interaction effects persisted after controlling for various factors, even if some of the effects were only marginally significant.

Chapter 6. Discussion

This chapter begins with a discussion of the research findings, followed by study delimitations and limitations, and concludes with study implications.

A. Research Findings and Discussion

Two overarching research questions were examined, (1) Is a culturally accepting/inclusive school climate related to positive academic outcomes? and (2) Does the effect of the cultural climate on student achievement vary by students' ethnic identity? These were informed by theories and research related to additive/subtractive schooling, the Multidimensional Model of Racial Identity, and familialismo ideology.

1. Research question one. My first research question asked, is a more culturally accepting school climate related to positive academic outcomes? In my study, more culturally accepting perceptions of school climate were related to five of eight outcomes. Specifically, after controlling for several factors (high school GPA, self-efficacy, self-esteem, public assistance, household income, parent homeownership, gender, mother foreign born, both parents foreign born, first generation college student, woman most responsible for care education level, man most responsible for care education level), more culturally accepting/inclusive school climates were related to (1) timely degree completion, (2) increased academic aspirations, (3) reporting less disconnection to family, (4) reporting less disconnection to their community, and (5) students reporting feeling less resented by members of their own ethnic group (see Table XXVII).

These findings support the need for universities and school counselors to give continued attention to cultural factors when assessing the impact of school climate on student achievement. Culturally accepting schools have the potential to (1) reduce the length of time to complete their

degree and therefore the amount of debt students accrue, (2) reduce the length of time students spend balancing student/life roles, (3) increase students' academic aspirations/motivation, and (4) nurture student achievement from a Latino perspective or in the context of the students' culture. Helping students to complete college in a more timely fashion enables students to build wealth earlier in life and enjoy the benefits of greater income and education earlier in life, such as better mental and physical mental health. In addition, this research shows the role schools play in helping students continue to feel part of their family, community, and ethnic group while going to college. Culturally affirming environments that support Latino students who feel the need to balance the demands between school and family responsibilities, may reduce students' stress level related to role strain. These results suggest a need for future research to examine if timely completion of college helps students maintain connections to their family, community, and ethnic group. Importantly, if institutions increasingly enroll and graduate Latinos who are disconnected from networks with other Latinos, then schooling becomes a subtractive system (Valenzuela, 1999) whereby resources and assets are removed from families, communities, and ethnic groups which, perhaps, can most benefit from role models/mentors.

For the most part, these findings align with the literature regarding the impact of school climate on student achievement. That is, the majority of the research shows school climate is related to outcomes like timely completion, increased sense of academic efficacy, motivation, enhanced learning, but not GPA. Where my research does not align well is with Valenzuela's theory of additive schooling which suggests that a culturally inclusive environment is necessary for engagement and persistence. In this study, the cultural climate was only related to timely completion not completion within six years. Still, these findings were not surprising because the sample was comprised of high achieving students and because previous research with the NLSF

showed the cultural climate was not related to departure through sophomore year. On the other hand, the findings from this study do align with Valenzuela's theory and other qualitative researchers regarding the impact the cultural climate can have on family, community, and ethnic group connectedness. Up until now I have not found quantitative research that looks at student achievement from a Latino perspective and that examines the impact of the cultural climate on student achievement from a Latino perspective. In the future, it would be interesting to learn to what extent students complete college in a timely fashion and at the same time report feeling close to family, community, and their ethnic group or to what extent students earn high grades while maintaining strong family, community, ethnic group ties.

2. Research question two. My second overarching research question asked, does the effect of the cultural climate on student achievement depend on students' ethnic identity? For the most part, the effect of the cultural climate on student achievement varied by students' ethnic identity. To examine this question more in-depth, I proposed eight sub-hypotheses about which kind of students might benefit most from a culturally accepting climate based on seven dimensions of ethnic identity. Table XXIV provides a comparison between the proposed sub hypotheses and the observed effects.

As displayed in Table XXIV, I proposed that perceptions of a more culturally inclusive school climate would be related with more positive outcomes under seven different conditions (*H2-H8*):

TABLE XXIV: COMPARISON BETWEEN PROPOSED SUB-HYPOTHESES AND OBSERVED INTERACTION EFFECTS

Proposed Interactions Sub Hypotheses ($H_2 – H_8$)	**Sub Hypotheses Supported/Rejected**	**Observed Results**
More culturally inclusive perceptions of school climate are associated with positive academic outcomes when…		*More culturally inclusive perceptions of school climate were associated* with…*
H_2: centrality is high.	Partially Supported/Rejected	Greater odds of increased academic aspirations when centrality was high and increased odds of degree completion within six years when centrality was low.
H_3: private regard is low	Supported	Increased odds of degree completion within six years when private regard was low.
H_4: nationalist ideology is high	Rejected	Decreased odds of reporting feeling resented from own ethnic membership when nationalist ideology was low.
H_5: humanist ideology is low	Supported	Greater odds of increased academic aspirations when humanist ideology was low.
H_6: assimilationist ideology is low	Rejected	Higher cumulative GPA's and increased odds of timely degree completion when assimilationist ideology was high.
H_7: students adhere to an oppressed minority ideology	Supported	Decreased odds of reduced academic aspirations and feeling less part of the family, when students adhered to an oppressed minority ideology.
H_8: familialismo ideology is high.	Rejected	Increased odds of timely degree completion and completion within six years, when familialismo ideology was low.

H_2 – Students' ethnicity was more central to their identification (centrality is high).

This sub-hypothesis was partially supported depending on the outcome in question. I terms of increased aspirations, perceptions of a more culturally accepting school climate tended to be more beneficial among students who prefer to identify as Latino (high centrality). This means,

students who are more likely to identify as being Latino (high centrality) may rely more heavily on the cultural climate for increased sense of academic motivation. Some research suggests students high in centrality more easily detect racial incongruence in their environment (Castillo et al., 2006), so it would not be surprising that some students' aspirations may be influenced more strongly by the cultural climate than others.

In terms of degree completion (within six years), perceptions of a more culturally inclusive climate tended to be more beneficial for students low in centrality or who prefer to identify as American. In contrast, for students whose centrality was high, perceptions of greater inclusivity tended to be negatively related to degree completion (within six years). This was in direct contrast to my proposed sub-hypothesis. More specifically, culturally affirming or inclusive learning environments may be more important for students with a greater desire to belong to mainstream culture than students who identify more with their own ethnic group (high centrality). Research suggests school climates are related to students' overall sense of belonging and consequently their persistence (Castillo et al., 2006; Freeman, Anderman & Jensen, 2007; Valenzuela, 1999). In my study, this was only marginally supported for Latinos whose ethnicity was less central to their identity or who prefer to identify as American. In fact, students with high centrality fared marginally worse under conditions of greater inclusivity. This finding might partially be explained by Operario and Fiske's (2001) research about how students with high centrality were more vulnerable to subtle forms of discrimination than explicit forms. Future research might be able to tease out the effects of subtle versus explicit forms of cultural acceptance on student achievement by ethnic identity.

Overall the findings regarding this sub hypothesis shows the effect of the cultural climate on student achievement varies by ethnic identity, and by the achievement outcome in question.

Neither the cultural climate nor centrality alone predicted increased aspirations. However, when the cultural climate and students' ethnic centrality were combined, students' increased aspirations were predicted. Neither the cultural climate nor centrality alone predicted degree completion within six years. However, when the cultural climate and students' ethnic centrality were combined, students' degree completion (within six years) was marginally predicted. Programs aimed at improving student achievement may need to pay attention to the cultural aspects of the climate, the students' ethnic identity, as well as the intended goal of the program.

H_3 – Students held more negative perceptions of their own ethnic group (private regard is low).

This sub-hypothesis was marginally supported for one of the achievement outcome variables. A more culturally accepting environment tended to be most beneficial for students who held more negative views of their own ethnic group (or low private regard) than students with high regard for their ethnic group – in terms of degree completion (within six years). Massey and Fischer (2005) found that low private regard was associated with fewer hours of studying and consequently lower grades. However, when students had at least one diverse instructor, this relationship weakened. Perhaps, high school students with negative views of their own ethnic group who enroll into a culturally accepting college campus may come to perceive their ethnic group more positively and/or maybe experience an increased sense of belonging or affirmation, different from their previous schooling experience. Neither the cultural climate nor centrality alone predicted degree completion within six years. However, when the cultural climate and students' ethnic private regard were combined, students' degree completion (within six years) was marginally predicted.

H_4 – Students had a high preference for Latino environments (nationalist beliefs are high).

This sub-hypothesis was rejected. Actually, a more culturally inclusive environment tended to be more beneficial for students with low preference for Latino environments than students with high nationalist beliefs– in terms of reporting less resentment from their ethnic group for going to college. Students' nationalist beliefs alone were not related to reporting feeling resented by members of their ethnic group for going to college. When the cultural climate and students' nationalist beliefs were combined, however, students' feeling resented by other Latinos was marginally predicted. So, students with low nationalist beliefs and high nationalist beliefs did not differ significantly in terms of feeling resented by their ethnic group. However, under conditions of lower inclusivity students with low nationalist beliefs were more likely to report feeling resented. That is, students with a lower preference for Latino environments are at a greater risk for subtractive schooling or loosing ties to their ethnic group possibly because they place less emphasis on strengthening/maintaining those ties, but culturally responsive schools may reduce this risk. It is possible that some of these students have an increased preference for the mainstream culture at the start of college and with a culturally affirming environment they might have an increased interest in diversity.

H_5 – Students had a low preference for interracial dating (humanist beliefs are low).

This sub-hypothesis was supported for one achievement outcome variable. A more culturally accepting environment was most beneficial for students with low humanist beliefs – in terms of increased aspirations. The research on the relationship between humanist beliefs and student achievement is limited. In one study, humanist beliefs were related to grades earned among a sample of African American students enrolled in predominately White institutions, but not those

enrolled in Historically Black Colleges and Universities (Nasim, Roberts, Harrell, & Young, 2005). In this study, Latino students' humanist beliefs alone were not related to increased aspirations, but it became important in the context of cultural school climate. Specifically, a culturally inclusive climate appeared to be less important for students high in humanist beliefs (more open to interracial dating), perhaps because issues around race/ethnicity are less relevant to these students' everyday interactions, environmental assessments, achievement attitudes, or sense of belonging.

H_6 – Students disagreed that if Latinos only did what was proper they could get ahead in life (low assimilationist beliefs).

