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Cultivating Our Nation's Engaged Citizenry:

Institutional Factors That Promote the Civic Engagement of College Students

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in Education

by

Cynthia Maribel Alcantar

2017

ABSTRACT OF THE DISSERTATION

Cultivating Our Nation's Engaged Citizenry:

Institutional Factors That Promote the Civic Engagement of College Students

by

Cynthia Maribel Alcantar

Doctor of Philosophy in Education

University of California, Los Angeles, 2017

Professor Robert T. Teranishi, Chair

Through the power of social media and increased access to mobile technology, our country is witnessing a rise in college student-led protests and mobilizing to try to challenge racism on college campuses (Curwen, Song, & Gordon, 2015). One of the key functions of higher education institutions is cultivating our engaged citizenry (Hurtado, 2007). We know civic engagement in college influences future civic participation of students (Coley & Sum, 2012). However, very little is known about the factors in college that promote civic engagement of students. The purpose of this study is to explore the institutional- and student-level characteristics that affect the development of students' level of civic values after four years of college enrollment, utilizing data from the Cooperative Institutional Research Program (CIRP), a longitudinal dataset of college students. Overall, this study found differences in the factors that promote civic values of students based on race/ethnicity and institutional contexts. More

specifically, various civic-related curricular and co-curricular college experiences and institutional contexts influenced the development of civic values of racial/ethnic minority students differently. For example, service learning, a proven curricular approach that promotes the civic values and engagement of students, negatively influenced the civic values of Latina/o students. Additionally, Asian American and Native American Pacific Islander Institutions (AANAPISIs) were particularly influential in promoting civic values, but only for Asian American and Pacific Islander (AAPI) students. Moreover, the same factors that influenced civic values also influenced student's aspirations to pursue a career in service. The findings will help higher education researchers and practitioners understand the student- and institutional-level factors that promote the development of civic values in higher education, as well as shed light on which higher education institutions develop the next generation of leaders and engaged citizens.

The dissertation of Cynthia Maribel Alcantar is approved.

Daniel G. Solórzano

M. Kevin Eagan

Anne-Marie Nuñez

Robert T. Teranishi, Committee Chair

University of California, Los Angeles

2017

MI DEDICACIÓN

Este doctorado es dedicado para…

Mi familia en los Estados Unidos y México- pasado, presente, y futuro.

Especialmente para mis padres que vinieron a este país hace más de cuarenta años para brindarnos un mejor futuro a mí y mis hermana/os. Este doctorado es uno de los muchos ejemplos de que sus esfuerzos y sacrificios no fueron en vano. Es por ustedes que fui al colegio, obtuve mí doctorado y seguiré luchando para familias como la de nosotros.

Mi comunidad y mi gente- dicen que no podemos, pero si se pudo, y les juro que habrán más.

Para todos los estudiantes que por muchas diferentes razones no tuvieron la oportunidad de realizar sus metas y sueños. Esa fue la razón porque quise seguir con mi doctorado.

Para aquellos que realizaron sus sueños y que abrieron el camino para mí. Sin ustedes no pudiera haber realizado esta meta.

Y para los que siguen de mí. Espero que les pueda ayudar en un modo o otro para que realicen sus sueños. No se rajen y no se les olvide de donde vinieron.

Si se pudo y no seré la última...

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Emma, Anabelle, Ethan, and Maddi. You are my motivation and inspiration. The way things are looking now, the future of our family looks bright. I am excited to witness the first (but definitely not the last) college graduate from your generation next year. Gratitude is owed to my childhood best friends, who are more like sisters—Adriana, Jeannyna, and Wendy. Thank you for always checking in on me, lending an ear, sharing your pepperoni slices in high school, celebrating my successes and telling me you are proud. Thank you to my partner in crime, my travel and life mate—Vidal—for the coffee house dates, writing with me when we were both finishing up our masters, reviewing papers for me, offering a shoulder to cry, being understanding and patient when I could not celebrate things with you because of school or research, and having fun with me when I had to step away from school work. Also, thank you to your family, la familia Vargas—especialmente Doña Evelia, Vero, el compa Oscar, and the girls, for being a source of encouragement and support throughout this trajectory.

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Andrade, you were some of the few educators at Wells Middle School and Norte Vista High

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potential in all of us. Andrade you were the first educator in my life to actually share your

college experience with me. I still remember those summer afternoons after practice where we

would all sit under the trees and listen to your stories about going to college.

There were two programs that were particularly important for me as a poor and first-

generation college-going student: Upward Bound and the McNair Scholars programs. The

mentors and experiences I had through Upward Bound were particularly pivotal as this was also

the spring board to meeting my mentors from McNair and during my graduate education.

Gustavo, I cannot thank you enough for always believing in me and going above the call of duty

of any Upward Bound director. I still remember when I first met you during the Upward Bound

recruitment event at Norte Vista High School when I was a sophomore. You brought science

poster boards full of pictures of all the college visits, cultural trips, and the summer program at

UCR. I remember being a bit skeptical about the program, thinking there was no way one

program could expose me to all of this for free. What was the catch? I was sold when you

promised to get me to college; the one thing I aspired for but still had no idea how to do. All the

college visits, the summer college classes, meeting professors and college students, help with

college admission and financial aid applications were so important to me getting to college. But

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out of your way to introduce me to the educators in the McNair Scholars program at CGU.

To Leon, Heidi, Robin, Jason, Ivy, and Omar, I cannot thank you enough for all your

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Roberta and Will, I would not be successfully graduating with a masters and a Ph.D. without you. You were both the first university professors I knew who were also coming from a similar background as me. You were also the first professors who I met with outside of the university. You made professors normal to me and was no longer intimidated by them. I appreciate you teaching me about how to navigate academia, allowing me to get involved with your research, for all the mentorship, advice, and role modeling, opening opportunities for me, and for your friendship. You were also the ones to connect me to Robert, my doctoral advisor.

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SELECTED PUBLICATIONS

Peer Reviewed Journal Articles

Alcantar, C. M., & Hernandez, E. (In press). "Here the professors are your guide, tus guías": Latina/o student validating experiences with faculty at a Hispanic-Serving community college. *Journal of Hispanic Higher Education.*

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SELECTED PRESENTATIONS

Alcantar, C. M. (2017). *"This motivated me to fight for rights of Asian Americans": Developing the Civic Leadership Capacities of Community College Students*. Paper presented at the American Educational Research Association Conference, San Antonio, TX.

Alcantar, C. M. (2016). *Higher Education as a Mechanism to Promote Civic Engagement of Latina/o Students*. Paper presented at the American Educational Research Association Conference, Washington, DC.

Alcantar, C. M., Hernandez, E., Teranishi, R. T., & Peumsang, P. (2016). *Factors That Affect College Access and Enrollment of Undocumented College Students*. Paper presented at the American Educational Research Association Conference, Washington, DC.

Alcantar, C. M., Teranishi, R. T., Martin, M., Bordoloi Pazich, L., & Nguyen, B. M. D. (2015). *The Impact of Grant Aid on Underrepresented Asian American and Pacific Islander Community College Students: Results of a Randomized Controlled Trial*. Paper presented at the Annual Conference for the Association for the Study of Higher Education, Denver, CO.

CHAPTER 1: INTRODUCTION

Decades of research has demonstrated higher education's critical role in promoting the democratic values of our nation, and cultivating civically engaged citizenry by training leaders and participants of a diverse democracy (Hurtado, 2007; Lopez & Kiesa, 2009; Scott, 2000). In fact, higher education institutions were initially built upon a mission to serve the community and were positioned to actively promote students' civic engagement (Coley & Sum, 2012; Scott, 2000; Thelin, 2004). Historically, college students have been instrumental in leading protests, raising consciousness, and mobilizing students on college campuses and local communities in pursuit of social justice (Curwen, Song, & Gordon, 2015). For example, college students were instrumental in leading protests and mobilizing communities from the Civil Rights movement, the Vietnam War, the Occupy Wall Street movement, and in most recent protests for the #BlackLivesMatter movement (Anderson, 2015; Nguyen & Gasman, 2015; Public Broadcasting Service, 2005; Sanchez, 2011; Sangillo, 2014). Moreover, recent racially-charged incidents on college campuses across the country, such as the incident that occurred between the former University of Missouri president and a Black student protestor (Izadi, 2015), have sparked student mobilization and calls to action from higher education institutions to address racial discrimination and support underrepresented populations on college campuses (Chessman & Wayt, 2016; Curwen et al., 2015; Wong & Green, 2016). Presumably this heightened level of college student mobilization influenced the civic engagement expectations of future college students. Recently the Higher Education Research Institute (HERI; 2016) revealed that one-third of entering college freshmen at four-year colleges reported that they "Expect to participate in student protests or demonstrations while in college" (p. 1).

Correspondingly, higher education institutions have historically promoted students' civic engagement in the U.S. and abroad through various curricular and co-curricular practices such as service-learning, volunteer opportunities, and ethnic and gender studies courses (Astin, Vogelgesang, Ikeda, & Yee, 2000; Bataille, Carranza, & Liza, 1996; Chang, 2002a; Colby, Beaumont, Ehrlich, & Corngold, 2007; Cole & Zhou, 2014; Eyler & Giles, 1999; Laird, 2005; Lott, 2013; Luebke & Reilly, 1995; Salisbury, Umbach, Paulsen, & Pascarella, 2009). For example, a longitudinal study by Astin and Sax (1998) found that students who volunteered in college were more likely to be "committed to promoting racial understanding and socializing across racial ethnic lines" (p. 595). Additionally, service-learning has been a particularly instrumental curricular opportunity which raises students' civic engagement (Martin, Miller, Rawal, & Sweet, 2015). However, limited research has focused on the ways in which civically engaging curricular and co-curricular opportunities affect (and are available to) students by race and ethnicity. Much of what we know about civic engagement has focused on the experiences of White students; with very little known about the civic participation of racial/ethnic minority students (Hillygus, 2005; Mayhew & Enberg, 2011; Pascarella, Ethington, & Smart, 1988; Wray-Lake & Syvertsen, 2011).

Understanding the higher education practices that promote the civic engagement for racial/ethnic minority students is important given the changing demography of our country. Higher education institutions are experiencing this change, with racial/ethnic minorities, immigrants, and their children representing the largest and fastest growing populations in the United States (Pew Research Center, 2015). Much of the growth is attributed to Latina/os and Asians, whose populations are expected to double by 2050 (Passel & Cohn, 2008). Latina/os are currently the largest ethnic minority population and Asians are quickly growing in size.

Currently, Latina/os account for 14 percent of the U.S. population; by 2050 they are projected to be 29 percent of the population (Passel & Cohn, 2008). Asians are currently five percent of the total U.S. population and by 2050 they will account for nine percent of the population (Passel & Cohn, 2008). This changing demography is also reflected in the growing enrollment rates of racial/ethnic minority students in higher education. In 2011, 14.6 percent and 6.5 percent of college students enrolled in degree-granting institutions were Latina/o and Asian, respectively; by 2022 these percentages are expected to grow by 27 percent and seven percent, respectively (Hussar & Bailey, 2013). Given our growing and changing demography, it is important to gain a deeper understanding of the ways in which students develop their civic values and how they become (or are) civically engaged in college in an effort to fulfill higher education's role in cultivating our nation's engaged citizenry for our diverse population.

Minority Serving Institutions (MSIs) are particularly important sites to explore the promotion of civic engagement for racial/ethnic minority students since a large proportion of these students are enrolled in these institutions. MSIs enroll "more than five million undergraduate students, of which about 3.5 million are students of color. That's one in five of all undergraduates and two in five undergraduate students of color" (Cunningham, Park, & Engle, 2014, p. 3). Higher education institutions become designated MSIs by having a history of serving or a growing demography of particular populations (see Appendix A for complete list of MSIs). The four major types of MSIs are: a) Historically Black Colleges and Universities (HBCUs), b) Tribal Colleges and Universities (TCUs), c) Hispanic Serving Institutions (HSIs), and d) Asian American and Native American Pacific Islander Serving Institutions (AANAPISIs; Appendix A includes the requirements to become a MSI). HBCUs and TCUs were both founded through a mission to serve Black and Native populations, respectively, who were historically excluded

from higher education. While HSIs and AANAPISIs are based on percent enrollment rates of Latina/o and Asian American and Pacific Islander (AAPI) students, and were developed to support these growing populations in higher education.

MSIs are important, not only because of their structural diversity, especially diversity of ethnic/racial minority students, but they are also touted as producing civically-minded leaders who pursue careers in the service sector. These careers may include government officials, teachers, doctors, and nurses (Scott, 2000; sometimes referred to as helping professions [Combs & Gonzales, 1994]). MSIs have historically been described as institutions that serve disenfranchised communities, provide college access for underrepresented populations, and develop future leaders from underrepresented backgrounds (Garcia, 2013; Scott, 2000). This statement is especially true for HBCUs and TCUs, whose mission went beyond providing access to higher education for Black and American Indian students, but also to develop the next generation of educated and engaged citizens that can serve the community (Institute for Higher Education Policy [IHEP], 2007; Scott, 2000). For example, among Black members of Congress, 40 percent graduated from HBCUs (Thurgood Marshall College Fund, 2015). TCUs have also been critical for increasing the number of Native K-12 teachers serving tribal nations (American Indian Higher Education Consortium [AIHEC] & The Institute for Higher Education Policy [IHEP], 2001). For instance Haskell Indian Nations University developed a bachelor's degree program in elementary teaching in response to a need for teachers in this sector in their communities (AIHEC & IHEP, 2001). Although MSIs, especially HBCUs and TCUs, are known to produce leaders who work in service sector careers, very little is known empirically about their role in developing student's civic values (Astin, 1993; Scott, 2000).

Additionally, there is limited research on civic engagement of students at HSIs and AANAPISIs. Recently, three studies examined the civic engagement of students at HSIs (Cuellar, 2012), emerging HSIs (Cuellar, 2012; Garcia & Cuellar, 2018), and an AANAPISI (Alcantar, 2017). Cuellar (2012) found differences in the relationship between various curricular and co-curricular experiences and Latina/o student's civic values at emerging vs non-emerging HSIs. Garcia and Cuellar's (2018) study focused on the political involvement of students at emerging HSIs. Moreover, Alcantar's (2017) study utilized qualitative methods to examine the influence of culturally responsive civically engaging practices at one AANAPISI community college. Across these studies, curricular and co-curricular experiences in college were influential in the civic development of students (Alcantar, 2017; Cuellar, 2012; Garcia & Cuellar, 2018). The current study extends this line of work by examining the development of civic values of students at federally designated HBCUs, HSIs, and AANAPISIs from a large dataset of four-year colleges. Furthermore, given the large sample of students and institutions in this dataset I was able to examine the development of civic values of various racial/ethnic groups nested within the various MSI institutional contexts.

In all, higher education institutions have the undeniable capability and responsibility to develop the civic capacities students. According to Astin and Astin (2015):

> All higher education institutions have the ability to educate, train and develop
> the next generation of leaders, public servants, and engaged citizens. How *they*
> [(students)] view the issues of economic, racial, and educational equity is what will
> eventually shape the policies that can address the structural problems that continue to
> stand in the way of achieving greater educational equity. And it is our higher education
> institutions that can help shape the character and develop the leadership qualities of these
> same future leaders and citizens. (p. 73)

However, there remains a question of *if* and *how* different types of higher education institutions educate and develop college students' civic values. What are the policies, practices, and

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institutional characteristics that affect the civic engagement of all students, especially for racial/ethnic minority students?

Purpose of the Study

This study examines how institutional contexts shape college students' commitment to civic engagement. More specifically, this study seeks to understand *if* and *how* institutional characteristics affect college students' level of civic values after four-years of enrollment, especially for racial/ethnic minority student populations. Based on my review of the literature and theories on civic engagement of college students and the affect of institutions on student's civic engagement, the guiding research questions are as follows:

1) What background and college experiences predict the development of civic values of college students? In what ways, if at all, do college experiences predict the development of civic values of college students from different racial/ethnic backgrounds?

2) Controlling for background and college experiences, does the development of civic values vary by institution? In what ways, if at all, does attending a HBCU, HSI, or AANAPISI moderate the level of civic values for students from different racial/ethnic backgrounds?

3) What background, college experiences and institutional contexts contribute to student's likelihood of aspiring to pursue a service sector career after controlling for students' civic values?

The first and second research questions examine the relationship between student's background characteristics, high school and college experiences, and institutional characteristics on the development of students' civic values. I am particularly interested in the practices and

institutional characteristics that foster students' civic values. The last research question will examine if attending a minority serving institution influences students' aspirations for a service-related career after controlling for students' civic values. I am interested in knowing if higher civic values result in a greater likelihood of students aspiring for a service sector career after four years of college enrollment, or if this varies by institutional type (i.e., MSI).

In addition, in order to understand civic engagement in higher education, it is imperative that the term be defined. Past literature has used various terms to describe civic engagement and the associated characteristics and actions of individuals (see Appendix B). Despite inconsistencies in the terms used to describe civic engagement (Adler & Goggin, 2005; Newell, 2011), most literature would agree that, "*Civic engagement* refers to the ways in which citizens participate in the life of a community in order to improve conditions for others or to help shape the community's future" (Adler & Goggin, 2005, p. 236); this includes social and political engagement, which can be said to be part of the spectrum of the types of civic engagement individuals participate in. To illustrate this, individuals participating in protests, community organizing or mobilizing—especially those connected to social and political causes—are said to be civically engaged. The act of protesting, community organizing or mobilizing for a cause is *civic participation*. More simply, the act of civic engagement is civic participation. Those that espouse a long-term commitment to civic engagement are said to hold *civic values* (also referred to as civic commitment or social agency). Aside from demonstrating civic values through active civic participation, some of the characteristics attributed to those with civic values are: civic competency, civic-mindedness, and civic responsibility. For this study, while I control for variables measuring various civic participation (i.e., volunteering, participating in protests), the primary focus is on civic values, defined as the level of student's commitment towards political

or social civic engagement as a "personal goal" (Franke, Ruiz, Sharkness, DeAngelo, & Pryor, 2010; Hurtado, Ruiz, & Whang, 2012, p. 14).

Significance of the Study

      This study is significant in the current landscape of higher education policy and practice. Over the last eight years there has been a heightened commitment to increase college degree attainment for all students, but especially for low-income and/or racial/ethnic minority students. For example, the Obama administration made degree completion a goal during his presidency, in an effort to regain the United States' global and economic competitiveness (The White House, 2009, 2012). To meet this goal, the federal administration and several funding agencies allocated support to higher education institutions who subscribe to this objective through various sources of funding, including their Title III and Title V Minority Serving Institutions (MSI) funding avenues. Additionally, foundations have partnered with federal agencies to achieve this college completion goal by funding research and practices that help promote college completion (Lumina Foundation for Education [Lumina], 2009). Lastly, research has highlighted the steady and promising increase of access to college and national college completion rates, and the striking growth of degree completion gaps between ethnic/racial minority and White groups (Lumina, 2013). As a result of these efforts there is a heightened commitment and pressure among higher education institutions to improve degree completion, and thus an increased interest in identifying ways in which we as a nation can improve degree completion of students. I propose one way is through developing student's level of civic commitment, as this increases students likelihood of completing a college degree.

      Additionally, in the last decade we have witnessed events which have sparked various protests and movements across various college campuses and have caught the media's attention nationwide. These events include: the killing of Treyvon Martin in 2012, Eric Garner and Michael Brown in 2014 and the use of excessive force by police in these cases, the attack on

affirmative action through the *Fisher v. University of Texas* case in 2009, various racial

discrimination incidents on college campuses, the attack on undocumented college students by

states and higher education institutions through admissions, tuition and financial aid policies, and

the campaign and presidency of the 45th President. These racist, xenophobic, and classist

incidents seemed to create a renewed and/or growing commitment to social justice across college

campuses, especially for racial/ethnic minority students since many of these incidents directly

impact their families, communities and educational experiences.

As a result, this raises questions about how higher education institutions and practitioners

have responded to these incidents, protests, movements, political contexts, and renewed (and

sometimes new) commitments to social justice of students. Have student's civic values been

nurtured or silenced by higher education institutions and practitioners? What type of spaces or

programs were or can be created by institutions to support students in expressing their civic

values? To answer these questions we must understand the factors that promote or inhibit civic

engagement of college students. This study of civic engagement will shed light on ways in which

different types of higher education institutions affect the development of student's civic values.

The findings from this study can inform research, policy, and practices that foster the civic

engagement in college students and ultimately contribute to their academic success and college

degree attainment.

CHAPTER 2: THEORY ON CIVIC ENGAGEMENT IN HIGHER EDUCATION

Although research on civic engagement of racial/ethnic minority college students has demonstrated lower levels of civic engagement of this population (Hyman & Levine, 2008), a closer examination of this research reveals that civic engagement has mostly been operationalized in ways that frequently exclude the types of civic participation often reported by minoritized populations. The research on civic engagement has mostly focused on student civic participation, rather than the development of civic values, curricular and co-curricular opportunities available to students, and institutional characteristics and practices which promote civic engagement. This study aims to fill this gap in the literature by drawing from asset-based, critical and developmental theoretical frameworks— the Critical Quantitative theoretical framework, Civic Learning Spiral, and the Multicontextual Model for Diverse Learning Environments, each described in detail below. For this study, I am interested in the development of civic values after four-years of college enrollment, as opposed to civic engagement. Students with civic values are more likely to practice civic mindedness and espouse democratic values in their everyday lives, rather than displaying a one-time civic participation.

Critical Quantitative Framework

Underlying this study is a Critical Quantitative (CQ) framework to examine the civic engagement of college students (Stage, 2007). By taking a CQ approach, researchers must critically examine and question traditional conceptual models, but also give recommendations for new or modified models to help us better understand underrepresented minority students. The intent is to ultimately achieve equitable outcomes (Stage, 2007). Conceptual models on student engagement and success in college were primarily developed from a "traditional" college student perspective— commonly White, male, middle class, 18-24 years old— attending four-year

colleges (Bensimon, 2007). Most conceptual models that help us understand student engagement and success often neglect the experiences of ethnic and racial minority, low-income, community college students, and students at Minority Serving Institutions (MSIs; Bensimon, 2007). Thus, institutional policies and practices that have been developed using "traditional" models often fall short of meeting the goal to engage students and increase student success of nontraditional students (Bensimon, 2007). This is important given the changing demography of the United States and increasing college enrollments and low postsecondary degree attainment rates of underrepresented minority students. Limited research has asked critical questions about civic participation among racial/ethnic minority students, or has been critical about the indicators and measures of civic engagement for this population. Furthermore, civic engagement has been measured primarily with an emphasis on political engagement; ignoring other forms of civic participation such as mentoring or translating for the community.

Moreover, focusing on an individual student's civic participation ignores the structural opportunities and/or barriers for developing civic mindedness, agency, and participation. Additionally, the theory of participatory democracy, originally created by Pateman in 1970 to understand political participation, has been used by some researchers as a conceptual model to examine civic engagement in higher education (Spiezio, 2009). Spiezio (2009) writes, "[Participatory democracy] theory specifies the causal relationships that link institutions, individuals, and democratic practice, while also suggesting practical steps that can be taken to promote engaged citizenship" (p. 88). The theory, as used in higher education, highlights the importance and responsibility of institutions as sites for teaching and fostering democratic principles with particular focus on the classroom (Spiezio, 2009). However, the theory simply focuses on the institution and classroom and fails to examine external factors that impact

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students' civic participation. Spiezio's conceptual model is limited and does not reflect the patterns of participation for diverse students, the impact of educational agents (e.g., faculty, administrators, and staff), and external social and political factors associated with access to civic participation.

By taking a critical quantitative approach to examine civic engagement of college students, I am examining the civic engagement of ethnic and racial minority students, and include variables representative of civic participation and barriers to participation of these populations. I also scrutinize institutional level predictors of civic engagement of underrepresented minority students. To this aim, I am expanding the theory of participatory democracy by using the Multicontextual Model for Diverse Learning Environments Model (DLE Model)—a conceptual model which consider the multiple layers which affect underrepresented minority student's civic engagement, including institutional, curricular, and co-curricular affects on civic engagement.

Model for Diverse Learning Environments: The Influence of Institutions

The DLE Model helps us understand the affects of institutions on civic engagement of underrepresented minority students at various college campuses. The DLE Model takes a holistic approach to analyzing the ecosystem of higher education institutions and its impact on student success (Hurtado, Alvarez, Guillermo-Wann, Cuellar, & Arellano, 2012). Hurtado, Alvarez, et al. (2012) state, "[I]nstitutions do not exist in a vacuum, but rather are a part of communities and individual external commitments and macrosystems or the contextual forces outside the institution" (p. 49). At the microsystem and mesosystem levels, the DLE Model draws on social identity theory to describe the interactions between diverse students with multiple social identities and instructors, staff, and students; interactions include in- and out-of-class

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experiences, both social and academic. Institutions and students are also influenced by the community context and external commitments. This model also highlights the impact of macrosystems on institutions and students; this includes socio-historical and policy contexts that influence institutional contexts. These systems combine to influence the campus climate for diversity and result in greater social equity and success for racial/ethnic minority students.

At the center of the DLE model is the relationship of student's social identity (e.g., race, class, and gender, and I would add immigrant identities), and climate for diversity and student success. Racial/ethnic minority students, especially immigrants, are more likely to be civically engaged in activities that are connected to their ethnic and/or immigrant identities (Perez, Cortes, Ramos, & Coronado, 2010; Perez, Espinoza, Ramos, Coronado, & Cortes, 2010; Stepick, Stepick, & Labissiere, 2008). However, the activities in which they are likely to engage are not consistently or accurately measured in studies on civic engagement of college students (Hillygus, 2005).

The DLE Model represents the reality for underrepresented minority students on college campuses and their social and academic engagement at the institutions they attend; ultimately impacting their civic engagement and academic success. The model represents the multi-dimensional factors that impact student success and moves away from focusing on student's academic achievement and abilities—very unidimensional, student-focused, and deficit-framed approaches to examining student success. The DLE Model takes into account the interaction among various dimensions of policy, institutional, and community contexts that influence student's college experiences and ultimately student's academic success (Cuellar, 2014). This includes student's demographic and social backgrounds, and pre-college and college experiences. For example, influenced by the Bronfenbrenner (1976, 1977) ecological model of

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human development, the exosystem level of the DLE Model is the "Community Context and External Commitments" (Hurtado, Alvarez, et al., 2012). This level considers the networks and relations of higher education institutions with the local communities, including alumni, parents and student's external commitments to the community. Student-level external commitments include so called "pull factors" that affect student's level of engagement on campus, persistence, and academic achievement such as finances, hours of employment, and family responsibilities (Hurtado, Alvarez, et al., 2012); all of which are more likely to impact racial/ethnic minority, low-income, and first-generation college students. These external commitments are also likely to influence student's level and type of civic participation and civic values (Alcantar, 2014).

Additionally, at the mesosystem level, the model recognizes that each college campus will vary by state and institutional policy contexts, type and structure of the institution, and composition and characteristics of their students, faculty, staff, and local community and their influence on student success. Higher education institutions, especially public institutions, are governed and affected by state-level regulatory and finance policies—policies which are further affected by federal-level policies on financial aid and affirmative action (Hurtado, Alvarez, et al., 2012).

Aside from financial aid and affirmative action policies, MSIs are also regulated by the federal government. Federal higher education policies related to MSIs are interrelated with college campus culture, commitment to diverse student populations, and institutional policies and practices. The federal recognition of MSIs, and the availability of financial resources to support these institutions, are affected by federal policy and the availability of funds. Furthermore, there is the political will of postsecondary institutions who choose to seek federal MSI designation (HSIs, AANAPISIs, PBIs, ANSI, NHSI, and NASNI) and funding—

demonstrating a need and commitment to serving underrepresented populations. However, the level of commitment varies by institution. I specifically analyze the variation in student civic values by institution type (public vs. private), institutional commitment to developing civic values (Carnegie Classification), and Minority Serving Institution (MSI) status of various campuses, all of which represent institutional structures, policies, practice, and composition (see Appendix C for variables).

At a more macro level the historical context of studies (see sociohistorical and policy context of DLE Model), especially at the time of data collection, is important to consider when examining civic engagement—especially for racial and ethnic minority and immigrant populations (Doyle & Skinner, 2017; McIntosh & Muñoz, 2009; Ramakrishnan & Espenshade, 2001; Stepick et al., 2008; Torney-Purta, Amadeo, & Andolina, 2010). Civic participation rates are influenced by current social and political events, which are embedded in a historical context, especially when they have the potential to negatively affect particular communities. Researchers have found higher political participation among immigrant communities when anti-immigrant legislation is presented in the ballots (Ramakrishnan & Espenshade, 2001). For example, Banda (2010) found that in 2006 authorized and unauthorized immigrant youth across various metropolitan cities in the United States participated in rallies, walk-outs, marches, and meetings to support undocumented students. Furthermore, regions that are heavily populated with immigrants, like the Chicago metropolitan area, demonstrate higher rates of civic participation by immigrant populations compared to regions where immigrants are less concentrated or face harsh anti-immigrant policies, such as Arizona (Donnelly, 2010).

Stepick and his colleagues (2008) examined the civic engagement of immigrant youth in Florida and found that some of the higher rates of civic engagement among participants may

have been influenced by the Elián González case in 1999; at five years old he was found drifting

at sea from Cuba near Florida's coast on a floating device with his dead mother which resulted in

an international immigration and custody battle between Cuba and the U.S.. In a longitudinal

study of the civic engagement of high school students, McIntosh and Muñoz (2009) found

increased levels of political discussion in the classroom and a strong relationship between

African-American high school students and their intention to vote. Students were surveyed in

2009, months after President Obama was elected into office, and eligible Black, Hispanic, and

Asian voters exhibited higher turnout rates than in 1992 elections (Coley & Sum, 2012). The

researchers assume these patterns emerged due to the historical context of the study, when the

first Black presidential candidate campaigned for and took office in the United States, which

may have inspired more racial/ethnic minority students to vote (McIntosh & Muñoz, 2009). This

coincides with other findings of high voting rates among minorities during the 2008 presidential

elections (Coley & Sum, 2012).

Furthermore, the DLE Model acknowledges a more comprehensive conceptualization of

student success outcomes in higher education that focuses on student development and lifelong

learning to support a more diverse and democratic society (Hurtado, Alvarez et al., 2012). These

outcomes extend "achievement-oriented outcomes" such as access and college degree

attainment, to outcomes associated with the development of civic engagement and civic values

(Hurtado, Alvarez, et al., 2012). "Each of the individual-level outcomes [(associated with the

DLE Model)] result in collective implications for the promotion of social equity, pluralistic

ideals of democratic citizenship, as well as economic outcomes for regions where diverse college

graduates reside" (Hurtado, Alvarez, et al., 2012, p. 50). Additionally, institutions foster civic

and democratic values through compositional diversity, informal interactions with diverse peers,

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and diversity-centered curricular and co-curricular offerings (Hurtado, Alvarez, et al., 2012). The dependent variable of civic values is representative of this broad conceptualization of student success. I also include variables which represent diversity in curricular and co-curricular experiences, such as participation in ethnic and women's studies courses and participation in an ethnic/racial student organization.

Civic Learning Spiral: Developing Student Civic Values

Moreover, this study takes a developmental approach to the study of civic engagement of college students. Thus this study controls for student's civic values at the start of college and then examines how various college experiences influence the development of civic values after four years of college. The developmental approach to this study is informed by the Civic Learning Spiral (Musil, 2009). The Civic Learning Spiral is composed of six elements that are intertwined to foster, "lifelong engagement as an empowered, informed, and socially responsible citizen" in students from elementary through college (Musil, 2009, p. 59). The six elements are: 1) Self, 2) Communities and Cultures, 3) Knowledge, 4) Skills, 5) Public Action, and 6) Values, which are described below (Musil, 2009).

