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COLLEGE ADJUSTMENT, BELONGINGNESS, ACADEMIC SELF-EFFICACY,
PERSISTENCE, AND ACADEMIC SUCCESS AMONG
FIRST-GENERATION COLLEGE STUDENTS

by

Heather R. Highhouse

A dissertation submitted to the Graduate College
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
Counselor Education and Counseling Psychology
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Heather R. Highhouse

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Heather R. Highhouse, Ph.D.

Western Michigan University, 2019

Previous research has compared the impacts of college adjustment, belongingness, and academic self-efficacy on first-generation and continuing-generation college students. However, the impacts of these factors on academic success (GPA) and persistence of first-semester, first-generation college students have not been investigated. The primary purpose of this study was to examine college adjustment and belongingness for first-semester, first-generation college students, with a focus on race and gender. This study also examined the impact of academic self-efficacy (i.e., course self-efficacy and social self-efficacy), college adjustment, and belongingness for academic success (GPA) and persistence of these students. The roles of race and gender in relation to the moderators of college adjustment were also explored.

Eighty-two students completed measures of college adjustment, belongingness, and academic self-efficacy (i.e., course self-efficacy and social self-efficacy). Participants were recruited via in-class announcements and completed all study measures through an online questionnaire. Results of multiple regression and ANOVAs demonstrated that College Adjustment, Belongingness, and academic self-efficacy (i.e., Course Self-efficacy and Social Self-efficacy), were not statistically significant predictors of Academic Success (GPA) or

Persistence in this sample. Results of independent-sample *t*-tests, however, did reveal a statistically significant difference in the College Adjustment subscale, Institutional Attachment, between males and females. Independent-samples *t*-tests also revealed a statistically significant difference in first and second semester Academic Success (GPA) for students who Persisted to third semester and those who Did Not. Additional exploratory analysis, chi-square tests, found no significant associations between the impact of Gender, having a Pell Grant, Minority Status, or belonging to an Academic Support Program on Academic Success (GPA) and Persistence. Limitations of the present study and implications for future research along with potential implications of these findings for counselor education, research, and practice were also explored.

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CHAPTER I

INTRODUCTION

In today's information and service driven economy, the processes by which students transition from high school to college are of critical importance (Green, 2006). Researchers such as Green (2006), for example, argue that in order for individuals to thrive in life, attaining a solid post-secondary education is now a necessity. Successful attainment of post-secondary education can be eased for individuals who bring *social* and *cultural capital* to their post-secondary experiences, or what Bourdieu (1977) defined as personal, communal, and collective familial knowledge of the variables involved in getting into college and successfully persisting once there (e.g., Lubrano, 2004; Stanton-Salazar, 2011; Stanton-Salazar & Dornbusch, 1995). Of course, not all students who enter college can depend on such social and cultural capital, nor do they possess the skills needed to successfully complete college. First-generation college students (i.e., individuals who are the first in their families to attend college) often experience numerous challenges when negotiating educational transitions (e.g., Choy, 2001, 2002, 2004; Green, 2006). These college students typically differ demographically from continuing-generation students—those who have had at least one parent complete a 4-year degree. First-generation college students have one or more of the following traits. They are: (a) older than continuing-generation students, (b) female, (c) people of color, (d) parents with dependents, and (e) from low-income families (e.g., Choy, 2001; Nunez & Carroll, 1998; Nuñez & Cuccaro-Alamin, 1998; Saenz, Hurtado, Barrera, Wolf, & Yeung, 2007; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996).

An examination of the literature on first-generation college students reveals that members of this group encounter numerous barriers to successfully enrolling in, persisting through, and graduating from post-secondary studies. In fact, researchers have reported that some 60% of

first-generation college students fail to persist in their academics and drop out before college graduation (e.g., Ward, Siegel, & Davenport, 2012). Counselors across specializations (e.g., college counselors, career counselors, school counselors, marriage, couple and family counselors, clinical mental health counselors and student affairs professionals), will undoubtedly work with first-generation students. It is imperative, therefore, that counselors and counselor educators who train and work with counselors-in-training find more efficient and effective methods of supporting first-generation students' unique needs. Because of their roles as educators and gatekeepers to the profession, counselor educators in particular serve as disseminators of knowledge that could benefit first-generation college students. Ideally, through such a transmission of information, both theoretical and practical, a greater number of first-generation students will be identified and mentored earlier in their academic careers so that the number of first-generation students who experience the struggles associated with their college experiences can be diminished.

Background

A report compiled by the National Center for Education Statistics (NCES) regarding the makeup of college students in 2007-2008 found that nearly 50% of college students could be considered first-generation college students (U.S. Department of Education, 2010). First-generation college students are typically defined as students whose parents (a) have no more than a high school diploma, and/or (b) do not have a bachelor's degree but may have some college, post-secondary certificates, or associate degrees (U.S. Department of Education, 2010). Because this dynamic group of college students has not typically performed as well as students whose parents had at minimum attained bachelor's degrees, much research has been conducted with first-generation students (e.g., Ward et al., 2012).

As a whole, first-generation college students enter at a disadvantage and remain so in navigating the college culture, regardless of how long they remain enrolled (e.g., Chen, 2005; Ward et al., 2012; Winograd & Rust, 2014). This disadvantage was noted in first-generation college students' college preparedness with respect to study habits, declaring majors, approaching issues with professors, and academic achievement (Chen, 2005). Additionally, first-generation students typically complete fewer college credits, resulting in inconsistent graduation patterns. Moreover, these students often withdraw from or repeat courses (e.g., Ward et al., 2012; Winograd & Rust, 2014), and typically earn lower grades and require more remedial courses (e.g., Terenzini et al., 1996; Ward et al., 2012; Winograd & Rust, 2014). First-generation students in many cases rarely receive encouragement or support from faculty, family, or friends (e.g., Terenzini et al., 1996; Ward et al., 2012; Winograd & Rust, 2014). Overall, first-generation students, despite desires for higher education and financial opportunities, struggle to successfully navigate the college culture, as they do not enter college with the cultural or social capital typically possessed by continuing-generation college students. As a result, first-generation college students are more likely to become frustrated by the process and less likely to complete their college degrees.

It is important to provide both theoretical and practical information to counselor educators regarding not only the typical challenges faced by first-generation college students, but also potential strategies for overcoming these challenges. Tailoring this information specifically for counselor educators provides the potential to benefit first-generation college students. Because counselor educators will be teaching, training, and supervising future college counselors, career counselors, school counselors, marriage, couple and family counselors, clinical mental health counselors and student affairs professionals, there exists the potential to

ameliorate some of the otherwise typical challenges experienced by first-generation college students. If counselor educators are able to influence, for example, future school counselors, then these individuals could, in turn identify, intercede with and mentor first-generation students earlier in their academic careers, ideally fostering these students' academic skills (e.g., college capital) so that the students will be better positioned to successfully navigate the college environment.