This sub-hypothesis was rejected. Actually, a more culturally inclusive environment was most beneficial for students who agreed that if Latinos only did what was proper they could get ahead in life compared to students with low assimilationist beliefs – in terms of earning higher grades and to a lesser extent – timely degree completion (within four years). As suspected, students' assimilationist beliefs alone were not related to grades earned or timely completion (Rivas-Drake & Mooney, 2009). However, students' beliefs become important in the context of their cultural school climate. That is, under conditions of lower inclusivity, students who more strongly believed that if Latinos only did what was proper they could get ahead had lower grades and less timely completion (within four years). This suggests that these students are more strongly affected by the cultural aspects of the school climate as it relates to the most commonly assessed/valued measures of achievement (GPA and timely degree completion). Maybe students with assimilationist beliefs have a greater desire to belong to mainstream culture. It also stands to reason that assimilationist beliefs result in students' relying more heavily on relationships and interactions within their school climate with respect to their earned grades and timely degree

completion. For other students, the cultural school climate may not be as relevant to their achievement attitudes or behaviors because they might rely more on internal or external factors outside of their school climate. In one study with the NLSF, Latino college students with an assimilationist profile participated in extracurricular activities at a lower rate than students with more race conscious profiles (Rivas-Drake & Mooney, 2009). It is possible that students with higher assimilationist beliefs experience a sense of belonging differently from those with lower assimilations beliefs. Perhaps it is more about feeling accepted (a more passive sense of belonging) than being a part of the climate (a more active sense of belonging). Thus, differences in the impact of the cultural climate on student achievement may depend partially on this nuanced difference of belonging or students' assimilationist beliefs.

H_7 – Students believed that Latinos and African Americans were similarly marginalized/oppressed by society (oppressed minority beliefs).

This sub-hypothesis was supported for two achievement outcome variables. Perceptions of a more culturally inclusive climate was most beneficial for students with a marginalized sense of identity than students who did not adhere to oppressed beliefs – in terms of a tendency to report less disconnection to family and – in terms of reporting less reduced academic aspirations. In terms of predicting connection to family, the cultural climate was important, and to a lesser extent so are students' oppressed beliefs. Under conditions of greater cultural inclusivity, both students who adhere and do not adhere to a marginalized sense of identity report less disconnection to family than under conditions of lower inclusivity. However, greater inclusivity tends to be more impactful for students with a marginalized sense of identity (students' belief that Latinos and African Americans are similarly marginalized by society). Maybe students with a marginalized sense of identity felt more role strain at the start of college than students without

a marginalized sense of identity and subsequently the cultural climate had a greater impact on their student/family role strain.

In terms of predicting reduced aspirations, neither the cultural climate nor students' oppressed beliefs alone predicted students' reduced aspirations, but together they became important. Under conditions of greater inclusivity students with a marginalized sense of identity have less reduced aspirations than students who do not agree Latinos and African Americans are similarly marginalized by society. Perhaps, for these students a culturally inclusive climate started to change their views about blocked opportunities into more encouraging views about opportunities, which may have shielded them from having their aspirations reduced. As mentioned earlier, Rivas-Drake and Mooney (2009) found that Latino students from the NLSF data set who held more critical views about blocked opportunities were more actively involved in extracurricular activities. Conceivably students with more critical views of oppression find it necessary to become more involved on campus and consequently heightens students' sense of agency, including feeling better about their opportunities and aspirations. Interestingly, there was an opposite effect for students who did not agree Latinos and African Americans are similarly marginalized. Under conditions of greater inclusivity, students without a marginalized sense of identity reported more reduced aspirations than students with a marginalized identity.

In at least one qualitative study, Latino college students enrolled at predominantly White universities who also previously attended predominantly white high schools reported at the start of college a general tendency to relate more with the majority culture. In addition, these students generally had unexamined ethnic identities at the start of college, but by year two reported feeling more conflicted about their sense of belonging and ethnic identity (Torres, 2003). The effect of having diversity in their school environment, even though the college was

predominantly White, presented these students with a dilemma of feeling like an outsider of Latino groups or like other Latinos were more culturally Latino than they were. These students reported feeling more Latino in high school because they were one of few Latinos, and because their White peers viewed them as Latino. These students also tended to base their sense of being Latino more on their parents' geographic heritage than language, customs, or experiences. It is possible that for some students a culturally inclusive climate may provide students with a dilemma of trying to more critically understand their own ethnic identity and the types of experiences that truly exist across racial/ethnic groups, whereas in the past they may not have thought about this issue. Overall, this finding suggests that for some Latino students a culturally accepting or non-discriminatory learning environment may not be enough, in terms of preventing reduced aspirations. Some students may need a more targeted pathway for exploring their ethnic identity, their culture/history, and/or sense of belonging.

Schools could consider providing safe and critical outlets for exploration and belonging, such as supporting Latino ethnic clubs, Latino studies/Latin American history classes, and/or inviting expert guest speakers onto campus to discuss topics of race/ ethnicity and identity development. Furthermore, future research should consider the effect students' high school cultural climate has on college achievement and the impact it has on students' ethnic identity over time and vice versa.

H_8 –Students placed more emphasis on family as a reason for trying in their studies (high familist/familialismo beliefs).

This sub-hypothesis was rejected. Actually, a more culturally accepting climate was helpful for both students with high and low familist beliefs, but most beneficial for students who placed little emphasis on family as a reason for trying in college–at least in terms of timely

degree completion and degree completion within six years. The cultural climate alone was only related to timely completion not completion within six years. Additionally, while students' familist beliefs alone were not related to either students' timely completion or their completion within six years, it was important in the context of their perceptions of the cultural school climate. This finding is different from the research reviewed which suggests students' familist beliefs have a direct relationship with students' intention to persist in college, and in some cases also related to fewer dropped courses, greater academic efficacy, and higher grade point averages (Esparza & Sanchez, 2008; Ojeda et al., 2011). At least for this study's sample of high achieving Latino students, familist beliefs alone were not significant predictors of college completion. Still, under conditions of lower inclusivity, it appears students with high familist beliefs have a greater probability of degree completion (four and six years) than students who place little emphasis on family as a reason for trying in college.

As a result, this finding suggests some students rely more heavily on the cultural or relational aspects of their environment and for others the school climate is not as important as they rely more heavily on their family for maintaining focus in school. Consequently, the cultural climate may have a greater impact on achievement for those who rely more heavily on school climate factors and have less of an impact for those who rely more heavily on factors outside of school when it comes to reasons for trying in their college studies.

3. Summary of discussion. In general, a culturally inclusive/accepting learning environment may be more important for Latinos: (1) who identify more as American (low centrality), (2) who hold more negative perceptions of their own ethnic group (low private regard), (3) who believe that if Latinos only do what is proper Latinos could get ahead (high assimilationist beliefs), (4) who have lower preference for Latino environments and interracial

dating (low nationalist and humanist beliefs), and (5) who place little emphasis on family as a reason for trying in their studies (low familist beliefs). In other cases or depending on the outcome in question, a more culturally inclusive climate may be more beneficial for students who prefer to identify as Latino (high centrality) or who believe Latinos and African Americans are oppressed/marginalized by society (oppressed minority beliefs). Some of the findings were only marginally significant.

Overall, these results support the emerging trend in educational research of considering ethnic identity and cultural factors of school climate to explain minority students' achievement. Furthermore, these findings highlight the importance of including ethnic identity factors *in combination* with cultural aspects of school climate in studies explaining Latinos' student achievement. This study also shows the usefulness of measuring ethnic identity from a multi-dimensional perspective, measuring cultural aspects of school climate, and measuring academic outcomes from a Latino perspective. Finally, this study supports the need to develop targeted initiatives aimed at improving student achievement for a range of Latino students because depending on the outcome in question and/or students' unique dimensions of ethnic identity, some students stand to benefit more from a culturally inclusive learning environments than others. Some students may rely more heavily on cultural aspects of the learning environment to maintain focus, persistence, motivation, and balance student/family roles. Some may rely more heavily on internal factors or external factors outside of school. Perhaps, social workers can create or facilitate spaces for students to explore their ethnic identity, affirm their experiences, assess how their ethnic identity affects their everyday interactions, and help students find a healthy balance between mainstream values and Latino values.

B. Delimitations and Limitations

This study builds on previous work that has identified aspects of ethnic identity and racial climate as predictors of academic outcomes. A strength of this study is that it examines the influence of multiple dimensions of ethnic identity on both perceptions of the racial climate and multiple academic outcomes. There are at least two delimitations of this study. First, only the Latino sample from the NLSF data is utilized. Secondly, I am limiting the scope of this study to two types of predictor variables; ethnic identity dimensions and perceptions of the cultural inclusiveness of the school climate.

One limitation related to the generalizability of this study relates to the sample. The NLSF sample included Latino college students from diverse socioeconomic backgrounds, but a sizeable amount were from households with incomes greater than $75,000. Also, this sample comprised of college students enrolled at highly selective universities and predominantly White institutions, so the generalizability of this study to all Latino college students cannot be established. It would be helpful and essential to examine the extent to which ethnic identity moderates the relationship between perceptions of school climate and academic outcomes among Latinos enrolled in less selective colleges and universities. Even so, this study adds to the body of literature regarding Latinos experiences in selective, predominately White colleges.

Another limitation of this sample has to do with missing data. Missing data was handled with listwise deletion, which reduced the sample size. As a consequence, this may have caused a response bias where generalizability of these results should be limited to the characteristics of the final analytical sample size. In order to reduce this concern, I reported the results with missing data and imputed data. The discrepancies were not great. The utilization of secondary data limits how the data can be used for the purpose of this study. Firstly, the source of this data

includes 917 students from 28 institutions, so some students are from the same school which means variance in academic outcomes may be in part to the differences that exist between schools. However, this study does not control for nesting effects because the codebook for the data does not provide institutional identifiers. Although, the scatterplots of the outcome residuals against the respondents' case ID were plotted and suggested the error estimates were not systematically grouped, future research should take into account a possible nesting effect.

Another limitation related to the use of secondary data is related to instrumentation/measurement. For example, only the culturally inclusive aspect of the school climate will be examined because the original study does not include adequate measures for other aspects of an additive climate like authentic caring relationships and a curriculum that emphasizes social responsibility. To increase the validity of the measures I conducted a face validity check by comparing the operational definitions of my constructs in the literature to the available items in the secondary data to utilize items that closely align with the literature. Also, whenever possible multi-item measures from the NLSF that have been used in other studies were used (i.e. private regard and cultural climate). The few multi-item measures utilized produced low Cronbach reliability coefficients, but these measures have few items which may partially explain the lower alphas. Additionally, the majority of the variables are measured with single items. Reliability and validity of single item measures tend to be weak. Some constructs may be comprised of multiple dimensions, but single item measures may not adequately measure the several dimensions. Nevertheless, utilizing secondary data limits analyses to the available measures.

C. Implications

This study shows the usefulness of measuring ethnic identity from a multi-dimensional perspective, measuring cultural aspects of school climate, and measuring academic outcomes from a multicultural perspective with respect to understanding student achievement among Latino college students. This study also provides support for continued investigation into the extent Latinos perform well academically (i.e. high grade point average or timely completion) relataive to Latinos definition of what it means to be educated – obtaining a formal education and maintaining strong relatinships with the family, community, and ethnic group.

This study does not take into account that ethnic identity can change over time. This study mainly focuses on the respondents' ethnic identity prior to start of college. It would be helpful to examine changes in ethnic identity over time in relation with the school climate and academic outcomes. Additionally, this study solely relied on quantitative data. It would be helpful to examine the schooling experiences of Latinos through multiple methods. Qualitative data could provide a fuller picture of Latinos experiences as well as provide insight into other relevant issues related to their attitudes towards achievement and their perceptions of a culturally affirming school climate.