The element of "Self" is a person's own understanding of their identity and role within communities. "Communities and Cultures" is the appreciation and understanding of diversity and diverse perspectives. "Knowledge" is partly factual historical civic knowledge, but also recognition of knowledge as "socially constructed and implicated with power" (Musil, 2009, p. 62). The element of "Skills" are skills of critical thinking, teamwork, leadership, communication skills, and public speaking (Musil, 2009). "Public Action" is the commitment to and involvement in civic participation. The elements are not mutually exclusive. For example an institution may simultaneously develop student's civic knowledge and public action by instituting a service

learning course requirement for graduation. Lastly, "Values" is an individual's personal belief of promoting public good and "espousal of democratic aspirations of equality, opportunity, liberty, and justice for all" (Musil, 2009, p. 63). For this study I specifically focus on values as an developmental outcome, as this may predict a lifelong commitment to civic engagement.

Values within the Civic Learning Spiral have been examined using national datasets. For instance, Hurtado, Ruiz, and Whang (2012) combined various surveys from the Cooperative Institutional Research Program (CIRP) to examine curricular and co-curricular activities in college that foster each element in the Civic Learning Spiral. One of the elements the authors examined was "Values" (Hurtado, Ruiz, & Whang, 2012). Like Hurtado, Ruiz, and Whang (2012), I also use the "Social Agency" construct in the College Senior Survey (CSS) and the Freshman Survey (TFS), as a proxy for civic "Values," and expand on their work by examining institutions which serve a large proportion of racial/ethnic minority students and the development of civic values of different ethnic/racial groups. The social agency construct in the CSS and TFS examines "the extent to which students value social and political involvement as a personal goal" (Franke et al., 2010, p. 18).

Ultimately, the Civic Learning Spiral helps us understand the components of civic learning that, "establish the habit of lifelong engagement as an empowered, informed, and socially responsible citizen" among students (Musil, 2009, p. 59). The various components of the Civic Learning Spiral highlight that the development of student's civic values and a long-term commitment to civic engagement takes more than simply civic participation. Faculty and institutions interested in fostering civic values in students must move beyond encouraging or providing opportunities to be civically engaged. For example the components of the Civic Learning Spiral can be incorporated as student learning outcomes in a course, a component to

satisfy a degree requirement or be a part of an institution's mission. For this study I include variables representative of curricular and co-curricular opportunities presented in the literature as effective approaches to fostering the various components of the Civic Learning Spiral. Additionally, I use Civic Values (i.e., Social Agency) as both a developmental outcome variable and an independent variable within the statistical models to address the research questions and to examine the development of this outcome, which are further described in the methods section.

Rationale for the Theoretical Frameworks

Together the DLE Model and the Civic Learning Spiral are grounded in a critical quantitative (CQ) framework and are each interconnected to frame a critical lens for the study of civic engagement of underrepresented minority students. My choice in a quantitative study examining the educational experiences which promote civic values for underrepresented minority students, my interest in the influence of MSIs and being critical of traditional civic engagement models and considering covariates relevant and representative of the college experiences of underrepresented minority students reflect a CQ lens. The DLE Model recognizes the various levels of an organization and its political, historical and social context that affect student's academic success and development of civic values. The DLE Model also expands traditional student outcomes to include civic values. Lastly, the Civic Learning Spiral informs the decision to select civic values-the long-term commitment to civic values, as an outcome variable, as well as the selection of covariates of teaching and learning practices which have been recognized as promoting civic values.

<div align="center">

Conclusion

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In conclusion, these theoretical frameworks challenge traditional and deficit frameworks of civic engagement of racial/ethnic minority students in higher education and work towards a

more social justice-oriented approach in examining civic engagement of underrepresented minority college students (Bensimon, 2007; Solorzano & Delgado Bernal, 2001). They also guide my choice for examining a national dataset of higher education institutions, with variables representing curricular and co-curricular experiences in college, which will help us understand student civic values as a function of variance by institutions. These theoretical frameworks guide my methodological and analytical choices and will ultimately impact the direction I pursue with the results. At the center of this study is a deeper understanding of how higher education institutions promote civic values, particularly for underrepresented minority students, especially since civic values have been linked to other traditional educational outcome variables such as college degree attainment (Doyle & Skinner, 2017; Perna, 2005). The next section presents the research and conceptual frameworks that further inform the student-level and institutional-level factors that influence student's civic values for this study.

CHAPTER 3: CIVIC ENGAGEMENT LITERATURE

To be civically engaged is to be motivated to take action politically or nonpolitically to make a positive impact within a community (O'Connor, 2006). However, inconsistencies exist in the literature regarding how researchers operationalize and measure various forms of civic engagement (Newell, 2011; Torney-Purta et al., 2015).There are different ways to be civically engaged. Most research has focused on *political* civic engagement (Coley & Sum, 2012; Hillygus, 2005; McIntosh & Muñoz, 2009; Torney-Purta, 2002; Torney-Purta, Cabrera, Roohr, Liu, & Rios, 2015), such as voting, but the most current, albeit limited work, has included other forms of civic engagement behaviors that are indirectly related to politics (Hyman & Levine, 2008; Newell, 2011; Stepick et al., 2008; Torney-Purta et al., 2015), for example, volunteering in the community (see Appendix B for a list of both types of civic engagement). For this study, I include variables representing both civic and political engagement.

Furthermore civic engagement is often focused on civic actions or behaviors, be it political or social civic participation. However, although civic participation is important, what may be more important is the development of lifelong civic values and civic responsibility. Civic values are a deep commitment to civic participation; to have civic values is to have a sense of civic responsibility to your community and/or society. Having civic values extends civic engagement beyond one-time participation to a lifelong commitment to civic participation. For example, a student who is required to volunteer to fulfill a graduation requirement, may volunteer one time, but may not develop a commitment to volunteering that lasts beyond the requirement. As opposed to someone who volunteers on their own accord, and for an extended time, who may have civic values that they will act on beyond college and may instill these values in their children (Keeter, Zukin, Andolina, & Jenkins, 2002). However, civic participation in

college does have the potential to develop civic values of students if organized and delivered in a structured way through curricular and co-curricular opportunities. Researchers have recognized civic values, as opposed to civic engagement, as a learning outcome of higher education as it presents more of a developmental model for civic engagement (Hurtado, Ruiz, & Whang, 2012; Lott, 2013; Pascarella & Terenzini, 2005; Ponjuan, Alcantar, & Soria, 2016; Rhee & Dey, 1996). For example, Ponjuan and colleagues (2016) present a multidimensional developmental model for understanding the development of civic engagement of college students that considers the cognitive, intrapersonal and interpersonal domains of civic engagement. Because of this, I focus on the changes in students' civic values in college.

The next sections present the literature linking civic engagement to educational outcomes in higher education, and the curricular and co-curricular experiences and institutional affects on civic engagement of college students.

Civic Engagement and Higher Education

Researchers have found a positive relationship between educational outcomes (academic achievement, college degree attainment) and civic engagement (Astin & Sax, 1998; Campbell, 2009; Coley & Sum, 2012; Doyle & Skinner, 2017; Hillygus, 2005; Perna, 2005). The literature demonstrates civic engagement and higher education outcomes have the potential to be mutually reinforcing. Students who are civically engaged are more academically successful and attain higher levels of education (Astin et al., 2000). Educational outcomes measures, such as high school and college academic achievement (e.g., SAT scores, grade point averages), have a positive relationship with civic participation (Hillygus, 2005; Pascarella et al., 1988). In turn, individuals with higher levels of education are more civically engaged (Coley & Sum, 2012; Doyle & Skinner, 2017; Perna, 2005; Ramakrishnan & Espenshade, 2001). Civic engagement in

high school also influences civic participation in college, which in turn influences civic participation after college and post baccalaureate educational and career pursuits (Astin & Sax, 1998; Keen & Hall, 2008; Torney-Purta et al., 2015). A longitudinal study by Astin and Sax (1998) found that students who volunteered in college were more likely to enroll in graduate school, were more "committed to promoting racial understanding, and socializing across racial ethnic lines" (p. 595). Another longitudinal study that tracked students thirteen years after college found that students who volunteered in college were more likely to volunteer as adults and exhibited prosocial orientations (Bowman, Brandenberger, Lapsley, Hill, & Quaranto, 2010). Additionally, studies have found that students who have civic values, such as a commitment to help others, are more likely to pursue service-related careers (Kang, 1999). Various curricular, co-curricular experiences and institutional characteristics influence the development of civic engagement or civic values in college for students. However, not all students have the same or equal opportunities to participate or engage in these civic-promoting curricular and co-curricular experiences, nor do all types of institutions offer or promote the same opportunities.

Student engagement with curricular and co-curricular opportunities in college are also influenced by college enrollment and academic characteristics, and environmental "pull factors" of students (Nora, 2003). Past studies on social and academic engagement on college campuses have highlighted numerous factors that either inhibit or promote involvement of students (Nora, 2003). For example, researchers have identified enrolling part-time (Kuh, 2009; National Survey of Student Engagement [NSSE], 2004; Zhao & Kuh, 2004), having family and work—especially over 20 hours per week and off-campus (Kuh, 2009; Nora, 2003; Nora, Cabrera, Hagedorn, & Pascarella, 1996; Pike, Kuh, & McKinley, 2009), commuting to college (Kuh, Gonyea, & Palmer, 2001; Nora, 2003), living off campus (Kuh et al., 2001; Reason & Hemer, 2015; Torney-

Purta et al., 2015), as factors that inhibit students from fully integrating and engaging with college. Other factors that inhibit social, academic, and civic engagement on campus is placement in developmental education (Astin, 2000) or having transferred from another institution (NSSE, 2004). Another factor that influences student engagement with particular curricular and co-curricular activities on campus is student's academic major, with social science majors more likely to be civically engaged (Lott, 2013; Torney-Purta et al., 2015); which may be due to the exposure to social science courses related to political or social circumstances in the U.S. (Jayakumar, 2007). These factors may influence not only student's engagement in curricular and co-curricular activities, but possibly also civic activities (Astin, 2000; Lott, 2013; NSSE, 2004; Reason & Hemer, 2015; Torney-Purta et al., 2015).

Not only is the development of civic values in college influenced by the curricular and co-curricular opportunities students *choose or are able* to participate in, but also what is available at their institution (Colby et al., 2007). The next section presents the literature on the curricular and co-curricular factors that foster the civic engagement of college students, followed by the higher education institutional factors that promote civic engagement. At the end of each section I present the student- and institutional-level conceptual frameworks guiding this study.

Curricular and Co-Curricular Factors that Promote Civic Engagement

Structured curricular and co-curricular opportunities to engage with diversity issues, diverse peers, and to develop critical thinking are known to develop student's civic participation, capacities, understanding, and values (Hattori, 2011; Hurtado, 2007; Laird, 2005). The co-curricular opportunities that positively influence civic engagement in college are participation in leadership development, student government, interactions with diverse peers through participation in diversity-focused, service or social justice-oriented or culturally-oriented clubs,

workshops or programs, or having a roommate of a different racial/ethnic background, and volunteering (Astin, 1993; Astin, 1999; Cole & Zhou, 2014; Ko, 2012; Lott, 2013; Sax, 2004). The curricular opportunities that positively influence civic engagement and the development of civic values are diversity and social science courses, such as sociology, political science, ethnic and gender studies, as well as majoring in social science, and study abroad opportunities (Astin et al., 2000; Bataille et al., 1996; Chang, 2002a; Colby et al., 2007; Cole & Zhou, 2014; Eyler & Giles, 1999; Laird, 2005; Lott, 2013; Luebke & Reilly, 1995; Salisbury et al., 2009).

Furthermore, service learning has been highlighted as one of the most purposeful and targeted institutional practices to enact and promote civic engagement (Martin et al., 2015). Service learning is a pedagogical approach that combines academic learning, leadership and civic development, and community service (Franco, 2002; Martin et al., 2015; Wasburn, Laskowitz-Weingart, & Summers, 2004). According to Rockquemore and Schaffer (2000), "service-learning in higher education is intended to increase students' civic responsibility and enhance learning" (p. 14). Service learning can be an off-campus community service experience or a course with a community service component focused on collaborative civic pedagogies. It is typically designed in two ways: 1) Students are arranged into teams and work with community-based organizations (CBOs) to resolve an issue, or 2) Students work individually with designated organizations (Wasburn et al., 2004). Serving learning opportunities are intended to raise both social and academic engagement in two complementary ways. First, students gain "shared knowledge," or a common learning experience with connected courses that "promote higher levels of cognitive complexity that cannot easily be obtained through participation in unrelated courses" (Tinto, 1998, p. 171). This aspect raises their academic engagement. Second, by sharing

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this learning experience with other students in the same classes, students benefit from "shared knowing," or a sense of cohesion. This aspect raises their social engagement (Tinto, 1998).

Researchers who have examined service learning have found that it presents a strategy to engage students with school and develop positive academic, social, and civic outcomes (Astin & Sax, 1998; Astin et al., 2000; Franco, 2002; Lee & Espino, 2010; Rockquemore & Schaffer, 2000; Strage, 2004; Tinto, 1998; Wasburn et al., 2004); all which positively influences student persistence (Tinto, 2006). Tinto (1998) states, "the introduction of cooperative learning, whether in individual classes or in a learning community context, not only increases learning and retention, but also helps develop in students the norms of citizenship, a quality that is in danger of eroding throughout the nation" (Tinto, 1998, p. 173).

The literature finds that participation in service learning programs increases college student's sense of social awareness, concern for the public good, civic responsibility and efficacy, political awareness, altruistic attitudes, self-efficacy, personal identity, self-esteem, spiritual growth, moral development, sensitivity and reasoning, leadership skills, tolerance for diversity, racial understanding, and cultural awareness (Astin & Sax, 1998; Blankson, Rochester, & Watkins, 2015; Brisbin & Hunter, 2003; Coley & Sum, 2012; Conway, Amel, & Gerwein, 2009; Elwell & Bean, 2001; Eyler, Giles, Stenson, & Gray, 2001; Hurtado, 2007; Kezar, 2002; Lee & Espino, 2010; Taylor & Trepanier-Street, 2007; Wasburn et al., 2004). Service learning participants tended to report viewing diversity as an asset to a community, and are more likely to aspire to continue serving the community, volunteer, and work for nonprofit organizations after the service learning course or program ended (Astin & Sax, 1998; Brisbin & Hunter, 2003; Coley & Sum, 2012; Conway et al., 2009; Eyler et al., 2001; Hurtado, 2007; Kezar, 2002; Lee & Espino, 2010; Taylor & Trepanier-Street, 2007; Wasburn et al., 2004). For example, one study

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examined the civic engagement outcomes of participants in AmeriCorps, a university-sponsored

federally-funded service learning program (Einfeld & Collins, 2008). The study found that

participants had an increased awareness of social inequality and of their own privilege and

prejudices, and that the experience challenged their values, culture, and assumptions (Einfeld &

Collins, 2008).

Moreover, service learning has also been found to impact student's academic

development. Studies find that students who participate in service learning courses increase their

social and academic engagement on campus and earn higher college grade point averages than

students in non-service learning courses (Elwell & Bean, 2001; Strage, 2004). Using CIRP data,

Astin and colleagues (2000) have found it has numerous positive affects on "academic

performance (GPA, writing skills, critical thinking skills), values (commitment to activism and

to promoting racial understanding), self-efficacy, leadership (leadership activities, self-rated

leadership ability, interpersonal skills), choice of service career, and plans to participate in

service after college" (p. 3).

Although the literature has demonstrated the positive affects of these curricular and co-

curricular opportunities on the civic engagement of college students, little is known about the

factors that may be a barrier to engaging in these opportunities. Additionally we do not know

how these opportunities affect racial/ethnic minority groups or low-income students differently,

as most research has focused on White students (Hillygus, 2005). The limited research that has

examined civic engagement by race has found that racial/ethnic minority students are more likely

to engage in social (e.g., tutoring, mentoring, translating for the community) rather than political

(e.g., voting, interning in a governmental office) civic engagement (Hyman & Levine, 2008;

Katsiaficas et al., 2016; Perez, Cortes et al., 2010; Perez, Espinoza et al., 2010; Stepick et al.,

2008). These differences in civic engagement by racial/ethnic minority students may be influenced by their racial identity, immigration status, or socioeconomic status, but possibly also by different curricular or co-curricular opportunities in college than for White students (Tong, 2010).

Furthermore, low-income students and racial/ethnic minority students are more likely to enroll in college part-time, work, and have family responsibilities; all of which may present a challenge in engaging in these structured civic opportunities (Hyman & Levine, 2008; Mark & Jones, 2004; Martin et al., 2015). Although contrary to studies that find a negative affect of work on persistence and academic success for students, some studies have found that students who work are more likely to be civically engaged (Jarvis, Montoya, & Mulvoy, 2005; Sax, 2004). Moreover middle class students are often exposed to different forms of capital, especially financial, social and cultural capital that facilitates their opportunity to engage in civic opportunities (Hyman & Levine, 2008; Mark & Jones, 2004).

Furthermore, studies have also found difference in civic participation and values by gender (Cabrera et al., 2002; Hurtado, Engberg, Ponjuan, & Landrewman, 2002; Lott, 2013; Pascarella, Edison, Nora, Hagedorn, & Terenzini, 1996; Torney-Purta, 2009). Females are more likely to engage in social civic activities than males (Bureau of Labor Statistics, 2015; Einolf, 2011). Another study found females scored lower on civic values than men (Lott, 2013). However, males have been found to score higher on political civic knowledge, which may result in greater participation in political civic activities than females (Dolan, 2011; Torney-Purta, 2009). Nonetheless, some research has found no statistically significant relationship between gender and civic engagement (Hu, 2008; Reason & Hemer, 2015).

Student-Level Conceptual Framework

The student-level conceptual framework for this study is informed by the theoretical frameworks and literature presented on the student college experiences and personal attributes that may influence the development of civic values for college students. Student attributes and civic participation in high school (Student Attributes & Pre-College Factors) will influence their enrollment characteristics at particular institutions and their college academic outcomes (College Enrollment & Academic Factors), but also the types of academic and social experiences students engage in during college (Academic & Social Experiences in College), which ultimately influence their civic values and aspirations for service-related careers (Outcomes; see Figure 1 for details).

Institutional Factors that Promote Civic Engagement

Just like different types of higher education institutions produce different educational outcomes for students in terms of college degree attainment and academic skills because of their different level of resources, structures, compositions, characteristics, and missions, they also produce different outcomes in terms of civic engagement (Lott, 2013). Higher education institutions, especially public colleges and universities, are often thought of as vehicles for delivering a democratic education and fostering democratic ideals (Bowen, 1977; hooks, 2010; Hurtado, 2007; Hurtado, Alvarez, et al., 2012; The Center for Information & Research on Civic Learning and Engagement [CIRCLE], 2016). Although we know various curricular and co-curricular practices in higher education that may foster civic engagement, very little is known about the institutional-level characteristics that affect civic values of students (Hurtado, 2007). College is a stage in a student's educational and life trajectory when they have the opportunity to be exposed to diversity, critical thinking, social awareness, and develop civic capabilities

(Ponjuan et al., 2016). We also know institutions produce varying educational outcomes, such as degree production and academic skills, due to differences in selectivity levels, sector, availability of resources, student composition, the culture of support for students, and missions to serve and develop students (Hurtado, Alvarez, et al., 2012); civic engagement of students is also affected by these institutional characteristics (Lott, 2013).

Researchers have identified institutional selectivity, size, religious affiliation, and sector as institutional characteristics which affect student level of civic engagement and the development of civic values (Astin, 1993; Lott, 2013; Pascarella et al., 1988; Rhee & Dey, 1996). Specifically, religiously affiliated institutions and private institutions have a positive affect (Rhee & Dey, 1996; Lott, 2013), and more selective institutions (Lott, 2013) have a negative affect on student's civic values. Increased levels of civic values at religiously affiliated institutions may be due in part by institutional commitments to service and possible social justice orientations (Rhee & Dey, 1996). The increase in civic values at private institutions may be attributed to religiously affiliated institutions being private schools. Additionally, campuses where students are more likely to engage in campus demonstrations and protest are also more likely to increase student's level of civic values (Rhee & Dey, 1996); this may be due in part to an influence by a campus culture of civic engagement. Put differently, greater levels of civic values among students at religiously affiliated institutions and institutions with high participation in campus protests and demonstrations may be due to institutional missions aimed at civic engagement.

Institutional Mission of Civic Engagement

Although limited research has focused on the influence of institutional missions of civic engagement on civic values of students, researchers and practitioners have described them as

essential for raising student's commitment to civic engagement and their development of civic capacities (Sax, 2004; The National Task Force on Civic Learning and Democratic Engagement [TFCLDE], 2012). In other words, aside from institutional characteristics, resources, and civic opportunities, an institution's mission to developing student's civic capacities greatly influences student's development of civic values (Barnhardt, Sheets, & Pasquesi, 2015; Fox, 2012; Sax, 2004; Scott, 2000; Strange & Banning, 2001). Higher education institutions can provide a service learning course or offer a volunteer opportunity to students, but without a cross-campus commitment to civic engagement, these opportunities will only impact a small fraction of the student population. One study found that student's perceptions of their campus' civic missions greatly influenced their civic commitments, even after controlling for student backgrounds, participation in curricular and co-curricular opportunities, and institutional characteristics (Barnhardt et al., 2015).

In the last decade, national organizations dedicated to elevating our country's civic engagement through higher education institutions, have developed various task forces to strategize around this goal. For example, in 2012, the Association of American Colleges and Universities (AAC&U) published a call-to-action for higher education to return to the original mission of colleges in developing our nation's civic engagement. This was answered by various institutions by developing university task forces to strategize around developing students' civic capacities and engendering an engaged citizenry (TFCLDE, 2016). Some of the participating institutions implemented professional development for faculty in curriculum development, others on applied metrics for measuring success related to civic engagement (TFCLDE, 2016).

Prior to the report put forth by the AAC&U in 2006, the Carnegie Foundation opened the Community Engagement Classification which symbolizes an organization's mission,

commitment, and practice of civic engagement; this classification is considered an "elective

classification" because institutions voluntarily apply for this classification (New England

Resource Center for Higher Education [NERCHE], 2015). The Community Engagement

Classification is an "evidence-based documentation of institutional practice" of "collaboration

between institutions of higher education and their larger communities (local, regional/state,

national, global) for mutually beneficial exchange of knowledge and resources in a context of

partnership and reciprocity" (NERCHE, 2015, para. 9). The New England Resource Center for

Higher Education (2015), Carnegie's partner in administering this classification, states:

> The purpose of community engagement is the partnership of college and university
> knowledge and resources with those of the public and private sectors to enrich scholarship,
> research, and creative activity; enhance curriculum, teaching and learning; prepare educated,
> engaged citizens; strengthen democratic values and civic responsibility; address critical
> societal issues; and contribute to the public good. (par. 10)

In addition to reporting institution's practice of community engagement, the classification also

involves data collection and documentation of their impact, commitment, and practices

(NERCHE, 2015).

Most research that has examined the impact of Carnegie's Community Engagement

Classification has focused on organizational change, community-institution partnerships,

resource allocation, implementation of this for faculty tenure, and intention to elect this

classification, but not its impact on students (Pearl, 2014; Saltmarsh, Giles, O'Meara, Sandmann,

Ward, & Buglione, 2009; Weerts & Sandmann, 2008). This study controls for the Community

Engagement Classification to examine its influence on student's civic values.

Minority Serving Institutions

This study also examines civic engagement at MSIs. Higher education institutions

categorized as MSIs are accredited, degree-granting, public or private not-for-profit institutions

that either have a history of serving particular racial/ethnic populations (i.e., HBCUs and TCUs) or meet a minimum enrollment threshold of a particular racial/ethnic population (i.e., HSIs and AANAPISIs). Some researchers have categorized institutions as MSIs if they fulfill the minimum full-time enrollment threshold set forth by the U.S. Department of Education (DOE; Cuellar, 2012), while others follow the full DOE guidelines for meeting MSI designation, which includes a minimum threshold for low-income students (CARE, 2013; see Appendix A for complete definitions). There are a total of nine different federally recognized MSI categories (full list in Appendix A). Three of the four major MSIs that are of interest for this study are: a) federally designated and/or funded Historically Black Colleges and Universities (HBCUs), b) Hispanic Serving Institutions (HSIs), and c) emerging Asian American and Native American Pacific Islander Serving Institutions (AANAPISIs).

MSIs have a long history of preparing leaders and professionals (i.e., doctors, teachers) needed in our communities (Blankson et al., 2015; Gasman & McMickens, 2010; Gasman, Spencer, & Orphan, 2015; Kanter & Schneider, 2013; Scott, 2000). In fact some MSIs have applied their federal Title III and V funding to provide community outreach and service (U.S. Department of Education, 2012). For example the City College of San Francisco, an AANAPISI, developed a service learning program that provided internship opportunities for students in programs or organizations that serve low-income AAPI communities. However, although MSIs are considered sites for promoting civic engagement among underserved populations, limited research has examined the relationship between higher education and civic engagement for racial/ethnic minority students at MSIs (Scott, 2000). The limited studies on civic engagement at MSIs has focused on HBCUs or Predominantly Black Institutions (PBIs) and TCUs (Gasman et al., 2015; Scott, 2000). One study examined the civic values of Latina/o students at federally

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designated, funded and emerging HSIs (Cuellar, 2012). Cuellar (2012) controlled for pre-college experiences and demographics, curricular and co-curricular experiences in colleges, and institutional contexts (HSI, emerging HSI, and private colleges). She found that the HSI and emerging HSI institutional contexts were not significant predictors of civic values for Latina/o students (Cuellar, 2012). Cuellar's (2012) study focused on Latina/o students and HSIs, for this study I am examining the experiences of other minoritized groups, examining HBCUs and AANAPISIs, and controlling for institutions with a mission to promote civic engagement. I also use HLM to examine civic values of students within institutions.

Furthermore, research on MSIs has demonstrated mixed results in terms of their impact on the educational and labor market outcomes of racial/ethnic minority students (Strayhorn, 2008). While some—if not most—MSIs have been described as welcoming and culturally responsive campus environments for racial/ethnic minority students (Cole, 2011), some researchers have found these institution to have low college completion rates (Gasman & Conrad, 2013) or no differences in academic outcomes (Kim, 2002). Further researchers have found MSIs to be more likely to graduate racial/ethnic minority students compared to racial/ethnic minority students attending non-MSIs, especially their targeted minority student population (Cunningham et al., 2014; National Commission on Asian American and Pacific Islander Research in Education [CARE], 2013).

Despite conflicting research on the impact of MSIs on traditional measures of student success, they are important sites of opportunity for racial/ethnic minority populations. Minority Serving Institutions (MSIs) are a set of institutions which often converge both a civic mission and racial and socioeconomic diversity; which make them perfect sites for building student's civic capacities, especially for racial/ethnic minority students (AIHEC & IHEP, 2001; Blankson

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et al., 2015; Kanter & Schneider, 2013; Scott, 2000). The high enrollment of racial/ethnic

minority students positions MSIs as a mechanism for promoting civic engagement of these

populations (Kanter & Schneider, 2013). Consequently more research is needed on the civic

engagement at MSIs. For this study I include institutional variables for HBCUs, HSIs, and

AANAPISIs to examine the influence of these institutions on student's civic values. I

categorized institutions that are federally designated and/or funded MSIs. I also examine the

differences in the development of civic values for targeted racial/ethnic groups enrolled in these

institutions. A more detailed definition of these categories are presented in Appendix A and

further explained in the methods section. Additionally, although MSIs vary in the proportional

representation of racial/ethnic minority students, type (2-year versus 4-year colleges), control

(public versus private), and selectivity (CARE, 2013, Nuñez, Crisp, & Elizondo, 2016); I only

focus on four-year colleges due to the sample restrictions.

Institutional-Level Conceptual Framework

Together the theoretical frameworks and the literature on institutional factors that

promote civic engagement inform the institutional-level conceptual framework guiding this

study. To review, the institutional-level characteristics included in the conceptual model contain:

control (public versus private), institutional selectivity, minority serving institution designation,

and the community engagement classification. The full conceptual model presenting both the

student-level and institution-level factors and their relationship to developing college student's

civic values is presented in the methodology section (see Figure 1).

CHAPTER 4: METHODOLOGY

In order to examine the factors that promote civic engagement of college students and the variability by higher education institutions, I examined a longitudinal dataset focused on college students. The first part of the study focused on the students and the background characteristics, enrollment patterns, and college experiences that promote or inhibit student's civic values after four years in college. The second part focused on the institutional characteristics that promote or inhibit student's civic values. After examining the student-level and institutional-level factors related to student's civic values, I examined how these factors influence student's aspirations in pursuing service-related careers, with particular focus on their level of civic values. For review, this study focused on the following research questions:

1) What background and college experiences predict the development of civic values of college students? In what ways, if at all, do college experiences predict the development of civic values of college students from different racial/ethnic backgrounds?

2) Controlling for background and college experiences, does the development of civic values vary by institution? In what ways, if at all, does attending a HBCU, HSI, or AANAPISI moderate the level of civic values for students from different racial/ethnic backgrounds?

3) What background, college experiences and institutional contexts contribute to student's likelihood of aspiring to pursue a service sector career after controlling for students' civic values?

This chapter presents a detailed description of the methods for this study, including the research hypothesis and rationale, conceptual framework, data, variables, and analysis plan. This chapter concludes with the study's limitations and the researcher's stance.

Hypotheses

This section presents the hypotheses and rationale for each research question.

Question 1: What background and college experiences predict the development of civic values of college students? In what ways, if at all, do college experiences predict the development of civic values of college students from different racial/ethnic backgrounds?

Working Hypothesis 1: Distinct differences in civic values by race/ethnicity. Factors correlated to college students' development of civic values will differ across racial/ethnic group membership. Civic values will be particularly different for racial/ethnic minority students compared to White students, but also between each racial/ethnic minority group.

Rationale 1. Studies have found differences in civic values for racial/ethnic minority students, as a group, compared to White students (Lott, 2013). One study in particular examined civic values using the 2000 and 2004 CIRP datasets and found that racial/ethnic minority students had higher civic values than White students after four-years in college (Lott, 2013). Racial/ethnic minority students were oversampled in the dataset used for this study (2004 TFS and 2008 CSS CIRP datasets). Thus, for this study I examined the influence of factors across different racial/ethnic groups, rather than grouping them. This analysis will yield different results for different racial/ethnic groups.

Question 2: Controlling for background and college experiences, does the development of civic values vary by institution? In what ways, if at all, does attending a HBCU, HSI, or AANAPISI moderate the level of civic values for students from different racial/ethnic backgrounds?

Working Hypothesis 2: Distinct differences in civic values based on institutional characteristics after controlling for student-level variables. Civic values will vary within and

between institutions. The variation within institutions refers to differences between students at one institution in regards to the student's development of civic values. I hypothesize that variation will exist between students based on demographic backgrounds such as race and socioeconomic status, pre-college experiences, and college curricular and co-curricular experiences. These differences will further be influenced by various institutional characteristics or contexts. Although some similarities may exist in terms of student's civic values *within* institutions based on institutional control and selectivity, variation will exist across institutional context, religious-based institutions and MSIs in particular. The civic values of racial/ethnic minority students will be particularly influenced by MSIs (i.e., HBCU, HSI, AANAPISI status).

Rationale 2. Past studies have found a positive correlation between curricular and co-curricular experiences in college on the development of student's civic values (Hurtado, Ruiz, & Whang, 2012). Taking service learning, Women's Studies and Ethnic Studies courses in particular have been found to influence student's civic values (Hurtado, Ruiz, & Whang, 2012; Lott, 2013). Additionally, researchers have found differences in civic values based on institutional contexts (Lott, 2013). Lott (2013) for example, found institutional selectivity based on mean SAT score and private institutions predicted civic values. Research has also found differences in academic achievement and academic self-concept outcomes for students at different institutional contexts, including MSIs (Cuellar, 2014; Teranishi, Martin, Bordoloi Pazich, Alcantar, & Nguyen, 2014). Given the research on differences by institutional contexts, I expect there to be differences in civic values based on institutional contexts.

Question 3: What background, college experiences and institutional contexts contribute to student's likelihood of aspiring to pursue a service sector career after controlling for students' civic values?