Statement of the Problem

For the past three decades, researchers have articulated the struggles experienced by first-generation college students (e.g., Bourdieu, 1986; Bourdieu & Passeron, 1992; Bui, 2002; Coleman, 1988; Collier & Morgan, 2008; Elliott, 2014; Hertel, 2002; Kojaku, Nunez, & Malizio, 1998; London, 1989, 1992; Mehta, Newbold, & O'Rorke, 2011; Olenchak & Herbert, 2002; Ramos-Sanchez & Nichols, 2007; Reynolds & Weigand, 2010; Wang & Castaneda-Sound, 2008; Ward et al., 2012; Winograd & Rust, 2014; York-Anderson & Bowman, 1991). As a whole, researchers have agreed that first-generation college students are significantly disadvantaged because of a lack of preparation for post-secondary studies (e.g., Bourdieu, 1986; Bourdieu & Passeron, 1992; Coleman, 1988; Collier & Morgan, 2008; Ward et al., 2012; Winograd & Rust, 2014). These students typically score low on aptitude tests in reading, math, and critical thinking, resulting in the need for remedial college courses (e.g., Choy, 2001; Horn, Nunez, & Bobbitt, 2000; Riehl, 1994; Terenzini et al., 1996; Warburton, Bugarin, & Nunez, 2001).

Researchers have also found first-generation college students typically have lower academic and future career expectations, and have minimal or absent support systems (Albert, & Luzzo, 1999). Their minimal or absent support networks are likely the result of first-generation college students' parents not having completed bachelor degrees; thus, not understanding the

procedures needed to navigate college (e.g., Billson & Brooks-Terry, 1982; Choy, 2001; Hossler, Schmit, & Vesper, 1999; Stage & Hossler, 1989; Terenzini et al., 1996; Wang & Castaneda-Sound, 2008; York-Anderson & Bowman, 1991). Moreover, these families commonly fall within the low socio-economic strata, which prior research shows has an influence on the college adjustment of first-generation college students (e.g., Aspelmeier et al., 2012; Brooks-Terry, 1988; Stephens et al., 2012a; Ward et al., 2012; Winograd & Rust, 2014). Most colleges and universities maintain values endemic to middle class culture (e.g., independence, assertiveness, future-oriented goal setting) (Stephens et al., 2012a). In the working-class homes where most first-generation college students come from, however, interdependence (i.e., family members contribute with time and money to help ensure the well-being of one another), is more highly prized than independence (Stephens et al., 2012a). As a likely consequence, first-generation college students typically need to work while attending college (e.g., Bui, 2002; Terenzini et al., 1996; Ward et al., 2012). First-generation college students often view post-secondary education as a means to future financial earnings, which will allow them to help themselves and their families (Bui, 2002). Researchers have also noted first-generation college students are more inclined to abandon their academic pursuits after their first year of studies (e.g., Choy, 2001; Kojaku et al., 1998).

As stated above, first-generation college students typically come from low socio-economic family backgrounds, which does not typically provide these students with effective college-minded role models; thus, their socio-economic status serves as yet another potential hindrance to their ability to successfully navigate their college experiences (e.g., Atherton, 2014; Olson, 2014; Stephens, Hamedani, & Destin, 2014; Ward et al., 2012). Research additionally shows first-generation college students are also more likely to be from racial and ethnic minority

groups (Ward et al., 2012). Without adequate preparation, these first-generation college students are typically bombarded with a set of cultural values, beliefs, and expectations vastly different from their family of origin (e.g., Atherton, 2014; Bergerson, 2007; Brooks-Terry, 1988; London, 1989; 1992; Olson, 2014; Pascarella et al., 2004; Roberts & Rosenwald, 2001; Ward et al., 2012). As a result, first-generation college students often have confusion and doubt about maneuvering through and assimilating into the unfamiliar academic environment of their chosen college (e.g., London, 1989; 1992; Roberts & Rosenwald, 2001). Furthermore, first-generation college students struggle to find a balance between their burgeoning academic-infused perspectives and their familial loyalty and obligations (London, 1989; Roberts & Rosenwald, 2001).

Yet another important factor is that of social capital, or rather lack thereof. Because many first-generation college students have not had sufficient academic exposure or preparation, they are often unaware of how their social-class background affects their college experience, positively or negatively (e.g., Atherton, 2014; Stephens et al., 2014). When first-generation students are unaware of the power of their social-class on their academic experience, they are likely to feel more alienated and inadequate, believing their problems are unique and proof they do not belong in higher education (Stephens et al., 2014). Understandably, first-generation college students often harbor intense fear of failure (e.g., of disappointing their family, not becoming successful, not gaining future financial freedom, not being good enough) (Bui, 2002).

Despite the wealth of scholarship and research readily accessible on first-generation college students, this group continues to struggle with academic success, yearly persistence, and degree completion (Ward et al., 2012). Therefore, more attention is warranted for this group. For this reason, an important objective of the current research was the formation of valuable

theoretical and pragmatic information to counselor educators, who can in turn aid in the teaching, training, and supervision of counselors-in-training who are working with or may work with first-generation college students to help in bringing about potential change for this specific at-risk population.

It is important counselor educators are not only reminded of the unique needs of first-generation college students, but also have a working knowledge of both theoretical and practical strategies to share with counselors-in-training who will be working with and helping this group of students flourish. With such information, counselor educators will be positioned to inform counselors-in training who may work with and help first-generation college students both while in college (i.e., via college counselors, career counselors, marriage, couple and family counselors, clinical mental health counselors and student affairs professionals, who have been trained and supervised by counselor educators), and before attending college (i.e., via school counselors who have also been trained and supervised by counselor educators).

Conceptual Framework

There are several factors believed to influence persistence among first-generation college students. These relevant factors include College Adjustment, Belongingness, Academic Self-Efficacy (i.e., Course Self-Efficacy and Social Self-Efficacy) and Academic Success.

The conceptual framework below illustrates how Belongingness is believed to predict adjustment (e.g., Tao, Dong, Pancer, Hunsberger, & Prior, 2000; Pittman & Richmond, 2007), how College Adjustment influences Self-Efficacy (Levett-Jones & Lathlean, 2009), and how Self-Efficacy impacts Persistence and Academic Success (e.g., Beyers & Gossens, 2002; Wright, Jenkins-Guarnieri, & Murdock, 2013). This study examines the impact of College Adjustment,

Belongingness, Course Self-Efficacy, Social Self-Efficacy have on Academic Success and Persistence for first-semester, first-generation college students.