Moreover, this study has implications for the social work curriculum and for programs/policies aimed at improving Latinos educational attainment, especially for instiutions increasingly serving Latinos. This study helps inform more targeted initiatives aimed at improving Latinos student achievement. Social workers, in particular, are well-positioned to impact student success through the various titles they hold in the community from mental health professionals, community organizers, public officials, and even as administrators, researchers, faculty, and staff in colleges and universities.

Social work mental health professionals can help students at the micro level by seeking to understand Latinos attitudes toward achievement and identifying strategies for academic success that "starts where the client is" and encouraging institutions to assess achievement in culturally affirming ways. In this way, social workers can provide a respectful place for clients to explore how their ethnic identity manifests itself in their life from balancing competing school and family obligations-to-increasing their sense of belonging, motivation, or persistence in the schooling process. Otherwise, institutions become a subtractive system in society that increasingly graduates Latino professionals who are disconnected from their family, community, and ethnic group. This means schools may inadvertently subtract resources and knowledge from the very same families, communities, and ethnic groups they intend to serve. Additionally, resources and relationships are subtracted from those communities who may stand to benefit the most from those relationships. Social workers could utilize ethnic identity and cultural climate surveys to target interventions more effectively given students' ethnic identity and achievement goal. Surveys could also be used to identify those students seemingly most vulnerable to subtractive schooling practices, such as students with low familist beliefs who might come to rely more heavily on support systems outside of their home. In addition, surveys could be used to identify occurrences/situations of subtractive and additive schooling practices and policies with the aim of improving the learning environment and student achievement.

Social work community organizers and public officials can work with key stakeholders at the macro level to organize support for the creation of social policies and programs that advance students' educational attainment, from pre-school through higher education, in a culturally responsive manner. For instance, social workers could organize support for (1) educational curricula that promotes social responsibility and fosters a broader understanding of cultural

differences, which may help reduce students' loss of connection to family and increase their belonging, (2) employment positions that are designed to promote equitable and culturally affirming/responsive services, which may help Latino students complete their degree in a more timely fashion, and (3) employee/student trainings to increase awareness of the values and beliefs of clients and that also help service providers apply strategies/skills that are culturally responsive/effective.

Social workers working as university personnel (i.e., administrators, researchers, faculty, counselors, and staff) can support social work educational programs that have missions, competencies, curricula, and practicums that are responsive to individual and cultural differences. Prospective college students would be well-advised by college Admissions recruiters and high school counselors to consider the cultural fit of the school climate when trying to choose a college. Again, students and their advisors can utilize College/University mission statements and curriculum information to make judgements about the cultural fit of the school climate, especially when students show a greater desire to belong to mainstream culture or demonstrate less reliance on family as a reason for trying in school. Additionally, social work educational programs that prepare students for direct practice can also help students develop the necessary skills to become advocates for multicultural or culturally responsive policies and programs. If social work program are to effectively prepare students to meet the needs of the Latino population, they must establish relationships with broader community based programs for broader field/practicum learning experiences and programs must be taught by faculty with personal knowledge of the area of study and population. This will require leadership and innovation in the recruitment and retention of the teaching workforce.

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APPENDICES

APPENDIX A

Human Subjects Protocol

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Notice of Determination of Human Subject Research

July 26, 2013

20130760-76352-1

20130760-76352-1

Linda Campos-Moreira, MSW, MEd
Jane Addams School of Social Work
1040 W Harrison Street
M/C 309
Chicago, IL 60612
Phone: (312) 996-7096 / Fax: (312) 996-2770

RE: **Protocol # 2013-0760**
Latino College Students Attending Highly Selective Universities: The Role of Ethnic Identity on Perceptions of School Climate and Academic Outcomes

Dear Ms. Campos-Moreira:

The UIC Office for the Protection of Research Subjects received your "Determination of Whether an Activity Represents Human Subjects Research" application, and has determined that this activity **DOES NOT meet the definition of human subject research** as defined by 45 CFR 46.102(f).

You may conduct your activity without further submission to the IRB.

If this activity is used in conjunction with any other research involving human subjects or if it is modified in any way, it must be re-reviewed by OPRS staff.

APPENDIX B

TABLE I- SUMMARY OF MEASURES

	Multi-item Measure	Cronbach's Alpha	Number of Items
	Academic Outcome		
1.	Cumulative College GPA		1
2.	Degree Completion within Four Years		1
3.	Degree Completion within Six Years		1
4.	Increased Academic Aspirations		1
5.	Lowered Academic Aspirations		1
6.	Familial Cost of Being Educated		1
7.	Communal Cost of Being Educated		1
8.	Ethnic Membership Cost of Being Educated		1
	Control Variables		
1.	High School GPA		1
2.	Self-Efficacy		1
3.	Self-Esteem		1
4.	Public Assistance		1
5.	Household Income		1
6.	Parent Homeownership		1
7.	Gender		1
8.	Mother Foreign Born		1
9.	Both Parents Foreign Born		1
10.	First Generation College Student		1
11.	Woman most responsible for Care Education		1
12.	Man most responsible for Care Education		1
	Independent Variable: School Climate		
1.	Cultural Climate	.75	9
	Moderator Variable: Ethnic Identity		
1.	Ethnic Identity Centrality		1
2.	Ethnic Identity Private Regard	.63	3
	Ethnic Identity Ideology		
3.	Nationalist Ideology		1
4.	Humanist Ideology		1
5.	Assimilationist Ideology		1
6.	Oppressed Minority Ideology		1
7.	Familialismo Ideology		1

TABLE II- DESCRIPTION OF CONTROL MEASURES

Dichotomous Control Variables		
Recipient of public assistance at least once since age 6 (0=no, 1=yes)	Parent homeownership (0=No, 1= Yes)	Biological or adoptive mother foreign born (0=no, 1=yes)
Gender: Male (0=No, Female, 1=Yes, Male)	First-generation college student (0=no, at least one parent some college, 1=yes, both parents no college)	Both biological or adoptive parents foreign born (0=no, 1=yes)
Continuous Control Variables		
High school grade point average on a four-point graded scale 0 – 4, higher the score the greater the achievement.	Self-esteem: Ten item summed scale score. 0 – 40 The higher the score the greater the esteem or agreement to items such as "I feel that I am a person of worth equal to others" and "I am able to do things as well as most people". Cronbach's alpha=.855 (Massey et al.,) (entire sample)	Self-efficacy: Six item summed scale score. 0 – 24 The higher the score the greater the efficacy or agreement to items such as "I don't have control over the direction of my life" and "Every time I try to get ahead something stops me" Cronbach's alpha=.691 (Massey et al.,) (entire sample)
Annual household income 1= < $25,000, 2= $25,000-$34,9999, 3= $35,000-$49,999, 4= $50,000-74,999, 5= $75,000 +	Highest education level achieved my woman most responsible for student's care 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	Highest education level achieved by man most responsible for student's care 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 III- DESCRIPTION OF OUTCOME MEASURES

Self-reported Cumulative College GPA (4-point scale)	FAIL	Excellent
Average grades for courses completed by end of year four or last semester enrolled, not projected/predicted grades when possible (i.e. Fall 1999 - Spring 2003)	0 1 2 3 4	
Degree Completion Variables:		
1. Timey Degree Completion (within four years)	Yes	No
2. Degree Completion (within six years)	Yes	No
Change in Academic Aspirations year four:		
1. Increased academic aspirations between first semester in college (Wave 1) and last semester enrolled (Wave 2-5).	Yes	No
2. Lowered academic aspirations between first semester in college (Wave 1) and last semester enrolled (Wave 2-5).	Yes	No
	Disagree	Agree
Cost of Being Educated Variables:		
1 **Familial Cost of Being Educated** W5q45c-My going to college made me feel less part of my family (0=rated 0 on 0-10 scale ranging from totally disagree to totally agree; 1= rated 1 or more on 0-10 scale from totally disagree to totally agree)	0	1
2 **Communal Cost of Being Educated** W5q45d-My going to college made me an outsider in my home community (0=rated 0 on 0-10 scale ranging from totally disagree to totally agree; 1= rated 1 or more on 0-10 scale from totally disagree to totally agree)	0	1
3 **Ethnic Membership Cost of Being Educated** W5q45f-Other people of my race/ethnicity resent my going to college (0=rated 0 on 0-10 scale ranging from totally disagree to totally agree; 1= rated 1 or more on 0-10 scale from totally disagree to totally agree)	0	1

TABLE IV: DESCRIPTION OF INDEPENDENT VARIABLE MEASURES

	Climate of Cultural Inclusivity Scale: **NLSF Campus Racial Climate (reversed)** *How often, if ever,…*	Minimum Never	Maximum Often
1	W2q39- have students in your college classes ever made you feel uncomfortable or self-conscious because of your race or ethnicity? (R)	0	4
2	W2q40- have any of your college professors made you feel uncomfortable or self-conscious because of your race or ethnicity?(R)	0	4
3	W2q41- made to feel uncomfortable or self-conscious because of race or ethnicity by simply walking around campus?(R)	0	4
4	W2q43- have you heard derogatory remarks made by fellow students about your ethnic group?(R)	0	4
5	W2q44- have you heard derogatory remarks made by professors about your racial or ethnic group?(R)	0	4
6	W2q45- have you heard derogatory remarks made by other college staff about your racial or ethnic group?(R)	0	4
7	W2q48 have you felt you were given a bad grade by a professor because of your race or ethnicity?(R)	0	4
8	W2q49- have you felt you were discouraged by a professor from speaking out in class because of your race or ethnicity?(R)	0	4
9	W2q50-have you been discouraged from course of study by your advisor or professor?(R)	0	4
	Range of scale	0	36
	Cronbach's alpha		.75

R= Reverse coded

Table V: DESCRIPTION OF MODERATOR MEASURES

	Centrality Variable	American Important	Hispanic Important
1.	W1q143-Do you think it should be more important (for Hispanics or Latinos) to be 1) American, 2) both identities should be equally important, or 3) Hispanic?	1	3

	Private Regard Variable: NLSF Stereotype Internalization Scale	Minimum	Maximum	Rotated Factor
	Where would you rate Hispanics or Latinos on this scale, Where 1 means tends to be unintelligent, lazy, give up easily and 7 means tends to be intelligent, hardworking, tends to stick with it-?			1
1.	W1q97d- tends to be unintelligent –tends to be intelligent	0	6	.75
2.	W1q95d-tends to be lazy – tends to be hardworking	0	6	.77
3.	W1q101d-tends to give up easily – tends to stick with it until the end	0	6	.75
Range of scale		0	18	
Cronbach's alpha				.63

	Nationalist Variable	Strongly agree	Strongly disagree
1.	W1q147j-How much do you disagree or agree with the statement: Hispanics or Latinos should live in predominantly Latino neighborhoods.	0	4

	Humanist Variable	Strongly agree	Strongly disagree
1.	W1q147d- How much do you disagree or agree with the statement: Hispanic or Latino men should not date White women.	0	4

	Assimilationist Variable	Strongly disagree	Strongly agree
1.	W1q130- How much do you disagree or agree with the statement: Any Hispanic or Latino who is educated and do what is "proper" will be accepted and eventually get ahead.	0	10