Working Hypothesis 3: Distinct differences in aspirations for service sector career based on student- and institutional-level characteristics after controlling for civic values. Aspirations for a service sector career will vary within and between institutions. The variation within institutions refers to differences between students at one institution in regards to the student's aspirations for a service career. I hypothesize that variation will exist between students' odds of aspiring for a career in service based on demographic backgrounds such as race and socioeconomic status, pre-college experiences, and college curricular and co-curricular experiences. These differences will further be influenced by institutional characteristics. Although some similarities may exist in terms of student's odds of aspiring for a service career within institutions based on institutional control or selectivity, variation will exist across other institutional contexts.

Rationale 3. Research has found that college student's career aspirations are often influenced by faculty, and curricular and co-curricular college experiences (Berman, Rosenthal, Curry, Evans, & Gusberg, 2008; Campos-Outcalt, Senf, Watkins, & Bastacky, 1995; Hunter, Laursen, & Seymour, 2006; Milem & Umbach, 2003; Sax, Bryant, & Harper, 2005). For example, participating in research as a an undergraduate student, taking service learning courses, and having meaningful interactions with faculty have been found to be particularly influential to career aspirations (Berman et al., 2008; Campos-Outcalt et al., 1995; Hunter et al., 2006; Sax et al., 2005). Most of the research on career choice aspirations has focused on STEM careers (Berman et al., 2008; Garibay, 2014), however, these differences will possibly be found for service careers as well. One study did find that participating in service learning had a positive influence on pursuing careers in service (Astin et al., 2000). Thus, curricular and co-curricular experiences will influence distinct differences in aspirations for service careers. In terms of

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institutional difference, limited research has examined institutional influences on student's career choices; but smaller scale and descriptive studies have identified particular institutional contexts whose graduates are more likely to be in particular fields. For example, a large proportion of elected officials graduated from HBCUs (Thurgood Marshall College Fund, 2015), HBCUs are also credited with being the second most common bachelor degree-granting institutions that grant doctorates in science and engineering (including health professionals; Fiegener & Proudfoot, 2013), 50 percent of all teaching degrees earned by Latina/os were granted by HSIs (HACU, 2017), and TCUs have made tremendous strides in raising the number of Native K-12 teachers (AIHEC & IHEP, 2001). These data points highlight differences in career preparation and thus production.

Conceptual Framework

Figure 1 presents the conceptual framework that guides the student- and institutional-level variable selection and data analysis of this study. I controlled for various student attributes, college experiences, and institutional characteristics to examine the relationship of these variables to student civic values and their aspirations to pursue service-related careers (see Figure 1). Each set of variables presented in Figure 1, and their relationship with one another, is explained in the following section. Below (in measures sub-section), I describe the student-level (Level-1) and institutional-level (Level-2) variables entered in the models which are organized in variable blocks representing the inputs, environment, and the output (DV) as guided by Astin's (1993) Input-Environment-Outcome Model (I-E-O; see list of the variables in Appendix C).

Astin's (1993) I-E-O Model considers the characteristics and experiences that students come with to college and how they affect their educational outcomes. "In the I-E-O model, student outcomes (O) are presumed to be a function of inputs (I) and environments (E). Students

enter college with characteristics, proclivities, and prior experiences (inputs) that influence the experiences and environments toward which they gravitate in college. Together, inputs and experiences/environments are predictive of college outcomes" (Bryant, Gayles, & Davis, 2012, pp. 80-81). For example, pre-college characteristics such as high school GPA and civic engagement will influence the level of engagement in college. Once in college these pre-college characteristics and experiences will interact with the college environment. For instance, if a student was civically engaged in high school and the college offers civic opportunities, these students are more likely to continue their civic engagement through college and will influence their civic outcomes post college.
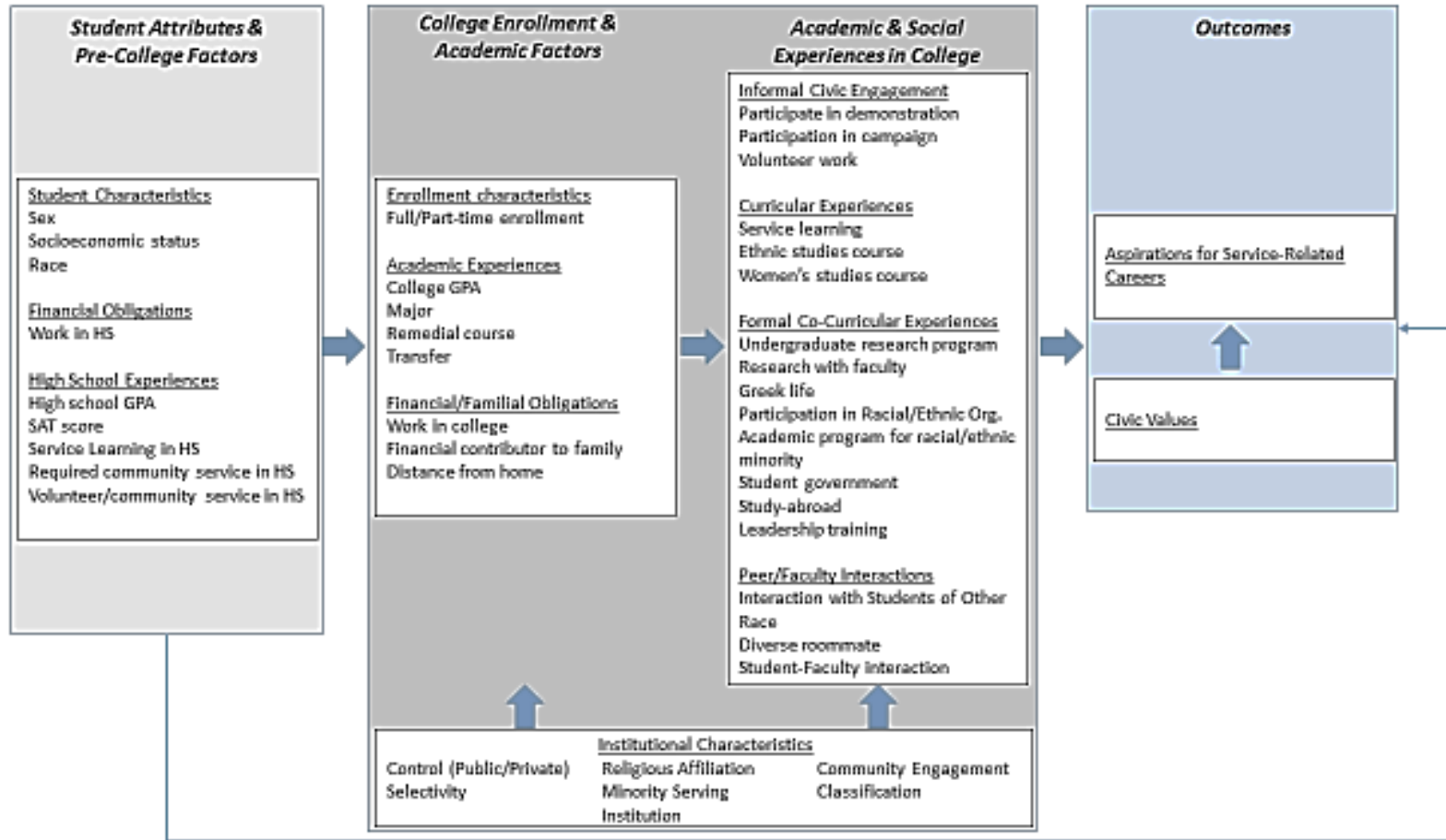
Figure 1. Conceptual model for understanding the relationship between student attributes, college experiences, and institutional characteristics on student civic values and aspirations for service-related careers.

At the student-level, the block of input variables are: Student attributes and pre-college factors; these variables are the various characteristics and experiences which the students come into college with, such as their individual background characteristics (sex, socioeconomic status, race), high school academics (GPA, SAT scores) and civic experiences in high school (service learning courses, community service). It is important to control for these pre-college experiences, as past studies have found that high academic achievement and civic engagement in high school positively influences civic participation in college (Astin & Sax, 1998; Hillygus, 2005; Keen & Hall, 2008; Pascarella et al., 1988; Torney-Purta et al., 2015).These pre-college experiences and background characteristics may influence their college experiences and the institutions they enroll in and thus potentially their civic values and aspirations for a career in service.

The environmental blocks are experiences in college (both at the student- and institutional-level) that will then influence civic outcomes (civic values and aspirations for service-related careers). The first block of environmental factors are: a) college enrollment (part-time/full-time enrollment), b) academic experiences (college GPA, major, remedial coursework, transfer), and c) financial and familial obligations and responsibilities (working in college, financial contributor to family, distance from school). The second group of environmental factors are: a) academic experiences (curricular experiences) and social experiences (informal civic engagement, co-curricular experiences, peer/faculty interactions). The third component of the environmental block are the institutional-level variables which consist of various institutional characteristics (control, selectivity, religious affiliation, MSI, community engagement commitment/classification), which may influence student's academic and social experiences within colleges and ultimately the outcomes.

Each of the blocks of variables are informed by the theoretical/conceptual frameworks and literature on civic engagement that was presented in Chapter 2 and 3. Each measure in the conceptual framework and its associated literature is explained in further detail in the measures section below.

Research Design

This section presents the research design, data source, analysis plan, and limitations of the study. Additionally, a detailed explanation for each of the variables included in the model is presented under the measures subsection.

Data Source

The data for this study came from three institutionally-matched datasets: student reported data from CIRP, a large dataset of higher education institutions directed by HERI at the University of California, Los Angeles; and institutional data from the Integrated Postsecondary Education Data System (IPEDS) and The Carnegie Classification of Institutions of Higher Education.

The data was drawn from two CIRP surveys: the 2004 Freshman Survey (TFS) and the 2008 College Senior Survey (CSS). The TFS is administered to freshman students enrolled full-time in the fall of their first year and asks students about their high school academics and experiences, demographic information, and aspirations for involvement in college. The CSS is a follow-up survey to the TFS and is administered four years later with the same student participants which allowed me to control for various inputs in the statistical models and to examine the experiences of students after they enter college. The CSS asks students about their college enrollment status, academics, in- and out-of-college experiences, and future career and educational aspirations. The CIRP dataset is one of the few large datasets available to examine

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the development of civic values of students across time and among clusters of students in various institutions across the U.S. (Reason & Hemer, 2015; Torney-Purta et al., 2015).

The CIRP datasets typically draw large samples of selective four-year institutions and White students; however in the 2004 TFS and 2008 CSS, HERI oversampled MSIs and thus, also racial/ethnic minority students, through National Institutes of Health (NIH) and National Science Foundation (NSF) grants (for more information see Garibay, 2014). The larger sample of MSIs and racial/ethnic minority students provides a unique opportunity to utilize multilevel modeling analytic techniques to examine MSIs with this dataset.

IPEDS is institutional data collected through interrelated surveys conducted by the U.S. Department's National Center for Education Statistics ([NCES], 2015). Each year, IPEDS collects data from all postsecondary institutions that participate in federal student financial aid programs (i.e., Pell Grant and federal loan programs), about institutional characteristics and prices, enrollment, student financial aid, demography of students, finances and expenditures, and data from human resources about employees (NCES, 2015). Over 7,500 postsecondary institutions participate in IPEDS surveys each year (NCES, 2015).

The data from the Carnegie Classification that was used for this study is the Carnegie's Community Engagement Classification. The Carnegie Classification is a categorization system of higher education institutions to allow researchers to compare similar groups of institutions (The Carnegie Classification for the Advancement of Teaching [Carnegie], 2015). The six classifications are: Basic, Undergraduate and Graduate Instructional Program, Enrollment Profile and Undergraduate Profile, and Size & Setting (Carnegie, 2015). As reported earlier, the Community Engagement Classification was added in 2006 to recognize higher education institutions that self-select to apply to be a part of institutions that provide evidence of their

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mission, commitment, and practice of civic engagement (NERCHE, 2015). In 2006 and 2008, institutions had to provide evidence of either having "Curricular Engagement" or "Outreach and Partnerships" related to civic engagement, and both were required by 2010. The Community Engagement Classification currently takes place in five-year cycles. Each year there are more and more institutions that sign on to the Community Engagement Classification. In 2006, they started with seventy-four institutions; this rate nearly doubled by 2008 for a total of 120 institutions. Currently, 278 institutions are classified as Community Engagement institutions.

However, for this study I only utilized the 120 institutions that were classified in 2006 and 2008 to align with the 2004 and 2008 CIRP datasets (list in Appendix F). These classified institutions are flagged in the 2004 and 2008 CIRP datasets and unclassified institutions were used as the control group. Although these institutions were classified in three different years, starting two years after the 2004 entering class and the 2008 seniors in the dataset, institutions do not identify as civically engaged campuses or commit to engaging with local communities through curriculum or other initiatives overnight. Therefore, I have included all institutions classified in these years; not just during the 2004 and 2008 years.

Student and Institutional Sample

The analytic sample of 18,800 students from 329 postsecondary institutions for this cross-sectional study was drawn from a larger sample of students who participated in the 2004 TFS ($N = 428,808$) and 2008 CSS survey conducted at 720 postsecondary institutions across the U.S. (Sax et al., 2004). The racial/ethnic demography of the sample consists of 66.4 percent White ($n = 12,496$), 8.2 percent Black ($n = 1,546$), 8.2 percent Hispanic ($n = 1,539$), 5.6 percent Asian ($n = 1,053$), 0.4 percent American Indian ($n = 73$), and 9.5 percent multiracial ($n = 1,791$) students (Table 4.1). Almost a third of the sample had a father (30.2%) and a mother (34.8%)

with a college education. More demographic characteristics of student-level and institution-level variables are reported in the next chapters.

The MSI designation was determined utilizing the federal enrollment eligibility requirements. HBCUs are already flagged within the CIRP datasets. The designated and/or funded HSIs in the dataset were identified by utilizing a published list of institutions developed by Cuellar (2012). Designated and/or funded HSIs enroll at least 25 percent full-time Latina/o students and at least 50 percent of students met low-income eligibility guidelines, which is determined by Pell grant eligibility. Cuellar (2012) examined HSIs using the 2004 CIRP dataset and reported 21 HSIs and 23 emerging HSIs. Cuellar (2012) employed published lists of eligible institutions from research advocacy organizations—Excelencia and Hispanic Associations of Colleges and Universities (HACU)—to identify HSIs within the dataset. For AANAPISIs, their minimum enrollment threshold of AAPIs is ten percent. These institutions were flagged as emerging AANAPISIs, as these institutions did not receive designation until 2008. For this study, HBCUs, HSIs, and AANAPISIs were dummy coded.

Measures

The selection of variables was guided by the literature on civic engagement and the conceptual frameworks presented earlier (List of variables in Appendix C). The primary variable of interest (used as both a dependent variable in Model 1 and 2 and an independent variable in Model 3) is student's level of civic commitment—also known as civic values—and is defined as social agency in the CIRP dataset. The independent variables include student-level: a) pre-college demographic variables, b) high school, c) college experience variables, and d) institutional level characteristic variables.

Dependent Variable 1. The primary dependent variable of interest is *Civic Values*; I measured *Social Agency* as the proxy for civic values—the element of "Values" within the Civic Learning Spiral. The *Social Agency* dependent variable is a "six-item [construct] that measures the extent to which students value political and social involvement as a personal goal" (Hurtado, Ruiz, & Whang, 2012, p. 14). The six items are four-point scales that indicate the importance of each of the following items: keeping up to date with political affairs, participating in a community action program, influencing social values, becoming a community leader, helping others who are in difficulty, and helping to promote racial understanding. The social agency construct in the CIRP dataset, as a measure of civic values, is one of the most reliable and valid measures of civic engagement in higher education (Lott & Eagan, 2011).

Dependent Variable 2. The second dependent variable, *Service Career*, represents student's aspiration for a public service sector career. Service sector careers include careers/occupations such as teacher (K-12 and college), school administrator (principal, school counselor), medical careers (nurse, physician, therapist), military service, etc. The variable was derived from a survey item that asked students to mark their probable career or occupation. This survey item includes 44 distinct and diverse values such as "college teacher," "clergy," and "undecided" (full list and coding for this study in Appendix G). The dependent variable was dummy coded 1 if the student aspires for a public service sector career, and 0 if they did not. I utilized a number of publications, government websites, and definitions to identify and group public service sector careers available in the CIRP dataset.

At the initial stage, I replicated the list of service careers used in a past report by HERI (Astin et al., 2000). Astin and colleagues (2000) listed the following service sector careers: medical careers (clinical psychologist, dentist, nurse, optometrist, physician and therapist), non-

medical service careers (elementary, secondary or college teacher, clergy, forester/conservationist, foreign service, law enforcement, school counselor, and principal).

Second, I cross-listed or added more careers using the list of qualifying employers that are used to determine student federal loan borrower's eligibility for the U.S. Department of Education's Public Service Loan Forgiveness Program (PSLF). "The PSLF Program was [signed into law in 2007 through The College Cost Reduction and Access Act] to encourage individuals to work in public service by forgiving the remaining balance of their [federal student loans]" (U.S. Government Accountability Office, 2015; Federal Student Aid, 2015, p. 2). Public service employers include: "any federal, state, local, or tribal government agency […] U.S. military, public [schools], public colleges and universities, public child and family service agencies, and special governmental districts" (i.e., public transportation agencies), also law enforcement, public health, and other education/school and elderly services (Federal Student Aid, 2015, p. 7).

Third, since the focus of the PSLF is more about the employer rather than the occupation, I also used occupation lists from the U.S. Census Bureau (2006, 2017) and the U.S. Bureau of Labor Statistics (2017) which utilizes the North American Industry Classification System (NAICS) developed by federal agencies from the U.S., Mexico, and Canada to classify occupations in North America (Executive Office of the President & Office of Management and Budget, 2017). The U.S. Census Bureau's (2006) *Government Finance and Employment Classification Manual* distinguishes civilian (non-military) versus non-civilian (military) public employees, local, state, and federal public employees (including those serving abroad). In addition to these employment lists, the manual includes a list of "functional categories for employment statistics" (U.S. Census Bureau, 2006, p. 12–1); this includes employment categories that are important to the function of the U.S., but do not directly fall under the

previous lists, such as employees in higher education institutions, including instructional

employees. Additionally, NAICS' *North American Industry Classification* manual further

differentiates occupations by industry and public versus private sector occupations (Executive

Office of the President & Office of Management and Budget, 2017). For example, pharmacists is

an occupation listed in the CIRP dataset which the NAICS manual identifies as being in the

private sector since this occupation is in the business of selling pharmaceuticals.

Lastly, for careers which were not explicitly defined as public service careers through the

websites and reports previously listed, I utilized other variables to get a sense for individual's

intent for a career in public service. Many of these careers listed in the CIRP dataset were

ambiguous because they can potentially align with both careers in the private or public sector

(e.g., engineers can pursue careers in the private sector, as opposed to a career in public service

like civil engineers). The following careers in the CIPR dataset were not explicitly delineated as

public service careers: "architect or urban planner," engineer, and scientific researcher.

In order to add these careers into one of the two categories (service versus not service) I

examined crosstabs of these careers with a variable that lists goals to provide service. From a

scale of 1 (not at all important) to 3 (very important to essential), the variable asked participant's

the level of importance they give to the following goals: a) influencing the political structure; b)

helping others in difficulty; c) becoming involved in programs to help clean up the environment;

d) becoming a community leader; e) working to find a cure for health problems; and f)

improving the health of minority communities. Careers with a large proportion of the sample

(80% or more) who select "somewhat important" and "very important to essential" to at least

two of five goals was coded as "service career." I chose to ignore the goal "helping others in

difficulty" because upon further examination the majority of the sample—regardless of the

career—selected this goal to be important. Urban planner/architect and scientific researcher were coded as 1 because both had at least two goals with over 80 percent of the sample stating they were "somewhat important" and "very important to essential." Specifically, amongst students who aspired for a career as a scientific researcher, 84.9 percent selected the goals to clean the environment and 81.1 percent to find a cure for health problems as important. Of students who aspired to a career as an urban planner or architect, 82.9 percent thought the goal of becoming a community leader and 93.9 percent to clean the environment as important. Engineer was coded as 0 because only one of the goals, cleaning the environment, had over 80 percent (83.1%) of the sample selecting it as important.

Additionally, "Other" and "Undecided" was coded as non-service since this options does not give a proper indicator for being a service career. The full list of public service careers in the dataset is listed in Appendix G.

Independent Variables. The independent variables are listed by level and in blocks guided by the I-E-O Model. The variables and the coding descriptions are listed in Appendix C.

Student-Level Variables (Level 1)

Pre-Test. In order to control for student's civic values at the start of college, and not as a product of their college experience, I controlled for student's level of civic values at the start of college using the TFS survey. For the third research question examining student's aspirations for a career in service, I also controlled for student's probable career, as stated by the student, at the start of college as a pre-test measure for aspirations for a service sector career.

Background Variables. Student's background characteristics that may affect their level of civic values and aspirations to pursue a service career were added to this block of independent variables. I controlled for gender, where female=1 and males are a reference group. Research has

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found differences in civic participation and values, and service occupations for women as opposed to men (Cabrera et al., 2002; Cemalcilar, 2008; Hurtado et al., 2002; Lott, 2013; McKinney, 2002; Pascarella et al., 1996; Torney-Purta, 2009). Most studies have found that women are more likely to be civically engaged, especially those with a postsecondary education (Bureau of Labor Statistics, 2015; Einolf, 2011; Perna, 2005; Wilson, 2000). Also, in terms of aspirations for service careers, nationally women are more represented than men in service sector careers such as teaching, nursing, and social work (U.S. Department of Labor, 2015).

Secondly, I included socioeconomic status, which is a scale item composed from income and parent education level variables and a dummy variable for first-generation college student status. Research has found family income and parent's level of education has an impact on student's level of civic engagement due to access to social, cultural, and human capital (Hyman & Levine, 2008; Lott, 2013; Mark & Jones, 2004; Pacheco & Plutzer, 2008; Wilson, 2000). In other words, students whose parents have higher incomes and levels of education may afford access to civic and internship opportunities that may not be accessible to others.

Additionally I controlled for student's race/ethnicity with dummy codes for Black, Latina/o, AAPI, and American Indian/Alaska Native, with White as the reference group. Past studies have found differences in civic engagement by racial/ethnic group (Harris, Battle, Pastrana, & Daniels, 2013; Lott, 2013; Perna, 2005). Lott (2013) found racial/ethnic minority students had higher civic values than White students. Still, limited research has really captured the differences in civic engagement and values for racial/ethnic minority students, especially the factors that promote their civic engagement (Harris et al., 2013; Lin, 2011; Park, Lin, Poon, & Chang, 2008).

Lastly, I controlled for parents' service sector careers. Given the influence of family socioeconomic status, parents' volunteerism through role modeling and/or through social, cultural, and human capital on student's civic engagement (Wilson, 2000), it is important to account for parents' civic engagement. In one study, Latina/o high school students identified their parents' "community involvement, political action, or compassion for others" as influencing their participation in student protests (Solorzano & Delgado Bernal, 2001, p. 321). However given that there is limited to no variables in the dataset that account for parents' civic behaviors, the closest proxy was parents' service-related careers.

High School Variables. I controlled for high school academic achievement using high school grade point average (GPA) and the composite SAT score. High school academic achievement has been found to influence student's civic engagement, as students who are more academically successful are more likely to be civically engaged (Hillygus, 2005; Pascarella et al., 1988). This may be due to students positioning themselves for college applications—although some studies have found otherwise (Lott, 2013).

Civic engagement experiences in high school were also included in the model due to their potential to influence civic values in college (Hart, Donnelly, Youniss, & Atkins, 2007). Past research has linked high school civic participation with civic engagement in adulthood (Hart et al., 2007). The civic engagement variables included are: participation in service learning in high school, volunteering, hours worked, and volunteering as a graduation requirement in high school. I recoded some of the experiential variables into dichotomous variables (1=students participated in those activities). Some of the experiential variables in the dataset asked students to report their level of participation within each experience—but the value options are problematic because we are not able to know how students interpreted the values. For example, students were asked if

they participated in volunteer work in the last year and were given the following options: "Not at All," "Occasionally," and "Frequently"; the intensity of their participation is left to the student to interpret. For instance, "Occasionally" could mean one time the entire year for one student—for others it could mean once a month. Since participation in particular curricular and co-curricular opportunities could potentially influence their civic values and engagement. Thus I recoded each curricular and co-curricular variables into dichotomous variables.

College Enrollment. I included independent variables to account for student enrollment patterns that may affect student's ability to participate in civic activities. Those variables are full-time enrollment, college GPA, taking remedial course work, and transferring from a community college or a four-year college. Enrolling in college full-time and college GPA have been found to be positive predictors of civic engagement; while enrolling part-time, remedial coursework and transferring have been found to negatively affect student's level of academic and social engagement (Astin, 2000; Kuh, 2009; NSSE, 2004; Zhao & Kuh, 2004). However, limited research has examined the influence of these variables on civic engagement.

I also controlled for college majors, specifically majoring in STEM versus not. This is a dichotomous variable representing STEM versus non-STEM majors, as this has been found to influence student's level of civic values (Garibay, 2015). For instance, majoring in STEM has a negative relationship with student's level of civic values (Garibay, 2015). On the contrary, majoring in the social sciences has a positive relationship with civic values (Lott, 2013; Torney-Purta et al., 2015). Majoring in STEM may affect student's civic values and aspirations for service-related careers due to a greater likelihood of being exposed to more diversity courses than STEM majors (Milem & Umbach, 2003).

Family and Economic Obligations/Responsibilities. Independent variables in this block represent familial and economic obligations and responsibilities, or what Nora (2003; Crisp & Nora, 2010) calls "environmental pull factors," that may affect civic participation and or civic values of college students. Past studies have found that students who; work more than 20 hours per week, help to financially support their families, and commute to school have negative affects on student's academic and social engagement which ultimately negatively influences their persistence and degree attainment (Crisp & Nora, 2010; Nora, 2003). Conversely, some studies have found that working students are more civically engaged (Jarvis et al., 2005; Sax, 2004). I examined whether distance from home affects student's level of civic values and their aspirations for a career in service. Going away for college can often force students to step out of their comfort zones and engage with different communities. For some students, this also forces them to seek community outside of their college campus to feel like home. Studies on civic engagement have yet to examine if the distance students travel to go to college affects their level of civic engagement.

Informal Civic Engagement. Three variables were entered to account for student's civic participation in informal civic opportunities: demonstrated for/against war and/or politics; experience working on a local, state, or federal campaign; and hours per week volunteering. These are civic opportunities that are not necessarily offered through a formal program, course, or requirement. Students who participate in these activities in college may have more motivation to be civically engaged, as they are demonstrating initiative in seeking out these opportunities. Some of these variables, such as demonstrating for/against a cause, also demonstrate high levels of civic engagement and possible values of social justice. Past studies have found that these three

civic activities are positive predictors of political engagement, civic values and awareness (Hurtado, Ruiz, & Whang, 2012).

Curricular Experiences. Curricular experience variables included in the model are formal courses that have been found to foster civic engagement, democratic ideals, and pluralistic orientations through civic participation and critical civic learning (Hurtado, Ruiz, & Whang, 2012; Milem, Umbach, & Liang, 2004). The three curricular experience variables are participating in a service learning course, and taking Ethnic and Women's Studies in college.

Co-Curricular Experiences. Institutions may also foster civic engagement through formal activities, clubs, and organizations on campus outside of class. The literature has demonstrated that participating in research as an undergraduate student is particularly influential in civic engagement development, career choice and graduate school aspirations (Garibay, 2014; Hunter et al., 2006). Student involvement in Greek life, sororities and fraternities, have also been found to influence civic engagement and leadership development of college students (Asel, Seifert, & Pascarella, 2009; Garcia, Huerta, Ramirez, & Patrón, 2017; Moreno & Sanchez Banuelos, 2013). Involvement in Latina/o and Black Greek organizations, in particular, have been found to influence greater civic participation (Garcia et al., 2017; McClure, 2006; Moreno & Sanchez Banuelos, 2013). I included a variable that accounts for students participating in Greek life at any point since entering college. Unfortunately, I was not able to differentiate between traditionally-White versus Black or Latina/o Greek organizations in the dataset.

However, related to Black and Latina/o Greek life involvement, student involvement in racial/ethnic organizations has been found to influence student leadership development and civic engagement (Garcia et al., 2017; Ko, 2012; Santiago, Shimizu, & Vaioleti, 2001).Thus, two dichotomous variables indicating participation in racial/ethnic organizations and academic

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programs for racial/ethnic minorities were also added to the model to examine its influence on civic values.

Additionally, experiential variables indicating participation in student government, study-abroad, and leadership training were also included in the model. Past studies have found a positive relationship between participation in study-abroad, student government, and leadership training on civic values, pluralistic orientations, and social responsibility for college students (Engberg, 2013; Lin, 2011; Lott, 2013).

Interactions with Faculty & Peers. Interactions with diverse peers and having meaningful relationships with faculty have been found to influence the development of student's pluralistic orientation and positive college campus experiences (Engberg, 2007; Garcia, 2016). One study found that college roommates of different racial/ethnic backgrounds influenced future positive cross-racial interactions (Duncan, Boisjoly, Kremer, Levy, & Eccles, 2003). Moreover, having a roommate of another race is particularly impactful to White students as these experiences often positively influence their view and sympathy for diverse social groups (Duncan et al., 2003; Gaither & Sommers, 2013). Additionally, positive student-faculty interactions have been found to influence student's career and graduate school aspirations (Berman et al., 2008; Campos-Outcalt et al., 1995; Hunter et al., 2006; Sax et al., 2005). I included variables for interactions with someone from another racial/ethnic background, having a roommate of a different race/ethnicity, and meaningful student-faculty interactions. The student-faculty interaction variable is a nine-item construct measuring the extent to which students and faculty establish a mentoring relationship.

Institutional-Level Variables (Level 2)

Institutional Characteristics. Lastly, to account for institutional characteristics that may influence civic engagement, I controlled for institutional selectivity, public versus private institutions, and religious-affiliated institutions. Selective private institutions are known to have more resources to support and encourage academic, social, and civic engagement (Cunningham et al., 2014). These institutions are also more likely to enroll students with high academic achievement and socioeconomic backgrounds, which as stated earlier, puts students at an advantage for civic participation. Additionally, although the CIRP dataset includes two-year colleges, only four institutions in the sample ($N = 18,818$) are two-year colleges with a range of one to twelve students each. Thus, because it is such a small sample of two-year colleges, I decided to drop these cases. I also controlled for religious-affiliated institutions since religious institutions and participation in religious activities or networks have been found to positively influence civic values and engagement (Lewis, MacGregor, & Putnam, 2013).

I also included institutional variables that have not been examined when it comes to civic engagement and they are MSI, particularly HBCUs, HSIs, and AANAPISIs, and the *Civic Engagement Classification*. The MSI variables are dichotomous variables representing MSI federal designation and/or funding versus non-MSI status for: HBCUs, HSIs, and AANAPISIs (see definitions of MSIs in Appendix C). Federally designated HBCUs were already flagged in the dataset. HSI were derived from Cuellar's (2012) study which examines HSIs utilizing the 2004 TFS and 2008 CSS datasets (for the list see Appendix D). Included in this study are federally designated and/or funded HSIs that meet the race/ethnicity (25% full-time Latina/o students) and income (50% low-income) requirements and institutions that meet the High Hispanic Enrollment (HHE) racial/ethnicity (25% Latina/o students) requirement as determined by the DOE (Appendix D; Cuellar, 2012). Cuellar (2012) obtained the list of HSIs from leading

HSI advocacy and research organizations—Excelencia and HACU. The list of AANAPISIs is

derived from a report by a leading research organization on AANAPISIs, the National

Commission on Asian American and Pacific Islander Research in Education (CARE, 2013; for a

list see Appendix E). The AANAPISIs represented in this study are all federally designated and

one funded institution as of 2013. Unfortunately there are no Tribal College and Universities

(TCUs) in the dataset.

The Civic Engagement Classification variable includes institutions whom received the

Carnegie Foundation's Community Engagement Classification in 2006 and 2008. The Civic

Engagement Classification was dummy coded 1 if an institution has this classification and 0 for

non-classified, for each year (2006, 2008) using non-classified institution as a reference group.