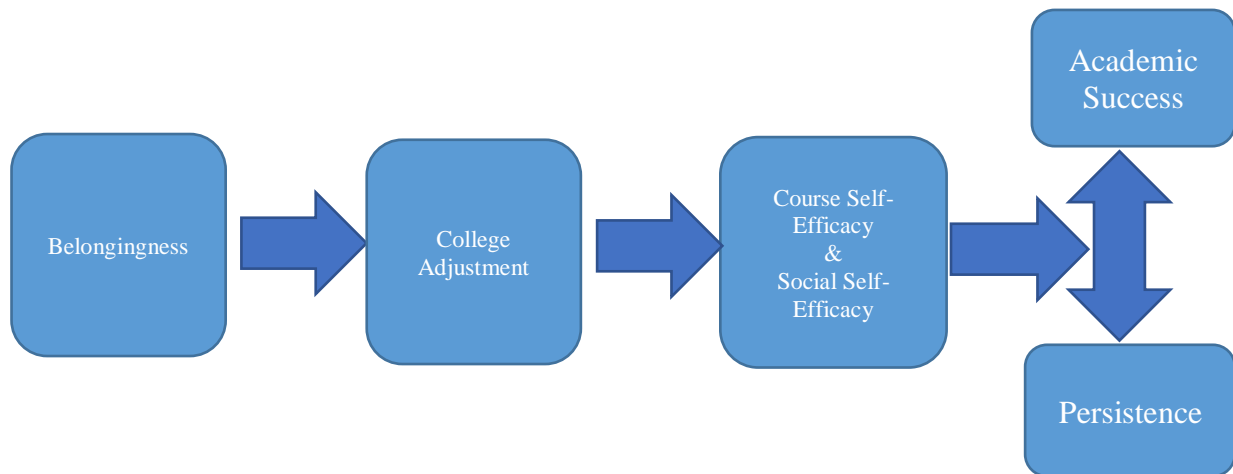


Figure 1. Conceptual framework of the study.

Theoretical Framework

The current research was informed by three theoretical perspectives: (a) Tinto's theory of college adjustment, (b) Astin's theory of student involvement, and (c) Chickering's theory of student development. Each of these theories globally advances the need for students to actively invest in their academic journey. More specifically, both Tinto's and Astin's theories provide the framework needed to conceptualize college adjustment, particularly the relationship between college adjustment and persistence. Chickering's theory provides additional factors to consider when accounting for academic self-efficacy (i.e., course self-efficacy and social self-efficacy), belongingness, and college adjustment. What follows is a generalized introduction to these theories.

Tinto's Theory of College Adjustment

Inspired by social anthropology, Tinto (1993), in his theory of college adjustment, proposed that positive college adjustment is attained through three essential stages: (a) separation from family, (b) transition into the college setting, and (c) assimilation into the college culture. In the first stage (i.e., separation from family), students begin the journey of individuating from their families (e.g., homesickness wanes, call frequency decreases, and return visits home spread out). In stage two (i.e., transition), students acquire knowledge needed to navigate their college environment (e.g., registering for classes, handling financial aid, discussing issues with professors, study habits, fraternity/sorority membership), in order to align more with expected behaviors. In the final stage (i.e., assimilation), students have gained proficiency in navigating the college environment and have largely adopted the perspectives, values, expectations, and customs professed by the college culture (e.g., Tinto, 1987, 1988, 1993). When first-generation students actively engage on campus and in their academics, their adjustment process is more successful (Tinto, 1993). The level to which first-generation college students adjust to college culture is connected to the level in which they interact with their peers, professors, and other college professionals—the more interactive the first-generation college students are, the more effective their adjustment will be, and vice versa (Tinto, 1993).

The above stages theorized by Tinto have been supported through empirical research. Gerdes and Mallinckrot (1997), for example, explored the effect of social and emotional adjustment and academic adjustment on persistence, finding that while social and emotional adjustment predicted persistence to a greater extent than academic adjustment, both factors were significant predictors of persistence. Chemers, Hu, and Garcia (2001), examined the effects of academic self-efficacy and optimism on students' academic performance, stress, health, and

commitment to remain in college. The researchers found academic self-efficacy and optimism were strongly related to academic performance, and personal adjustment, and indirectly related through expectations and coping perceptions on classroom performance, stress, health, and overall satisfaction and commitment to remain in college, again, providing empirical support for the constructs of Tinto's theory (Chemers et al., 2001).

Astin's Theory of Student Involvement

Student involvement refers to how students' change and develop as a result of co-curricular activities. Astin's (1985, 1999) theory is based upon student "inputs" (i.e., demographics, background, and previous experience), the student's environment, (i.e., experiences the student has during college), and student outcomes (i.e., the student's characteristics, knowledge, attitudes, beliefs, and values). Astin's (1985) student involvement theory is also based upon five basic assumptions about involvement: (a) involvement requires an investment of physical and psychological energy; (b) involvement is continuous and varies from student to student; (c) involvement may be quantitative and qualitative; (d) what a student gains from being involved is proportional to the extent of the quantitative and qualitative level of involvement; and (e) academic performance is correlated with the level of student involvement.

The first principle of Astin's (1985) theory, *investment of physical and psychological involvement*, can be general, (i.e., the entire student experience) or more specific (i.e., studying for an exam). According to the second principle, *involvement is continuous and varies from student to student*, involvement occurs along a continuum, distinct for each student at a given time. The third principle, *quantitative and qualitative involvement*, emphasizes the idea that involvement can be measured by quantitatively (i.e., the hours spent studying) or qualitatively

(i.e., a student's ability to comprehend a reading assignment). Principle four, *student qualitative and quantitative gains*, suggests that a highly involved student devotes considerable energy studying, spends time on campus, is active in student organizations, and frequently interacts with faculty and other students (Astin, 1999). Principle five, *academic performance is correlated with the level of student involvement*, suggests the more involved students are in their academics (i.e., academic involvement, honors program, student-faculty interactions), and campus life (i.e., resident life, athletics, student peer group, employment, and extracurricular activities), the greater their college adjustment and academic success will be (Astin, 1999).

Like Tinto's theory, the above theory based upon student "inputs" and involvement assumptions developed by Astin has also been supported through empirical research. Terenzini et al. (1996) explored first-generation college students' college experiences, as well as their cognitive and psychosocial development during college. They found first-generation college students completed fewer first-year credit hours, took fewer fine arts and humanities courses, studied fewer hours, worked more hours per week, were less likely to participate in an honors program, and were less likely to perceive that faculty were concerned about students and teaching. These results support Astin's theory, as the first-generation students in the study had fewer inputs as defined by the theory.