	Oppressed Minority Ideology Variable: Constructed from two NLSF items	Not Oppressed	Oppressed
1.	Respondent agrees that both a Latino and African American won't get a job no matter how hard he/she tries when two qualified people are considered for the same job and the other person is White.	0	1

	Familialismo Ideology Variable	No importance	Utmost importance
1.	W2q36c- *In thinking about how to try in your college studies, how important for you is the following consideration: My f*amily making sacrifices for my education	0	10

APPENDIX C

TABLE I- VISUAL AID OF FINAL MULTIVARIATE MODELS

Models[a]:	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**	**M7**	**M8**
Dependent Variables[b]:	**D1**	**D2**	**D3**	**D4**	**D5**	**D6**	**D7**	**D8**
Step 1/block 1: Control Variables								
Student Demographics								
High School GPA	X*	X*	X*	X	X	X	X	X
Self-Esteem	X	X	X	X*	X	X*	X*	X*
Self-Efficacy	X	X	X	X*	X	X*	X*	X*
Public Assistance	X*	X*	X*	X	X	X*	X*	X
Household Income	X*	X*	X*	X	X	X*	X*	X*
Parent Homeownership	X*	X*	X*	X	X	X	X	X
Gender	X	X*	X*	X	X*	X*	X*	X
Foreign Born	-	-	-	-	-	-	-	-
Mother Foreign Born	X	X	X	X*	X*	X	X	X
Father Foreign Born	-	-	-	-	-	-	-	-
Both Parents Foreign Born	X*	X	X	X	X	X*	X*	X
First Generation College Student	X*	X*	X*	X	X*	X*	X*	X*
Woman most responsible Education	X*	X*	X*	X	X*	X	X*	X*
Man most responsible Education	X*	X*	X*	X	X*	X*	X*	X*
Institutional Variable								
Type of College Attended	-	-	-	-	-	-	-	-
Step 2/block 2: IVs								
Culturally Inclusive School Climate	X	X	X	X	X	X	X	X
Step 3/block 3: MVs								
Ethnic Identity								
Centrality	X	X	X	X	X	X	X	X
Private Regard	X	X	X	X	X	X	X	X
Nationalist	X	X	X	X	X	X	X	X
Humanist	X	X	X	X	X	X	X	X
Assimilationist	X	X	X	X	X	X	X	X
Oppressed Minority	X	X	X	X	X	X	X	X
Familialismo	X	X	X	X	X	X	X	X
Step 4/block 4: Interaction Terms								
Culturally Inclusive Climate x Centrality	X	X	X	X	X	X	X	X
Culturally Inclusive Climate x Private Regard	X	X	X	X	X	X	X	X
Culturally Inclusive Climate. x Nationalist	X	X	X	X	X	X	X	X
Culturally Inclusive Climate x Humanist	X	X	X	X	X	X	X	X
Culturally Inclusive Climate x Assimilationist	X	X	X	X	X	X	X	X
Culturally Inclusive Climate x Oppressed	X	X	X	X	X	X	X	X
Culturally Inclusive Climate x Familialismo	X	X	X	X	X	X	X	X

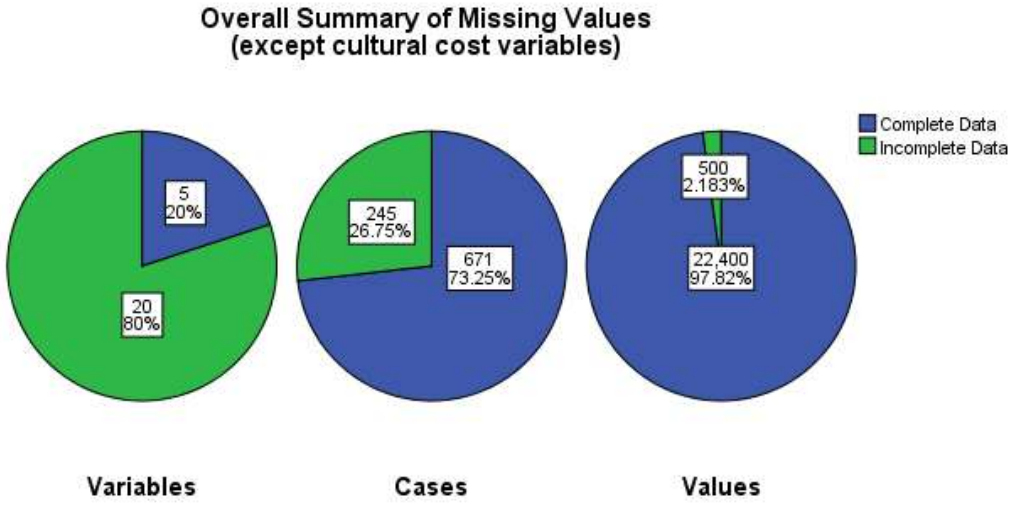
*Indicates a significant bivariate relationship with dependent variable.

[a]M1 – M8 = Models 1 through 8.

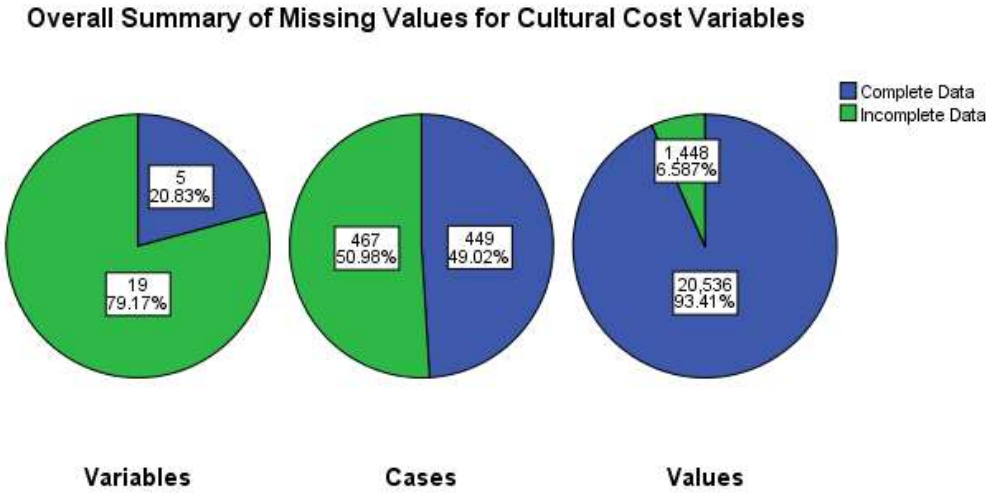
[b]D1 = GPA; D2 = Degree Completion (four years.); D3 = Degree Completion (six years.);
D4 = Increased Academic Aspirations; D5 = Reduced Academic Aspirations; D6 = Familial Cost of an Education; D7 = Communal Cost of an Education; D8 = Ethnic Membership Cost of an Education.

APPENDIX D

Overall Summary of Missing Data by Variables Cases, and Values and Little's MCAR Test Results



Little's MCAR test: Chi-Square = 1573.856, DF= 1370, Sig. = .0

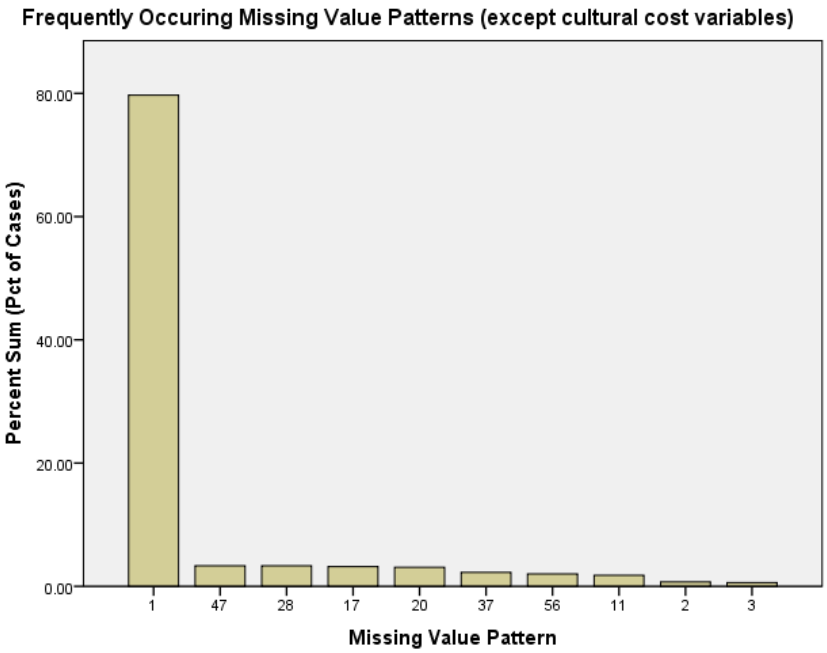


Little's MCAR test: Chi-Square = 1460.263, DF= 1348, Sig. = .017

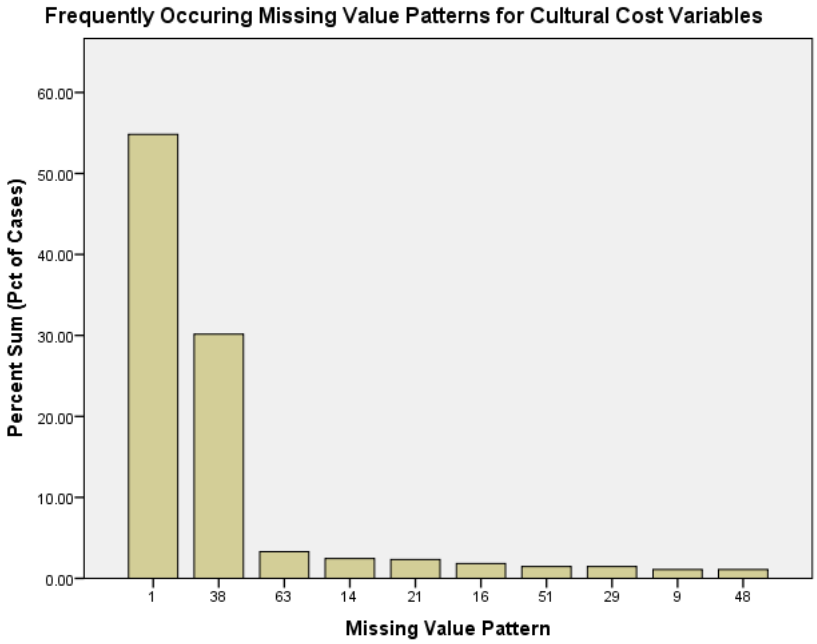
Missing Univariate Statistics for the Controls, Independent Variable, Moderators, and Outcomes.