The list of institutions with the Civic Engagement classification was derived from the Carnegie

Foundation (the full list of institutions from Carnegie is in Appendix F).

Data Analysis

The analytic strategies used to address this study's research questions are described

below in Table 4.2 and will be described in further detail following the table.

Table 4.2 Summary of methods and analytics strategies based on research questions.

Research Question	Method & Analytic Strategy	Dependent Variable(s)/Outcomes	What is being measured?
(RQ1) What background and college experiences predict the development of civic values of college students? In what ways, if at all, do college experiences	1. Descriptive statistics 2. ANOVA 3. Level-1 Hierarchical Linear Modeling (HLM) 4. Interaction of curricular and co-curricular experiences by race/ethnicity	Civic Values (i.e., Social Agency)	The impact of various curricular and co-curricular college experiences on students' level of civic values for different racial/ethnic minority groups.

predict the development of civic values of college students from different racial/ethnic backgrounds?			
(RQ2) Controlling for background and college experiences, does the development of civic values vary by institution? In what ways, if at all, does attending a HBCU, HSI, or AANAPISI moderate the level of civic values for students from different racial/ethnic backgrounds?	1. Level-2 Hierarchical Linear Modeling (HLM) 2. Cross-level interactions of MSIs and race/ethnicity	Civic Values (i.e., Social Agency)	The variance in civic value outcomes by institutions. I am particularly interested in the institutional characteristics, especially MSI status, that promote students' civic values.
(RQ3) What background, college experiences and institutional contexts contribute to student's likelihood of aspiring to pursue a service sector career after controlling for students' civic values?	1. Descriptive statistics 2. ANOVA 3. Hierarchical generalized linear modeling (HGLM) 4. Cross-level interactions of MSIs and race/ethnicity	Service Sector Career Aspirations	Whether students aspiring for service sector careers vary by institutional characteristics, especially MSI status, and does having higher civic values result in a greater likelihood of students choosing service sector jobs.

Descriptive Statistics. I ran descriptive statistics to measure the mean, standard

deviation, range, skewness, and frequencies of variables to examine outliers, normality, and

differences by student's racial background, at the different types of institutions, and identify the amount of missing values. I provide descriptive statistics of the students and institutions in the sample. I ran correlational statistics, including crosstabs, and created scatter plots between all dependent and independent variables to examine the relationship between variables and identify potential risks of multicollinearity (also by examining the variance inflation factor). I was particularly interested in the relationship between civic values (i.e., social agency) at the beginning of college compared to their senior year; in other words, I wanted to know if students who initially start with high scores in civic values are also scoring high on civic values at the end of their senior year and do differences by ethnic/racial background exist. I completed a crosstab on civic values at the beginning of the survey administration (TFS- the Freshman survey) by civic values at the end of their senior year (the CSS). This is followed by a three-way crosstab of civic values of college freshman by civic values of college seniors for each ethnic/racial minority group in the sample. I also completed a crosstab with civic values at the start of their college education and participation in service learning courses, since research has found service learning to be a high impact practice for the development of civic values and skills (Astin et al., 2000). Lastly, I included a crosstab of the MSI designation with the Community Engagement Classification. Variables that demonstrate high correlation are either combined into a factor utilizing factor analysis, dropped from the model, or kept due to prior literature and theory (Belsley, Kuh, & Welsch, 2004).

Missing Variables. Although the CIRP dataset contains a large sample of students and institutions, missing values become problematic because: a) it increases the chances of biased parameter estimates, b) SPSS drops cases with missing values which reduces the overall sample size, which is particularly problematic when examining subgroups within the dataset, and c)

threatens the significance levels. To address missing variables, first I assessed the percentage of missingness for all variables in the dataset. Most of the variables in the dataset had no more than the allowable percentage of missing variables (3.06%; Allison, 2002; Little & Rubin, 2002). Of the categorical variables, estimated parental income had the most missing data at 10.6 percent, but was still less than the 15 percent of allowable missingness. However, among the continuous variables, the SAT composite scores variable had the highest percentage of missing values at 29.4 percent, surpassing the minimum missingness allowed.

Next, to test for missingness of continuous variables happening completely at random, I conducted the Little's Missing Completely at Random (Little's MCAR) test through SPSS software (Little, 1988). Little's MCAR examines the relationships between missing values of the student and institutional variables. The MCAR results were statistically significant (Chi-Square = 4278.466, df = 1462, p = .000) which means that missing data was not completely at random. Data not missing completely at random is not unusual, what is more usual, and likely for this dataset, is that the data is Missing at Random (MAR; Garson, 2015). The data is MAR, "[W]hen (1) not MCAR, indicated by Little's MCAR test being significant; and (2) missingness may be predicted by other observed variables and does not depend on any unobserved variables" (Garson, 2015, p. 15). To-date there is no test to determine if data is MAR (Garson, 2015) except to collect follow-up data and to use more exploratory methods such as assessing Little's MCAR or just examining patterns of missingness (Schafer & Graham, 2002).

To treat the missing data and preserve most of the data and variables, I utilized the Expectation-Maximization (EM) algorithms (Cox, McIntosh, Reason, & Terenzini, 2014) through SPSS software. EM is one of the preferred alternatives for handling missing data rather than "traditional" methods, such as listwise deletion, pairwise deletion, mean imputation,

dummy-variable adjustment, and cold-deck and hot-deck imputation (Cox et al., 2014). The variables included in the imputation model are listed in Appendix H. Sex and gender variables were not included in the imputation; thus cases with missing values in these variables were dropped in the full analysis.

      Hierarchical Linear Modeling (HLM). For the first and second research questions, I analyzed the inter-class correlation (ICC), which is a one-way analysis of variance (ANOVA), to determine if there was between-institution variance. This determines if the use of Hierarchical Linear Modeling (HLM) is the appropriate approach for analysis for the civic values dependent variable. The HLM 6 software has a function to run this analysis:

$$\text{ICC} = \frac{\tau}{\tau + \sigma^2}$$

The ICC determines if the variability of student's civic values "as a function of variability within institutions (or among students) and variability due to between-institution differences" (Lott, 2013, p. 5). Additionally, the chi-square test informs me of the difference among students across institutions is statistically significant.

      Due to the sampling strategies of the CIRP dataset, students are nested within various institutions. Because of this, variability potentially exists between students at one institution versus another. Therefore, to avoid misinterpreting the results, I use a two-level hierarchical linear model to account for the variability and nested nature of the data. At Level-1, individuals (students) vary across a number of characteristics within various institutions, as well as across institutions (O'Connell & Reed, 2012). These student characteristics include: gender, first-generation college student status, income levels, etc. The students are then nested within institutions with varying institutional characteristics. At Level-2, the institutional characteristics vary by institution but not by students within these institutions (O'Connell & Reed, 2012). For

example, students at highly selective institutions vary from students at low selective institutions (Level-2); additionally, students at highly selective institutions are more likely to be White and from affluent backgrounds. Students vary within each of these types of institutions (Level-1), but in different ways. The following are the equations for research question 2:

RQ1 & RQ2: Civic Values (DV)

Level-1:

$$y_{ij} = \beta_{0j} + \beta_{1j}(Pretest) + \beta_{2j}(Background) + \beta_{3j}(High\ School) \\ + \beta_{4j}(College\ Enrollment) + \beta_{5j}(Family/Economic\ Obligations) \\ + \beta_{6j}(Informal\ Civic\ Engagement) \\ + \beta_{7j}(Curricular\ Experiences) + \beta_{8j}(Co \\ - Curricular\ Civic\ Engagement) + \beta_{9j}(Interactions) + +r_{ij}$$

Level-2:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(Institutional\ Characteristics) \\ + \gamma_{02}(Minority\ Serving\ Institutions) \\ + \gamma_{03}(Civic\ Engagement\ Classification) + u_{0j}$$

The variables were entered into HLM in blocks based on the I-E-O Model. The variability within institutions in level 1 is represented by r_{ij} after controlling for all other variables. In Level-2 the random effect is associated with u_{0j}. All non-dichotomous variables are grand-mean centered, in this and in RQ3, to estimate the variability within groups; grand-mean centering subtracts the overall mean from the value of each person's response to the variable to adjust for between-institution differences (Raudenbush & Bryk, 2002). Dichotomous variables are uncentered in Level-1 because I was interested in the affect of variables on individuals (Lott, 2013; Raudenbush & Bryk, 2002). Additionally, all the variables in Level-2 are grand-mean centered.

To address RQ1, factors influencing civic values of students were examined in Level-1 of the HLM model. Each block of variables were examined as separate models to investigate the influence of each block of variables on the overall model. Additionally, to further examine the influence of various curricular and co-curricular experiences for each racial group, dummy slope variables (i.e., interaction terms) were constructed and entered into the full model. In other words, informal civic engagement, curricular experiences, co-curricular experiences, and peer and faculty relations were interacted with each racial/ethnic minority group; the interaction terms examine whether each college experience influences civic values for racial/ethnic minority students differently than for White students. Chapter 5 presents the findings from RQ1.

To address RQ2, the full HLM model was examined with particular focus on the influence of institutional variables in Level-2. After analyzing the full HLM model for civic values, cross-level interactions of MSIs by each racial/ethnic group was examined. This allowed me to examine if attending MSIs affected the civic values of racial/ethnic minority students differently. The following cross-level interactions were examined: a) HBCUs were interacted with Black students, b) HSIs with Latina/o students, and c) AANAPISIs with AAPI students. Chapter 6 presents the findings of RQ2.

Hierarchical Generalized Linear Modeling (HGLM). In the third research question civic values are entered as an independent variable; with student aspirations for careers in the service sectors representing a dichotomous dependent variable. Similar to research question two, this analysis begins by examining the ICC. For HGLM, the ICC is computed as:

$$\text{ICC} = \frac{var(u_{0j})}{var(u_{0j}) + \frac{\pi^2}{3}}$$

In addition to this, "graphs of empirical Bayes (EB) estimates [were] examined to determine the amount of variation between institutions" (Arellano, 2011, p. 85).

Furthermore, the Bernoulli, a special case of hierarchical generalized linear modeling (HGLM), is utilized for RQ3 because it examines a binary dependent variable (Raudenbush & Bryk, 2002):

Prob $(Y_{ij} = |\beta_{ij}) = \Phi_{ij}$,

Where Y_{ij} represents a transformed predicted value, a logit link, denoted as η_{ij} and i denotes the student and j denotes the institution (Raudenbush & Bryk, 2002).

$$\eta_{ij} = \log\left(\frac{\Phi ij}{1 - \Phi ij}\right)$$

The Level-1 and Level-2 models are as follows:

RQ3: Service Career (DV; Service Career=1)

Level-1:

$$\eta_{ij} = \beta_{0j} + \beta_{1j} * (Pretest) + \beta_{2j} * (Background) + \beta_{3j} * (High\ School) + \beta_{4j}$$
$$* (College\ Enrollment) + \beta_{5j} * (Financial/Familial\ Obligations)$$
$$+ \beta_{6j} * (Informal\ Civic\ Engagmeent) + \beta_{7j}$$
$$* (Curricular\ Civic\ Engagement) + \beta_{8j}$$
$$* (Co - Curricular\ Experiences) + \beta_{9j} * (Interactions)$$

Level-2:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} * (Institutional\ Characteristics) + \gamma_{02}$$
$$* (Minority\ Serving\ Institutions) + \gamma_{03}$$
$$* (Civic\ Engagement\ Classification) + u_{0j}$$

The variables are entered in the order representing the blocks in the conceptual model with the added independent variable that controls for student's level of civic values.

The results are reported as odd-ratios, which indicated the change in odds of a student aspiring for a service sector career holding all other variables constant (Powers, 2012). "Odds-ratios greater than one suggests an increase in students' likelihood of" aspiring for a service

sector career, "whereas values less than one indicate a reduction in their likelihood of" aspiring for a career in the service sector (Arellano, 2011, p. 87; Hedeker & Gibbons, 2006).

Limitations

A limitation to this study is the homogeneity of the population in the dataset. As mentioned in the data source and sample section, the majority of the of participants are White, women, and attending selective four-year private institutions which limits the analysis for community colleges, four-year public institutions, and racial/ethnic minority students whom mostly attend public, low to moderately selective institutions, especially community colleges. Additionally, even from the small sample of racial/ethnic minority students, they are high achieving students with traditional college-going characteristics. From the sample of Latina/os, the majority attend school full-time and enrolled directly after high school, which is opposite of what the literature states about this population (Fry, 2004); therefore, generalizability is limited. However, even though there are these limitations, the longitudinal nature and large sample of students and institutions in the CIRP datasets allowed me to examine institutional level affects on civic values of students. Additionally, the 2004 TFS and 2008 CSS dataset provide a unique opportunity to examine MSIs and racial/ethnic minority students because HERI oversampled these types of institutions and students these years. Furthermore, the CIRP dataset is one of the few large and comprehensive datasets which collects data about students' curricular and co-curricular college experiences, which allowed me to examine the impact of these practices on civic values of students.

Additionally, although this study's dataset provided a large sample of institutions, given the interest on civic values of racial/ethnic minority students, this study would have benefited from sampling a greater variety of types of institutions, specifically MSIs and community

colleges. The full sample of institutions included a limited number of community colleges. Therefore, cases from community colleges were dropped from the sample for analysis. Moreover, the sample of MSIs represented in the dataset are fairly small considering the number of MSIs across the country. Most of the MSIs in the dataset are four-year colleges and mostly federally designated HBCUs and HSIs, with very limited emerging AANAPISIs, and no TCUs. In fact, the data presented is on emerging AANAPISIs, given that this designation and funding came about in 2008, in the second phase of data collection for this dataset.

Another limitation was the use of secondary data to address the research questions. An assortment of variables would have been ideal to examine in this study, such as immigrant generation and citizenship and residency status. Immigrant generation, time of arrival to the U.S. and immigration status, especially undocumented status, are all known to affect civic participation (Suárez-Orozo, Hernández, & Casanova, 2015). Civic engagement is influenced by students' social identity which is shaped by intersections of race, class, gender, and immigrant backgrounds (social identity, part of the microsystem level of the DLE Model). For ethnic/racial minority groups, many whom are of immigrant backgrounds, it is important to examine relationships between civic participation and immigrant generation,[1]immigration status (U.S.-born, resident, refugee, undocumented, or the most recent, Deferred Action for Childhood Arrivals—DACA), and length of time in the U.S. (Tong, 2010; Uslaner & Conley, 2003).

Immigrant generation has an impact on civic engagement, and in particular the type of civic engagement. Recent immigrants are more likely to be socially civically engaged, while second- and first-generation immigrants who have been in the U.S. for a longer period of time

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[1]First-generation immigrants are those who immigrate to the United States older than 12 years old, 1.5-generation immigrants are those who immigrate to the United States at or under the age of 12, and second-generation immigrants are U.S.-born children of at least one foreign-born parent.

are more likely to demonstrate higher levels of political civic engagement (Uslaner & Conley, 2003). The 1.5-generation immigrant may also differ in their civic engagement and participation from first- and second-generation immigrants. On the one hand, 1.5-generation immigrants share an affinity to the United States since they spent much of their schooling in the United States, but may still face similar issues as first-generation immigrants (Seif, 2011). Higher levels of political participation may be due to their political and cultural socialization in U.S. schools.

Lastly, the outcome variables I selected may present some reporting bias that is skewed towards socially desirable responses. The civic values variable is composed of survey questions which ask students to indicate the level of importance they place on various civic behaviors and values (see Measures for complete description of construct). However, the civic values construct has proven to be a strong measure of civic engagement as it has been tested for reliability and validity (Lott & Eagan, 2011) and used as a dependent and independent variable for various studies (Astin, 1993; Lott, 2013; Pascarella et al., 1998; Rhee & Dey, 1996).

Researcher's Stance

In my own personal college experience as a Latina who is a low-income and first-generation college student, I had to work more than three jobs at a time to help my parents and myself survive—all while attending college full-time so that I could continue to receive financial aid to pay for school. I worked for a public hospital in a low-income community, specifically with undocumented and Spanish monolingual patients, and my off-campus work-study job was at a public elementary school teaching reading, writing, and math to recently immigrated students from Mexico and Vietnam. On top of working over 40 hours a week and attending school full-time, I independently tutored and mentored students, and coached track at my high school alma mater, which enrolls predominantly Latina/o and low-income students. I did not

have an official regular 20-hour week volunteer schedule or site, nor was I volunteering through a program, class, or internship. My volunteer activities were sporadic—but regular in that I was frequently giving back to my community in a variety of ways. Secondly, in my college, the type of community involvement I was doing was not rewarded, praised, or reinforced by college educators. The students in my classes who received positive affirmations were those who were able to participate through clubs, Greek life, and internships.

According to traditional civic and educational engagement models, I wasn't engaged in school or my community: I was unable to volunteer long-term for a set 20 hours a week; as a working commuter student I was not able to engage on campus. Furthermore, together, my personal experiences and engaging with my community, and learning about social inequalities in college, not only made me more critically conscious, but these experiences also gave me a sense of purpose. I knew then why I needed to continue with my education and it motivated me to pursue a career in academia. I wanted to do research that disrupts the damaging misconceptions of underrepresented populations and to support these communities, and I wanted to teach and mentor students. Because of students like me, with the growth of college enrollment from low-income racial/ethnic minority students, and the changing demography of this nation, it is critical that researchers use a critical perspective to analyze and develop education models, programs, and pedagogies that are inclusive and considerate of students' experiences in order to engage students and lead them to be successful college graduates who are civically responsible leaders and engaged citizens.

Conclusion

This chapter presented the methodology that was employed for this study. I examined the factors that influence the civic values and service sector career choices of students using a large

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longitudinal dataset. Research questions one and two will be addressed using HLM and research question three with HGLM. The next chapter presents the descriptive statistics and findings for each research question.

CHAPTER 5: STUDENT-LEVEL PREDICTORS OF CIVIC VALUES

The first research question, "What background and college experiences predict the development of civic values of college students? In what ways, if at all, do college experiences predict the development of civic values of college students from different racial/ethnic backgrounds?" puts into question the various background and college experiences that influence the development of civic values for college students. Guided by the conceptual framework presented in the last chapter, this research question specifically examines student's background characteristics (i.e., race/ethnicity, socioeconomic status), and high school and college experiences that may influence the civic values of students. The racial/ethnic background of students and college experiences are of particular interest for this study given the limited research on the civic engagement of racial/ethnic minority college students. This part of the study informs the work of higher education faculty, administrators, and student affairs professionals by exposing differences in the development of civic values and the practices that promote the civic values of students of different racial/ethnic backgrounds.

To address RQ1, this chapter presents the student-level predictors of student's civic values. This chapter is organized as follows: First, I examine descriptive statistics of the dependent and student-level independent variables in the model predicting civic values. Second, in order to determine if multilevel modeling is an appropriate statistical analysis the unconditional HLM was examined through the inter-class correlation (ICC). Third, HLM was used to examine the predictors of civic values at the student-level (Level-1), followed by the examination of the impact of curricular and co-curricular college experiences on the civic values of students of various racial/ethnic groups.

Examination of Civic Values & Student-Level Variables

Descriptive Statistics of the Student Sample

Table 5.1 presents the student-level descriptive statistics for the dependent and independent variables in the HLM (and HGLM model predicting service career aspirations in Chapter 7). The descriptive statistics demonstrate that 66.5 percent of the student sample are females which is reflective of national proportional representation of female undergraduate students compared to males (U.S. Department of Education, 2017). Of the 18,800 students in the dataset, 8.2 percent identify as Black, 8.2 Hispanic (as labeled in the dataset), 5.6 percent Asian, .4 percent American Indian, 66.4 percent White, 1.1 percent Other, and 9.5 Two or More Races/Ethnicities. Many of the students in the sample come from non-first-generation college backgrounds (83.8%), compared to first-generation college students (15.5%). In fact, 59.0 percent of students have fathers and 58.1 percent have mothers with at least a college degree. Additionally, 41.7 percent of students have at least one parent in a service sector career.

Table 5.1
Descriptive statistics of dependent and student-level variables

	Min.	Max	N	Mean	S. D.	Mean	S.D.
			Non-Imputed Data			Imputed Data (n = 18,800)	
Outcomes							
Civic Values	24.89	79.32	18503	52.1	9.90	52.14	9.85
Service Sector Career	1.00	2.00	18268	1.47	0.50	1.47	0.50
Pre-Test							
Civic Values Entering College	24.13	76.80	18100	49.0	9.02	49.07	8.91
Career Aspiration Entering College	1.00	2.00	17786	1.45	0.50	1.45	0.50
Demographic Characteristics							
Black	0.00	1.00	18688	0.08	0.28	0.08	0.28
Latino	0.00	1.00	18688	0.08	0.27	0.08	0.27
Native American	0.00	1.00	18688	0.004	0.06	0.004	0.06
Asian American	0.00	1.00	18688	0.06	0.23	0.06	0.23

Other	0.00	1.00	18688	0.01	0.10	0.01	0.10
Sex: Female	0.00	1.00	18791	0.67	0.47	0.67	0.47
Socioeconomic Status	4.00	44.0	16485	29.0	8.33	28.94	8.03
First-Gen. College Student	1.00	2.00	18658	1.16	0.36	1.16	0.36
Either Parent Service Career	1.00	2.00	18309	1.43	0.50	1.43	0.49
High School							
High School GPA	0.00	8.00	18668	6.81	1.28	6.80	1.28
Composite SAT Score	0.00	16.0	13278	10.4	4.52	10.4	3.92
Work in High School	1.00	2.00	18432	1.62	0.49	1.62	0.48
Service Learning in HS	1.00	2.00	18689	1.57	0.50	1.57	0.49
Req. Comm. Service in HS	1.00	2.00	18667	1.35	0.48	1.35	0.47
Volunteer/Comm. Service HS	1.00	2.00	18750	1.97	0.16	1.97	0.16
College Enrollment							
Enrollment: Full-Time	1.00	2.00	18111	1.93	0.25	1.93	0.24
College GPA	1.00	8.00	18401	5.99	1.51	5.99	1.50
STEM Major	0.00	1.00	18578	0.29	0.46	0.29	0.45
Remedial Course	1.00	2.00	18688	1.89	0.31	1.89	0.31
Transfer	1.00	2.00	18718	1.97	0.16	1.97	0.16
Financial Obligations & Challenges							
Work 20+ Hours	1.00	2.00	18664	1.79	0.41	1.79	0.41
Financial Contributor	1.00	2.00	18547	1.72	0.45	1.72	0.45
Distance From Home	1.00	6.00	18607	3.61	1.35	3.61	1.34
Informal Civic Engagement							
Demonstrations	1.00	3.00	18569	1.20	0.45	1.20	0.44
Campaign	1.00	3.00	18553	1.11	0.37	1.11	0.37
Volunteer	1.00	3.00	18567	1.88	0.68	1.88	0.68
Curricular Experiences							
Service Learning	1.00	2.00	18750	1.52	0.50	1.52	0.50
Ethnic Studies Course	1.00	2.00	18730	1.53	0.50	1.53	0.50
Women's Studies Course	1.00	2.00	18731	1.29	0.45	1.29	0.45
Co-Curricular Experiences							
Undergraduate Research Program	1	2	18720	1.12	0.33	1.12	0.33
Worked on Professor Research	1	2	18732	1.32	0.47	1.32	0.47
Joined Frat/Sorority	1	2	18740	1.19	0.39	1.19	0.39
Ethnic/Racial Organization	1	2	18729	1.28	0.45	1.28	0.45
Acad. Prog. for Racial/Ethnic Min.	1	2	18721	1.11	0.31	1.11	0.31
Student Government	1	2	18740	1.13	0.34	1.13	0.34
Study Abroad	1	2	18706	1.30	0.46	1.30	0.46
Leadership Training	1	2	18731	1.36	0.48	1.36	0.48

Informal Co-Curricular							
Interact with Other Race	1	3	18573	2.46	0.58	2.46	0.58
Roommate	1	2	18731	1.47	0.50	1.47	0.50
Student-Fac Interact	27.3	67.0	18485	49.9	9.00	49.9	8.93

In terms of the students' preparation and experiences in high school, 66.2 percent had average grades ranging from A- to A+ in high school. The sample also had a mean score of 518.2 (S.D. = 223.9) on the SAT Verbal and 521.9 (S.D. = 230.2) on the Math out of a total score of 800 on each test. Almost all of the students in the sample (97.2%) had volunteered or participated in community service in high school. Although 34.3 percent reported their high school required community service for graduation or participated in community service for a class (56.2%), the total percentage volunteering in high school is still fairly high—especially considering that 61.0 percent of the students reported working during high school. However, this high percentage of service is not surprising given that nearly all of the students enrolled directly into a four-year college (96.9%) and many colleges like to see community service in college admissions applications.

Descriptive Statistics of Civic Values

In order to examine the dependent variable (civic values), the continuous variable was recoded into a categorical variable. This was done by dividing the range of the continuous variable into thirds and grouping them into three categories (Low, Medium, and High). Recoding the Civic Value variable into a categorical variable eases the feasibility of running crosstabs with independent variables. This was also done with the civic values pre-test variable to examine its relationship with the Civic Values dependent variable. The frequency of the pre-test of civic values is 19.7 percent, 68.1 percent, and 12.2 percent scored "low," "medium," and "high," respectively, on civic values at the start of college. After four-years of college, 17.1 percent of

students in the dataset scored "low" on Civic Values, compared to 66.6 percent "medium," and 16.3 percent scoring "high." Generally, the frequencies demonstrate that many of the students fall under the medium range of civic values, but there is evidence of changes in civic values from the start of college to four years into college. After four-years of college, the percentage of students scoring "low" in civic values is reduced (19.7% to 17.1%), and increased for "high" (12.2% to 16.3%).

Additionally, crosstabs were conducted to examine the relationship between the pre-test and the outcome variable of Civic Values. More specifically, this analysis examined how students change in their level of Civic Values from the time they entered college until their senior year. The chi-square test revealed a statistically significant difference between the student's scores on Civic Values at the start of college and senior year of college ($\chi^2_{(4)} = 4529.37, p < .001$; Table 5.2). Overall, regardless of where students were in their level of civic values at the start of college, by the end of college many student's level of civic values changes (see Table 5.2). The most consistent were students who started college scoring in the "medium" ranges of civic values; by senior year 73.8 percent of those students stayed in the "medium" level of civic values. For the other quarter of students who started in the "medium" range, half (14.0%) scored in the "high" range of civic values, while the remaining (12.2%) decreased to "low" ranges of civic values. Interestingly, for students who started college with a "low" or "high" level of civic values, nearly half increased or decreased in those levels. More specifically, among students who scored "low" in civic values, a little over half (53.9%) scored "medium" by their senior year; while nearly half of those who scored "high" on civic values, lowered to "medium" in civic values. Although these crosstabs demonstrate a difference in scores on civic values from the time the students entered college to their senior year, these findings do not

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demonstrate what factors influenced those changes. The HLM analysis will be able to give a sense of what factors influenced these changes and in what direction.

Table 5.2
Percent of Student Score of Civic Values by Pre-Test Civic Values Score (n = 18,800)

Pre-Test Civic Values	Student Score on Civic Values		
	Low	Medium	High
Low	43.5%	53.9%	2.6%
Medium	12.2%	73.8%	14.0%
High	1.6%	47.2%	51.3%

Moreover, the bivariate relationship between the civic values and each student-level variable was examined using a correlation matrix. Only the pre-test for civic values had a moderately strong, positive, statistically significant relationship to civic values ($r = .588$, $N = 18800$, $p < .01$), which is expected given the crosstabs presented in Table 5.2. For the rest of the independent variables, civic values had a weak but statistically significant relationship with most variables except for American Indian/Alaskan Native (AI/AN), AAPIs, and full-time enrollment; these three variables did not have statistically significant relationship to civic values.

Variance of Civic Values

The descriptive statistics demonstrate changes in students' levels of civic values at the start of college to four years into college. There is also correlation between various background characteristics and college experiences. However, how much of the changes are due to differences by institutions? Before moving forward with a conditional HLM model predicting civic values, the first step is to analyze the unconditional HLM results for civic values—otherwise known as the inter-class correlation (ICC)—to examine the variance within and between schools for Civic Values. As Table 5.3 demonstrates, the ICC for Civic Values was .0554823678, suggesting that 5.55 percent of the variance in civic values is due to differences

between institutions (94.45% is attributed to differences between students). The chi-square test ($\chi^2_{(328)} = 1167.97887, p < .001$), reveals that the average civic values of students varies within institutions and is statistically significant across institutions. These results demonstrate HLM is an appropriate approach to study civic values of students, given the variance by institutions.

Table 5.3

Between Institution Variance for Civic Values ($n = 18,766$ students, 329 institutions)

	Variance Component	Chi-square	Sig.	ICC
Civic Values	5.46367	1167.97887	***	0.05548236780

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

Student-Level Predictors of Civic Values

Given the variation across institutions, a conditional HLM model predicting civic values was conducted to examine the factors that promote or inhibit student's civic values. The step block HLM model predicting civic values is found in Appendix I (Model 1-9). Each model (Model 1-9) in Appendix I presents the findings of each block of student-level variables entered into HLM. Table 5.4 presents the final student-level HLM model predicting civic values (Model 9 in Appendix I).The findings in each model are presented by the blocks of variables that are representative of the conceptual model presented in Chapter 4. To review, the blocks corresponding to the student-level conceptual framework are: a) pre-test variables, b) background characteristics, c) pre-college/high schools experiences, d) college enrollment patterns, e) financial and/or familial obligations during college, f) informal civic engagement in college, g) curricular experiences, h) co-curricular experiences, and i) peer and faculty interactions. The findings from the blocks of variables are discussed below.

Table 5.4

Student-Level HLM Model Step-Results Predicting Civic Values (n = 18,776 students, 329 institutions)

| | | | Model 9 | |
Variables	*r*	Sig.	Coef.	S.E. (Sig.)
Pre-Test				
Civic Values in HS	0.588	***	0.492	0.007***
Background Characteristics				
Female	0.098	***	-0.317	0.118**
Socioeconomic Status	-0.049	***	0.010	0.011
First-Generation College Student	0.022	**	0.303	0.180
American Indian/Alaska Native	0.004		0.656	1.229
Black	0.161	***	1.898	0.239***
Latina/o	0.091	***	1.178	0.240***
AAPI	0.000		0.740	0.265**
Other Race	0.023	**	1.273	0.532*
Multi-Racial	0.003		-0.125	0.184
Parent Service Career	0.033	***	0.164	0.110
Pre-College/High School Experiences				
HS GPA	-0.018	*	-0.077	0.055
Composite SAT	-0.092	***	-0.127	0.018***
Work in HS	0.022	**	-0.056	0.115
Service Learning in HS	0.111	***	-0.125	0.105
Community Service Required in HS	0.024	***	-0.116	0.125
Volunteer/Community Service in HS	0.080	***	0.148	0.418
College Enrollment				
Full-Time	-0.007		-0.408	0.227
College GPA	0.023	**	0.135	0.048**
STEM Major	-0.131	***	-0.984	0.134***
Remedial Course	-0.066	***	-0.187	0.189
Transferred	-0.017	*	-0.078	0.373
Financial/Familial Obligations in College				
Work over 20hrs/week	-0.057	***	0.123	0.141
Financial Contributor	-0.147	***	-0.506	0.129***
Distance from home	0.047	***	0.028	0.043
Informal Civic Engagement in College				
Demonstration	0.304	***	2.176	0.144***
Campaign	0.213	***	1.048	0.185***
Volunteer/Community Service	0.336	***	2.079	0.093***
Curricular Experiences in College				
Service Learning in college	0.203	***	0.812	0.120***
Ethnic Studies Course	0.205	***	0.927	0.121***
Women's Studies Course	0.162	***	0.755	0.137***
Co-Curricular Experience				

Undergraduate Research Program	0.020	**	-0.421	0.200*
Worked on Professor's Research	0.075	***	-0.070	0.129
Joined Fraternity/Sorority	0.049	***	-0.162	0.147
Ethnic/Racial Organization	0.269	***	1.291	0.154***
Academic Prog. for Racial/Ethnic Min.	0.211	***	0.881	0.175***
Student Government	0.136	***	0.213	0.143
Study-Abroad	0.108	***	0.557	0.138***
Leadership Training	0.219	***	0.760	0.123***
Interactions with Peers & Faculty				
Interact. w/Other Race/Ethnic Group	0.152	***	0.836	0.116***
Roommate of Other Race/Ethnicity	0.084	***	-0.194	0.127
Student-Faculty Interaction	0.238	***	0.125	0.008***
Intercept			36.430	1.286***
Model Statistics				
Level 1 variance			51.273	
Level 2 variance			0.967	
Explained variance at Level 1			0.449	
Explained variance at Level 2			0.823	
Intercept Reliability			0.382	

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

Pre-Test & Background Characteristics

In terms of civic values at the start of college, the pre-test for civic values was statistically significant throughout all the models. The higher the civic values of students at the start of college, the higher they are after four years. This finding aligns with past research which has found that civically engaged high school students are more likely to be civically engaged in college (Astin & Sax, 1998; Keen & Hall, 2008: Torney-Purta et al., 2015).