Similarly, Pascarella, Pierson, Wolniak, and Terenzini, (2004), studied first-generation college students and examined the influences of demographic characteristics, characteristics of the institution attended, students' academic and nonacademic experiences compared to continuing- generation college students. Pascarella et al. (2004) found first-generation students had significantly lower grades, as well as a negative relationship between being a first-generation college student and levels of educational degree plans. Overall, the researchers

found there are substantial differences between first-generation and other students in how college experiences shape cognitive and noncognitive outcomes (i.e., the extent of involvement in academic activities have stronger positive effects on first-generation college students). Social and peer engagement (i.e., extracurricular involvement) had stronger positive effects on critical thinking, degree plans, and sense of control over academic success for first-generation college students (Pascarella et al., 2004).

Chickering's Theory of Student Development

Chickering's conceptual model gives attention to emotions and relationships and describes college student development within seven vectors through which students progress during their academic studies (Thomas & Chickering, 1984). Each vector can be globally understood as a psychological developmental milestone comprised of specific tasks, concerns, and changes that, when completed, constitute successful achievement of that developmental vector (Chickering, 1969). However, Chickering asserted that progression through the vectors is fluid—students can work through and complete several vectors simultaneously (Chickering & Reisser, 1997). The seven vectors identified by Chickering (1969) include: (a) developing competence (i.e., intellectual, physical, and interpersonal), (b) managing emotions (i.e., integrating feelings with emotions, and developing flexible control and appropriate expression), (c) moving through autonomy toward interdependence (i.e., self-direction, ability to solve problems, inner direction, and persistence; and recognition and acceptance of the importance of interdependence), (d) developing mature interpersonal relationships (i.e., tolerance and appreciation of differences, and capacity for nurturing and enduring intimacy), (d) establishing identity (i.e., comfort with body image, gender identity, and sexual orientation; sense of self in social, historical, and cultural contexts; clarification of self-concept through roles and lifestyles;

self-acceptance, self-esteem; and personal stability and integration), (f) developing purpose (i.e., clear vocational goals; sustained, focused, and rewarding activities; and interpersonal and family commitments), and (g) developing integrity (i.e., humanizing values; personalizing values while respecting others' beliefs; social responsibility; congruence and authenticity) (Chickering & Reisser, 1997).

Chickering's seven vectors model is based upon the assumptions that college student emotional, interpersonal, ethical, and intellectual development is important within the college environment, and has been supported through empirical research. Foubert and Grainger (2006), for example, examined first-year, second-year, and graduating seniors. They found that more involved students reported greater development toward interdependence and establishing and clarifying purpose, educational involvement, career planning, life management, and cultural participation. Similarly, Martin (2000) conducted a longitudinal study examining first-year students with a 4-year follow-up. Martin (2000) found development of purpose and sense of competence were related to collegiate experiences (i.e., campus residence, the student union, clubs and organizations, the college environment, peers, experiences with faculty, and relationships with faculty). Pascarella et al. (2004) studied first-generation college students and examined the influences of demographic characteristics, characteristics of the institution attended, students' academic and nonacademic experiences compared to continuing-generation college students. Of particular interest, Pascarella et al. (2004), found first-generation students derived significant stronger positive benefits from involvement in extracurricular activities (i.e., significant positive effects on critical thinking, degree plans, internal locus of control for academic success, and preference for higher-order cognitive tasks for first-generation students), as well as significant stronger positive benefits (i.e., science reasoning, writing skills, and

educational degree plans) from non-course-related interactions with peers than did continuing-generation students. Conversely, Pascarella et al. (2004) also found that for first-generation students, other nonacademic involvements (i.e., work responsibilities) had stronger negative implications for first-generation college students' growth during college than continuing-generation students (i.e., critical thinking, internal locus of control for academic success, and preference for higher-order cognitive tasks).

Summary of College Student Theories

An understanding of the theories of Tinto, Astin, and Chickering, as well as the insights from empirical research, provide a useful framework to effectively address the unique challenges first-generation students often face. Research exploring the applications of these theories to racial and ethnic minorities further highlight the importance of these constructs when considering Persistence and Academic Success (e.g., Phinney & Haas, 2003; Perna, & Titus, 2005; Ward et al., 2012; Winograd & Rusk, 2014; Ye & Wallace, 2014). These theories were therefore considered in the development of this study and the interpretation of its results.

Empirical research based upon Tinto's theory of college adjustment demonstrates both social and emotional adjustment are better predictors of persistence than academic adjustment (Gerdes, & Mallinckrot, 1997). Chemers et al. (2001) found academic self-efficacy (i.e., Course and Social Self-Efficacy) were strongly related to academic performance (i.e., Academic Success) and personal adjustment, and indirectly related through expectations and coping perceptions on classroom performance (i.e., Belongingness), stress, health, and overall satisfaction (i.e., College Adjustment), and commitment to remain in college, (i.e., Persistence).

Based upon Astin's theory of student involvement, empirical research conducted by Terenzini et al. (1996) identified several challenges unique to first-generation college students.

First-generation college students are more likely to complete fewer first-year credit hours (i.e., Persistence), take fewer fine arts and humanities courses (i.e., Course and Social Self-Efficacy), study fewer hours (i.e., Academic Success), work more hours per week (i.e., Persistence and Academic Success), are less likely to participate in an honors program (i.e., Academic Success and Persistence), and are less likely to perceive faculty as being concerned about students and teaching (i.e., Belongingness, Course Self-Efficacy, and Social Self-Efficacy) (Terenzini et al., 1996). The empirical research of Pascarella et al. (2004), also based upon Astin's theory of student involvement, found extracurricular involvement (i.e., Social Self-Efficacy), had stronger positive effects on critical thinking, (i.e., Course Self-Efficacy), degree plans (i.e., Persistence), and sense of control over academic success for first-generation college students.

The empirical research based on Chickering's theory of student development identified that more involved students reported greater development toward interdependence and establishing and clarifying purpose (i.e., College Adjustment), educational involvement (i.e., Course Self-Efficacy and Social Self-Efficacy), career planning, (i.e., Persistence), life management (i.e., Belongingness), and cultural participation (Foubert, & Grainger, 2006). Martin (2000) found development of purpose and sense of competence were positively related to collegiate experiences (i.e., College Adjustment, Belongingness, Course Self-Efficacy, Social Self-Efficacy, Academic Success, and Persistence). Similarly, Pascarella et al. (2004) found first-generation students derived significant stronger positive benefits from involvement in extracurricular activities and in non-course-related interactions with peers than did continuing-generation students. Additionally, Pascarella et al. (2004) also found that other nonacademic involvement (i.e., work responsibilities) had stronger negative implications for first-generation

college students than for continuing-generation students. Each of these theories can be used to examine the constructs that follow.