Variables	N	Missing		No. of Extremes[a]	
		Count	Percent	Low	High
Control Variables					
High school GPA	876	40	4.4	11	0
Self-esteem	916	0	.0	13	0
Self-efficacy	916	0	.0	8	0
Public assistance	907	9	1.0	.	.
Household income	875	41	4.5	0	0
Parent home ownership	916	0	.0	.	.
Gender	916	0	.0	0	0
Mom foreign born	913	3	.3	0	0
Both parents foreign born	901	15	1.6	0	0
First generation college student	869	47	5.1	0	0
Woman most responsible for care education level	911	5	.5	0	0
Man most responsable for care education level	873	43	4.7	0	0
Independent Variable					
Inclusive school climate	863	53	5.8	37	0
Moderator Variables					
Centrality	906	10	1.1	.	.
Private regard	878	38	4.1	5	19
Nationalist	906	10	1.1	0	0
Humanist	907	9	1.0	9	0
Assimilationist	904	12	1.3	20	0
Oppressed minority	899	17	1.9	.	.
Familist	862	54	5.9	0	0
Outcome Variables					
Cumulative College GPA	889	27	2.9	52	4
Increased aspirations	857	59	6.4	0	0
Lowered aspirations	857	59	6.4	.	.
Degree completion (four years)	915	1	.1	.	.
Degree completion (six years)	915	1	.1	0	0
Familial cost	570	346	37.8	0	0
Communal cost	569	347	37.9	0	0
Ethnic membership cost	567	349	38.1	0	0

Frequently Occurring Missing Value Patterns

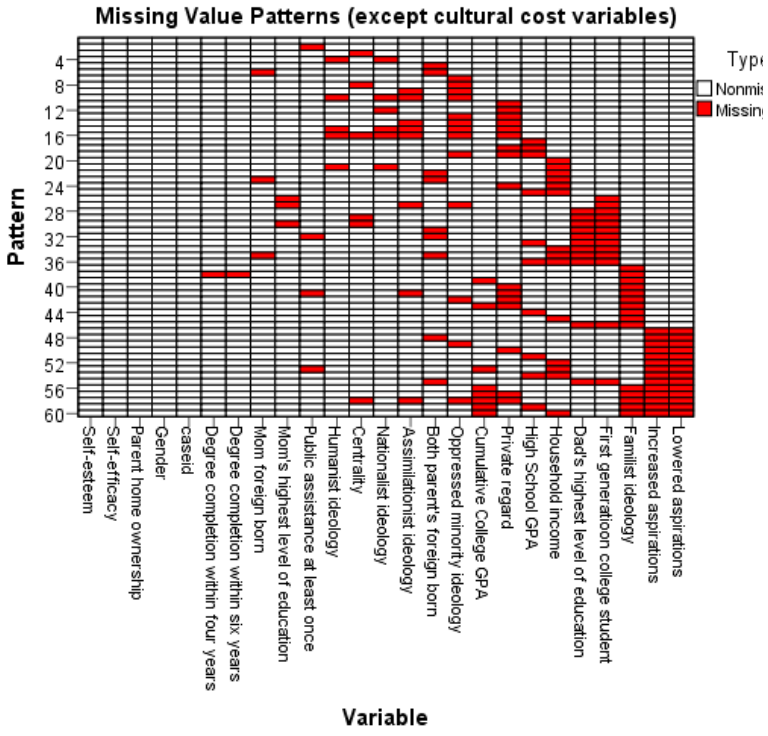


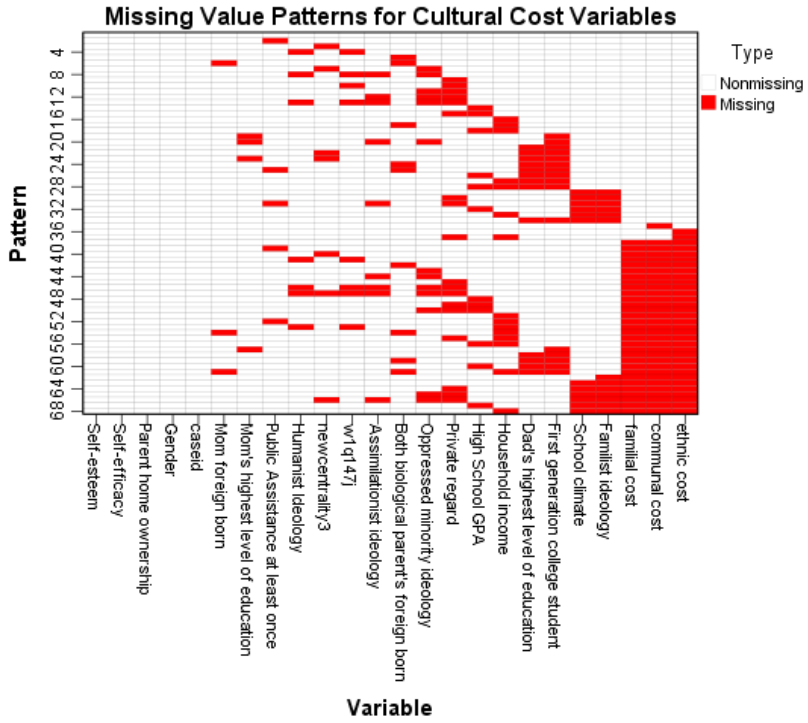
The 10 most frequently occurring patterns are shown in the chart.



The 10 most frequently occurring patterns are shown in the chart.

Overall Missing Value Patterns





Separate Variance *t*- Tests: Variables Whose Pattern of Missing May Be Influencing The Observed Values of Other Variables (excluding cultural cost variables)

Separate Variance t Tests for Models Without Cultural Cost Variables[a]

		Gender	Degree Completion (6 years)	Degree Completion (4 years)	Private Regard	Familist Ideology
Increased Aspirations	t	-1.9	4.1	4.2	-2.1	.5
	df	65.9	61.6	65.2	60.9	38.3
	P(2-tail)	.056	.000*	.000*	.042*	.609
	# Present	857	856	856	822	825
	# Missing	59	59	59	56	37
	Mean(Present)	.41	.8773	.6881	10.3662	7.05
	Mean(Missing)	.54	.6102	.4068	11.1607	6.76
Lowered Aspirations	t	-1.9	4.1	4.2	-2.1	.5
	df	65.9	61.6	65.2	60.9	38.3
	P(2-tail)	.056	.000*	.000*	.042*	.609
	# Present	857	856	856	822	825
	# Missing	59	59	59	56	37
	Mean(Present)	.41	.8773	.6881	10.3662	7.05
	Mean(Missing)	.54	.6102	.4068	11.1607	6.76
School Climate	t	-1.9	.6	1.9	-1.2	.
	df	58.3	56.1	56.4	49.5	.
	P(2-tail)	.061	.519	.057	.235	.
	# Present	863	863	863	832	862
	# Missing	53	52	52	46	0
	Mean(Present)	.41	.8621	.6779	10.3918	7.04
	Mean(Missing)	.55	.8269	.5385	10.8696	.
Familist Ideology	t	-2.1	.6	1.8	-1.1	.
	df	59.6	57.4	57.7	50.7	.
	P(2-tail)	.044*	.554	.071	.298	.
	# Present	862	862	862	831	862
	# Missing	54	53	53	47	0
	Mean(Present)	.41	.8619	.6775	10.3947	7.04
	Mean(Missing)	.56	.8302	.5472	10.8085	.

For each quantitative variable, pairs of groups are formed by indicator variables (present, missing).

[a]-Indicator variables with a p > .05 and less than 5% missing are not displayed.

* p<.05.

APPENDIX D (continued)

Separate Variance *t*- Tests: Variables Whose Pattern of Missing May Be Influencing The Observed Values of Other Variables

Separate Variance t Tests for Cultural Cost Models[a]

		Public Assistance at least Once	Household Income	Parent Home Ownership	Both Parent's Foreign Born	Familial Cost	Communal Cost	Familist Ideology
First Gen. College Stud.	t	-2.2	6.6	4.5	-.1	1.4	.7	-1.5
	df	47.7	48.0	48.9	42.6	35.9	35.9	41.1
	P(2-tail)	.032	.000*	.000*	.938	.171	.501	.136
	# Present	861	831	869	861	537	536	779
	# Missing	46	44	47	40	33	33	39
	Mean(Present)	.13	3.7485	.82	.3937	.5810	.5466	7.39
	Mean(Missing)	.28	2.3182	.49	.4000	.4545	.4848	8.05
Familial Cost	t	-.4	-1.8	-1.0	-1.4	.	.	-2.1
	df	702.6	685.1	759.2	704.0	.	.	644.8
	P(2-tail)	.679	.067	.306	.161	.	.	.037*
	# Present	565	549	570	561	570	569	520
	# Missing	342	326	346	340	0	0	298
	Mean(Present)	.14	3.6066	.80	.3761	.5737	.5431	7.28
	Mean(Missing)	.15	3.7945	.82	.4235	.	.	7.65
Communal Cost	t	-.4	-1.9	-1.1	-1.3	.	.	-2.2
	df	706.5	689.3	762.9	707.2	.	.	647.6
	P(2-tail)	.699	.064	.291	.178	.	.	.031*
	# Present	564	548	569	560	569	569	519
	# Missing	343	327	347	341	1	0	299
	Mean(Present)	.14	3.6058	.80	.3768	.5729	.5431	7.28
	Mean(Missing)	.15	3.7951	.82	.4223	1.0000	.	7.66
Ethnic Membership Cost	t	-.3	-1.7	-1.1	-1.5	-.3	-21.9	-2.2
	df	714.3	688.8	770.3	711.6	2.0	565.0	654.9
	P(2-tail)	.741	.086	.261	.130	.806	.000*	.030*
	# Present	562	547	567	558	567	566	517
	# Missing	345	328	349	343	3	3	301
	Mean(Present)	.14	3.6106	.80	.3746	.5732	.5406	7.28
	Mean(Missing)	.14	3.7866	.83	.4257	.6667	1.0000	7.65
School Climate	t	-.3	.0	.3	1.2	-2.9	-1.1	.
	df	56.8	54.5	58.1	59.2	18.9	18.2	.
	P(2-tail)	.779	.987	.794	.249	.009*	.287	.
	# Present	855	825	863	848	552	551	818
	# Missing	52	50	53	53	18	18	0
	Mean(Present)	.14	3.6764	.81	.3986	.5652	.5390	7.42
	Mean(Missing)	.15	3.6800	.79	.3208	.8333	.6667	.
Familist Ideology	t	-1.2	.4	.8	2.2	-1.3	.0	.
	df	114.2	112.3	118.2	120.9	59.6	58.6	.
	P(2-tail)	.221	.673	.433	.029*	.188	.964	.
	# Present	810	782	818	806	520	519	818
	# Missing	97	93	98	95	50	50	0
	Mean(Present)	.13	3.6841	.81	.4057	.5654	.5434	7.42
	Mean(Missing)	.19	3.6129	.78	.2947	.6600	.5400	.

a- Indicator variables with a p > .05 and with less than 5% missing are not displayed.
*p<.05

APPENDIX E

TABLE I- SUMMARY OF MULTICOLLINEARITY: CORRELATION COEFFICIENTS BETWEEN INDEPENDENT VARIALE AND MODERATOR VARIABLES.