The background characteristics that were statistically significant were female and race/ethnicity, particularly for Black, Latina/o, AAPI, and "Other Race" students. Contrary to most scholarship on civic engagement (Doyle & Skinner, 2017; Garibay, 2014; Perna, 2005), females have lower civic values relative to males, holding all other student-level variables constant. This study aligns with one study which found that women had lower civic values than

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men (Lott, 2013). Interestingly, females had higher civic values than males when other background characteristics (high school academic and civic experiences, college enrollment, and financial and familial responsibilities) variables were introduced in the model. However, female became a non-significant variable once I entered informal civic engagement, curricular and co-curricular experience variables into the models. After the block of variables on interactions with peers and faculty were entered, civic values lowered for females compared to males. These findings suggest that for females, their background, high school, college enrollment patterns, financial and familial responsibilities and informal civic engagement experiences may have a greater influence on their civic values than for males; while interactions with peers from another racial/ethnic background and faculty interactions have a greater influence on civic values for males than for females. Furthermore, considering the high levels of civic values amongst females in the sample, it is harder to raise their civic values any further; while males may have more room to grow in terms of civic values given their lower levels of civic values.

In terms of racial/ethnic backgrounds, Black, Latina/o, AAPI, and "Other Race" students have higher civic values after four years in college compared to White students. This finding aligns with past studies ascertaining racial/ethnic minority students have higher civic values (Lott, 2013). In fact, these racial/ethnic categories were significant throughout each model. However, although these findings demonstrate an increase in civic values for these racial/ethnic minority groups, it does not say much about what factors influence this increase. Later analysis will examine interactions between race and the various civic-related college experiences.

Pre-College/High School Experiences

The only statistically significant predictor of civic values in this block of variables was composite SAT scores, which had a negative statistically significant relationship to civic values.

The higher the student's SAT scores were, the lower their civic values were after four years. While past studies have found statistically significant but contradictory findings, in terms of the influence of high school academics (i.e., SAT scores and GPA) on civic engagement (positive relationship; Hillygus, 2005; Pascarella et al., 1988) and civic values (negative relationship; Lott, 2014) in college, this study found a negative relationship between SAT scores and civic values and nonsignificant findings for high school GPA controlling for all other student-level variables.

College Academics & Enrollment

In the college academics and enrollment block, college GPA and majoring in STEM both had statistically significant relationships to student's civic values. College GPA has a positive statistically significant relationship with civic values; the higher a student's GPA in college the higher their score on civic values. Additionally, majoring in STEM has a statistically significant negative relationship to civic values; students who major in STEM have lower civic values than non-STEM majors. Past literature has attributed the lower civic values of STEM majors to the limited social science coursework required by STEM majors, which may influence the civic awareness and engagement of college students (Garibay, 2015; Lott, 2013; Torney-Purta et al., 2015).

Financial & Familial Obligations

Of the financial and familial obligations and responsibilities block, being a financial contributor to your family has a statistically significant negative relationship to civic values. This means that students who have the responsibility of being a financial contributor to their family have lower civic values than those who do not have this responsibility. Past research has found that working over 20 hours per week negatively impacts academic achievement and academic and social engagement of students (Torres, Gross, & Dadashova, 2010-2011). Although working

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over 20 hours per week was not statistically significant in this study, the obligation of being a financial contributor was significant which may be an indicator of working because of financial need versus a financial desire.

Moreover, given this financial responsibility to family, students in this study may have less opportunities to engage in experiences and practices that promote civic values. An alternative explanation is that their focus is on supporting their family first and foremost; although they may have lower civic values related to societal uplifting, they may have stronger values towards helping their family, especially given their financial circumstances. While working and being a family contributor is often perceived as harmful to the educational success and experiences of students, other studies have found financial and familial responsibility to be a motivating factor in pursuing a postsecondary education for students (Nuñez & Sansone, 2016). This is an instance where having lower civic values should be considered and supported by institutions. Higher education faculty and practitioners must consider ways to provide opportunities to promote the civic engagement of students with financial obligations to their families—while also providing financial aid. Having socially and culturally responsive approaches to civic engagement may be especially critical given that low-income and racial ethnic minority students are more likely to be financial contributors to their family while in college (Melguizo & Chung, 2012).

Informal Civic Engagement in College

Consistent with prior studies (Hurtado, Ruiz, & Whang, 2012; Lott, 2013), all three informal civic engagement activities: participating in demonstrations, campaigns, and volunteering/community service had a positive statistically significant relationship to student's civic values. All three variables were statistically significant across all the models. Students who

participate in these activities have higher civic values than those that do not engage in these informal civic engagement activities. These findings are not surprising, given that these civic activities may not have been through a formalized structure (not through a club or course). Students who reported engagement in these activities may already have high civic values and seek to participate in these civic opportunities. In this study, I controlled for civic values at the start of college, thus further confirming that these informal civic engagement opportunities raise the civic values of students after four years in college.

Curricular Experiences

Furthermore, participating in service learning, Ethnic Studies, and Women's Studies courses are also positive predictors of civic values, which aligns with extensive literature on these practices (Astin et al., 2000; Lott, 2013). Students who took service learning, Ethnic Studies, and Women's Studies courses had higher civic values than students who did not take these courses. A wealth of literature has examined the positive impact of service learning courses on civic engagement (Astin et al., 2000). Service learning has been found to be one of the most influential practices for promoting civic engagement and values (Astin et al., 2000).

Co-Curricular Experiences

Amongst the variables in the block of co-curricular experiences, participating in: undergraduate research programs, racial/ethnic student organizations and academic programs, study abroad, and leadership training were statistically significantly related to civic values. Participating in undergraduate research programs had a negative relationship to civic values. Furthermore in alignment with previous literature (Garibay, 2014; Lott, 2013), participating in racial/ethnic student organizations and academic programs, studying abroad, and leadership

training have a positive statistically significant relationship to civic values. Participating in student government and Greek life were not statistically significant.

Peer & Faculty Interactions

Lastly, interactions with peers and faculty has a positive relationship to civic values. More specifically, having more frequent interactions with people from other race/ethnic background has a positive relationship to civic values. Additionally, in alignment with past literature (Sax et al., 2005), students who report more positive faculty interactions have a positive statistically significant relationship to civic values.

Model Statistics

Table 5.4 and the table in Appendix I also present the model statistics for each of the models, as well as the final full model (Model 9, Appendix I). The results of the model statistics reveal that a large percentage of the between-institution variance was explained by the variables in this study. The first model (in Appendix I), explained 67.1 percent of the between-institution variance, the background characteristics added 5.8 percent to Level-2 variance, and model 3 and 4 adding an additional 0.4 and 3.0 percent variance, respectively, at Level-2. There was no added variance to Level-2 in model 5, but increased again when informal civic engagement (5.4%) and curricular experiences (1.6%) were added to the model. The last two sets of variables representing co-curricular experiences and interactions with peers and faculty actually marginally decreased the Level-2 variance by .2 and .8 percent, respectively; however, even with the decrease, a large proportion of the between-institution variance is still explained by the variables in the model. The final model with student-level variables accounted for 82.3 percent of the between-institution variance for student civic values.

These findings indicate differences in civic values of racial/ethnic minority college students and the informal civic engagement, curricular and co-curricular civic-related experiences and social interactions that influence student's civic values in college. Additionally, for the most part, these findings align with past literature on civic engagement. However, these findings fail to help us understand how these curricular and co-curricular experiences influence the civic values of students of different racial/ethnic backgrounds differently. The next section help us answer the second part of the research question.

Curricular and Co-Curricular Experiences by Race

To examine whether the factors that influence student's civic values differ by race/ethnicity, I inserted student-level interactions of race and all the curricular and co-curricular experiences on civic values into the student-level model. More specifically each racial group (with White as a control group) was interacted with variables in the informal civic engagement, curricular, co-curricular, and peer/faculty interaction blocks of college experiences. Table 5.5 presents the statistically significant results of the student-level interactions and the model statistics. The addition of the student-level interactions added an additional 0.8 percent to the between-institution variance; the model with student-level interactions account for 83.1 percent of the between-institution variance for civic values.

Table 5.5
Statistically Significant Predictors of Civic Values: Student-Level Interactions by Race (n = 18,776 students, 329 institutions)

	Student Level	
	Coef.	S.E. (Sig.)
Pre-Test		
Civic Values in HS	0.491	0.007***
Background Characteristics		
Female	-0.320	0.119**
American Indian/Alaska Native	-19.607	9.523*
Black	8.831	1.781***
AAPI	5.446	2.708*

Pre-College/High School Experiences		
Composite SAT	-0.126	0.018***
College Enrollment		
College GPA	0.136	0.048**
STEM Major	-0.983	0.134***
Financial/Familial Obligations in College		
Financial Contributor	-0.462	0.127***
Informal Civic Engagement in College		
Demonstration	2.097	0.178***
Campaign	1.243	0.233***
Volunteer/Community Service	2.102	0.115***
Curricular Experiences in College		
Service Learning in college	0.887	0.142***
Ethnic Studies Course	0.894	0.140***
Women's Studies Course	0.766	0.175***
Co-Curricular Experience		
Undergraduate Research Program	-0.702	0.253**
Ethnic/Racial Organization	1.487	0.190***
Acad. Prog. for Racial/Ethnic Min.	1.204	0.276***
Study-Abroad	0.642	0.162***
Leadership Training	0.863	0.147***
Informal Co-Curricular Experiences		
Interact. w/Other Race/Ethnic Group	0.975	0.122***
Student-Faculty Interaction	0.113	0.010***
Informal Civic Engagement in College x Race		
Demonstration		
x Black	-0.943	0.454*
x Latina/o	0.940	0.414*
Campaign		
x Latina/o	-1.419	0.602*
Volunteer/Community Service		
x Other Race	-1.881	0.871*
Curricular Experiences in College x Race		
Service Learning in college		
x Latina/o	-1.109	0.450**
Co-Curricular Experience x Race		
Undergraduate Research Program		
x Latina/o	1.715	0.678**
Study-Abroad		
x AAPI	-1.784	0.659**
x Other Race	-2.868	1.206*
Interactions with Faculty & Peers x Race		
Interact. w/Other Race/Ethnic Group		
x Black	-1.367	0.371***
Student-Faculty Interaction		
x Black	0.052	0.025*

Intercept	29.236	1.389***
Model Statistics		
Level 1 variance	51.106	
Level 2 variance	0.926	
Explained variance at Level 1	0.451	
Explained variance at Level 2	0.831	
Intercept Reliability	0.375	

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

Overall, a number of interactions of college experiences by racial group were statistically significantly related to civic values (Table 5.5). There were also changes in significance for the relationships between AI/AN and Latina/o students and civic values after controlling for these interactions. In the previous model predicting civic values, AI/AN was not significant, whereas here it is. AI/AN students had lower civic values than White students, after controlling for student-level interactions. For Latina/os, after controlling for student-level interactions, being Latina/o alone was not statistically significantly related to civic values compared to White students, but was significant when interacted with various experiences which are described below. In previous models, Latina/o alone compared to White was statistically significant. In terms of background characteristics, high school experiences, college enrollment, familial/financial obligations, and all of the college experience variables as related to civic values, there were no changes in significance or direction of coefficients after controlling for student-level interactions. These are some of the first indicators that there are differences in civic values by race/ethnicity. Since there were not many changes in the individual student-level predictions, I mostly focus on the findings of the student-level interactions.

Moreover, in this analysis the nonsignificant findings are as important as the significant ones. While curricular experiences have been particularly positively significant throughout the previous models, once interacted by race/ethnicity, the only significant interaction was participating in service learning for Latina/o students. The interaction by race was nonsignificant

for all other curricular experiences, Ethnic and Women's Studies courses, and service learning—except for Latinos. Which concludes that participating in Ethnic and Women's Studies courses significantly raises student's civic values, controlling for race, but does not affect students differently by racial/ethnic group. However, for service learning courses, compared to White students, civic values for Latina/o students is lowered when participating in service learning courses in college.

Moreover, the student-level interactions revealed that for Latina/os, participating in demonstrations and undergraduate research programs are influential in raising their civic values (Table 5.5). Alternatively, Latina/os who participate in campaigns have lower civic values. These findings are interesting given that without the interactions by race, generally, participating in undergraduate research programs are a negative predictor of civic values and participating in campaigns are positive predictors of civic values. One reason may be attributed to the type of research (STEM in contrast to social science or public research) Latina/o students are engaging in. Unfortunately, the undergraduate research variable does not distinguish between the types of research students are engaging with; this would require further exploration. The type of research Latina/os may be engaging in could be related to the second set of predictors of civic values for Latina/os: participating in demonstrations having a positive influence and participating in a local, state, or national campaign having a negative influence. Latina/os are often more civically engaged in social engagement issues rather than political civic engagement (Alcantar, 2014; Katsiaficas, et al., in press). Typically (though not always) demonstrations are tied to social issues, especially those that affect the Latina/o community, as opposed to campaigning which is more politically oriented and can feel further removed from social issues.

For Black students, the most meaningful influence to their civic values was having student-faculty interactions. More specifically, having meaningful student-faculty interactions raises Black students' civic values compared to White students. Alternatively, Black students who interact with others of a different race/ethnicity have lower civic values than White students. Also participating in demonstrations is a negative predictor of civic values for Black students compared to White students. These findings further support past studies that have found differences in the perception of and experience with racial campus climate by race and ethnicity (Gurin, Nagda, & Lopez, 2004; Pike & Kuh, 2006; Rankin & Reason, 2005). For example, Rankin and Reason (2005) found that although all racial/ethnic groups recognize harassment happens on college campuses, racial/ethnic minority groups are more likely to report experiencing harassment and also perceiving the campuses to be racist compared to White students (Rankin & Reason, 2005). These experiences with racial campus climate, especially negative experiences, impacts interactions with other racial/ethnic groups (Rankin & Reason, 2005) which then influences civic values for students differently as found in this study.

In other words, Black students in this study may potentially be encountering more negative experiences with White students, faculty, administrators, and staff on campus and these negative experiences may be affecting their overall civic values. This is not to say that Black students are not civically engaged, but that having interactions with people from other racial/ethnic groups do not positively influence civic values in the same way as for White students. Also, while past literature has documented the positive relationship of a higher frequency of cross-racial interactions in college for all racial/ethnic groups on various outcomes (Chang, Denson, Sáenz, & Misa, 2006), extensive literature has also captured the negative campus racial climates and interactions with White peers and educators for Black students,

especially at predominantly White college campuses (Allen, 1992; Dovidio, Kawakami, & Gaertner, 2002; Solorzano, Ceja, & Yosso, 2000). Potentially, for Black students, an increase in interactions with people from other racial/ethnic groups may mean more negative cross-racial interactions and thus, decreasing influence of civic values, especially particular variables within this construct.

Lastly, contrary to the impact of study abroad on civic values for students, it was a negative predictor of civic values for AAPI students and for "Other Race" students. In other words, while generally, students who study abroad have higher civic values than students who do not, civic values are lowered for AAPI and "Other Race" students compared to White students. Limited studies have examined the impact of study abroad on AAPI college students. However, one study's findings does gives us a sense of why AAPIs may be experiencing negative affects of study abroad on civic values (Van Der Meid, 2003). First, the majority of AAPI students studying abroad are studying in countries connected to their "ancestry and language heritage" (Van Der Meid, 2003, p. 103). This suggests that while studying abroad may be a negative predictor of civic values for AAPI students, they may be gaining stronger ethnic identities by learning more about their cultural backgrounds or other Asian or Pacific Islander cultures, or strengthening their heritage language skills (Van Der Meid, 2003).

Van Der Meid (2003) also found that among AAPI students who did not participate in study abroad programs, a majority cited financial concerns as the reason for not participating. Additionally, a majority of AAPIs who study abroad are of Chinese and Korean descent, while Vietnamese and Filipinos are less likely to study abroad (Van Der Meid, 2003). Correspondingly, past studies have demonstrated that Chinese and Koreans are more financially well-off compared to Vietnamese (CARE, 2008). In this case, there is a possibility that a

majority of the AAPI students studying abroad in this study were also of higher socioeconomic

backgrounds and from more historically well-to-do ethnic backgrounds, given that

socioeconomic status and being a financial contributor to the family was a negative predictor of

civic values. However, the dataset used for this study does not collect AAPI ethnicity data to

confirm this possibility.

Conclusion

This chapter presented the student-level predictors of civic values. As previously

mentioned, there is a dearth of literature on the civic engagement of racial/ethnic minority

students. The predictors related to background characteristics, high school and college academics

and obligations, information civic engagement experiences, curricular, co-curricular and social

experiences in college influence the development of college student's civic values. For example

there were differences by student's sex and race/ethnicity. In terms of academics, being a STEM

major, college GPA, and contributing financially to family was particularly influential to the

development of civic values. Additionally, the following experiences in college influenced the

development of civic values:

- *Informal civic engagement:* participating in demonstrations, campaigns, volunteering.
- *Curricular, co-curricular:* taking service learning, ethnic studies, and women's studies courses, participating in undergraduate research opportunities, ethnic/racial organization and academic programs, study abroad, and leadership training.
- *Social experiences:* interacting with others of different race/ethnicity and having meaningful student-faculty interactions.

However, after analyzing the interactions between race and civic-related college experiences,

differences in the impact of these experiences for different racial/ethnic groups emerged.

The student-level interactions demonstrated that the influence of civic-related college

experiences on student civic values impacted students differently by race and ethnicity. Notably,

participating in demonstrations and undergraduate research opportunities are particularly influential in raising civic values of Latina/os; while service learning and participating in campaigns lowers their civic values. Secondly, for Black students, having meaningful interactions with faculty raises their civic values; and interacting with others of a different race and participating in demonstrations lowers their civic values. Lastly, studying abroad positively affects student's civic values, except for AAPIs; for AAPIs, participating in study abroad lowers their civic values.

Furthermore, the findings from this study should not be interpreted as demonstrating that certain experiences cannot raise the civic values of particular racial/ethnic groups, but that there are certain experiences that are particularly influential in promoting the civic values of particular racial/ethnic groups. Further research is needed to explore the reasons why certain curricular and co-curricular college experiences promote or inhibit racial/ethnic minority student's civic values. For example, in terms of service learning, these findings do not mean that service learning is bad for Latina/os, but we do need to explore why service learning negatively impacts their civic values compared to other racial/ethnic groups. These nuanced experiences and civic outcomes for racial/ethnic minorities are important for institutions to consider as they implement policies and practices that promote student learning and civic engagement.

In the next chapter, I introduce the Level-2 variables to examine the institutional factors that influence students' civic values. Additionally, I examine cross-level interactions of race and MSI status to determine if attending MSIs influences civic values for Black, Latina/o, and AAPI students.

CHAPTER 6: INSTITUTIONAL-LEVEL PREDICTORS OF CIVIC VALUES

Similar to other educational outcomes, such as academic achievement, persistence, and degree attainment, various curricular and co-curricular college experiences and approaches influence student's civic values differently, as demonstrated in Chapter 5. However, institutions have also been found to influence student's educational outcomes differently. For example, highly selective public and private four-year colleges have higher persistence and graduation rates than low-to-mid selective four-year colleges (Melguizo, 2008). The question of whether these differences exists as a product of the institutional practices and contexts, as opposed to the preparation and resources of the student body, has been extensively examined and debated (Astin & Oseguera, 2012). But one thing that researchers and practitioners do agree on is the difference that exists in outcomes by the type of institution a student attends (Astin & Oseguera, 2012; Melguizo, 2008). In other words, higher education institutions are not all the same—not the students they admit nor the contexts and cultures of these institutions—but there are similarities by various types, such as private versus public, selectivity levels, four-year versus community college, and MSI versus PWI.

The differences in success by institutional types has been extensively studied using traditional educational outcome measures such as academic achievement, persistence, and college completion (Melguizo, 2008), which are important to study, but what about other non-traditional outcomes such as civic engagement? Examining other outcomes is important given the immense pressure under-resourced institutions have in meeting the same metrics of success as institutions with an abundance of resources. Because of this, institutions with less resources are often depicted as underperforming; as extension of these institutions, students are also negatively perceived as underperforming. Therefore, when comparing a highly selective four-

95

year college to a low selective four-year college in terms of college completion, or the abilities and potential of graduates from those institutions, you are comparing apples to oranges. As alluded to earlier, not only are institutional contexts different, but also the student body admitted is different.

For this study, I am interested to know if there are also differences in the democratic development of students by institution type; particularly at institutions that serve a greater proportion of racial/ethnic minority students. This chapter examines the institutional-level predictors of civic values. More specifically, this chapter addresses the second research question: Controlling for background and college experiences, does the development of civic values vary by institution? In what ways, if at all, does attending a HBCU, HSI, or AANAPISI, moderate the level of civic values for students from different racial/ethnic backgrounds?

The ICC results presented in Chapter 5, which was required in order to move forward with HLM analysis, demonstrates variation in civic values of students by institutions. However, what institutional characteristics influence this variation? Although institutions often ascribe to various civic-related institutional missions and practice civic-related curricular and co-curricular approaches, limited research has examined the institutional factors that promote the civic values and engagement of students. In this chapter, I first present the descriptive statistics of the institutions represented in the dataset, followed by two-level model findings which builds on the student-level model presented in Chapter 5. Then, because of my interest in institutions that serve a large proportion of racial/ethnic minority students, I examine the cross-level interactions of MSIs by race. To put it differently, the first HLM model examines the institutional-level predictors which influence student's civic values. The second HLM model with cross-level

interactions examines if MSIs affect the civic development of their target racial/ethnic group population differently compared to White students.

Examination of Civic Values & Institutional-Level Variables

Table 6.1 presents the descriptive statistics for the institutional variables in the HLM (and the HGLM model for RQ3). Of the 329 postsecondary institutions in the analytic sample, 32.5 percent are public colleges and 32.2 are religious-based institutions. Nearly a quarter (23.9%) of the students in the sample are enrolled in public institutions. Additionally, 40.5 percent of the student sample attend institutions that are religious-based.

Table 6.1
Descriptive statistics of institutional-level variables (n = 18,800)

Variable	Min.	Max	Mean	S. D.
Institutional Control: Private	1.00	2.00	1.76	0.43
Selectivity	0.00	1510.3	1157.3	130.1
Type: Religious	1.00	2.00	1.41	0.49
Type: HBCU	1.00	2.00	1.02	0.14
Type: HSI	1.00	2.00	1.04	0.19
Type: AANAPISI	1.00	2.00	1.03	0.17
Community Engagement 2006	0.00	1.00	1.04	0.20
Community Engagement 2008	0.00	1.00	0.05	0.22

The sample of institutions also includes 55 MSIs that are federally designated or emerging—26 designated HBCUs and 18 HSIs, and 11 emerging AANAPISIs (10 designated, 1 funded; see Table 6.2). Together, these institutions serve 8.72 percent of the students in the analytic sample, which is 1,638 students.

Table 6.2
Number of MSIs and enrolled students, and the percent from the total sample in the analytic sample

	HBCU		HSI		AANAPISI	
	n	%	*n*	%	*n*	%
Students	339	1.8	707	3.8	592	3.2
Institutions	26	7.9	18	5.5	11	3.3

Aside from MSI designation, various institutions in the sample have the Carnegie

Classification for Community Engagement (Table 6.3). Of the sample of institutions, 20 received

the Community Engagement Classification in 2006 and 25 additional in 2008. In the model,

these variables are entered as separate dummy variables and unclassified institutions are used as

a reference group.

Table 6.3
Number of institutions and enrolled students with Carnegie's Community Engagement
Classification, and the percent from the total sample in the analytic sample

	Designated in 2006		Designated in 2008	
	n	%	*n*	%
Students	795	4.23	987	5.26
Institutions	20	6.1	25	7.6

The bivariate relationship between the civic values and each institutional variable at

Level-2 were also examined using a correlation matrix (Table 6.4). Most of the independent

variables had a weak but statistically significant relationship with civic values; particularly

private colleges/universities, religious institutions, AANAPISIs, and Carnegie's Community

Engagement Classification for 2006. The relationship between civic values and institutions who

got the classification in 2008 was statistically significant ($r = .026$, $n = 18,800$, $p < .01$).

The descriptive statistics of the institutions in the sample gives us a sense of the

demography and structures represented in this study and their relationships to civic values.

However, if we control for student's background and the civic-related experiences they engage in

while in college, what influence do these institutional contexts have on the civic development

(i.e., civic values) of students?

Institutional-Level Predictors of Civic Values

First, I examined the influence of institutional characteristics on student's civic values by centering the student-level continuous variables around the group-mean (Table 6.4). Group-mean centering "subtract[s] the mean of each group from the raw scores for that group" (Wu & Wooldridge, 2005, p. 213). By centering continuous variables around the group-mean, I was able to examine if the mean civic values was statistically significantly higher or lower at particular institutions. In this study, HSIs and HBCUs have a statistically significant positive affect on mean civic values. Simply put, mean civic values of students attending HSIs and HBCUs are higher than students that are not at HSIs or HBCUs. The results are presented in Table 6.4.

Table 6.4

HLM Results Predicting Civic Values, Group-Mean Centered (n = 18,776 students, 329)

	Civic Values	
Variables	Coef.	S.E. (Sig.)
Institutional Level Variables		
Private	0.084	0.334
Selectivity	-0.001	0.001
Religious	0.115	0.314
HBCU	4.091	0.705***
HSI	1.566	0.561**
AANAPISI	-0.389	0.619
Community Engagement 06	0.386	0.477
Community Engagement 08	0.438	0.436
Intercept	29.639	1.895***
Model Statistics		
Level 2 variance	2.198	
Intercept Reliability	0.531	

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

However, when I grand-mean centered the continuous variables at Level-1 (student-level), HSIs and HBCUs were no longer statistically significant. Table 6.5 presents the two-level HLM model predicting civic values. To examine the models with the blocks of variables, as

entered into the model, see Appendix I. After grand-mean centering continuous variables, students attending private institutions have lower civic values than students at public institutions and continue to be significant after examining interactions between civic-related curricular and co-curricular experiences by race at the student-level.

Table 6.4

HLM Model Step-Results Predicting Civic Values Grand-Mean Centered (n = 18,776 students, 329 institutions)

Variables	*r*	Sig.	Model 10 Coef.	S.E. (Sig.)
Pre-Test				
Civic Values in HS	0.588	***	0.493	0.007***
Background Characteristics				
Female	0.098	***	-0.331	0.118**
Socioeconomic Status	-0.049	***	0.012	0.011
First-Generation College Student	0.022	**	0.308	0.18
American Indian/Alaska Native	0.004		0.573	1.236
Black	0.161	***	1.882	0.258***
Latina/o	0.091	***	1.131	0.246***
AAPI	0.000		0.719	0.263**
Other Race	0.023	**	1.275	0.533*
Multi-Racial	0.003		-0.145	0.189
Parent Service Career	0.033	***	0.162	0.11
Pre-College/High School Experiences				
HS GPA	-0.018	*	-0.065	0.054
Composite SAT	-0.092	***	-0.116	0.019***
Work in HS	0.022	**	-0.055	0.116
Service Learning in HS	0.111	***	-0.128	0.104
Community Service Required in HS	0.024	***	-0.101	0.125
Volunteer/Community Service in HS	0.080	***	0.152	0.418
College Enrollment				
Full-Time	-0.007		-0.34	0.232
College GPA	0.023	**	0.128	0.048**
STEM Major	-0.131	***	-0.989	0.134***
Remedial Course	-0.066	***	-0.158	0.19
Transferred	-0.017	*	-0.046	0.373
Financial/Familial Obligations in College				
Work over 20hrs/week	-0.057	***	0.154	0.17
Financial Contributor	-0.147	***	-0.499	0.128***

Distance from home	0.047	***	0.042	0.044
Informal Civic Engagement in College				
Demonstration	0.304	***	2.177	0.145***
Campaign	0.213	***	1.047	0.185***
Volunteer/Community Service	0.336	***	2.079	0.093***
Curricular Experiences in College				
Service Learning in College	0.203	***	0.809	0.121***
Ethnic Studies Course	0.205	***	0.929	0.121***
Women's Studies Course	0.162	***	0.771	0.138***
Co-Curricular Experience				
Undergraduate Research Program	0.020	**	-0.411	0.199*
Worked on Professor's Research	0.075	***	-0.062	0.129
Joined Fraternity/Sorority	0.049	***	-0.149	0.147
Ethnic/Racial Organization	0.269	***	1.313	0.156***
Acad. Prog. for Racial/Ethnic Min.	0.211	***	0.89	0.175***
Student Government	0.136	***	0.206	0.173
Study-Abroad	0.108	***	0.587	0.138***
Leadership Training	0.219	***	0.761	0.123***
Interactions with Peers & Faculty				
Interact. w/Other Race/Ethnic Group	0.152	***	0.833	0.117***
Roommate of Other Race/Ethnicity	0.084	***	-0.186	0.128
Student-Faculty Interaction	0.238	***	0.126	0.008***
Institutional Level Variables				
Private	-0.008		-0.496	0.243*
Selectivity	-0.020	**	-0.001	0.001
Religious	0.002		0.127	0.245
HBCU	0.101	***	-0.209	0.509
HSI	0.023	***	0.462	0.53
AANAPISI	0.012		-0.242	0.487
Community Engagement 06	0.009		-0.115	0.316
Community Engagement 08	0.026	***	-0.074	0.343
Intercept			36.742	1.661***
Model Statistics				
Level 1 variance			51.269	
Level 2 variance			0.962	
Explained variance at Level 1			0.449	
Explained variance at Level 2			0.824	
Intercept Reliability			0.381	

Note: *p < .05, **p < .01, ***p < .001

Curricular & Co-Curricular Experiences by Race

 To extend the analysis of the influence of institutions, Level-2 variables are introduced

into the model examining the student-level interactions between race and college experiences at

Level-1 that were presented in the previous chapter (from Table 5.5). After introducing

institutional characteristics, private institutions continue to be negatively related to civic values

compared to public colleges, after controlling for these interactions (Table 6.6). In other words,

students attending private colleges had lower civic values than students at public institutions,

after controlling for all the other variables. Also, after introducing the institutional

characteristics, the interaction of participating in demonstrations for Black students became

nonsignificant. Once institutional-level predictors were entered into the final two-level model,

there were no differences in the direction, nor statistical significance, of any student-level

variables. These findings demonstrate institutional characteristics have an influence on the

development of student's civic values.