First-Generation College Student Theoretical Constructs

College Adjustment

When considering *college adjustment* as an independent construct, it is imperative to recognize that college adjustment leads to a sense of attachment and fit within the college environment. It is comprised of a number of factors (i.e., academic, social, and emotional adjustment), ultimately culminating into a prevailing sense of connection (i.e., attachment as understood through Tinto's theory) with the selected college (e.g., Baker & Siryk, 1984, 1986, 1989; Tinto, 1993). For first-generation college students, however, college adjustment can be difficult. Often, first-generation college students' parents may have extremely imposed barriers, and may not provide advice, direction, or suggestion for ways to navigate college expectations (e.g., Brooks-Terry, 1988; Elliott, 2014; Mehta, Newbold, & O'Rourke, 2011; Reynolds & Weigand, 2010; Winograd & Rust, 2014).

Moreover, because many first-generation college students are ill-prepared for the rigor of college, they often experience greater struggles with social and academic adjustment to collegiate expectations (e.g., Elliott, 2014; Hertel, 2002; London, 1989; 1992; Mehta et al., 2011; Pascarella et al., 2004; Reynolds & Weigand, 2010; Roberts & Rosenwald, 2001; Terenzini et al., 1996; Winograd & Rust, 2014), which affects overall institutional attachment. First-generation students typically attended lower quality high schools, and when transitioning to college often are required to enroll in remedial courses, need additional tutoring, mentoring, and social support (e.g., Engle, 2007; Warburton, Bugarin, & Nunez, 2001).

Researchers have proposed first-generation college students may lack the confidence and self-efficacy requisite for successful college adjustment (e.g., McGregor et al., 1991; Reynolds & Weigand, 2010; Winograd & Rust, 2014). Researchers have further proposed the value of self-efficacy with regard to level of college adjustment, noting self-efficacy is connected to performance, transition, and adjustment to college, especially within the first year (e.g., Chemers, Hu, & Garcia, 2001; Elliott, 2014; Majer, 2009; Ramos-Sanchez & Nichols, 2007; Winograd & Rust, 2014). Overall, the literature regarding first-generation college students and college adjustment reveals these students struggle and as a result have lower college adjustment levels (e.g., Brooks-Terry, 1988; Bui, 2002; Dennis et al., 2005; Elliott, 2014; Hertel, 2002; Kojaku et al., 1998; Lohfink & Paulson, 2005; London, 1989; Mehta et al., 2011; Pascarella et al., 2003; Reynolds & Weigand, 2010; Terenzini et al., 1996; Winograd & Rust, 2014).

Choy (2001) noted first-generation, low-income students at 4-year institutions were twice as likely to drop out before their second year than continuing generation students. The initial transition for first-generation students includes a multitude of challenges (e.g., major selection, experiential learning opportunities, academic advisors, syllabi, residence halls, faculty, forming relationships with other college students), while simultaneously navigating new ways of being with family members, balancing financial needs, and other life issues along with the new academic and social demands of college students (Ward et al., 2012). Both the language and behavioral expectations of higher education are unfamiliar to first-generation students (Ward et al., 2012). Overall, first-generation, first-year college students face college attrition rates that are significantly higher than non-first-generation, first-year students (Ishitani, 2006). As noted in the literature, college adjustment can be correlated to academic success; thus, the greater and sooner first-generation college students adjust to college life the more likely they are to achieve

academic success, persist in their studies, and complete a bachelor's degree. Therefore, Tinto's and Astin's theories provide a solid working awareness of the maze first-generation college students navigate to transition, adjust, persist, and succeed in college.

Belongingness

According to Tinto's theory, college adjustment is developed through social interaction, and is therefore affected by students' perceived levels of belongingness (e.g., Tinto 1987, 1988, 1993). Simply stated, *belongingness* is the sense of fitting in and feeling connected to one's environment (Pittman & Richmond, 2007). Moreover, as a fundamental human need, belongingness propels individuals to cultivate relationships (Baumeister & Leary, 1995). When considered in a college setting, belongingness would be the extent to which students feel they fit in and are a part of the college campus culture (e.g., Mounts, 2004; Osterman, 2000; Pittman & Richmond, 2008). In pursuing belongingness on a college campus, there is a relationship between student performance, learning, and interpersonal relationships (Osterman, 2000). Within the first college year, perceived belongingness increases as overall college adjustment increases (e.g., Mehta et al., 2011; Pittman & Richmond, 2008). In this vein, additional positive outcomes have been found in connection with increased levels of belongingness, including: (a) higher reported grades, (b) increased perception of academic skills, (c) improved motivation and confidence, and (d) lower levels of depression (e.g., Mounts, 2004; Pittman & Richmond, 2007, 2008).

Researchers have found college generational status (i.e., first-generation or continuing-generation) seems to predict belongingness (e.g., Pittman & Richmond, 2007; Winograd & Rust, 2014). Researchers have discovered that a sense of disconnect (i.e., belongingness uncertainty) is more likely in underrepresented student groups (e.g., first-generation college students)

(Winograd & Rusk, 2014). As such, the research regarding belongingness seems especially germane to an investigation of first-generation college students. Moreover, first-generation college students often struggle to navigate their new academic environment because of lack of social and cultural capital (Stephens et al., 2014). These struggles also affect first-generation college students' abilities to socially adapt to the new college setting (e.g., Bergerson, 2007; Bryan & Simmons, 2009; Elliott, 2014; London, 1989; Olenchak & Hebert, 2002; Reynolds & Weigand, 2010; Roberts & Rosenwald, 2001). First-generation college students struggle to interact with their environment (e.g., developing interpersonal relationships, seeking help, interacting with professors, coping with stress, participating in activities) (e.g., Mehta et al., 2011; Winograd & Rust, 2014).

Academic Self-Efficacy

Self-efficacy describes the level of doubt or confidence individuals have in their abilities to do something (Bandura, 1997). Moreover, individuals are more willing to do what they believe they can complete successfully (e.g., Elliot, 2014; Salazar, 2005). In this vein, heightened levels of commitment and perseverance can be identified among those individuals with healthy senses of self-efficacy (e.g., Elliot; Reynolds & Weigand, 2010; Salazar; Schunk, 1981; Schunk & Hanson, 1985; Schunk, Hanson, & Cox, 1987; Straus, 2000). Conversely, if individuals anticipate difficulty or failure, they will shy away from an activity (e.g., Bandura; Salazar; Straus), thus revealing senses of low self-efficacy (e.g., Straus). In short, self-efficacy, success (e.g., academic or personal), and/or failure are closely connected (e.g., Multon, Brown, & Lent, 1991). Thus, when this construct is applied to academic endeavors, similar conclusions can be drawn.