	Cultural Climate	Centrality	Private Regard	Nationaist	Humanist	Assimilationist	Oppressed Minority	Familist
Cultural Climate	1	-.116**	-.026	-.112**	.133**	.085*	-.069*	-.084*
Centrality	-.116**	1	.068*	.126**	-.133**	-.082*	.071*	.074*
Private Regard	-.026	.068*	1	.021	-.025	.058	-.018	.080*
Nationalist	-.112**	.126**	.021	1	-.493**	-.048	.136**	.028
Humanist	.133**	-.133**	-.025	-.493**	1	.050	-.130**	-.003
Assimilationist	.085*	-.082*	.058	-.048	.050	1	-.071*	.016
Oppressed Minority	-.069*	.071*	-.018	.136**	-.130**	-.071*	1	.014
Familist	-.084*	.074*	.080*	.028	-.003	.016	.014	1

** p < .001; * p < .05

TABLE II- SUMMARY OF MULTICOLLINEARITY VIF AND TOLERANCE VALUES FOR THE CUMULATIVE COLLEGE GPA REGRESSION MODEL.

	Model 1 (Cumulative College GPA)	
Collinearity Statistics	Tolerance	VIF
High school GPA	.933	1.071
Self-Esteem	.554	1.804
Self-Efficacy	.539	1.856
Since 6: ever on public aid	.780	1.282
Household income	.603	1.659
Parent home ownership	.866	1.154
Sex	.938	1.066
Mother foreign born	.399	2.504
Both parents foreign born	.372	2.686
First generation college student	.493	2.030
Woman most responsible for care education level	.506	1.975
Man most responsible for care education level	.460	2.172
Culturally inclusive climate	.177	5.638
Centrality	.910	1.098
Private regard	.954	1.048
Nationalist Ideol.	.726	1.377
Humanist Ideol.	.731	1.368
Assimilationist Ideol.	.945	1.058
Oppressed Minority Ideol.	.922	1.085
Familist Ideol.	.926	1.080
SCxCentrality	.807	1.238
SCxPrivate regard	.926	1.079
SCxNationalist	.640	1.562
SCxHumanist	.668	1.497
SCxAssimilationist	.921	1.086
SCxoppressed	.180	5.551
SCxFamilist	.875	1.143

TABLE III- SUMMARY OF MULTICOLLINEARITY VIF AND TOLERANCE VALUES FOR THE DEGREE COMPLETION WITHIN SIX AND FOUR YEARS REGRESSION MODELS.

	Model 2 (Degree Completion Six Years)		Model 3 (Degree Completion Four Years)	
Collinearity Statistics	Tolerance	VIF		
High school GPA	.933	1.071	.933	1.071
Self-Esteem	.554	1.804	.554	1.804
Self-Efficacy	.539	1.856	.539	1.856
Since 6: ever on public aid	.780	1.282	.780	1.282
Household income	.603	1.659	.603	1.659
Parent home ownership	.866	1.154	.866	1.154
Sex	.938	1.066	.938	1.066
Mother foreign born	.399	2.504	.399	2.504
Both parents foreign born	.372	2.686	.372	2.686
First generation college student	.493	2.030	.493	2.030
Woman most responsible for care education level	.506	1.975	.506	1.975
Man most responsible for care education level	.460	2.172	.460	2.172
Culturally inclusive climate	.177	5.638	.177	5.638
Centrality	.910	1.098	.910	1.098
Private regard	.954	1.048	.954	1.048
Nationalist Ideol.	.726	1.377	.726	1.377
Humanist Ideol.	.731	1.368	.731	1.368
Assimilationist Ideol.	.945	1.058	.945	1.058
Oppressed Minority Ideol.	.922	1.085	.922	1.085
Familist Ideol.	.926	1.080	.926	1.080
SCxCentrality	.807	1.238	.807	1.238
SCxPrivate regard	.926	1.079	.926	1.079
SCxNationalist	.640	1.562	.640	1.562
SCxHumanist	.668	1.497	.668	1.497
SCxAssimilationist	.921	1.086	.921	1.086
SCxoppressed	.180	5.551	.180	5.551
SCxFamilist	.875	1.143	.875	1.143

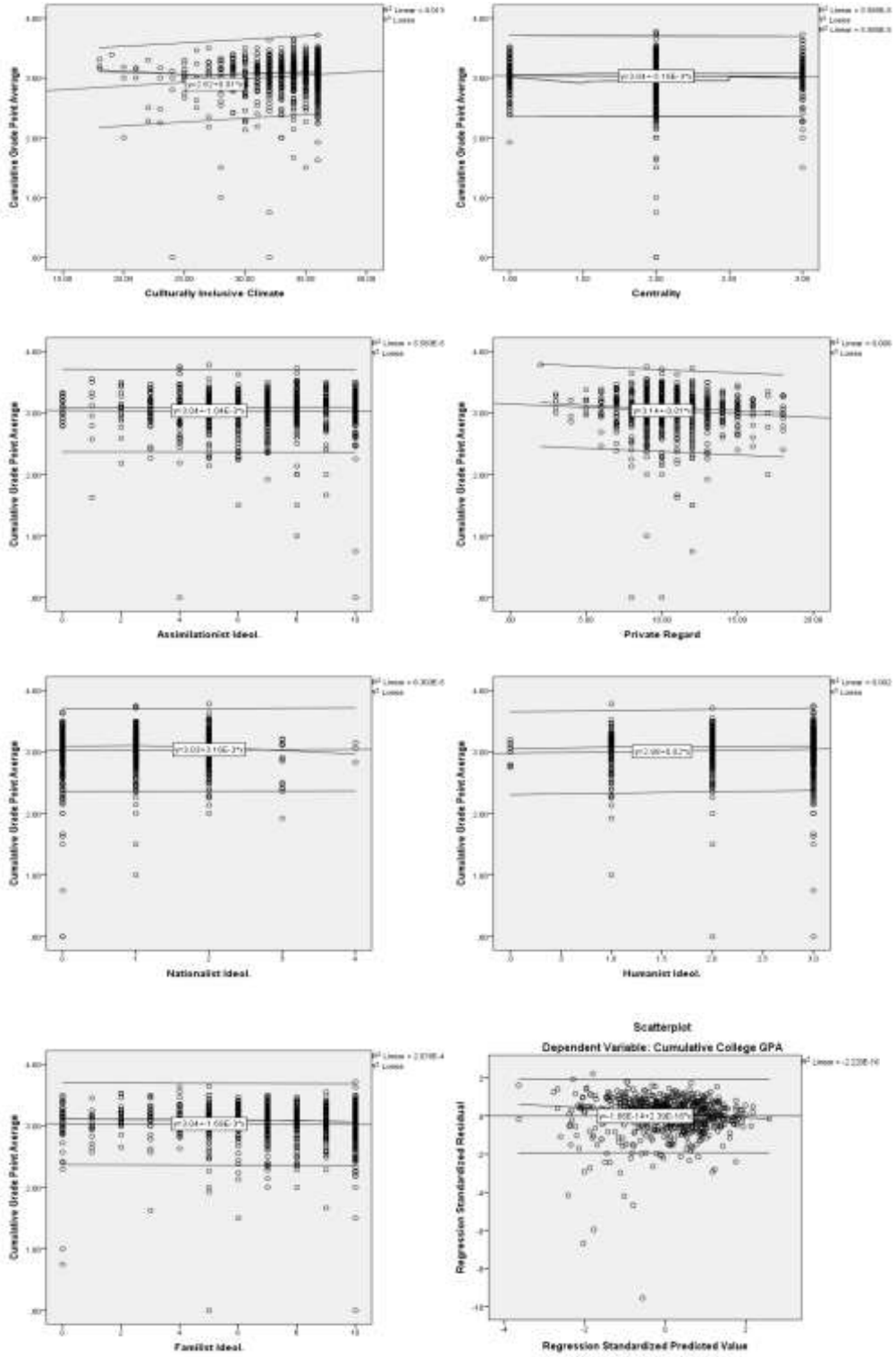
TABLE IV- SUMMARY OF MULTICOLLINEARITY VIF AND TOLERANCE VALUES FOR THE INCREASED AND LOWERED ASPIRATIONS REGRESSION MODELS.

	Model 4 (Increased Aspirations)		Model 5 (Lowered Aspirations)	
Collinearity Statistics	Tolerance	VIF	Tolerance	VIF
High school GPA	.931	1.074	.931	1.074
Self-Esteem	.569	1.758	.569	1.758
Self-Efficacy	.548	1.824	.548	1.824
Since 6: ever on public aid	.784	1.275	.784	1.275
Household income	.610	1.639	.610	1.639
Parent home ownership	.862	1.160	.862	1.160
Sex	.941	1.063	.941	1.063
Mother foreign born				
Both parents foreign born	.404	2.474	.404	2.474
First generation college student	.377	2.652	.377	2.652
Woman most responsible for care	.491	2.039	.491	2.039
education level	.502	1.991	.502	1.991
Man most responsible for care	.456	2.195	.456	2.195
education level	.168	5.936	.168	5.936
Culturally inclusive climate	.905	1.105	.905	1.105
Centrality	.948	1.055	.948	1.055
Private regard	.730	1.369	.730	1.369
Nationalist Ideol.	.730	1.370	.730	1.370
Humanist Ideol.	.949	1.054	.949	1.054
Assimilationist Ideol.	.924	1.083	.924	1.083
Oppressed Minority Ideol.	.923	1.084	.923	1.084
Familist Ideol.	.807	1.239	.807	1.239
SCxCentrality	.926	1.080	.926	1.080
SCxPrivate regard	.643	1.554	.643	1.554
SCxNationalist	.667	1.499	.667	1.499
SCxHumanist	.927	1.079	.927	1.079
SCxAssimilationist	.172	5.800	.172	5.800
SCxoppressed	.873	1.146	.873	1.146
SCxFamilist				

TABLE V- SUMMARY OF MULTICOLLINEARITY VIF AND TOLERANCE VALUES FOR THE CULTURAL COST OF EDUCATION REGRESSION MODELS.

	Model 6 (Familial Cost)		Model 7 (Communal Cost)		Model 8 (Ethnic Membership Cost)	
Collinearity Statistics	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
High school GPA	.931	1.074	.931	1.074	.923	1.084
Self-Esteem	.569	1.758	.569	1.758	.528	1.895
Self-Efficacy	.548	1.824	.548	1.824	.562	1.778
Since 6: ever on public aid	.784	1.275	.784	1.275	.778	1.285
Household income	.610	1.639	.610	1.639	.604	1.657
Parent home ownership	.862	1.160	.862	1.160	.807	1.239
Sex	.941	1.063	.941	1.063	.901	1.109
Mother foreign born	.404	2.474	.404	2.474	.404	2.476
Both parents foreign born	.377	2.652	.377	2.652	.367	2.726
First generation college student	.491	2.039	.491	2.039	.383	2.613
Woman most responsible for care education level	.502	1.991	.502	1.991	.408	2.452
Man most responsible for care education level	.456	2.195	.456	2.195	.430	2.325
Culturally inclusive climate	.168	5.936	.168	5.936	.164	6.084
Centrality	.905	1.105	.905	1.105	.884	1.132
Private regard	.948	1.055	.948	1.055	.929	1.077
Nationalist Ideol.	.730	1.369	.730	1.369	.659	1.517
Humanist Ideol.	.730	1.370	.730	1.370	.675	1.482
Assimilationist Ideol.	.949	1.054	.949	1.054	.899	1.112
Oppressed Minority Ideol.	.924	1.083	.924	1.083	.928	1.078
Familist Ideol.	.923	1.084	.923	1.084	.911	1.098
SCxCentrality	.807	1.239	.807	1.239	.755	1.324
SCxPrivate regard	.926	1.080	.926	1.080	.835	1.198
SCxNationalist	.643	1.554	.643	1.554	.621	1.609
SCxHumanist	.667	1.499	.667	1.499	.552	1.811
SCxAssimilationist	.927	1.079	.927	1.079	.868	1.152
SCxoppressed	.172	5.800	.172	5.800	.168	5.939
SCxFamilist	.873	1.146	.873	1.146	.895	1.118

SCATTERPLOT DISPLAYS OF LINEARITY: CUMULATIVE GPA AGAINST INDEPENDENT VARIABLE AND EACH MODERATOR VARIABLE.