Table 6.6

*Statistically Significant Predictors of Civic Values: Student-Level Interactions
by Race & Institutional-Level Variables (n = 18,776 students, 329 institutions)*

	Coef.	S.E. (Sig.)
Pre-Test		
Civic Values in HS	0.491	0.007***
Background Characteristics		
Female	-0.329	0.119**
American Indian/Alaska Native	-19.859	9.542*
Black	9.180	1.819***
AAPI	5.298	2.700*
Pre-College/High School Experiences		
Composite SAT	-0.117	0.019***
College Enrollment		
College GPA	0.131	0.049**
STEM Major	-0.982	0.134***
Financial/Familial Obligations in College		
Financial Contributor	-0.458	0.127***
Informal Civic Engagement in College		

Demonstration	2.096	0.178***
Campaign	1.243	0.233***
Volunteer/Community Service	2.098	0.116***
Curricular Experiences in College		
Service Learning in College	0.882	0.144***
Ethnic Studies Course	0.897	0.140***
Women's Studies Course	0.777	0.177***
Co-Curricular Experience		
Undergraduate Research Program	-0.693	0.252**
Ethnic/Racial Organization	1.492	0.190***
Academic Prog. for Racial/Ethnic Min.	1.214	0.276***
Study-Abroad	0.659	0.162***
Leadership Training	0.860	0.147***
Informal Co-Curricular Experiences		
Interact. w/Other Race/Ethnic Group	0.976	0.122***
Student-Faculty Interaction	0.113	0.010***
Informal Civic Engagement in College x Race		
Demonstration		
x Black	-0.860	0.459
x Latina/o	0.933	0.414*
Campaign		
x Latina/o	-1.415	0.600*
Volunteer/Community Service		
x Other Race	-1.881	0.878*
Curricular Experiences in College x Race		
Service Learning in college		
x Latina/o	-1.117	0.450**
Co-Curricular Experience x Race		
Undergraduate Research Program		
x Latina/o	1.738	0.677**
Study-Abroad		
x AAPI	-1.757	0.657**
x Other Race	-2.849	1.206*
Interactions with Faculty & Peers x Race		
Interact. w/Other Race/Ethnic Group		
x Black	-1.490	0.380***
Student-Faculty Interaction		
x Black	0.054	0.025*
Institutional Level Variables		
Private	-0.464	0.241*
Intercept	30.463	1.723***
Model Statistics		
Level 1 variance	51.100	
Level 2 variance	0.923	
Explained variance at Level 1	0.451	

Explained variance at Level 2	0.831	
Intercept Reliability	0.374	

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

Model Statistics

Table 6.4, 6.5 and 6.6 present the model statistics for the two-level model predicting civic

values. The institutional variables add an additional 0.1 percent Level-2 variance. However,

although the additional variance is small, the overall Level-2 variance for the final model is still

large at 82.4 percent. Thus, a large percentage of the between-institution variance was explained

by the variables in this study. From Model 1 (67.1%), the two-level Model 10 added 15.3 percent

to the between-institution variance.

Cross-Level Interactions: Race & MSIs on Civic Values

Next, in order to examine the influence of MSI status on racial/ethnic minority groups, I

included cross-level interactions for MSIs (Level-2) by race (Level-1). Specifically, I interacted

each MSI status by the targeted racial group for that type of institution; I interacted HBCUs with

Black students, HSIs with Latina/o students, and AANAPISIs with AAPIs, compared to White

students. Table 6.7 presents the statistically significant findings for the student- and institutional-

level variables and the three cross-level interactions regardless of significance.

Table 6.7

HLM Model with Statistically Significant Predictors of Civic Values
with Cross-Level Interactions (n = 18,776 students, 329 institutions)

Variables	Coef.	S.E. (Sig.)
Pre-Test		
Civic Values in HS	0.493	0.007***
Background Characteristics		
Female	-0.330	0.118**
Black	2.825	1.309*
Latina/o	1.394	0.701*
Other Race	1.262	0.534*
Pre-College/High School Experiences		

Composite SAT	-0.116	0.019***
College Enrollment		
College GPA	0.130	0.048**
STEM Major	-0.999	0.134***
Financial/Familial Obligations in College		
Financial Contributor	-0.488	0.128***
Informal Civic Engagement in College		
Demonstration	2.180	0.145***
Campaign	1.050	0.185***
Volunteer/Community Service	2.079	.093***
Curricular Experiences in College		
Service Learning in College	0.811	0.121***
Ethnic Studies Course	0.934	0.121***
Women's Studies Course	0.774	0.138***
Co-Curricular Experience		
Undergraduate Research Program	-0.421	0.198*
Ethnic/Racial Organization	1.310	0.155***
Academic Prog. for Racial/Ethnic Min.	0.898	0.174***
Study-Abroad	0.584	0.137***
Leadership Training	0.762	0.123***
Interactions with Peers & Faculty		
Interact. w/Other Race/Ethnic Group	0.832	0.117***
Student-Faculty Interaction	0.126	0.008***
Cross-Level Interactions of MSI x Race		
Black x HBCU	-0.883	1.234
HSI x Latina/o	-0.249	0.571
AANAPISI x AAPI	2.364	0.940**
Institutional Level Variables		
Private	-0.477	0.242*
Intercept	36.112	2.028***
Model Statistics		
Level 1 variance	51.163	
Level 2 variance	0.964	
Intercept Reliability	0.465	

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

The interaction between AANAPISI and AAPI was the only statistically significant

cross-level interaction in the model. Civic values rose for AAPI students enrolled in

AANAPSISIs, compared to White students after four years of college. This is interesting given

that in the two-level model without interactions, being enrolled in an AANAPISI was not

statistically related to civic values. This implies that AANAPISIs in this study do not influence civic values of all students, but do have an influence on AAPI students specifically. Past studies have found Black students to have more positive experiences on HBCU campuses compared to PWIs (Allen, 1992), however, this study demonstrated no difference in civic values for Black students attending HBCUs.

Moreover, once the cross-level interactions of MSIs and race are included, being a financial contributor also became nonsignificant once I controlled for institutional-level variables. Given the statistically significant student-level predictors— interacting with people from another race/ethnicity, taking ethnic studies courses, participating in ethnic/racial organization, and the institutional-level predictors, particularly the cross-level interaction of AANAPISIs and the analysis of the mean civic values at HBCUs and HSIs, there seems to be an important influence of diversity-related experiences or diverse contexts on student civic values. Private colleges may be negatively influencing civic values in this model given that a lower proportion of racial/ethnic minority students are enrolled at these institutions (Aud, Fox, & KewalRamani, 2010). Furthermore, past studies have demonstrated that diversity is only impactful when done intentionally through curricular and co-curricular practices (Gurin et al., 2004); Gurin and colleagues (2004) found a positive influence of diversity related curricular and co-curricular experiences in college on the development of democratic citizenship of students. Hence, the findings from this study align with past studies on civic engagement and values, but adds to it an analysis of MSI institutions and the impact of civic-related curricular and co-curricular experiences on different racial/ethnic groups.

Conclusion

This chapter presented the findings addressing the second research question examining the institutional-level factors that influence student's civic values, with a particular focus on MSIs. The findings demonstrate institutional contexts do influence the development of student's civic values differently. HBCUs and HSIs were a positive predictor of civic values. After grand-mean centering, private schools were a statistically significant negative predictor of student's civic values. Moreover, there were differences by race/ethnicity. In the model with cross-level interactions of MSIs by race/ethnicity, AANAPISIs were particularly influential on AAPI student's civic values. Simply put, attending an AANAPISI raises the civic values of AAPI students. The results demonstrate the importance of MSIs beyond the traditional measures of student success. MSIs are important—not just in providing college access to underserved and underrepresented populations—as they play a role in developing the civic values of the students they serve. In the next chapter I examine how these same variables influence student's aspirations to pursue a service sector career.

CHAPTER 7: PREDICTORS OF SERVICE CAREER ASPIRATIONS

Developing student's civic values is only one aspect of higher education's role in fueling the United States' democratic ideals. As this study demonstrates in Chapters five and six, various curricular and co-curricular college experiences and institutional contexts influence the development of student's civic values differently, especially for racial/ethnic minority students. However, how do higher education institutions move past students having civic values to a lifetime of practicing democratic ideals beyond the ivory walls of the institutions? Past studies have demonstrated that students who are civically engaged in college are more likely to be civically engaged after college through voting and volunteering (Bowman et al., 2010). Another way to examine student's commitment to civic values is to examine their service career aspirations. But do higher education institutions influence student's aspirations for a service career?

MSIs for example, are often charged with developing the next generation of racial/ethnic minority leaders that serve our communities and country as a whole. MSIs are known to graduate the most racial/ethnic minority doctors (at HBCUs), and the most Latina/o K-12 teachers (at HSIs), and many have developed programs or initiatives to increase the representation of racial/ethnic minority teachers and doctors in local communities, such as TCUs and HSIs (AIHEC & IHEP, 2001; HACU, 2017; IHEP, 2007; Scott, 2000; Thurgood Marshall College Fund, 2015). Additionally, a large percentage of Black elected U.S. officials graduated from HBCUs (Thurgood Marshall College Fund, 2015). However, limited studies have empirically examined the influence of institutional characteristics on service career aspirations, nor the student-level factors that predict student's aspirations for service sector careers (Astin et al., 2000). The final research question aims to examine the student- and institutional-level factors

that predict a student's likelihood of aspiring for a service sector career such as doctors, teachers, police, and military after four years of college.

More specifically the last research question examines if attending a MSI (HBCU, HSI, AANAPISI), private, religious-affiliated, selective, or institutions with civic missions, influence student's aspirations for a service-related career after controlling for student's civic values. Thus I am interested in knowing if higher civic values result in a greater likelihood of students aspiring for a service sector job and if this varies by institutional contexts (i.e., MSI). This chapter examines the student- and institutional-level factors which influence student's aspirations for a service sector career using HGLM. The results of this chapter address the third and final research question: What background, college experiences and institutional contexts contribute to student's likelihood of aspiring to pursue a service sector career after controlling for students' civic values? First, I present the descriptive statistics of the dependent and independent variables. Second, I include the unconditional HGLM results for service sector career aspirations to examine the variance between institutions. Lastly, I present the student-level findings followed by the institutional-level findings.

Descriptive Statistics of Service Career & Independent Variables

First, the relationship between student's civic values at the start of college and aspirations for a service career after four years of college was examined. This analysis give us a sense if civic values are related to student's aspirations for service careers. Crosstabs examining the relationship between the level of civic values and aspirations for a service sector career in the fourth year of college reveals a statistically significant difference between the two values ($\chi^2_{(2)} =$ 379.97, $p < .001$; Table 7.1). As would be expected, a large proportion (58.9%) of students who score "high" on civic values aspire for a career in service; while a large percentage (65.6%) of

students scoring "low" on civic values do not aspire for service sector careers. Additionally,

analysis for the bivariate relationship between the continuous variable of civic values and service

career demonstrated a weak statistically significant positive relationship ($r = .165$, $n = 18,800$, $p < .01$).

Table 7.1
Percent of Student who Aspire for Social Service Career by Civic Values Score (n = 18,800)

	Aspirations for Service Career	
Score on Civic Values	Yes	No
Low	34.4%	65.6%
Medium	47.3%	52.7%
High	58.9%	41.1%

Moreover, nearly half (45.0%) of all the students in the sample aspire for a service sector

career in their senior year of college ($\bar{Y} = 1.45$, S.D. = .50). Crosstabs exploring the relationship

between student's aspirations for a service career at the start of college and four years later

reveals a statistically significant relationship ($\chi^2_{(1)} = 3655.8$, $p < .001$; Table 7.2). The

crosstabs revealed that the majority (71.3%) of students who started college aspiring to pursue a

service sector career maintained this aspiration four years later. The same is true for those who

did not aspire for a career in the service sector; 72.9 percent of students who reported not

aspiring to a service sector career at the start of college will not aspire for a service sector career

four years later.

Table 7.2
Percent of Student Aspiring for a Service Sector Career by Pre-Test Aspiration for Service Sector Career (n = 18,800)

	Aspiration for Service Sector Career	
Pre-Test Service Career	Yes	No
Yes	71.3%	28.7%
No	27.1%	72.9%

The bivariate relationship between service career and each independent variable were also examined using a correlation matrix. Like civic values, the pre-test for aspiring to pursue a service sector career was the only moderately strong negative statistically significant relationship with service career ($r = -.547$, $n = 18,800$, $p < .01$). The rest of the independent variables had weak statistically significant relationships with service career, except for SES, first-generation college student, Latina/o, AI/AN, Other Race, SAT composite score, full-time enrollment, remedial course, transfer, financial contribution to family, distance from home, fraternity/sorority, study abroad, private college/university, HSI, and the Community Engagement classified institutions (correlations between service career aspirations and independent variables are presented in Table 7.3).

Unconditional HGLM Results for Aspirations for Service Career

Next, an unconditional ANOVA (the ICC) examining service sector careers was studied to determine if HGLM is an appropriate type of analysis to examine aspirations for service sector careers. The result of the ICC for Service Sector Career is .057539, which means 5.75 percent of the variance of aspirations for a service career is due to differences between institutions (94.3% is due to differences between students). The chi-square test ($\chi^2_{(328)} = 382.38$, $p < .001$), reveals that student's aspirations for a service career within institutions vary significantly across institutions. The findings from the ICC demonstrate that HGLM analysis for this outcome is warranted. More importantly, these results demonstrate there are service career aspiration differences by institutions. But what influences student's aspirations for a career in service? The following sections present the student- and institutional-level factors that influence student's aspirations to pursue service careers.

Predictors of Aspirations for Service Career

Table 7.3 presents the two-level HGLM results for aspirations for pursing service sector

careers (for HGLM models demonstrating results by blocks of variables see Appendix J). The

statistically significant findings are presented as blocks of variables. The findings are reported as

odd ratios. If the odds ratio=1 that "means that the odds of the affect of an independent variable

are the same for the dichotomous outcome" (Arellano, 2011, p. 98). To review, aspiring for a

career in service coded as service=1 and not service=0. "An odds ratio over the value of 1 means

that the independent variable has a positive influence" on aspiring for a service career and

"anything less than 1 means the variable has a negative effect" (Arellano, 2011, p. 98).

Additionally, the odds ratio also gives information about how much the independent variable

deviates from 1. For anything greater than 1, the 10ths and 100ths place give a sense of the

percentage of increased likelihood. While anything less than 1, gives a sense of the difference in

percentage of decreased likelihood. For example, an odds ratio of .80 would be interpreted as a

20 percent decreased likelihood for a 1 unit increase of the independent variable, while a result

of 1.80 would be an 80 percent likelihood increase.

Table 7.3
*HGLM Final Model Predicting Aspirations for Service Career (n = 18,776 students, 329
institutions)*

Variables	r	Sig.	Coef.	S.E. (Sig.)	O.R.
Pre-Test					
Service Career Aspiration HS	0.441	***	1.744	0.042***	5.720
Civic Values in HS	0.115	***	0.008	0.002***	1.008
Background Characteristics					
Female	0.114	***	0.259	0.036***	1.296
Socioeconomic Status	-0.007		-0.002	0.003	
First-Generation College Student	0.003		0.048	0.053	
American Indian/Alaska Native	0.005		0.447	0.241	
Black	0.017	*	0.045	0.081	
Latina/o	0.008		0.061	0.073	
AAPI	-0.024	***	-0.182	0.084*	0.833
Other Race	-0.004		-0.079	0.152	

Multi-Racial	-0.018	*	-0.023	0.067	
Parent Service Career	0.049	***	0.149	0.038***	1.161
Pre-College/High School Experiences					
HS GPA	0.052	***	-0.062	0.018***	0.940
Composite SAT	-0.007		-0.006	0.006	
Work in HS	0.015	*	-0.012	0.033	
Service Learning in HS	0.019	**	-0.044	0.034	
Comm. Service Required in HS	-0.017	*	-0.019	0.037	
Volunteer/Comm. Service in HS	0.029	***	-0.119	0.115	
College Enrollment					
Full-Time	-0.008		-0.121	0.069	
College GPA	0.131	***	0.145	0.014***	1.156
STEM Major	0.061	***	0.250	0.055***	1.284
Remedial Course	-0.008		-0.057	0.061	
Transferred	-0.002		-0.059	0.114	
Financial/Familial Obligations in College					
Work over 20hrs/week	0.024	***	0.099	0.046*	1.104
Financial Contributor	-0.014	*	0.022	0.044	
Distance from home	-0.012		-0.012	0.015	
Informal Civic Engagement in College					
Demonstration	0.043	***	0.009	0.046	
Campaign	0.039	***	0.099	0.048*	1.104
Volunteer/Community Service	0.165	***	0.293	0.032***	1.340
Curricular Experiences in College					
Service Learning in college	0.092	***	0.089	0.041*	1.093
Ethnic Studies Course	0.037	***	0.042	0.034	
Women's Studies Course	0.039	***	0.032	0.045	
Co-Curricular Experience					
Undergraduate Research Program	0.112	***	0.409	0.059***	1.505
Worked on Professor's Research	0.078	***	-0.019	0.038	
Joined Fraternity/Sorority	0.005		-0.111	0.046*	0.895
Ethnic/Racial Organization	0.033	***	0.004	0.044	
Academic Prog. for Racial Min.	0.049	***	0.145	0.063*	1.157
Student Government	0.028	***	-0.033	0.057	
Study-Abroad	0.001		-0.147	0.041***	0.864
Leadership Training	0.068	***	0.007	0.043	
Peer/Faculty Interactions					
Interact. w/Other Race/Ethnic Grp	0.015	*	0.003	0.028	
Roommate of Other Race/Ethnicity	-0.021	**	-0.053	0.042	
Student-Faculty Interaction	0.161	***	0.020	0.002***	1.020
Institutional Level Variables					
Private (Public)	0.012		-0.149	0.080	
Selectivity	-0.020	**	0.0003	0.0003	

Religious	0.040	***	0.145	0.070*	1.156
HBCU	0.016	*	-0.133	0.187	
HSI	0.008		0.145	0.125	
AANAPISI	-0.018	*	-0.151	0.112	
Community Engagement 06	0.010		0.137	0.122	
Community Engagement 08	0.004		-0.049	0.090	
Intercept			-3.886	0.530***	0.021

Note: *$p < .05$, **$p < .01$, ***$p < .001$;

Odds ratios only reported for statistically significant coefficients.

Pre-Test for Civic Values & Aspirations for Service Career

Both of the pre-test variables, civic values and aspirations for a service career, that were acquired from students at the start of college had a statistically significant and positive relationship to student's aspirations for a service sector career. In other words, students who start college aspiring for service careers (odds ratio = 5.720, $p < .001$) and with civic values (odds ratio = 1.008, $p < .001$) are more likely to aspire for careers in service after four years of college. Controlling for these variables in the model is important, given the pre-test's statistically significant influence over aspirations for a service career, to examine the influence of the rest of the independent variables. These findings also align with and contribute to past literature that has examined the influence of civic engagement and values during college on student's post-college aspirations (Astin & Sax, 1998; Kang, 1999). One study found that students with civic values are more likely to be motivated to purse service sector careers (Kang, 1999). Another study found that students who were civically engaged were more likely to enroll in graduate school, which could mean they also had an idea of the career they wanted to pursue (Astin & Sax, 1998).

Background Characteristics

In reviewing the background characteristics block, being female (odds ratio = 1.296, $p < .001$), AAPI (odds ratio = 0.833, $p < .05$), and having at least one parent in a service sector career (odds ratio = 1.161, $p < .001$) had a statistically significant relationship to aspirations for

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pursuing a public service career. Being female and having a parent who works in a service profession increased the odds of aspiring for a career in service by 29.6 and 16.1 percent, respectively. On the other hand, the odds of aspiring for a service career decreased by 16.7 percent for AAPIs. These findings align with the proportionally higher representation of females in service sector careers compared to men (Bureau of Labor Statistics, 2015; Einolf, 2011; Perna, 2005; U.S. Department of Labor, 2015; Wilson, 2000). Additionally, given the literature on parents' influence on college enrollment and civic engagement, it is no surprise that parents also influence service career choices of students (Hyman & Levine, 2008; Lott, 2013; Mark & Jones, 2004; Pacheco & Plutzer, 2008; Wilson, 2000).

Extensive research has examined the influence of college-educated parents on students college enrollment (Charles, Roscigno, & Torres, 2007), persistence, and academic achievement in STEM courses (Crisp, Nora, & Taggart, 2009), but limited research has examined their influence on student's career aspirations. Most of the research on careers in STEM focused on parents' educational level (Xu, 2013). However, limited research has examined the influence of parents' careers on student's career aspirations. This study contributes to the research on parent's role in career choices of students.

Additionally, the findings on AAPIs contradict the past literature that find that AAPIs have high civic values compared to White students (Garibay, 2014). However, potentially for AAPIs, they may have high civic values, but not aspirations to pursue service careers. For example, in the teaching professions, AAPIs are severely underrepresented compared to other racial/ethnic groups (CARE, 2010). Alternatively, service career aspirations may look different by AAPI ethnicity, rather than the race as a whole. Research has documented differential educational and social outcomes by AAPI ethnic subgroups (CARE, 2010).

Pre-College/High School Experiences

Aligning with past research that has linked high school GPA with civic values (Lott, 2013), high school GPA also has a negative influence on aspirations to pursue a career in service. In the pre-college/high school experiences block, only high school GPA (odds ratio = .940, $p <$ .001) had a statistically significant influence over the odds of a student aspiring for a career in service. The higher the high school GPA when entering college, the lower the odds (by 6.0%) of students aspiring to pursue a career in the service sector.

College Academics & Enrollment

Furthermore, contradictory to the literature connecting college GPA and STEM majors to civic values (Garibay, 2015; Lott, 2013), college GPA (odds ratio = 1.156, $p <$ .001) and majoring in STEM (odds ratio = 1.284, $p <$ .001) increases the odds of aspiring for a career in service by 15.6 and 28.4 percent, listed respectively. The increase in odds of these two variables may be due to the representation of STEM-related service careers, such as careers in nursing and physicians (careers listed in Appendix G). Also, students may aspire to service-related careers without having high civic values, which may be the reason why these findings contradict past studies on civic values.

Financial & Familial Obligations

Moreover, in alignment with recent research that has challenged past literature on the impact of working while in college (Nuñez & Sansone, 2016), this study suggests that students who work are more likely to have a greater sense of civic responsibility. The odds of those working over 20 hours a week (odds ratio = 1.104, $p <$ .05) aspiring to pursue a career in service increases by 10.4 percent. Working students' aspirations for a service career may be influenced

by their level of civic values, as these students have been found to be more civically engaged (Jarvis et al., 2005; Sax, 2004).

Informal Civic Engagement

Similar to the literature on practices that promote civic values (Astin et al., 2000), participating in campaigns (odds ratio = 1.104, p <.05) and volunteering (odds ratio = 1.340, p < .001) while in college increases the odds of service sector career aspirations of students. In this study, participating in campaigns and volunteering increases the odds of aspiring for a career in service by 10.4 and 34.0 percent.

Curricular & Co-Curricular Experiences

Moreover, of the variables related to curricular experiences, service learning, one of the proven practices to promote the civic values, engagement, and service career aspirations of students (Astin et al., 2000), is also statistically significant. Participating in a service learning (odds ratio = 1.093, p < .05) course increases the odds of aspiring to pursue a career in service by 9.3 percent.

This study also found that participating in undergraduate research programs (odds ratio = 1.505, p < .001), joining a fraternity or sorority (odds ratio = .895, p < .05), participating in an academic program for racial/ethnic minorities (odds ratio = 1.157, p < .05), and study abroad (odds ratio = .864, p < .001) statistically significantly influenced aspirations for a career in service. Specifically, participating in undergraduate research programs increased the odds of aspiring for a service career by 50.5 percent and academic programs for racial/ethnic minorities by 15.7 percent. While joining a fraternity or sorority and studying abroad decreased the odds of students aspiring to pursue careers in service by 10.5 and 13.6 percent. While participating in

Greek life has been found to improve the leadership potential of members (Kelley, 2008; Martin, Hevel, & Pascarella, 2012), limited research has examined their influence on career choices.

Moreover, participating in undergraduate research programs have been found to influence student's career and graduate school choices (Hunter et al., 2006; Russell, Hancock, & McCullough, 2007). Another reason undergraduate research experiences may be influential in career choices—aside from professional training—may be due to the exposure to faculty since relationships with faculty are particularly influential to students' post-college plans (Hunter et al., 2006).

Peer & Faculty Interactions

In alignment with the previous findings related to undergraduate research and faculty interaction, in the final set of student-level variables, meaningful student-faculty interactions (odds ratio = 1.020, $p < .001$) was a statistically significant variable in the model. The odds of students pursuing careers in service increased by 2.0 percent for students who had meaningful interactions with faculty. This finding aligns with research that has documented the influential role of faculty in student's aspirations for graduate school and career choices (Berman et al., 2008; Campos-Outcalt et al., 1995; Hunter et al., 2006; Sax et al., 2005).

Institutional Characteristics

Lastly, the only institutional characteristic that was statistically significant was attending a religious institution (odds ratio = 1.156, $p < .05$); students who do so have a higher likelihood of aspiring for a service sector career. This finding may be related to religious institutions having service missions that influence campus climate, culture, and practices. The literature has documented the service and social justice missions of Jesuit and other religious-based postsecondary institutions (Cuban & Anderson, 2007; Seider, Rabinowicz, & Gillmor, 2011).

However, the study of the influence of religious-based schools on civic engagement has most extensively been studied at the K-12 level, with opportunity for further research in higher education. Research on religious-based K-12 schools has found that students attending these schools are more likely to vote and engage in volunteering as adults than public school students (Hill & Dulk, 2013). The literature in higher education on religious-based institutions has demonstrated differences in motivations to volunteer based on the type of institution (Burns et al., 2005).

Cross-Level Interactions: Race & MSIs on Service Career Aspirations

Next I examined cross-level interactions of race and MSIs. Table 7.4 presents the findings from the cross-level interactions. The cross-level interactions were not statistically significant. The student-level variables mostly remained the same, in terms of their influence on aspirations for a service career, by direction of the odds ratio and significance. The only change to the student-level variables was for AAPIs after including the cross-level interaction. AAPI became a nonsignificant variable after controlling for cross-level interactions.

Table 7.4

HGLM Model Predicting Service Career Aspirations with Cross-Level Interactions (n = 18,776 students, 329 institutions)

Variables	Coef.	S.E. (Sig.)	O.R.
Pre-Test			
Service Career Aspiration in HS	1.741	0.041***	5.703
Civic Values in HS	0.008	0.002***	1.008
Background Characteristics			
Female	0.259	0.035***	1.295
Socioeconomic Status	-0.002	0.003	
First-Generation College Student	0.043	0.052	
American Indian/Alaska Native	0.445	0.236	
Black	0.206	0.314	
Latina/o	0.178	0.189	
AAPI	-0.184	0.308	
Other Race	-0.086	0.15	
Multi-Racial	-0.027	0.066	

Parent Service Career	0.150	0.038***	1.162
Pre-College/High School Experiences			
HS GPA	-0.062	0.018**	0.940
Composite SAT	-0.006	0.006	
Work in HS	-0.01	0.033	
Service Learning in HS	-0.044	0.034	
Community Service Required in HS	-0.019	0.036	
Volunteer/Community Service in HS	-0.115	0.113	
College Enrollment			
Full-Time	-0.121	0.068	
College GPA	0.146	0.014***	1.157
STEM Major	0.250	0.054***	1.284
Remedial Course	-0.057	0.060	
Transferred	-0.052	0.112	
Financial/Familial Obligations in College			
Work over 20hrs/week	0.097	0.046*	1.102
Financial Contributor	0.022	0.043	
Distance from home	-0.012	0.015	
Informal Civic Engagement in College			
Demonstration	0.009	0.045	
Campaign	0.101	0.047*	1.106
Volunteer/Community Service	0.292	0.031***	1.339
Curricular Experiences in College			
Service Learning in college	0.086	0.040*	1.090
Ethnic Studies Course	0.043	0.034	
Women's Studies Course	0.031	0.044	
Co-Curricular Experience			
Undergraduate Research Program	0.405	0.057***	1.499
Worked on Professor's Research	-0.017	0.037	
Joined Fraternity/Sorority	-0.106	0.045*	0.899
Ethnic/Racial Organization	0.005	0.044	
Academic Prog. for Racial/Ethnic Min.	0.145	0.061*	1.156
Student Government	-0.034	0.056	
Study-Abroad	-0.148	0.040***	0.862
Leadership Training	0.007	0.042	
Interactions with Peers & Faculty			
Interact. w/Other Race/Ethnic Group	0.002	0.027	
Roommate of Other Race/Ethnicity	-0.054	0.041	
Student-Faculty Interaction	0.02	0.002***	1.020
Cross-Level Interactions of MSI x Race			
Black x HBCU	-0.147	0.286	
HSI x Latina/o	-0.106	0.140	
AANAPISI x AAPI	0.036	0.279	
Institutional Level Variables			
Private	-0.134	0.078	

Selectivity	0.0003	0.0003	
Religious	0.148	0.068*	1.160
HBCU	-0.023	0.310	
HSI	0.200	0.130	
AANAPISI	-0.209	0.120	
Community Engagement 06	0.132	0.113	
Community Engagement 08	-0.036	0.087	
Intercept	-4.032	0.579***	
Intercept Reliability	0.374		

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

These findings demonstrate that although there are differences in student-level predictors
of aspirations for service careers, limited institutional variables predicted this outcome.

Conclusion

This chapter presented the findings to the third research questions presented in Chapter 1.
The student-level predictors that influence aspirations for a service sector career are:

Pre-test/Background characteristics: aspirations for service career and civic values at the

start of college, females, AAPIs, having at least one parent in a service profession.

High school and college academic and financial experiences: high school and college

GPA, majoring in STEM, working over 20 hours per week.

Civic engagement experiences: participating in a campaign, volunteering, taking a service

learning course.

Co-curricular and social experiences: participating in undergraduate research

opportunities, Greek life, study abroad, and having meaningful interactions with faculty.

Of the Level-2 variables, religious-based institutions were particularly influential on student's

aspirations for a service career. Overall the findings demonstrate that civic-related curricular and

co-curricular approaches and particular institutional contexts influence the development of civic

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commitments to pursue a service career. The next chapter discusses the findings comparatively across the models and implication from this study.

CHAPTER 8: DISCUSSION, IMPLICATIONS, & CONCLUSION

Recently, the concept of "waking the sleeping giant" was used to describe social groups, particularly Latina/os, and their untapped potential and unused political power in voting (Doval & Garza, 2016). I argue that college students are another sleeping giant that is awakening, but instead of focusing on the giant we must focus on the untapped potential of the institutional agents, the practices, and the institutional contexts that awaken them. Now, more so than in the last five decades, college students are more civically engaged in the social and political affairs of our time. As previously mentioned, in 2015, HERI (2016) reported that a third of entering college freshmen reported that they, "Expect to participate in student protests or demonstrations while in college" (p. 1). After this 2016 presidential election, I expect this number to be even higher given our current socio-political climate. Thus, faculty, administrators and student affairs professionals must respond to the rising critical consciousness, civic and social awareness, sense of civic responsibility, and civic engagement of college students. A tremendous amount remains unknown about the democratic development of college students, especially of racial/ethnic minority students and the institutions that serve them. Limited research has examined the practices which promote civic engagement of minoritized student populations or the institutional contexts that influence the development of civic values of college students. In order for higher education institutions to be responsive to the civic development of students, we must first understand the factors that promote engaged citizens.

The purpose of this study was to address this gap in the literature and examine the student- and institutional-level factors that promote or inhibit the civic values and aspirations to pursue service careers for college students generally, and racial/ethnic minority students specifically. The following research questions were pursued:

1) What background and college experiences predict the development of civic values of college students? In what ways, if at all, do college experiences predict the development of civic values of college students from different racial/ethnic backgrounds?

2) Controlling for background and college experiences, does the development of civic values vary by institution? In what ways, if at all, does attending a HBCU, HSI, or AANAPISI, moderate the level of civic values for students from different racial/ethnic backgrounds?

3) What background, college experiences and institutional contexts contribute to student's likelihood of aspiring to pursue a service sector career after controlling for students' civic values?

To address these research questions, this quantitative study utilized the CIRP dataset, a large longitudinal dataset that allowed for a multilevel analysis of college students nested in colleges. This study not only contributes to the literature, and thus our understanding of the factors that promote or inhibit civic values and aspirations for service careers, but also the large sample of institutions and the nested nature of the dataset allows us to understand the influence of various institutional contexts. Additionally, the oversampling and targeted recruitment of different institutional contexts, such as MSIs in this particular wave of data collection (CIRP TFS 2004 and CSS 2008), allowed for further exploration of the impact of institutions and the impact of various practices on the civic development of racial/ethnic minority students.