The connection between efficacy beliefs and educational development has been extensively researched (e.g., Winograd & Rust, 2014; Zimmerman, 1995). A substantial body of work describes the particular construct of academic self-efficacy and its impact as a predictor of academic achievement (e.g., Elias & Loomis, 2002; House, 1992; Rampp & Guffey, 1999; Warkentin, Bates, & Griffin, 1994). Positive academic self-efficacy is correlated to student academic success (e.g., Chemers, Hu, & Garcia, 2001; Choi, Fuqua, & Griffin, 2001; Cunningham et al., 2000; Elias & Loomis, 2002; Gore, Leuwerke, & Turley, 2006; Hicks & McFrazier, 2014; Lorbach & Jinks, 1999; Schunk & Miller, 2002). Simply, when students have higher perceived levels of academic self-efficacy, they are typically more academically successful (e.g., DeWitz, Woolsey, & Walsh, 2009; Hicks & McFrazier, 2014; Schunk & Miller, 2002).

Hence, as counselor educators work with future counseling professionals, it will be important to highlight the significance of both identifying student Course and Social Self-Efficacy and fostering student Course and Social Self-Efficacy. Here again, if first-generation college students can recognize their individual strengths earlier in their academic journeys, first-generation students may develop the needed skills to attain Academic Success and persist.

Purpose

The topic of first-generation college students has been examined for the last three decades, producing both depth and breadth of knowledge. Numerous studies have examined, in isolation, the impact the constructs of College Adjustment (e.g., Baker & Siryk, 1984, 1986, 1989; Brooks-Terry, 1988; Hertel, 2002; London, 1989, 1992; Pascarella et al., 2004; Roberts & Rosenwald, 2001; Terenzini et al., 1996; Tinto, 1993), efficacy (e.g., Chemers, Hu, & Garcia, 2001; Choi, Fuqua, & Griffin, 2001; Elias & Loomis, 2002; Gore, Leuwerke, &

Turley, 2006; House, 1992; Rampp & Guffey, 1999; Warkentin, Bates, & Griffin, 1994; Zimmerman, 1995), and Belongingness (e.g., Bergerson, 2007; Osterman, 2000; Pittman & Richmond 2007; 2008) have on Persistence, Academic Success (GPA), and graduation rates of first-generation college students. The current study sought to add to this knowledge base by providing a new lens of potential influencing factors. More specifically, the constructs of Belongingness, College Adjustment, Course Self- Efficacy, and Social Self-Efficacy were examined together during the first-semester of the first-year of college.

To this end, the purpose of this dissertation was to assess the impact of Belongingness, College Adjustment, Course Self-Efficacy, and Social Self-Efficacy of first-generation college students on Persistence and Academic Success (GPA) at a predominately white university in the Midwest. The intent was to identify the extent to which first-semester, first-generation college students experience College Adjustment (SACQ) and Belongingness (PSSM). Additionally, the study also explored whether differences existed in Social Adjustment (SACQ), Institutional Attachment (SACQ), Belongingness (PSSM), according to race and gender. The combination of College Adjustment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy provides a more complete picture of what happens cognitively, socially, and emotionally for first-generation college students. As a result, this added dimension can be used in providing counselor educators with theoretical and practical information and insight that can be transmitted to counselors-in-training who will be taught, trained, and supervised by counselor educators.

Research Questions

Given the purpose of this dissertation, the research questions guiding this study were:

- 1 To what extent do first-semester, first-generation college students experience College Adjustment as measured by the Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1999)?
- 2 Is there a statistically significant difference in Social Adjustment (SACQ), Institutional Attachment (SACQ), and Belongingness (PSSM) according to race and gender for first-semester, first-generation college students?
- 3 To what extent do first-semester, first-generation college students experience Belongingness, as measured by the Psychological Sense of School Membership (PSSM) (Goodenow, 1993)?
- 4 Do College Adjustment (SACQ), Belongingness (PSSM), Course Self-Efficacy (CSEI), and Social Self-Efficacy (CSEI) predict first-semester, first-generation college students' Academic Success (GPA)?
- 5 Is there a statistically significant difference in Social Adjustment (SACQ), Institutional Attachment (SACQ), Belongingness (PSSM), Course Self-Efficacy (CSEI), and Social Self-Efficacy (CSEI) between first-semester, first-generation college students who persist to third semester and those who do not?

Overview of Methodology

As stated above, the purpose of this dissertation was to explore levels of College Adjustment, Course Self-Efficacy, Social Self-Efficacy, and Belongingness among first-semester, first-generation college students. Specifically, this study explored how well College Adjustment, Course Self-Efficacy, Social Self-Efficacy, and Belongingness predict Academic Success and Persistence to the second semester, as well as differences in these variables according to race and gender. Accordingly, five research questions were identified. Participants

of the study included first-generation, first-semester undergraduate students from a large, predominately white, mid-western, public university. Data were collected through an online administration of the Student Adaptation to College Questionnaire (Baker & Siryk, 1999), the Psychological Sense of School Membership Scale (Goodenow, 1993), College Self-Efficacy Inventory (Solberg et al., 1993), as well as a demographic questionnaire created by the researcher.

Descriptive statistics were obtained for all study variables, and used to answer research questions 1 and 3, which explore the extent to which first-semester, first-generation students experience various levels of College Adjustment as measured by the SACQ, as well as their experience of Belongingness as measured by Total Belongingness scores on the PSSM. Research question 2 explores racial and gender group differences in levels of Social Adjustment (SACQ), Institutional Attachment (SACQ), and Belongingness (PSSM); therefore, one-way analysis of variance (ANOVA) procedures were used to explore differences in race, and independent-samples *t*-tests explore differences between genders. For research question 4 multiple regression was used to predict end of semester cumulative GPA. Research question 5 utilized independent-samples *t*-tests to examine first-generation college students who persisted to the second and third semester and those who did not persist. Additional exploratory analyses were used to examine the impact of gender, having a Pell grant, minority status, and belonging to an academic support program on academic success (GPA) and persistence.