APPENDIX F

TABLE I: OVERALL REGRESSION RESULTS OF MODELS 1-5 WITH MULTIPLE IMPUTATIONS (STEP 4)

Dependent Variables:	**College GPA b (SE)**		**Completion Four Years β (SE) OR**			**Completion Six Years β (SE) OR**			**Increased Aspirations β (SE) OR**			**Lowered Aspirations β (SE) OR**		
Step 1/block 1: Control Variables														
High School GPA	.133	(.039)**	.929	(.254)**	2.533	.867	(.335)**	2.379	-.319	(.255)	.727	-.264	(.326)	.768
Self-Efficacy	.006	(.003)	-.023	(.036)	.977	.029	(.049)	1.029	-.180	(.040)**	.835	.041	(.048)	1.042
Self-Esteem	-.008	(.006)*	.008	(.018)	1.008	-.011	(.025)	.990	.023	(.020)	1.023	-.053	(.026)**	.948
Public Assistance	-.082	(.040)*	.318	(.243)	1.375	.317	(.301)	1.373	-.403	(.292)	.668	-.034	(.322)	.966
Household Income	-.009	(.011)	.059	(.069)	1.060	.100	(.092)	1.106	.126	(.077)[a]	1.134	-.034	(.093)	.967
Parent Homeownership	.044	(.034)	.071	(.214)	1.074	-.173	(.269)	.841	.050	(.237)	1.051	-.006	(.296)	.994
Gender: Male (Female)	-.046	(.025)*	.324	(.163)**	1.382	.406	(.221)*	1.500	.097	(.175)	1.102	-.588	(.223)**	.556
Mother Foreign Born	.003	(.037)	-.206	(.256)	.814	-.698	(.455)	.498	.193	(.264)	1.212	-.496	(.323)*	.609
Both Parents Foreign Born	-.019	(.039)	.121	(.270)	1.128	.548	(.478)	1.729	.183	(.283)	1.200	.137	(.332)	1.146
First Generation College Student	.043	(.048)	-.139	(.265)	.870	-.282	(.373)	.754	.114	(.321)	1.121	-.011	(.378)	.989
Woman most responsible Education	.026	(.010)**	.155	(.070)**	1.168	.238	(.099)**	1.269	-.034	(.083)	.967	-.129	(.098)	.879
Man most responsible Education	.014	(.009)	.068	(.061)	1.070	.054	(.085)	1.056	-.039	(.071)	.962	-.038	(.090)	.963
Step 2/block 2: IVs														
Culturally Inclusive School Climate	. 017	(.011)	.058	(.029)**	1.059	-.027	(.042)	.973	.088	(.037)*	1.091	-.029	(.041)	.972
Step 3/block 3: MVs														
Ethnic Identity														
Centrality	.005	(.025)	.076	(.163)	1.078	-.213	(.221)	.808	-.063	(.176)	.939	.002	(.225)	1.002
Private Regard	-.011	(.005)**	-.037	(.032)	.964	-.004	(.044)	.996	-.075	(.037)**	.927	.026	(.044)	1.026
Nationalist	.020	(.016)	.025	(.106)	1.025	-.174	(.141)	.840	.007	(.116)	1.007	.177	(.148)	1.194
Humanist	.013	(.019)	-.051	(.121)	.950	-.272	(.169)[a]	.762	.037	(.125)	1.038	.164	(.172)	1.178
Assimilationist	-.002	(.005)	-.032	(.033)	.969	-.049	(.046)	.952	-.002	(.036)	.998	.007	(.045)	1.007
Oppressed Minority	-.004	(.033)	.032	(.221)	1.033	.131	(.317)	1.140	-.237	(.246)	.789	.480	(.284)*	1.616
Familist	.001	(.004)	.011	(.028)	1.011	.044	(.037)	1.045	-.004	(.033)	.996	-.085	(.036)**	.918
Step 4/block 4: Interaction Terms														
School Climate x Centrality	.001	(.008)	-.047	(.050)	.954	-.111	(.077)	.895	.104	(.065)	1.109	.025	(.069)	1.025
School Climate x Private Regard	-.001	(.001)	-.005	(.010)	.995	-.027	(.015)*	.973	-.006	(.014)	.994	-.009	(.012)	.991
School Climate x Nationalist	-.009	(.005)*	-.003	(.033)	.997	-.047	(.047)	.954	-.052	(.040)	.949	.013	(.042)	1.013
School Climate x Humanist	-.006	(.005)	.004	(.035)	1.004	-.019	(.054)	.982	-.087	(.048)*	.917	-.008	(.043)*	.992
School Climate x Assimilationist	.004	(.001)**	.027	(.010)**	1.027	.016	(.014)	1.016	.007	(.012)	1.007	-.001	(.013)	.999
School Climate x Oppressed	.009	(.012)	-.071	(.066)	.931	-.083	(.091)	.920	.023	(.088)	1.023	-.124	(.094)	.883
School Climate x Familialismo	.000	(.001)	-.004	(.008)	.996	-.017	(.011)[a]	.983	-.006	(.011)	.994	-.002	(.011)	.998
Intercept	1.820	(.403)**	-5.573	(1.577)**	.004	-1.238	(2.055)	.290	.737	(1.693)	2.089	1.963	(2.063)	7.119
R^2 / Nagelkerke's R^2	.1048		.1142			.135			.1116			.087		

*p<.10; **p<.05; [a] $p < .107$

TABLE II: OVERALL REGRESSION RESULTS OF CULTURAL COST VARIABLES WITH MULTIPLE IMPUTATIONS (STEP 4)

Dependent Variables:	**Familial Cost**			**Communal Cost**			**Ethnic Membership Cost**		
	β	**(SE)**	**OR**	**β**	**(SE)**	**OR**	**β**	**(SE)**	**OR**
Step 1/block 1: Control Variables									
High School GPA	-.014	(.249)	.986	.238	(.338)	1.269	.017	(.356)	1.018
Self-Efficacy	-.061	(.038)[a]	.941	-.023	(.043)	.978	-.003	(.046)	.997
Self-Esteem	-.024	(.020)	.976	-.046	(.019)**	.955	-.040	(.020)	.961
Public Assistance	-.913	(.349)**	.401	-.552	(.291)*	.576	.033	(.299)	1.033
Household Income	-.102	(.082)	.903	-.184	(.073)**	.832	-.173	(.097)**	.841
Parent Homeownership	-.147	(.229)	.863	-.257	(.300)	.774	-.291	(.281)	.748
Gender: Male (Female)	-.558	(.237)**	.573	-.622	(.216)**	.537	-.143	(.198)	.867
Mother Foreign Born	.287	(.303)	1.333	.377	(.308)	1.458	.027	(.398)	1.027
Both Parents Foreign Born	-.428	(.279)	.652	-.369	(.273)	.691	.226	(.383)	1.254
First Generation College Student	.204	(.327)	1.227	.222	(.327)	1.249	.318	(.341)	1.374
Woman most responsible Education	.010	(.071)	1.010	-.001	(.080)	.999	-.078	(.097)	.925
Man most responsible Education	-.033	(.077)	.967	-.075	(.073)	.928	-.151	(.082)	.860
Step 2/block 2: IVs									
Culturally Inclusive School Climate	-.083	(.034)**	.921	-.080	(.037)**	.923	-.131	(.039)**	.877
Step 3/block 3: MVs									
Ethnic Identity									
Centrality	.078	(.209)	1.081	.259	(.217)	1.296	.290	(.235)	1.336
Private Regard	-.027	(.042)	.973	-.007	(.042)	.993	-.025	(.046)	.975
Nationalist	-.074	(.112)	.929	-.031	(.153)	.970	.008	(.136)	1.008
Humanist	-.012	(.156)	.988	-.129	(.131)	.879	-.288	(.122)**	.750
Assimilationist	.051	(.047)	1.053	-.007	(.035)	.993	-.075	(.042)*	.927
Oppressed Minority	-.367	(.292)	.693	-.701	(.306)**	.496	-.734	(.377)*	.480
Familist	.011	(.034)	1.011	-.023	(.034)	.977	-.003	(.033)	.997
Step 4/block 4: Interaction Terms									
School Climate x Centrality	-.029	(.053)	.972	.012	(.059)	1.012	-.045	(.083)	.956
School Climate x Private Regard	-.002	(.014)	.998	.004	(.013)	1.004	.001	(.013)	1.001
School Climate x Nationalist	.017	(.048)	1.017	.029	(.043)	1.029	.043	(.045)	1.044
School Climate x Humanist	-.023	(.050)	.977	.013	(.040)	1.013	.025	(.050)	1.025
School Climate x Assimilationist	.006	(.012)	1.006	.006	(.011)	1.006	.007	(.013)	1.007
School Climate x Oppressed	-.040	(.087)	.960	-.073	(.071)	.929	.000	(.085)	1.000
School Climate x Familialismo	-.002	(.010)	.998	-.005	(.012)	.995	-.013	(.011)	.987
Intercept	6.622	(1.966)**	751.453	6.012	(2.454)**	408.111	7.932	(1.984)**	2783.874
Nagelkerke's R (Psuedo R^2)		.1432			.176			.21	

*p<.10; p<.05**

[a] $p = .111$

Curriculum Vitae

Linda D Campos-Moreira, M.S.W., M.Ed., Ph.D.
Elgin, IL 60120 - lcampo2@uic.edu

EDUCATION

2016 **Ph.D. in Social Work**
Jane Addams College of Social Work, University of Illinois, at Chicago

Dissertation Title: Latino College Students Attending Highly Selective Universities: The Role of Ethnic Identity on the Relationship between Perceptions of School Climate and Academic Outcomes.

Committee: James Gleeson, PhD (Chair), Lydia Falconnier, PhD, Chang-ming Hsieh, Ph.D., Cassandra McKay-Jackson, Ph.D., Nilda Flores-González, Ph.D.

2013 **M.A. in Educational Psychology**, University of Illinois, at Chicago
Concentration: Measurement, Evaluation, Statistics, and Assessment
Software Focus: SPSS, R, Hierarchical Linear Modeling, and SAS.