This chapter presents an overview of the important conclusions drawn from the findings of this study, followed by a discussion of the implications and recommendations of this study for research, policy, and practice.

Civic Development & Higher Education Diversity Initiatives

A major theme that interconnects the findings from this study is the importance of higher education diversity initiatives in the civic development of students. This study demonstrates the importance of diversity through student- and institutional-level factors that impact the civic development of college students; particularly the different curricular and co-curricular practices and institutional contexts that promote or inhibit the civic values and aspirations for pursuing a service career. Past studies have demonstrated that diversity is only impactful when done intentionally through curricular and co-curricular practices (Gurin et al., 2004); Gurin and colleagues (2004) found that diversity related curricular and co-curricular experiences in college positively influences the development of democratic citizenship of students. Thus, the findings from this study align with past studies on civic values and engagement, while adding to the literature and analysis of institutions with a proportionately higher enrollment of racial/ethnic minority students and the impact of diversity-related curricular and co-curricular experiences on different racial/ethnic groups.

For example, in line with past studies, the findings from this study further confirms that diversity-related curricular and co-curricular college experiences promote civic values of students. In this study, taking Ethnic Studies and Women's Studies courses were positive predictors of civic values; these courses (and other diversity-related courses) are known to develop students' critical consciousness and awareness of social issues which may be driving the development of their civic values (Bryant, 2003; Chang, 2002b; Sleeter, 2011). Alternatively, majoring in STEM was a negative predictor of civic values possibly because these students may be less exposed to diversity-related courses. Moreover, this study further confirms the positive impact of service learning on the civic development of students (Astin et al., 2000); service

learning courses were influential in the development of civic values and service career aspirations of students.

In addition to curricular experiences, diversity-related co-curricular experiences and interactions with peers and faculty were particularly influential to the civic development of students. In this study, participating in an academic program for racial/ethnic minorities was a positive predictor of both civic values and service career aspirations; participating in ethnic/racial organizations and interacting with others of a different racial/ethnic group was a positive predictor of civic values. Past studies have found that participating in an ethnic/racial organization and interacting with others of a different race/ethnicity possibly has an influence on students empathy for others, their critical consciousness of social issues, civic responsibility, coalition building, and sense of belonging on college campuses—all of which could influence student's civic values (Gurin et al., 2004; Terenzini, Cabrera, Colbeck, Bjorklund, & Parente, 2001).

However, even in diversity-related curricular and co-curricular experiences, faculty and student affairs practitioners must be intentional about incorporating pedagogies and practices that develop student's civic capacities. An example of this is studying abroad; it has the potential of exposing students to diverse global perspectives, experiences, and cultures. In this study, studying abroad was positively associated to civic values, but a negative predictor of service career aspirations. Thus, studying abroad may be exposing students to cultures and social issues on a global scale which may be positively influencing student's civic values. However, these experiences may not be influencing their commitment to pursue a career in service.

Additionally, one aspect of being intentional in implementing diversity-related curricular and co-curricular initiatives is to consider the ways in which it affects students differently.

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Generally, Black, Latina/o, and AAPI students had higher civic values than White students. This finding aligns with previous studies which found racial/ethnic minority students as a whole have higher civic values than White students (Lott, 2013). For racial/ethnic minority students, the individual items which make up the construct for civic values may have a greater influence than for White students. To put it another way, the items in the civic values construct—the importance of: 1) Helping promote racial understanding, 2) Developing a meaningful philosophy of life, 3) Influencing social values, 4) Keeping up to date with political affairs, 5) Being very well off financially, 6) Participating in a community action program—may have a greater stake in racial/ethnic minority students than for White students. These items may be more important to racial/ethnic minority students given that nationally, a greater proportion of racial/ethnic minorities live in poverty, are targets of racial discrimination, are incarcerated, and are unemployed (Gee, Spencer, Chen, & Takeuchi, 2007; Jung et al., 2015; Noguera, 2008; Shapiro, 2004; Telles & Ortiz, 2008; Western, 2006). These direct experiences with race and social issues may directly influence these college student's racial understanding, social values, interest in political affairs, and sense of civic responsibility to helping their community.

Moreover, this study demonstrates how diversity-related curricular and co-curricular experiences affect students of different racial/ethnic backgrounds contrastingly. In many cases, the ways these experiences affects racial/ethnic minority students contradicts how it impacts students generally. For instance, interacting with others of a different race/ethnicity lowers the civic values of Black students. Additionally, for Latina/o students, participating in undergraduate research programs raises their civic values, while participating in campaigns and service learning courses lowers their civic values. Also, studying abroad was a negative predictor of civic values for AAPI and "Other Race" students. Black, Latina/o and AAPI students in this study were

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influenced by diversity-related curricular and co-curricular experiences and college contexts differently and should be considered in the design and implementation of diversity initiatives aimed at developing student's civic capacities.

Furthermore, in terms of contextual affects, in alignment with past studies on the differential impact of institutional contexts on various educational outcomes, a number of institutional contexts in this study influenced the civic development of students. Although MSIs have been described as institutions that develop leaders that serve racial/ethnic minority and underserved communities, limited empirical research has examined the impact of these institutions on the civic development of students. In this study MSIs, were found to impact the civic development of students. Overall, the mean civic values was higher for students at HBCUs and HSIs than other institutions, controlling for other institutional contexts.

Additionally, attending an AANAPISI was particularly important to the positive development of civic values for AAPI students. This finding adds to the literature on the impact of AANAPISIs on AAPI students. AANAPISIs are one of the MSIs which is still in the early stages of research on the impact of these institutions. Past studies have demonstrated the importance of AANAPISIs to the college access, academic achievement, and degree attainment of AAPI students, given that they serve some of the most underserved AAPI ethnic subgroups (CARE, 2013). As this study demonstrates, AANAPISIs are also important to the civic development of AAPI students.

Furthermore, HBCU and HSIs did not have the same affects on Black and Latina/o students, respectively, as AANAPISIs did for AAPIs. One reason may be that HBCUs have a strong mission to serving and developing the leadership capacities of all its students regardless of race/ethnicity. Therefore, HBCUs have an influence on the civic values of all students not just

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Black students as demonstrated by the findings without the cross-level interactions by race. In

terms of HSIs, in general, students' civic values are higher at these institutions, but they made no

difference for Latina/o students specifically; these results may be due to the multiple missions of

these institutions. More specifically, the civic values of students at HSIs may be influenced by

their public institutional missions given that the majority of HSIs are public institutions (Nuñez

et al., 2016). In this study, private institutions were a negative predictor of civic values. This

study contributes to the literature which demonstrates differential developmental outcomes for

students at different type of institutions.

Implications for Research, Policy, & Practice

The findings from this study present a number of implications for research, policy, and

practice. In terms of research, more studies on the impact of higher education on the civic

development of students generally, and racial/ethnic minority students specifically, are needed to

help us understand the experiences of racial/ethnic minority students. The findings of this study,

as related to institutional contexts, raises the question about how institutional missions and

campus cultures influence student's civic development on college campuses. What can be

learned from MSIs and the ways in which they promote the civic development of students? What

can we learn from AANAPISIs regarding how they raise the civic values of AAPI students?

How about private institutions and the ways in which they inhibit civic values? Or at religious-

based institutions, which are particularly influential in promoting a life-long commitment to civic

values?

More research is needed on the impact of MSIs beyond traditional measures of success.

This study demonstrated that emerging AANAPISIs are important in the development of civic

values for students. Future research should explore the reasons why and how these institutions

influence the civic values of students. Additionally, data for this study was collected in 2004 and 2008, at that time AANAPISIs were yet to be officially federally instituted. The list of AANAPISIs derived for this study are institutions that would become designated and/or funded AANAPISIs by 2013 (Appendix E). More recent research on these institutional contexts must be explored to examine AANAPISIs, especially as they now offer nearly a decade of data to examine the changes of these institutions based on the designation. Furthermore, the MSIs represented in this study, are a small fraction of the MSIs nationally. MSIs represent a wide range of institutional contexts from private to public, four-year colleges, community colleges, all-women's colleges, religious-based institutions, and with a wide range of institutional enrollment sizes and locations (i.e., rural vs urban; CARE, 2013; Nuñez et al., 2016). A case in point is the large representation of federally designated AANAPISIs (47.4%) and HSIs (53%) that are community colleges (CARE, 2013; Excelencia, 2010-2011); although half of all designated AANAPISIs and HSIs are community colleges, community colleges were not included in this study due to the small sample sizes. Thus the findings from this study cannot be generalized to all MSIs, but is more relevant for four-year MSIs. More research is needed on the civic development of students enrolled all types of MSI contexts.

Relatedly, in addition to MSI status, private and religiously affiliated institutional contexts are also influential in the civic development of students. Private institutions are a negative predictor of civic values; while religiously affiliated institutions are positive predictors of service career aspirations. Attending religious-based institutions increases the odds of aspiring for a service career. First, religious-based institutions are often driven by institutional missions of social justice and/or service. Second, as for the negative affect of attending private colleges on student's civic values, this may be a factor of the limited racial/ethnic and economic diversity of

the student body or the availability of diversity-related curricular and co-curricular experiences. Further research is needed to explore the impact of private institutions and religiously affiliated institutions on the civic development of students. More specifically, future research should examine the influence of religious-based institution's mission on the civic engagement practices and culture on the college campus. Additionally, given public higher education institution's role in providing college access and opportunities to local communities and preparing future generations of local professionals and leaders, more research is needed on the impact of non-traditional measures of success. Future studies can examine the factors that influenced the career decisions of alumni from different colleges, especially those that pursued service sector careers. Qualitative research on civic engagement of college students can also inform the how, what, and why the predictors of this study have an influence on civic values and service career aspirations.

Furthermore, more qualitative research is needed to examine the role of institutions—the type of institution (MSI verses non-MSIs; four- versus two-year colleges), structurally diverse institutions, institutions with civic missions—on civic values and engagement, and aspirations to pursue service careers of college students; including, but not limited to, the perceived impact of the institutional context from the student perspective, but also case studies of the policies and practices which promote civic engagement on college campuses. One institutional context that is particularly important to examine is community colleges; they are one of the least studied institutions in terms of civic engagement, yet remain the point of entry for a large proportion of the low-income racial/ethnic minority and immigrant student population.

Additionally, this topic would also benefit from more studies that can examine the nuances in the saliency of race and ethnicity on civic engagement of students. One area of further exploration is the civic development of AAPI students. In this study, AAPI students had higher

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civic values than White students, but were less likely to pursue careers in service. These contradictory findings may be influenced by stereotypes of AAPIs as being less civically engaged and passive (Park et al., 2008) and thus possibly resulting in society discouraging or not encouraging these students to be civically engaged or pursue service careers. Also the lack of role models in civic-related careers for AAPIs may influence their aspirations, or lack thereof, to pursue these careers. For example, CARE (2010) reported that AAPIs are severely underrepresented in the teaching profession compared to the representation of AAPI students in K-12 schools. More research is needed to explore the civic values and service career aspirations of AAPI students. Furthermore, future studies on the civic engagement of racial/ethnic minority students should control for immigration status, immigrant generation, nationality, and ethnicity. These demographic variables were not available in this dataset, but based on the literature are important in the study of civic engagement since it may influence the type of civic participation students engage with.

In terms of practice, based on the findings of this study, higher education faculty, administrators and student affairs professionals must consider the practices and institutional contexts which promote the civic development of college students. The college experiences that proved to both raise student civic values and inspire students to pursue service sector careers are: participating in campaigns, volunteering, taking a service learning course in college, and participating in an academic program for racial/ethnic minorities. Additionally, the positive influence of student-faculty interactions for both civic values and service career aspirations demonstrates the importance of faculty in promoting the civic engagement of students on college campuses. This finding adds to the literature on the role of faculty on the educational success and college experiences of students (Alcantar & Hernandez, in press).

Furthermore, institutional agents must also be attuned to the factors that promote or hinder the civic engagement of students of different racial/ethnic backgrounds. Participating in demonstrations, campaigns, service learning, study abroad, volunteering, interactions with people from another race/ethnicity, and interactions with faculty all have different affects on different racial/ethnic minority students. Also, AANAPISIs are particularly influential in the development of civic values for AAPI students. One study conducted on an AANAPISI community college found that faculty and student affairs practitioners civically engaged students by introducing them to local AAPI civic leaders and teaching them the role of AAPIs in the history of the Civil Rights Movement (Alcantar, 2017). Consequently, there remains a wealth of information higher education institutions can learn from AANAPISIs and other MSIs. Most MSIs are located in or near communities that are highly segregated, especially of their target racial/ethnic minority population. Thus, promoting civic engagement at MSIs would not only increase academic achievement and college degree attainment of their students, but engage leaders in their communities.

In addition, the findings related to majoring in STEM have important implications for practice. Higher education faculty, administrators, and student affairs professionals interested in developing the civic values of students majoring in STEM must consider ways to engage students in civic learning. STEM is not an isolated field, unconnected to public issues. Greater efforts must be made to connect curricular experiences, courses and assignments within STEM courses, to more social science courses for STEM students. Undergraduate research programs must also connect STEM-related research to current social problems. For example, research in health could expose students to inequities in access to public healthcare.

Furthermore, STEM students can also be exposed to service learning projects that connect their curriculum to local or global social problems, as service learning has been found to be a proven method to increase student's civic values. These initiatives could also help increase student's aspirations for service careers, such as filling a need for doctors in family and general practice. One example is the Student-Run Free Clinic Project at the University of California, San Diego (UCSD); this is a community health clinic that is supervised by the medical school faculty, but ran by medical students and pre-med undergraduate students. This clinic provides free medical healthcare services to underserved communities of San Diego and medical training for students. But more importantly students gain empathy, compassion and training to serve non-English speaking, immigrant, and low-income communities. Another example which promotes community engagement and service is the medical school at the University of California, Riverside (UCR), a designated HSI and eligible AANAPISI. The UCR medical school was founded on a mission to serve the low-income communities of the Inland Empire (Riverside-San Bernardino Counties of Southern California).

As a matter of fact, various initiatives are currently underway through an assortment of non-profit organizations, higher education institutions, and through the federal government to promote the civic engagement of college students (New, 2016). For example, in the fall of 2016, California State University of Los Angeles instituted a graduation requirement to promote the civic learning of college students (New, 2016). A goal of this requirement is to connect what students are learning to real-world problems (New, 2016). The Department of Education also released a report, "A Crucible Moment: College Learning and Democracy's Future" developed by The Civic Learning and Democratic Engagement National Task Force on behalf of The Global Perspective Institute, Inc. (GPI, Inc.) and the Association of American Colleges and

Universities (AAC&U), encouraging higher education institutions to revisit their role in cultivating the United States' engaged citizenry. Many institutions are already answering this call for action. For instance, the Massachusetts Department of Higher Education (MDHE) recently published their statewide strategic plan to strengthen the civic capacities across all public higher education institutions (Brennan, 2017). These institution-wide initiatives have the potential to increase the civic values and engagement of college students, regardless of major.

Conclusion

One of the greatest critical education scholars, Paulo Freire, has been credited for the quote, "Education does not change the world. Education changes people. People change the world." This study demonstrated the influence of higher education institutions and practices on the civic development of college students. This study aimed to shed light on the civic engagement of college students and the factors that promote civic values within different types of institutions. With that, this study aimed to inform research, policy, and practice of student civic engagement and ultimately increase the retention, persistence and civic participation of students generally, but especially racial/ethnic minority students. By examining a large sample of higher education institutions I was able to explore the influence of curricular and co-curricular experiences on the development of civic values of students nested within postsecondary institutions. These findings helped identify the curricular, co-curricular, and institutional characteristics that are the greatest predictors of civic values and aspirations to pursue careers in service for students. Identifying evidence-based best practices can inform the allocation of resources and structure of programs and services at higher education institutions. Furthermore, this study has greater implications for our society as a whole as it sheds light on the role of

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higher education institutions in strengthening our nation's democracy through the development

of an engaged and educated citizenry to once again regain our global competitiveness.

APPENDIX A: Summary of Minority Serving Institutions & Definitions

Table 1. Summary of federally designated minority-serving institutions, 2012

Designation (Acronym)	First established	Undergraduate demographic requirement	Low-income or needy student requirement	Proof of race required	Cultural curriculum	Institutional requirements?	Ability for expansion
Alaska Native-Serving Institutions (ANSIs)		20% Alaskan Native		No		No	Based on demographics
American Indian Tribally Controlled Colleges and Universities (TCUs)	1968	50% Native American/Alaskan Native		Yes	Yes	No	Based on demographics
Asian American and Native American Pacific Islander-Serving Institutions (AANAPISI)	2008	FTE 10% AANAPI	50% of enrollment is low-income	No	No	No	Based on demographics
High Hispanic Enrollment (HHE)		FTE 25% Hispanic or Latina/o	None	No	No	No	Based on demographics
Hispanic-Serving Institution (HSI)	1992	FTE 25% Hispanic or Latina/o	50% of enrollment is low-income	No		No	Based on demographics
Historically Black Colleges and Universities (HBCUs)	1964	None	None	No	No	No	Cannot expand due to 1964 definition
Native American-Serving, Non-Tribal Institutions (NASNTIs)		10% Native American		Yes		No	Based on demographics
Native Hawaiian-Serving Institutions		10% Native Hawaiian		Yes		No	Based on demographics
Predominately Black Institutions (PBIs)		40% Black American	50% of enrollment is low-income or first-generation	No	No	Enrollment GT 1,000 students and 50% enrolled in an undergraduate degree program	Based on demographics
Minority Institutions		50% minority enrollment[a]		No	No	No	Based on demographics

Note: Adapted from table developed by Dr. Valerie Lundy-Wagner, New York University (2012); FTE - number of students enrolled full time at an institution, plus the full-time equivalent of the number of students enrolled part time; GT - greater than.

[a]Asians or Pacific Islanders are excluded from "minorities" for the Minority institutions designation because IPEDS enrollment data does not differentiate between Asian Americans, Pacific Islanders, and Asians.

APPENDIX B: Terms and Measures of Civic Engagement

<u>Terms used to Describe Civic Engagement</u>
- Civil activity
- Community-based civic engagement
- Pro-social behaviors
- Humanitarian/civic involvement
- Civic activities
- Social activities (social activities that include helping family, peers, and church)
- Civic voluntarism
- Community engagement
- Civic or public leadership
- Social Agency

<u>Measures of Civic Engagement</u>

Political Civic Engagement	**Social Civic Engagement**
• Voting and registering to vote (or intention to vote if under 18) • Pollworker • Protesting or attending demonstrations • Attending a rally • Contacting public officials about issues or concerns • Participation in political organizations, clubs • Taking leadership positions • Donating to political campaigns • Discussing politics • Seeking information about current events through newspapers or internet • Disseminating information about fundraisers, protests, rallys (e.g. using internet-Facebook, text, email, to share upcoming event) • Participating in protests for social or political causes	• Volunteering in the community • Community Service • Civil service jobs (e.g. teacher, tutor) • Mentoring • Participating in community based organizations • Translating • Childcare for community members who are going to work or school • Voluntary associations (e.g. House of worship) • Serving on local boards • Raising money for charity • Attending public town hall or school meetings • Social Capital • Public work/public problem solving • Social responsibility • Public agency • Engaged sociology • Participating in protests for social or political causes • Community organizing or mobilizing

APPENDIX C: Variable List

Dependent VA		
1	Civic Values	Continuous variable of social agency construct. Construct of GOAL17, GOAL15, GOAL05, GOAL18, GOAL08, GOAL16; Indicate the importance to you personally of each of the following: 1) Helping promote racial understanding (GOAL17), 2) Developing a meaningful philosophy of life (GOAL15), 3) Influencing social values (GOAL05), 4) Keeping up to date with political affairs (GOAL 18), 5) Being very well off financially (GOAL08), 6) Participating in a community action program (GOAL16); 1=not important, 2=somewhat important, 3=very important, 4=essential
2	Public Service Career	Aspiration for career in public service (1=Yes, 0=No)
Independent VAs		
Pre-Test		
3	Civic Values in HS	TFS Civic Values Score when entering college; Construct of Social Agency: GOAL17_TFS, GOAL15_TFS, GOAL05_TFS, GOAL18_TFS, GOAL08_TFS, GOAL16_TFS (for more detail see SOCIAL_AGENCY above)
4	Student Probable Service Career	Student's probable career in service at the start of college (2=Yes, 1=No)
Background Characteristics		
5	Female	2=female 1=male
6	Socioeconomic Status	Scale of three times: income (1=less than $10,000 to 14=$250,000 or more), mother's highest education (1=grammar school to 8=graduate degree), father's highest education (1=grammar school to 8=graduate degree). Computed as: SES= (INCOME*2)+FATHEDU+MOTHEDU
7	First-Generation College Student	First-generation college student based on parent(s) with less than 'some college'; 2=Yes, 1=No
8	Race: American Indian/Alaska Native	1=Yes, 0=No
9	Race: Black	1=Yes, 0=No
10	Race: Latina/o	1=Yes, 0=No

11	Race: Asian American/Pacific Islander	1=Yes, 0=No
12	Race: Other	1=Yes, 0=No
13	Either Parent in Service Career	2=Yes, 1=No

Pre-College/High School Experiences

15	High School GPA	D=1, C=2, C+=3, B-=4, B=5, B+=6, A-=7, A/A+=8
16	Composite SAT score	Composite SAT score (SAT Verbal + SAT Math/100)= 0-16
17	Work in HS	2=Yes, 1= None
18	Service Learning in HS	Act in Past Year: Performed community service as part of a class in HS (Service Learning in HS); 2=Occasionally or Frequently, 1= None.
19	Required Community Service in HS	HS Required Community Service for Graduation; 2=Yes, No=1
20	Volunteer and Community Service in HS	2=Yes, 1=None Act in Past Year: Performed Volunteer Work (ACT12_TFS); Participated in organized demonstrations (ACT03_TFS); Worked on a local, state, or national political campaign (ACT03_TFS) Any of the following volunteer work in high school; Tutoring/Teaching (CSVACT02_TFS), Counseling/Mentoring (CSVACT03_TFS), Environmental activities (CSVACT04_TFS), Child care (CSVACT05_TFS), Elder care (CSVACT06_TFS), Hospital work (CSVACT07_TFS), Substance abuse education (CSVACT08_TFS), Other health education (CSVACT09_TFS), Service to the homeless (CSVACT10_TFS), Community improvement/ construction (CSVACT11_TFS), Conflict mediation (CSVACT12_TFS), Service to my religious community (CSVACT13_TFS), Other community service (CSVACT14_TFS)

College Enrollment

21	Full-Time Enrollment	Enrollment status; 2=Full-time, 1= Not Enrolled or Part-time
25	College GPA	Overall GPA D=1, C=2, C+=3, B-=4, B=5, B+=6, A-=7, A/A+=8
26	STEM Major	Undergraduate Major in STEM (1=STEM Major, 0=Not STEM Major)
28	Remedial Course	1=Yes, 2=No; Act in College: Took remedial course

29	Transferred	1=Yes, 2=No. Since entering college have you transferred from Community College
Financial/Familial Obligations		
30	Working over 20 hours per week	1=Yes, 2=No; Combination of three variables was used. a) Working (for pay) off-campus 20+hrs per week (HPW09); b) Working 20+ hrs per week (for pay) on campus (HPW08); c) Working full-time while attending college (COLACT03)
31	Financial Contributor	1=Occasionally to Frequently, 2= Not at all; Indicate how often you engaged in contributing money to help support your family in the past year (GENACT15)
32	Distance from home	1 = 5 or less, 2 = 6 to 10, 3 = 11 to 50, 4 = 51 to 100, 5 = 101 to 500, 6 = Over 500; How many miles is this college from your permanent home.
Informal Civic Engagement		
33	Demonstration	1=Not at all, 2=Occasionally, 3=Frequently; Act in Past Year: Participated in political demonstrations
34	Campaign	1=Not at all, 2=Occasionally, 3=Frequently; Act in Past Year: Worked on a local, state, or national political campaign
35	Volunteer Work	1=Not at all, 2=Occasionally, 3=Frequently; Act in Past Year: Performed volunteer work
Curricular Experiences		
36	Service Learning in College	2=Yes, 1=No; Since entering college, indicate how often you performed community service as part of a class
37	Ethnic Studies Course	1=No, 2=Yes; Act in College: Taken ethnic studies in college
38	Women's Studies Course	1=No, 2=Yes; Act in College: Taken a women's studies course
Co-Curricular Experience		
39	Undergraduate Research Program	2=Yes, 1=No; since entering college have you participated in an undergraduate research program
40	Worked on Professor's Research	2=Yes (Occasionally/Frequently), 1=No; Since entering college have you worked on a professor's research project
41	Fraternity/Sorority	2=Yes, 1=No; Act in College: Joined a social fraternity or sorority
42	Ethnic/Racial Organization	2=Yes, 1=No; Act in College: since entering college have you participated in a ethnic/racial student organization

43	**Academic Program for Racial/Ethnic Minorities**	**2=Yes, 1=No; since entering college have you participated in an academic program for racial/ethnic minorities**
44	**Student Government**	**2=Yes, 1=No; Act in College: Participated in student government**
45	**Study-Abroad**	**2=Yes, 1=No; Act in College: Participated in a study-abroad program**
46	**Leadership Training**	**2=Yes, 1=No; Since entering college have you participated in leadership training**

Peer & Faculty Interactions

47	**Interactions with other race/ethnic group**	**GENACT03 Indicate how often you engaged in each during the past year; 1=not at all, 2=occasionally, 3=frequently (GENACT03); "Socialized with someone of another racial/ethnic group"**
48	**Roommate**	**COLACT09 since entering college have you had a roommate of different race/ethnicity; No=1, Yes=2**
49	**Student-Faculty Interaction**	**Continuous variable; Student-Faculty Interaction Score; Measures the extent to which students and faculty establish mentoring relationships. Encompasses academic and personal support; Construct of FACPRV01, FACPRV02, FACPRV03, FACPRV04, FACPRV05, FACPRV06, FACPRV07, FACPRV09, FACPRV10; How often have professors at your college provided you with 1) encouragement to pursue graduate/professional study (FACPRV01), 2) An opportunity to work on a research project (FACPRV02), 3) Advice and guidance about your educational program (FACPRV03), 4) Emotional support and encouragement (FACPRV04), 5) A letter of recommendation (FACPRV05), 6) Help improve your study skills (FACPRV06), 7) Feedback about your academic work (outside of grades) (FACPRV07), 8) An opportunity to discuss coursework outside of class (FACPRV09), 9) Help in achieving your professional goals (FACPRV10)**

Institutional Characteristics

50	**Private Institution**	**Institution control (1=Public, 2=Private)**
51	**Selectivity**	**Min 888- Max 1386**
52	**Religious Institutions**	**2=Catholic or Other Religious Institution, 1=Not; CIRP institutional stratification**

53	Historically Black Colleges and Universities	HBCU designation; 2=Yes, 1=No
54	Hispanic Serving Institution	2=Designated & Funded, 1=No; List derived from Cuellar (2012) and can be found in Appendix D.
55	Asian American and Native American Pacific Islander Serving Institutions	2=Yes, 1=No; Federally designated and funded AANAPISIs (excludes eligible); List of institutions derived from AANAPISI list from CARE (2013). List in Appendix E.
56	Community Engagement Classification 2006	1=Yes, 0=No; Carnegie Classification- Community Engagement in 2006; List derived from Carnegie Foundation list in Appendix F
57	Community Engagement Classification 2008	1=Yes, 0=No; Carnegie Classification- Community Engagement in 2008; List derived from Carnegie Foundation list in Appendix F

Note: HERI constructs can be found at http://www.heri.ucla.edu/PDFs/constructs/Appendix2009.pdf; HERI instruments can be found at http://heri.ucla.edu/instruments/

APPENDIX D: Hispanic Serving Institutions

Table 1. List of designated and emerging Hispanic Serving Institutions (HSIs)

Institution	Status	2004 TFS	2008 CSS
California Polytechnic-Pomona	Designated/Funded; 2005 Title V grant	X	X
College of Mount Saint Vincent	Designated/Funded; 2004 Title V grant	X	X
California State University Long Beach	Designated/Funded; 2006 Title V grant	X	X
California State University Los Angeles	Designated/Funded; 2004 & 2005 Title V grant	X	X
Eastern New Mexico University	Designated/Funded; 2004 Title V grant	X	X
Herbert H Lehman College	Designated/Funded; 2004 & 2006 Title V grant	X	X
Mt. Saint Mary's College	Designated/Funded; 2004 & 2005 Title V grant	X	X
Northeastern Illinois University	Designated/Funded; 2004 Title V grant	X	X
Our Lady of the Lake University-San Antonio	Designated/Funded; 2004 Title V grant	X	X
Saint Edward's University	Designated/Funded; 2004 Title V grant	X	X
Saint Peter's College	Designated/Funded; 2004 Title V grant	X	X
Saint Thomas University	Designated/Funded; 2004 Title V grant	X	X
University of La Verne	Designated/Funded; 2007 Title V grant	X	
University of New Mexico	Designated/Funded; 2006 Title V grant	X	X
University of Texas-San Antonio	Designated/Funded; 2004 Title V grant	X	X
Whittier College	Designated/Funded; 2004 & 2005 Title V grant	X	
Woodbury University	Designated/Funded; 2004 & 2005 Title V grant	X	X
Barry University	Designated; 2006-07 High Hispanic Enrollment; federal designation in 2006	X	X
Fresno Pacific University	Designated; 2006-07 High Hispanic Enrollment; federal designation in 2006	X	X
St. Mary's University	Designated; 2006-07 High Hispanic Enrollment	X	
Texas A&M University– Kingsville	Designated; 2006-07 High Hispanic Enrollment	X	X

APPENDIX E: Asian American and Native American Pacific Islander Serving Institutions

Table 1. List of designated and funded Asian American and Native American Pacific Islander Serving Institutions

	Institution	Status
1	American Samoa Community College	Federally Designated/Funded
2	California State University, East Bay	Federally Designated/Funded
3	California State University-Sacramento	Federally Designated/Funded
4	City College of San Francisco	Federally Designated/ Funded 2008
5	Coastline Community College	Federally Designated/ Funded 2010
6	CUNY Queens College	Federally Designated/ Funded 2009
7	De Anza College	Federally Designated/ Funded 2008
8	Guam Community College	Federally Designated/ Funded 2008
9	Laney College	Federally Designated/ Funded 2010
10	Mission College	Federally Designated/ Funded 2010
11	Mt. San Antonio College	Federally Designated/Funded
12	Palau Community College	Federally Designated/Funded
13	Richland College	Federally Designated/ Funded 2010
14	San Jose State University	Federally Designated/Funded
15	Santa Monica College	Federally Designated/ Funded 2009
16	Seattle Community College- South Campus	Federally Designated/ Funded 2008
17	University of Guam	Federally Designated/ Funded 2010
18	University of Hawaii at Hilo	Federally Designated/ Funded 2008
19	University of Illinois at Chicago	Federally Designated/ Funded 2010
20	University of Maryland-College Park	Federally Designated/ Funded 2008
21	University of Massachusetts-Boston	Federally Designated/ Funded 2010
22	Polytechnic Institute of New York University	Federally Designated
23	Bunker Hill Community College	Federally Designated
24	California State Polytechnic University-Pomona	Federally Designated
25	California State University- Northridge	Federally Designated
26	College of Micronesia-FSM	Federally Designated
27	Edmonds Community College	Federally Designated
28	Georgia State University	Federally Designated
29	Hawaii Community College	Federally Designated
30	Kauai Community College	Federally Designated
31	Los Angeles City College	Federally Designated
32	Los Angeles Harbor College	Federally Designated
33	Montgomery College	Federally Designated
34	Nevada State College	Federally Designated
35	Northern Marianas College	Federally Designated
36	Pacific Islands University	Federally Designated
37	Pasadena City College	Federally Designated
38	Rutgers University-New Brunswick	Federally Designated
39	San Francisco State University	Federally Designated
40	Seattle Community College- Central Campus	Federally Designated