Definitions of Terms

This section defines several key terms used in the current study. They include the following concepts:

Academic Self-Efficacy: College students' beliefs in their own abilities to successfully perform academic tasks (e.g., Solberg, O'Brien, Villareal, Kennell, & Davis, 1993). Academic Self-Efficacy was measured by Course Self-Efficacy and Social Self-Efficacy subscales of the College Self-Efficacy Inventory (Solberg et al., 1993).

Academic Adjustment: How well students acclimate to the academic demands and unique college culture of their chosen institution (Baker & Siryk, 1989). As understood through both Astin's and Tinto's theories, academic adjustment refers to the extent to which students adjust to college, evident in their level of involvement in campus life as they become more comfortable navigating the college environment and begin adapting to the values and expectations within the college culture (Aspelmeier et al., 2012). In the present study, academic adjustment was measured using a subscale of the Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1999).

Belongingness: Conceived of as the extent to which individuals perceive they fit in and are connected with their surrounding environment (Pittman & Richmond, 2007). Belongingness was measured by the Psychological Sense of School Membership (PSSM) (Goodenow, 1993)

College Adjustment: The resulting sense of connection experienced by college students when they have attained academic, social, and emotional adjustment (i.e., sense of satisfaction and success) (e.g., Baker & Siryk, 1984, 1986; Tinto, 1993). College adjustment was measured by the Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1999).

Continuing-generation college students: Students of a single parent or students of parents who have attained at least a bachelor's degree.

First-generation college students: Students of parents who have obtained no more than a high school degree (U.S. Department of Education, 1998), or those whose parents may have some college, post-secondary certificates, or associate's degrees, but not bachelor's degrees (McKay & Estrella, 2008).

Institutional Attachment: A sub-scale of the SACQ that assesses students' feelings about their chosen institution of study, as well as their general thoughts about college (Baker & Siryk, 1989).

Nonacademic adjustment: An adjustment level measured by the SACQ, which is comprised of emotional adjustment, social adjustment, and institutional attachment levels (e.g., Baker & Siryk, 1989; Gerdes & Mallinckrodt, 1994).

Persistence: Remaining active in college attendance and enrollment through the point of graduation. Researchers have noted that first-generation college students are less likely to complete their academic studies, with some 40 to 60% leaving well before graduation (e.g., Chen, 2005; Petty, 2014). Students who persisted were determined by university records.

Personal-Emotional Adjustment: One of the sub-scales measured by the SACQ, which is designed to assess students' psychological and physical well-being (Baker & Siryk, 1989).

Social Adjustment: A sub-scale of the SACQ that assess how well students have adjusted to college demands on an interpersonal, societal level (Baker & Siryk, 1989).

Organization of the Research Study

This dissertation is divided into five chapters. Chapter I provided an overview of the problem, while also addressing the purpose of the study. Additionally, the theoretical framework, relevant constructs, and research questions were discussed. Chapter II is a detailed literature

review that provides the foundation for the current research study. Specifically, an explanation of first-generation college students, college adjustment, academic self-efficacy, and belongingness are provided in Chapter II. Chapter III provides information on the methodology of the study, including details about participants, instruments used, data collection, and data analysis methods. Chapter IV presents the results of the current study. Chapter V discusses the significance of the results, as well as limitations, implications, and recommendations for future research.

CHAPTER II

LITERATURE REVIEW

Researchers of first-generation college students have examined a number of factors in hopes of better understanding this unique group of students (e.g., Bergerson, 2007; Bourdieu, 1986; Brown, 2008; Choy, 2001; Croninger & Lee, 2001; Hahs-Vaughn, 2004; Hertel, 2002; Klem & Connell, 2004; London, 1989; Morales & Trotman, 2004; Pascarella et al., 2004; Roberts & Rosenwald, 2001; Stanton-Salazar, 2001, 2011; Stephens et al., 2014; Terenzini et al., 1996; Ward, Siegel, & Davenport, 2012). Overall, this group of students when compared to their continuing-generation counterparts experience disadvantages and are faced with obstacles (e.g., Pascarella et al., 2004; Ward et al., 2012) in areas such as academic preparedness, academic expectations, academic self-efficacy, and college adjustment (e.g., Bergerson, 2007; Brown, 2008; Bui, 2002; Hahs-Vaughn, 2004; Hertel, 2002; Solberg, O'Brien, Villareal, Kennell, & Davis, 1993; Ward et al., 2012). Their poor college adjustment is often impacted by underdeveloped social capital (e.g., Stanton-Salazar, 2001; Stephens et al., 2014). This chapter provides a synthesis of the first-generation college student literature, including a working definition of first-generation. Then, the underlying theoretical framework (i.e., Astin's theory of student involvement, Tinto's theory of college adjustment, and Chickering's student development theory) of this research study is discussed. Finally, the chapter concludes with an examination of the foundational constructs of college adjustment, academic self-efficacy and belongingness.

Working Definition of First-Generation College Students

McKay and Estrella (2008) posed a simplified definition of first-generation college students, which was used for the current study. *First-generation* college students are those students whose parents have not graduated from a 4-year university (McKay & Estrella, 2008).

This definition is in line with U.S. federal government regulations regarding student eligibility requirements for participation in student support services programs. Specifically, first-generation college students are those individuals whose parents (or primary caregiver) do not have a bachelor's degree (Higher Education Act, 1965).

First-Generation College Students: Overview

According to Engle and Tinto (2008), approximately 24% of the post-secondary undergraduate student body is comprised of low-income, first-generation college students. For this unique group, the journey to obtain a bachelor's degree is especially challenging. In fact, first-generation college students typically withdraw from higher education more frequently and much sooner than continuing-generation students (e.g., Billson & Brooks-Terry, 1982; Lohfink & Paulsen, 2005; Mamiseishvili, 2010; Petty, 2014). Moreover, first-generation college students struggle more with college adjustment than their continuing-generation counterparts. Researchers have suggested that a lack of social capital is a contributing factor in first-generation college students' struggles, as social capital has been connected to college adjustment and sense of belongingness (e.g., Stephens et al., 2014). For example, having higher social capital increases students' ability to access resources within the university environment helping them address background-specific obstacles, thus easing their transition into college life.

Researchers have further found that first-generation college students (1) rarely enroll in a 4-year university, opting rather to attend a community college or trade school, (2) often drop out after completing their first year of college, (3) require remedial courses, (4) live off campus, (5) attend college part-time, (6) take breaks from course work, (7) work full-time, (8) rarely attain a bachelor's degree (e.g., Attinasi, 1989; Berkner, Horn, & Clune, 2000; Billson & Brooks-Terry; Chen & Carroll, 2005; Choy, 2001; Engle et al., 2006; Horn, 1998; Ishitani, 2006; Nunez

& Cuccaro-Alamin, 1998; Mamiseishvili, 2010; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Petty, 2014; Próspero & Vohra-Gupta, 2007; Richardson & Skinner, 1992; Warburton et al., 2001). The remainder of this section provides a summary of the (a) general demographics, (b) preparedness, (c) support systems, and (d) academic expectations of first-generation college students.