2008 **M.A. in Social Work**, University of Illinois, at Chicago
Concentration: Community Administration

2003 **B.A. in Psychology**, University of Illinois, at Chicago
Concentration: Applied Psychology

2001 **A.A. with emphasis in Psychology**, Elgin Community College

RESEARCH INTERESTS

- Intervention Based Research/Program Evaluation/Participatory Research
- Student Engagement/ Retention/Completion/Learning Environments
- Organizing Communities for Change/Change Agents/Immigrant Families
- Cultural Competency/Professional Development
- Social Identity Theories
- Ethnic Minorities/Adolescents/Young Adults: Risk and Protective Factors

TEACHING INTERESTS

- Research Methods/Program Evaluation/Assessment/Applied Statistics
- Organizing Communities for Change/Policy Related Issues
- Multicultural Practices/Scholarship/Leadership Development
- Human Growth and Development/Adolescence
- History of Social Welfare/Social Problems

PUBLICATIONS, MANUSCRIPTS, AND NEWS MEDIA

Book Review:

Campos-Moreira, L.D. & Grumbach, G. (2012). Book Review: Psychotherapy with infants and young children: Repairing the effects of stress and trauma on early attachment, *Families in Society, 3,* 2410.

News Media:

2015 "Ideological split causes rift in new Elgin district U46 board" The Courier-News, Chicago Tribune. May 5th.

"Outgoing members of U-46 Board have a say" Examiner. May 4th.

"Board member questions U46's recruitment of bilingual teachers" The Courier-News. Chicago Tribune. March 18th.

"U46 plan would call for ethnic diverse staff, flexible approach" The Courier-News. Chicago Tribune. March 4th.

2014 "Junta escolar del U-46 llena vacante con una Latina" Reflejos Newspaper. May 11th.

"U-46 board of education approves new board member and student advisor" The Courier-News, Chicago Tribune, May 6th.

2013 "Linda Campos-Moreira: Candidate profile Elgin-area unit 46 school board" Daily Herald, February 22nd.

2008 "Some Elgin residents call for tolerance", WBEZ, Chicago Public Radio, January 25th

2007 "Rising above the clatter: Student wants a more civilized chat about Carpentersville's future" Daily Herald, September 13th.

HONORS, AWARDS, GRANTS

Honors

2015 Representative for Undocumented Students, Elgin Community College
2013 School District U-46 Board Appointment
2013 YWCA Community Service Leader Nomination

HONORS, AWARDS, GRANTS (continued)

Awards

2014 Service to Community Award, Elgin Community College
2013 Distinguished Advisor Award, Student Life, Elgin Community College

Grants

2014 New Initiative Dollars, Elgin Community College
Amount: $12,440 Grant

Description: A Cultural-Based Approach to College 101; Used for engagement and retention of Latino and African American college students.

RESEARCH EXPERIENCE

2014 **Chair/Primary Investigator**
Elgin Community College
African American and Latino Taskforce
College 101-Subcommittee

Responsible for overseeing the development, implementation, and assessment of a culture-based freshman seminar course for the retention and graduation of Latino and African American students. Utilization of SPSS software.

2011 **Independent Study:** Understanding the Culturally Appropriateness of a Modified MIBI-T Survey for Latinos.
Jane Addams College of Social Work, University of Illinois at Chicago
Mentor: Larry W. Bennett, PhD.

Responsible for recruitment efforts, facilitating talk-aloud ethnic identity focus groups, transcribing data, examining data for code analysis, and organizing data for dissemination of knowledge. Utilization of ATLAS. ti.

2009 **Research Assistant**
Jane Addams College of Social Work, University of Illinois at Chicago
Mentor: Binta D. Alleyne, Ph.D.

Responsible for conducting literature reviews, editing manuscripts, preparing data for analysis, research recruitment efforts, and evaluating student progress in a timely manner. Utilization of SPSS.

RESEARCH EXPERIENCE (Continued)

2008 **Strategic Planning Intern** –Assistant to Strategic Planning Director
Metropolitan Family Services of Chicago
Mentor: Suzanne Strassberger, M.S.W.

Responsible for a staff exploratory questionnaire, data collection, qualitative data analysis, and co-facilitating focus groups to interpret and implement policies and/or programs arising out of the data. Utilization of SPSS and Word.

2003 **Research Assistant**
UIC Dept. of Disability and Human Development
Mentor: Fabricio Balcazar, PhD.

Responsible for participant recruitment efforts, conducting interviews, collecting data, analyzing quantitative data, reporting a brief summary, collaborating with a variety of social service agencies, and utilizing my bilingual skills. Utilization of SPSS software.

TEACHING EXPERIENCE

Spring 2014 **Adjunct-Faculty**
2015 School-Based Research
Jane Addams College of Social Work

Provided instruction on the commitment to ethical responsibilities and carrying out the stages of the research process in school based settings, including problem formulation, literature review, hypothesis development, data collection, quantitative data analysis, and interpretation of results (worked with SPSS).

Fall 2011 **Adjunct-Faculty**
2012 College 101-General Student Development
2013 Elgin Community College

Responsible for facilitating interdependent learning activities around college readiness. I incorporated professional guest speakers, from a variety of disciplines, into the instruction to expose students to professional's experiences in college and the workforce.

2010 **Research/Teaching Assistant**
Community-Based Practice
Jane Addams College of Social Work, University of Illinois at Chicago
Mentor: Alice K. Butterfield, PhD.

Responsible for conducting literature reviews, putting together a national NGO resource database, co-developing a social entrepreneurship course syllabus, delivering lesson plans, and providing student assistance.

TEACHING EXPERIENCE (Continued)

Guest Lectures:

Fall 2014 **Guest Lecturer:** Introduction to Applied Research Methods
Social Problems in Society, Columbia College of Chicago
Professor: Giesela Grumbach, PhD.

Spring 2013 **Guest Lecturer:** Introduction to Applied Research Methods
Social Problems in Society, Columbia College of Chicago
Professor: Giesela Grumbach, PhD.

Spring 2009 **Guest Lecturer:** Organizing Communities for Change
Social Work in a Multicultural Society, Jane Addams College of Social Work
Professor: Lydia Falconnier, PhD.

PROFESSIONAL EXPERIENCE

2010-present **Bilingual Admissions Recruitment Coordinator**
Elgin Community College, Elgin, IL

Primarily responsible for the recruitment of Latino college students and organizing various college readiness events both on-campus and in the community ranging from informational presentations to college fairs. I serve on various campus committees including the Latino Heritage Month Committee, Black History Month Committee, The Alliance for College Readiness, The English Language Learner Team, The African American and Latino taskforce, and have served as club advisor to our LGBT and Latin American student clubs.

2014-2015 **School Board Member**
Public School District U-46, Elgin, IL

Participated in the development of a 5-year school district plan in a community responsive manner by obtaining input from diverse staff, students, and community partners with surveys and focus groups. Additional tasks included adopting balanced budgets, negotiating contracts with employee unions, approving curriculum or operational changes, and serving on the finance and legislative committee.

2003-2012 **Youth Work Aide**
Spectrum Youth and Family Services of Schaumburg & Hoffman Estates

Role was comprised of informal counseling, crisis intervention, facilitating recreational program activities, and mentoring. I organized an annual Latino and African-American guest speaker day, co-lead a Girls group and a Boys group for culturally diverse youth between the ages of 12 and 19 to explore their bicultural identities and experiences.

PROFESSIONAL EXPERIENCE (Continued)

2007-2008 **Social Policy Intern**
Metropolitan Family Services of Chicago, Policy Department

Responsibilities included a community needs assessment (8 Communities), organizing community legislative forums surrounding those concerns, drafting/lobbying policies to reflect community input/trends, and evaluating the process.

2006-2007 **Case Work Intern**
Elgin Mental Health Center, Forensics Department

Co-facilitated treatment groups such as: 12 Steps, Mental Health Relapse Prevention, and Residential Transitions. Responsible for writing up social assessments, developing treatment plans, implementing treatment plans, measuring goals attained, and preparing clients for re-integration into the community.

INVITED PRESENTATIONS

State Conferences:

2013 Illinois Community College Admissions and Records Officers Organization
Illinois Association for College Admission Counseling

Presentation topics: Undocumented Students and the Role of Educators
Presentation audience: College and state university administrators, academic counselors, and support staff.

2012 Illinois Resource Center: Statewide Summit for Bilingual Parents

Presentation topics: Higher Education Opportunities for Undocumented Students
Presentation audience: Bilingual Latino parent leadership groups

2011 Illinois Resource Center: Statewide Summit for Bilingual Parents

Presentation topics: Higher Education Opportunities for Students Enrolled in Community Colleges
Presentation audience: Bilingual Latino parent leadership groups

Community Practice Workshop:

2008 Spectrum Youth and Family Services, Schaumburg, IL

Presentation topic: Suburban Latino Outreach and Treatment Techniques
Presentation audience: Social Work and Psychology clinicians and caseworkers.

Community Organizing Experience (Continued)

2014	Welcome Address and Co-organizer, "Immigration Roundtable at Elgin Community College with Congresswoman Tammy Duckworth". August 28th.
	Welcome Address and Co-organizer, "Deferred Action for Childhood Arrivals Workshops". February 23rd.
2013	Co-organizer. ECC students participate in immigration reform rally. October 22, 2013.
	Welcome address and Co-organizer. "Coming out of the Shadows and into the Streets at Elgin Community College". March 19th.
	Welcome address and Organizer. "Open Forum with Dolores Huerta, 2012 Presidential Medal of Freedom Recipient". September 13th.
	Co-organizer. "Deferred Action for Childhood Arrivals Informational Seminar". February 23rd.
2012	Co-organizer. "DACA Informational". December 1st.
2007	Organizer and Mediator. "1 Voice: Community Legislative Forum Surrounding Immigration Concerns". September 17th.

PROFESSIONAL AFFILIATIONS/MEMBERSHIPS

Professional Memberships:
American Association of Collegiate Registrars (AACRAO)
Illinois Association for College Admission Counseling (IACAC)
National Association for College Admission Counseling (NACAC)
National Education Association (NEA)

Professional Involvements:
Elgin Community College Committees:
African American and Latino Taskforce,
African American and Latino College 101 Subcommittee,
Alliance for College Readiness,
English Language Learners Subcommittee,
Black History Month Committee,
Latino Heritage Month Committee, and
Undocumented Students Subcommittee.

PROFESSIONAL AFFILIATIONS/MEMBERSHIPS (Continued)

Community Organizations:

Elgin Hispanic Network (EHN)
EHN is a networking forum made-up of businesses, community leaders, and educators to exchange ideas and resources on behalf of Latinos in the city of Elgin.

Co-Advisor, Elgin Dreamers United (EDU)
EDU is a community organization that empowers undocumented youth to raises awareness among the community on immigrant issues. Thereby, challenging the criminalization of undocumented immigrants and ultimately pushing to improve immigrants' lives through advocacy work.

Co-Advisor, Students Who Are Not Silent (SWANS-LGBT student organization)
SWANS is an LGBT student organization that advocates for programs and policies that promote an inclusive college campus environment.

References available upon request.