41	University of Hawaii-West Oahu	Federally Designated
42	University of Houston	Federally Designated
43	Windward Community College	Federally Designated
44	Berkeley City College	Federally Designated
45	California State University-Dominguez Hills	Federally Designated
46	California State University- Fresno	Federally Designated
47	California State University- Fullerton	Federally Designated
48	California State University-Long Beach	Federally Designated
49	California State University- San Marcos	Federally Designated
50	California State University- Stanislaus	Federally Designated
51	Chabot College	Federally Designated
52	College of Alameda	Federally Designated
53	College of the Marshall Islands	Federally Designated
54	Contra Costa College	Federally Designated
55	Cosumnes River College	Federally Designated
56	CUNY Bernard M Baruch College	Federally Designated
57	CUNY Hunter College	Federally Designated
58	CUNY Kingsborough Community College	Federally Designated
59	CUNY Queensborough Community College	Federally Designated
60	CUNY York College	Federally Designated
61	East Los Angeles College	Federally Designated
62	Fullerton College	Federally Designated
63	Leeward Community College	Federally Designated
64	Merritt College	Federally Designated
65	Minnesota State University- Mankato	Federally Designated
66	Napa Valley College	Federally Designated
67	Orange Coast College	Federally Designated
68	Pacific University	Federally Designated
69	Saint Martin's University	Federally Designated
70	Saint Peter's College	Federally Designated
71	San Jose City College	Federally Designated
72	Seattle Community College- North Campus	Federally Designated
73	Stony Brook University	Federally Designated
74	University of California, Merced	Federally Designated
75	University of Hawaii at Manoa	Federally Designated
76	University of Hawaii at Maui College	Federally Designated
77	University of Minnesota- Twin Cities	Federally Designated
78	University of the Pacific	Federally Designated

Note: List of institutions is derived from a report from the National Commission on Asian
American and Pacific Islander Research in Education (CARE, 2013)

APPENDIX F: Institutions with the Civic Engagement Classification

Table 1. List of institutions with the Carnegie Civic Engagement Classification in 2006 and 2008 used to derive variable represented in this study

	Institution	Year
1	Allegheny College	2006
2	Alvernia University	2008
3	Anne Arundel Community College	2008
4	Appalachian State University	2008
5	Arizona State University	2006
6	Augsburg College	2008
7	Bates College	2008
8	Berea College	2008
9	Boise State University	2006
10	Bowling Green State University	2008
11	Bristol Community College	2006
12	Bunker Hill Community College	2008
13	Cabrini College	2008
14	California State University, Chico	2006
15	California State University, Fresno	2006
16	California State University, Fullerton	2008
17	California State University, Long Beach	2008
18	California State University, Monterey Bay	2006
19	California State University, San Bernardino	2008
20	California State University, San Marcos	2006
21	California State University, Stanislaus	2008
22	Central College	2008
23	Chandler-Gilbert Community College	2006
24	Clemson University	2008
25	Colorado State University	2008
26	Daemen College	2008
27	DePaul University	2008
28	Dominican University of California	2008
29	Drexel University	2008
30	Duke University	2008
31	Duquesne University	2008
32	East Carolina University	2008
33	Eastern Kentucky University	2008
34	Eastern Michigan University	2008
35	Elon University	2006
36	Emory & Henry College	2008
37	Emory University	2006
38	Fairfield University	2008

39	Fielding Graduate University (CA)	2008
40	Florida Gulf Coast University	2008
41	Gettysburg College	2006
42	Georgetown University	2008
43	Indiana State University	2006
44	Indiana University-Purdue University Indianapolis	2006
45	Iowa State University	2008
46	Judson College	2008
47	Kapiolani Community College, University of Hawaii	2006
48	Keene State College	2006
49	La Sierra University	2008
50	Lawrence Technological University	2008
51	Louisiana State University	2008
52	Loyola University Chicago	2008
53	Madonna University	2006
54	Massachusetts College of Art and Design	2008
55	Messiah College	2008
56	Miami Dade College	2008
57	Middlesex Community College	2006
58	Michigan State University	2006
59	Mercer University	2008
60	Metropolitan State University	2008
61	Middle Tennessee State University	2008
62	Middlebury College	2006
63	Morehead State University	2006
64	Mount Wachusett Community College	2008
65	Nazareth College	2008
66	New York University	2006
67	Niagra University	2008
68	North Carolina Central University	2008
69	North Carolina State University	2006
70	Northampton Community College	2008
71	Northern Illinois University	2008
72	Northern Kentucky University	2006
73	Northern Michigan University	2008
74	Occidental College	2008
75	Ohio State University	2008
76	Oklahoma State University	2005
77	Otis College of Art and Design	2006
78	Otterbein University	2008
79	Owens Community College	2008
80	Pace University	2006
81	Pennsylvania State University	2008

82	Pfeiffer University	2008
83	Pitzer College	2006
84	Portland State University	2006
85	Purdue University	2008
86	Raritan Valley Community College	2008
87	Rhodes College (TN)	2006
88	Rockford University	2006
89	Rollins College	2008
90	Rutgers University-Newark	2006
91	Saint Mary's College of California	2008
92	Saint Peter's University	2008
93	San Francisco State University	2006
94	Springfield College	2008
95	State University of New York, Cortland	2008
96	Stetson University	2008
97	Stonehill College	2008
98	Swarthmore College	2008
99	Texas Tech University	2006
100	Townson University	2008
101	Tufts University	2006
102	Tulane University	2008
103	Universidad del Sagrado Corazon, Puerto Rico	2008
104	University of Akron	2008
105	University of Alabama	2008
106	University of Alabama at Birmingham	2008
107	University of Alaska Anchorage	2006
108	University of California, Los Angeles	2006
109	University of Central Florida	2006
110	University of Cincinnati-Main Campus	2006
111	University of Denver	2006
112	University of Houston-Downtown	2008
113	University of Illinois at Urbana-Champaign	2008
114	University of Kentucky	2006; 2008
115	University of Louisville	2008
116	University of Maine	2008
117	University of Massachusetts Amherst	2008
118	University of Massachusetts Boston	2006
119	University of Massachusetts Dartmouth	2008
120	University of Massachusetts Lowell	2008
121	University of Massachusetts Medical School	2008
122	University of Memphis	2006
123	University of Minnesota, Twin Cities	2006
124	University of Missouri-Columbia	2008

125	University of Montana	2008
126	University of Nebraska at Omaha	2006
127	University of North Carolina at Chapel Hill	2006
128	University of North Carolina at Charlotte	2008
129	University of North Carolina Greensboro	2008
130	University of North Carolina at Pembroke	2008
131	University of North Carolina Wilmington	2008
132	University of North Dakota-Main Campus	2006
133	University of Northern Iowa	2006
134	University of Pennsylvania	2006
135	University of Redlands	2006
136	University of San Diego	2006
137	University of San Francisco	2006
138	University of Scraton	2008
139	University of South Carolina	2008
140	University of South Florida	2006
141	University of Southern Indiana	2008
142	University of St. Thomas	2006
143	University of Tennessee at Chattanooga	2008
144	University of Vermont	2006
145	University of Wisconsin-Madison	2008
146	University of Wisconsin-Parkside	2006
147	Utah Valley University	2008
148	Villanova University	2008
149	Virginia Commonwealth University	2006
150	Virginia Polytechnic Institute and State University	2006
151	Wagner College	2008
152	Wartburg College	2006
153	Washington State University	2008
154	Wayne State University	2008
155	Weber State University	2008
156	Wentworth Institute of Technology	2008
157	Wesleyan University	2008
158	Western Carolina University	2008
159	Western Kentucky University	2006
160	Widener University	2006
161	Winona State University	2006
162	Winthrop University	2008
163	Xavier University	2008

Note: See Carnegie Foundation, 2015 for the full list of institutions with the Carnegie Civic Engagement classification.

APPENDIX G: Service Sector Careers

Table 1. Coding of Careers/Occupations in CIRP Dataset

Careers/Occupations	Service-Sector=1; Non-Service=0
Accountant or actuary	0
Actor or entertainer	0
Architect or urban planner	1
Artist	0
Business (clerical)	0
Business executive (management, administrator)	0
Business owner or proprietor	0
Business salesperson or buyer	0
Clergy (minister, priest)	1
Clergy (other religious)	1
Clinical psychologist	1
College administrator/staff	1
College teacher	1
Computer programmer or analyst	0
Conservationist or forester	1
Dentist (including orthodontist)	0
Dietitian or home economist	0
Engineer	0
Farmer or rancher	0
Foreign service worker (including diplomat)	1
Homemaker (full-time)	0
Interior decorator (including designer)	0
Lab technician or hygienist	0
Law enforcement officer	1
Lawyer (attorney) or judge	1
Military service (career)	1
Musician (performer, composer)	0
Nurse	1
Optometrist	0
Pharmacist	0
Physician	1
Policymaker/government	1
School counselor	1
School principal or superintendent	1
Scientific researcher	1
Social, welfare, or recreation worker	1
Therapist (physical, occupational, speech)	1
Teacher or administrator (elementary)	1
Teacher or administrator (secondary)	1
Veterinarian	0
Writer or journalist	0
Skilled trades	0
Other	0

Undecided	0

APPENDIX H: Variables in Multiple Imputation Procedure

Variables	Dependent	Predictor
Civic Values (SOCAGENm)	Yes	Yes
Pre-Test of Civic Values (preSOCAGENm)	Yes	Yes
Service Career (SERVCARm)	Yes	Yes
Pre-Test Service Career (preSERVCARm)	Yes	Yes
Socioeconomic Status (SESm)	Yes	Yes
First-Generation College Student (FIRSTGENm)	Yes	Yes
Either Parent Career in Service (PSERVCARm)	Yes	Yes
High School GPA (HSGPAm)	Yes	Yes
SAT Composite Score (COMSATm)	Yes	Yes
Work in High School (WORKHRS_HSm)	Yes	Yes
Service Learning in High School (SERVLEARN_HSm)	Yes	Yes
Community Service Required in HS (COMMSERREQm)	Yes	Yes
Volunteer & Community Service in HS (COMMSER_HSm)	Yes	Yes
Full-Time Enrollment in College (FTENROLLm)	Yes	Yes
College GPA (COLLGPAm)	Yes	Yes
STEM Major (STEMm)	Yes	Yes
Took Remedial Course (REMEDIALm)	Yes	Yes
Transferred from Community College (TRANSFm)	Yes	Yes
Work 20+ Hours in College (WORK20Pm)	Yes	Yes
Contribute Financially to Support Family (FAM_CONTRm)	Yes	Yes
Distance from Home (DISTHOME_TFSm)	Yes	Yes
Participated in Demonstration (DEMONSTm)	Yes	Yes
Participated in Campaign(CAMPAIGNm)	Yes	Yes
Volunteer Work (VOLUNTm)	Yes	Yes
Service Learning (SERVLRNm)	Yes	Yes
Ethnic Studies Course (ETHSTDm)	Yes	Yes
Women's Studies Course (WMNSTDm)	Yes	Yes
Undergraduate Research Program (RESEARm)	Yes	Yes
Professor's Research (PROFRESEARCHm)	Yes	Yes
Greek Life (GREEKLFm)	Yes	Yes
Ethnic/Racial Organization (RACEORGm)	Yes	Yes
Academic Program for Racial/Ethnic Minorities (RACEPROGm)	Yes	Yes
Student Government (STUGOVm)	Yes	Yes
Study Abroad (ABROADm)	Yes	Yes
Leadership Training (TRLEADm)	Yes	Yes
Interaction with Other Race/Ethnic Group (STU_RACEINTERACTm)	Yes	Yes
Roomate (ROOMATEm)	Yes	Yes
Student-Faculty Interaction (FAC_INTERACTIONm)	Yes	Yes
Selectivity (SELECTIVITYm)	No	Yes
Denominational Institution (RELIGm)	No	Yes
Pell Grant Count (NUMPELLm)	No	Yes
Institution Control: Private (INSTCONTm)	No	Yes
Institution Type: Four-Year College/Univ. (INSTTYPE4)	No	Yes
Hispanic Serving Institution (HSI)	No	Yes
Asian American and Native American Pacific Islander Institution (AANAPISI)	No	Yes

Community Engagement Classification (CCCOMMENG)	No	Yes

Table 6.2
HLM Model Step-Results Predicting Civic Values by Variable Blocks (*n* = 18,776 students, 329 institutions)

Variables	r	Sig.	Model 1 Coef.	S.E. (Sig.)	Model 2 Coef.	S.E. (Sig.)	Model 3 Coef.	S.E. (Sig.)	Model 4 Coef.	S.E. (Sig.)	Model 5 Coef.	S.E. (Sig.)	Model 6 Coef.	S.E. (Sig.)	Model 7 Coef.	S.E. (Sig.)	Model 8 Coef.	S.E. (Sig.)	Model 9 Coef.	S.E. (Sig.)	Model 10 Coef.	S.E. (Sig.)
Pre-Test																						
Civic Values in HS	0.588	***	0.646	0.007***	0.626	0.007***	0.620	0.007***	0.611	0.007***	0.604	0.007***	0.533	0.007***	0.521	0.007***	0.506	0.007***	0.492	0.007***	0.489	0.007***
Background Characteristics																						
Female	0.098	***			0.583	0.138***	0.499	0.136***	0.283	0.129*	0.307	0.129*	0.091	0.121	-0.195	0.123	-0.205	0.121	-0.317	0.118**	-0.313	0.119**
Socioeconomic Status	-0.049	***			-0.006	0.012	0.005	0.012	0.003	0.012	0.023	0.011*	0.007	0.011	0.010	0.011	0.015	0.011	0.010	0.011	0.011	0.011
First-Generation College Student	0.022	**			0.218	0.182	0.185	0.183	0.184	0.183	0.267	0.186	0.260	0.182	0.295	0.180	0.351	0.179*	0.303	0.180	0.299	0.179
American Indian/Alaska Native	0.004				1.925	1.382	1.564	1.385	1.788	0.331	1.507	1.314	1.447	1.294	1.238	1.241	0.641	1.245	0.656	1.229	0.781	1.212
Black	0.161	***			3.338	0.240***	3.094	0.240***	3.373	0.240***	3.089	0.240***	2.802	0.223***	2.614	0.222***	1.830	0.241***	1.898	0.239***	2.023	0.265***
Latina/o	0.091	***			2.078	0.248***	1.902	0.245***	2.034	0.245***	1.873	0.245***	1.810	0.233***	1.779	0.235***	1.189	0.240***	1.178	0.240***	1.234	0.247***
AAPI	0.000				0.648	0.304*	0.707	0.304*	1.037	0.302***	0.950	0.304***	1.123	0.280***	1.123	0.277***	0.567	0.274*	0.740	0.265**	0.773	0.268**
Other Race	0.023	**			1.555	0.574**	1.508	0.579**	1.656	0.574**	1.466	0.558**	1.647	0.546**	1.672	0.544**	1.239	0.542*	1.273	0.532*	1.425	0.546**
Multi-Racial	0.003				0.453	0.200*	0.377	0.199	0.449	0.199*	0.300	0.197	0.250	0.179	0.238	0.178	-0.138	0.182	-0.125	0.184	-0.010	0.189
Parent Service Career	0.033	***			0.408	0.117***	0.404	0.116***	0.398	0.118***	0.374	0.118**	0.268	0.113*	0.233	0.113*	0.190	0.112	0.164	0.110	0.182	0.111
Pre-College/High School Experiences																						
HS GPA	-0.018	*					-0.012	0.053	-0.096	0.059	-0.101	0.060	-0.088	0.056	-0.071	0.056	-0.094	0.055	-0.077	0.055	-0.06	0.054
Composite SAT	-0.092	***					-0.116	0.019***	-0.121	0.020***	-0.110	0.019***	-0.118	0.019***	-0.111	0.018***	-0.125	0.018***	-0.127	0.018***	-0.133	0.022***
Work in HS	0.022	**					0.160	0.121	0.155	0.121	0.119	0.121	0.017	0.120	-0.018	0.121	-0.033	0.118	-0.056	0.115	-0.078	0.116
Service Learning in HS	0.111	***					0.372	0.119***	0.378	0.118**	0.334	0.118**	0.110	0.110	-0.026	0.109	-0.071	0.107	-0.125	0.105	-0.122	0.105
Community Service Required in HS	0.024	***					-0.124	0.137	-0.144	0.135	-0.174	0.134	-0.088	0.127	-0.089	0.126	-0.106	0.127	-0.116	0.125	-0.077	0.126
Volunteer/Community Service in HS	0.080	***					1.164	0.452**	1.117	0.447***	1.082	0.442*	0.571	0.430	0.452	0.424	0.271	0.421	0.148	0.418	0.181	0.419
College Enrollment																						
Full-Time	-0.007								-0.185	0.242	-0.193	0.243	-0.258	0.235	-0.278	0.231	-0.291	0.232	-0.408	0.227	-0.427	0.235
College GPA	0.023	**							0.422	0.048***	0.437	0.047***	0.299	0.046***	0.296	0.045***	0.261	0.046***	0.135	0.048**	0.134	0.049**
STEM Major	-0.131	***							-1.426	0.137***	-1.447	0.135***	-1.248	0.127***	-0.976	0.129***	-0.954	0.134***	-0.984	0.134***	-0.970	0.19***
Remedial Course	-0.066	***							-0.905	0.216***	-0.845	0.215***	-0.527	0.204**	-0.330	0.199	-0.206	0.196	-0.187	0.189	-0.135	0.375
Transferred	-0.017	*							-0.457	0.426	-0.314	0.417	-0.111	0.375	-0.125	0.378	-0.075	0.381	-0.078	0.373	0.004	0.171
Financial/Familial Obligations in College																						
Work over 20hrs/week	-0.057	***									0.072	0.167	0.064	0.165	0.131	0.165	0.116	0.165	0.123	0.141	0.134	0.171
Financial Contributor	-0.147	***									-1.516	0.145***	-0.729	0.129***	-0.620	0.128***	-0.575	0.130***	-0.506	0.129***	-0.507	0.129***
Distance from home	0.047	***									0.169	0.046***	0.090	0.044*	0.082	0.043	0.007	0.043	0.028	0.043	0.054	0.045
Informal Civic Engagement in College																						
Demonstration	0.304	***											2.767	0.153***	2.536	0.148***	2.241	0.145***	2.176	0.144***	2.188	0.146***
Campaign	0.213	***											1.125	0.190***	1.123	0.187***	1.064	0.185***	1.048	0.185***	1.073	0.185***
Volunteer/Community Service	0.336	***											2.696	0.095***	2.465	0.094***	2.232	0.093***	2.079	0.093***	2.010	0.094***
Curricular Experiences in College																						
Service Learning in college	0.203	***													1.175	0.120***	1.069	0.121***	0.812	0.120***	0.840	0.122***
Ethnic Studies Course	0.205	***													1.250	0.125***	0.996	0.121***	0.927	0.121***	0.953	0.121***
Women's Studies Course	0.162	***													0.873	0.143***	0.782	0.140***	0.755	0.137***	0.803	0.138***
Co-Curricular Experience																						
Undergraduate Research Program	0.020	**															-0.168	0.193	-0.421	0.200*	-0.391	0.198*
Worked on Professor's Research	0.075	***															0.319	0.132*	-0.070	0.129	-0.076	0.129
Joined Fraternity/Sorority	0.049	***															-0.207	0.149	-0.162	0.147	-0.178	0.147
Ethnic/Racial Organization	0.269	***															1.404	0.146***	1.291	0.154***	1.313	0.155***
Academic Prog. for Racial/Ethnic Min.	0.211	***															0.953	0.178***	0.881	0.175***	0.885	0.175***
Student Government	0.136	***															0.258	0.172	0.213	0.143	0.243	0.174
Study-Abroad	0.108	***															0.553	0.136***	0.557	0.138***	0.603	0.137***
Leadership Training	0.219	***															0.866	0.123***	0.760	0.123***	0.785	0.123***
Interactions with Peers & Faculty																						
Interact. w/Other Race/Ethnic Group	0.152	***																	0.836	0.116***	0.848	0.118***
Roomate of Other Race/Ethnicity	0.084	***																	-0.194	0.127	-0.173	0.129
Student-Faculty Interaction	0.238	***																	0.125	0.008***	0.127	0.008***
Institutional Level Variables																						
Private	-0.008																				0.084	0.334
Selectivity	-0.020	**																			-0.001	0.001
Religious	0.002																				0.115	0.314
HBCU	0.101	***																			4.091	0.705***
HSI	0.023	***																			1.566	0.561**
AANAPISI	0.012																				-0.389	0.619
Community Engagement 06	0.009																				0.386	0.477
Community Engagement 08	0.026	***																			0.438	0.436
Intercept			52.269	0.109***	50.294	0.303***	47.482	1.030***	49.156	1.236***	50.802	1.271***	41.688	1.238***	37.565	1.202***	34.993	1.271***	36.430	1.286***	29.639	1.895***
Model Statistics																						
Level 1 variance			61.721		60.869		60.672		60.012		59.624		54.167		53.326		52.530		51.273		51.269	
Level 2 variance			1.797		1.480		1.458		1.296		1.293		1.001		0.912		0.922		0.967		0.962	
Explained variance at level 1			0.336		0.346		0.348		0.355		0.359		0.418		0.427		0.435		0.449		0.449	
Explained variance at level 2			0.671		0.729		0.733		0.763		0.763		0.817		0.833		0.831		0.823		0.824	
Intercept Reliability			0.462		0.428		0.426		0.406		0.407		0.378		0.365		0.369		0.382		0.381	

Note: *p < .05, **p < .01, ***p < .001

APPENDIX J: HGLM for Service Career Aspirations by Blocks

Table 7.3
HGLM Model Step-Results Predicting Aspirations for Service Sector Career (n = 18,776 students, 329 institutions)

Variables	r	Sig.	Model 1 Coef.	S.E. (Sig.)	O.R.	Model 2 Coef.	S.E. (Sig.)	O.R.	Model 3 Coef.	S.E. (Sig.)	O.R.	Model 4 Coef.	S.E. (Sig.)	O.R.	Model 5 Coef.	S.E. (Sig.)	O.R.	Model 6 Coef.	S.E. (Sig.)	O.R.	Model 7 Coef.	S.E. (Sig.)	O.R.	Model 8 Coef.	S.E. (Sig.)	O.R.	Model 9 Coef.	S.E. (Sig.)	O.R.	Model 10 Coef.	S.E. (Sig.)	O.R.
Pre-Test																																
Aspiration for Service Career in HS	0.441	***	1.821	0.042***	6.176	1.792	0.042***	6.003	1.789	0.042***	5.986	1.779	0.042***	5.924	1.778	0.042***	5.92	1.766	0.042***	5.848	1.762	0.042***	5.83	1.753	0.042***	5.770	1.743	0.042***	5.715	1.744	0.042***	5.720
Civic Values in HS	0.115	***	0.016	0.002***	1.016	0.015	0.002***	1.015	0.015	0.002***	1.015	0.016	0.002***	1.016	0.016	0.002***	1.016	0.010	0.002***	1.010	0.009	0.002***	1.009	0.009	0.002***	1.009	0.008	0.002***	1.008	0.008	0.002***	1.008
Background Characteristics																																
Female	0.114	***				0.305	0.035***	1.357	0.297	0.036***	1.346	0.292	0.036***	1.339	0.291	0.036***	1.338	0.260	0.037***	1.297	0.245	0.036***	1.278	0.272	0.036***	1.313	0.257	0.036***	1.293	0.259	0.036***	1.296
Socioeconomic Status	-0.007					-4E-04	0.002		-0.001	0.003		-0.002	0.003		-0.001	0.003		-0.003	0.003		-0.002	0.003		-0.001	0.003		-0.001	0.003		-0.002	0.003	
First-Generation College Student	0.003					0.033	0.053		0.037	0.053		0.044	0.053		0.047	0.053		0.050	0.053		0.053	0.053		0.056	0.053		0.047	0.053		0.048	0.053	
American Indian/Alaska Native	0.005					0.383	0.225		0.379	0.228		0.469	0.229*	1.598	0.472	0.232*	1.604	0.491	0.233*	1.634	0.485	0.232*	1.624	0.446	0.237		0.479	0.242*	1.615	0.447	0.241	
Black	0.017	*				-0.058	0.063		-0.027	0.066		0.087	0.067		0.084	0.068		0.065	0.070		0.060	0.070		-0.018	0.075		0.007	0.076		0.045	0.081	
Latina/o	0.008					-0.043	0.069		-0.028	0.071		0.059	0.071		0.061	0.071		0.070	0.071		0.075	0.071		0.042	0.072		0.069	0.072		0.061	0.073	
AAPI	-0.024	***				-0.169	0.078*	0.845	-0.165	0.078*	0.847	-0.193	0.078*	0.824	-0.197	0.078**	0.821	-0.187	0.078*	0.830	-0.182	0.078*	0.834	-0.230	0.081**	0.794	-0.180	0.083*	0.835	-0.182	0.084*	0.833
Other Race	-0.004					-0.136	0.157		-0.116	0.157		-0.131	0.156		-0.138	0.155		-0.107	0.154		-0.101	0.153		-0.114	0.151		-0.083	0.151		-0.079	0.152	
Multi-Racial	-0.018	*				-0.094	0.062		-0.083	0.062		-0.035	0.062		-0.029	0.062		-0.022	0.063		-0.016	0.063		-0.049	0.065		-0.023	0.066		-0.023	0.067	
Parent Service Career	0.049	***				0.166	0.037***	1.181	0.164	0.037***	1.178	0.163	0.037***	1.177	0.162	0.038***	1.176	0.161	0.038***	1.175	0.158	0.038***	1.172	0.152	0.038***	1.165	0.149	0.038***	1.161	0.149	0.038***	1.161
Pre-College/High School Experiences																																
HS GPA	0.052	***							0.039	0.016**	1.040	-0.060	0.018***	0.941	-0.059	0.018***	0.942	-0.063	0.018***	0.939	-0.062	0.018***	0.94	-0.062	0.018***	0.940	-0.058	0.018***	0.943	-0.062	0.018***	0.940
Composite SAT	-0.007								0.001	0.005		-0.007	0.005		-0.007	0.005		-0.007	0.005		-0.006	0.005		-0.006	0.005		-0.006	0.005		-0.006	0.006	
Work in HS	0.015	*							-0.011	0.033		-0.002	0.033		0.004	0.034		-0.007	0.034		-0.013	0.033		-0.009	0.033		-0.011	0.033		-0.012	0.033	
Service Learning in HS	0.019	**							-0.008	0.035		0.008	0.035		0.007	0.035		-0.016	0.035		-0.03	0.035		-0.034	0.035		-0.044	0.034		-0.044	0.034	
Community Service Required in HS	-0.017	*							-0.031	0.036		-0.035	0.036		-0.035	0.036		-0.023	0.036		-0.023	0.036		-0.022	0.037		-0.023	0.037		-0.019	0.037	
Volunteer/Community Service in HS	0.029	***							-0.008	0.111		-0.009	0.113		-0.007	0.114		-0.074	0.113		-0.082	0.002		-0.099	0.114		-0.114	0.115		-0.119	0.115	
College Enrollment																																
Full-Time	-0.008											-0.091	0.065		-0.010	0.066		-0.107	0.067		-0.110	0.067		-0.106	0.069		-0.127	0.070		-0.121	0.069	
College GPA	0.131	***										0.186	0.014***	1.205	0.184	0.014***	1.202	0.173	0.014***	1.189	0.173	0.014***	1.189	0.163	0.014***	1.177	0.143	.014***	1.154	0.145	0.014***	1.156
STEM Major	0.061	***										0.327	0.054***	1.386	0.322	0.054***	1.380	0.329	0.055***	1.389	0.347	0.055***	1.415	0.244	0.055***	1.277	0.246	0.055***	1.279	0.250	0.055***	1.284
Remedial Course	-0.008											-0.105	0.059		-0.105	0.059		-0.082	0.059		-0.073	0.059		-0.058	0.06		-0.056	0.06		-0.057	0.061	
Transferred	-0.002											-0.076	0.112		-0.084	0.112		-0.086	0.111		-0.085	0.111		-0.063	0.113		-0.060	0.113		-0.059	0.114	
Financial/Familial Obligations in College																																
Work over 20hrs/week	0.024	***													0.103	0.045*	1.109	0.093	0.045*	1.097	0.097	0.045*	1.102	0.101	0.046*	1.106	0.100	0.046*	1.105	0.099	0.046*	1.104
Financial Contributor	-0.014	*													-0.060	0.042		-0.006	0.044		0.002	0.044		0.015	0.044		0.022	0.044		0.022	0.044	
Distance from home	-0.012														-0.014	0.014		-0.018	0.014		-0.018	0.014		-0.017	0.014		-0.013	0.015		-0.012	0.015	
Informal Civic Engagement in College																																
Demonstration	0.043	***																0.050	0.046		0.034	0.046		0.017	0.046		0.006	0.046		0.009	0.046	
Campaign	0.039	***																0.099	0.047*	1.104	0.099	0.047*	1.104	0.102	0.047*	1.107	0.097	0.048*	1.102	0.099	0.048*	1.104
Volunteer/Community Service	0.165	***																0.332	0.032***	1.394	0.309	0.032***	1.362	0.306	0.032***	1.359	0.294	0.032***	1.342	0.293	0.032***	1.340
Curricular Experiences in College																																
Service Learning in college	0.092	***																			0.138	0.040***	1.148	0.132	0.040***	1.141	0.089	0.041*	1.093	0.089	0.041*	1.093
Ethnic Studies Course	0.037	***																			0.051	0.034		0.047	0.034		0.043	0.035		0.042	0.034	
Women's Studies Course	0.039	***																			0.041	0.045		0.035	0.044		0.033	0.045		0.032	0.045	
Co-Curricular Experience																																
Undergraduate Research Program	0.112	***																						0.443	0.059***	1.557	0.408	0.059***	1.504	0.409	0.059***	1.505
Worked on Professor's Research	0.078	***																						0.042	0.038		-0.020	0.038		-0.019	0.038	
Joined Fraternity/Sorority	0.005																							-0.112	0.046**	0.894	-0.112	0.046**	0.894	-0.111	0.046*	0.895
Ethnic/Racial Organization	0.033	***																						-0.003	0.043		0.006	0.044		0.004	0.044	
Academic Prog. for Racial/Ethnic Min	0.049	***																						0.154	0.064*	1.166	0.148	0.064*	1.159	0.145	0.063*	1.157
Student Government	0.028	***																						-0.030	0.056		-0.036	0.057		-0.033	0.057	
Study-Abroad	0.001																							-0.145	0.040***	0.865	-0.143	0.041***	0.867	-0.147	0.041***	0.864
Leadership Training	0.068	***																						0.018	0.044		0.004	0.043		0.007	0.043	
Informal Co-Curricular Experience																																
Interact. w/Other Race/Ethnic Group	0.015	*																									0.005	0.028		0.003	0.028	
Roommate of Other Race/Ethnicity	-0.021	**																									-0.047	0.041		-0.053	0.042	
Student-Faculty Interaction	0.161	***																									0.019	0.002***	1.019	0.020	0.002***	1.020
Institutional Level Variables																																
Private	0.012																													-0.149	0.080	
Selectivity	-0.020	**																												0.0003	0.0003	
Religious	0.040	***																												0.145	0.070*	1.156
HBCU	0.016	*																												-0.133	0.187	
HSI	0.008																													0.145	0.125	
AANAPISI	-0.018	*																												-0.151	0.112	
Community Engagement 06	0.010																													0.137	0.122	
Community Engagement 08	0.004																													-0.049	0.090	
Intercept			-2.742	0.068***	0.064	-3.153	0.106***	0.043	-3.328	0.277***	0.036	-3.310	0.385***	0.033	-3.405	0.391***	0.033	-3.983	0.400***	0.019	-4.248	0.404***	0.014	-4.572	0.434***	0.010	-4.085	0.448***	0.017	-3.886	0.530***	0.021

Note: *p < .05, **p < .01, ***p < .001; Odds ratios only reported for statistically significant coefficient

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