General Demographics of First-Generation College Students

There are various shared demographics among the population of first-generation college students. For example, first-generation college students largely identify as Latino/a or African-American (e.g., Chen, & Carroll, 2005; Hicks & McFrazier, 2014; Wang & Castaneda-Sound, 2008). Minority students are most at risk for attrition and/or poor college adjustment (e.g., Hicks & McFrazier, 2014). Additionally, 43% of incoming college students are first-generation who come from poor, working class, or middle class families (e.g., Aspelmeier et al., 2012; Petty, 2014; Terenzini et al., 1996; Wang & Castenada-Sound, 2008; Ward et al., 2012). Gender has been noted as another important demographic factor. Typically, most first-generation college students are female, and many first-generation college students are also family caregivers (McConnell, 2000).

Finally, researchers have also noted that while first-generation college students may begin their college career at the same age as their continuing-generation counterparts (i.e., immediately after completing high school), first-generation college students who ultimately graduate with a bachelor's degree often do so later in life (Chen & Carroll, 2005). For example, 11% of low-income first-generation college students graduate after 6 years (Kahlenberg, 2016). This could be related to first-generation college students' tendency to break up their post-secondary studies, attending classes for a while to then take time off before beginning the cycle

again (e.g., Baker & Siryk, 1984; Cokley, McClain, Enciso, & Martinez, 2013; Engle et al., 2006; Inman & Mayes, 1999; Mamiseishvili, 2010; Winograd & Rust, 2014). Thus, first-generation college students who have completed their bachelor's degree have typically taken longer than their continuing-generation counterpart (e.g., 5 to 7 years) and typically complete later in life (e.g., mid- to late-20s or 30s) (e.g., Engle et al. 2008; Inman & Mayes, 1999). This helps to explain why first-generation college students still typically fall within the definition of an emerging adult (i.e., the span between late adolescence and young adulthood) (Nelson et al., 2007). Emerging adults are exploring their identity independent of others and in terms of their personal interests and goals (Arnett, 2000): A reality that remains true for first-generation college students.

Another characteristic of first-generation college students is external obligations. Most of these students tend to work off-campus to maintain financial obligations, both for themselves and their families (e.g., Bui, 2002; Hicks & McFrazier, 2014; Mamiseishvili, 2010; Terenzini et al., 1996). Moreover, first-generation college students usually live off campus and commute to class (Bilson & Terry, 1982). Family attitudes (i.e., family needs, time with family, being a positive role model), financial responsibilities (i.e., paying for one's education), family responsibilities (i.e., emotional support to parents, financially contributing to family expenses, household chores, caring for an adult or a child, providing rides to others), and SES are significant stressors that are additionally challenging with regards to academic adjustment (Sánchez, Esparza, Colón, & Davis, 2010). The lack of economic resources along with financial and family responsibilities appear to limit the ability to explore their identities and future education opportunities, as well as desired career paths (Sánchez et al., 2010).

Finally, first-generation college students tend to struggle with declaring a major. Researchers have identified a distinction between how first-generation college students and continuing-generation college students interact with the university environment—this can be a contributing factor in first-generation college students’ struggle with selecting a major that will lead to a stable career (e.g., Collier & Morgan 2008; Lareau, 2011). Researchers have further explained first-generation college students are often challenged with declaring a major, connecting academic studies, major field of studies, and career aspirations (e.g., Lorch, 2014; Terenzini et al., 1996).

Preparedness of First-Generation College Students

One of the primary barriers first-generation college students face is being academically underprepared for college (e.g., Lorch, 2014; Terenzini et al., 1996). Researchers argue that the success of first-generation college students depends upon their preparation for college (e.g., Engle, Bremen, & O’Brien, 2006; Engle & Tinto, 2008; Lorch, 2014; Schrader & Brown, 2008; Terenzini et al., 1996; Xianglei, 2005). Given this, it is important to acknowledge that many first-generation college students do not attend high schools that make planning for college a priority. This is often due to the reality that public high schools are typically overcrowded, underfunded, and under resourced to ensure academic readiness for their students (e.g., Nelson-Laird et al., 2007; Walpole, 2007). When compared with other students, first-generation college students: (a) often opt for easier science and math courses in high school (e.g., Choi, 2005; Choy, 2002), (b) typically score lower on entrance exams (Schmidt, 2003; Terenzini, Cabrera, & Bernal, 2001), (c) usually have lower high school GPAs (Ward et al., 2012), and (d) typically hold lower post-secondary education aspirational goals (e.g., Bui, 2005; Terenzini et al., 1996). Moreover, even if first-generation college

students have access to resources, researchers have found that these students are less likely to (a) make a solid decision to attend college, (b) take college preparatory classes, (c) study and take college entrance exams (e.g., SAT, ACT), (d) look for suitable colleges, and (e) matriculate into college courses (Choy, 2001).

In addition, the quality of a first-generation college student's support network can affect preparedness (i.e., students who attend high schools that have greater levels of economic and academic need are less likely to receive help applying for college, know the least about the price of attending college, and lack knowledge of preparing, applying, and paying for college) and can also be predictive of college success (e.g., Aspelmeier et al., 2012; Engle & Tinto, 2008; Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006; Petty, 2014). Terenzini and colleagues (1996) learned that first-generation college students typically do not ask for additional support from friends, family, peers or instructors while in high school. This lack of *knowledge* or, perhaps, *awareness* to seek help could be seen as a precursor to tendencies observed while attending college (e.g., Winograd & Rust, 2014). In other words, because of a deficit in role models, first-generation college students may struggle more with applying academic studies to career attainment. For example, researchers have noted first-generation college students often feel intimidated (i.e., faculty are less concerned with their academic advancement) (e.g., Komarraju, Musulkin, & Bhattacharya, 2010) when navigating college culture and typically shy away from approaching instructors with questions as a result (e.g., Longwell-Grice & Longwell-Grice, 2007; Winograd & Rust, 2014).

In sum, many first-generation college students are underprepared for the demands of college life, which can result in the likelihood of these students having unrealistic expectations of and ideas about college. Many first-generation college students expect to seamlessly join the

college culture, perhaps expecting college to be like high school (Morales, 2011, 2012). However, the reality is typically quite different. In fact, the transition into college can be difficult for many first-generation college students (e.g., Brooks-Terry, 1988; Bui, 2002; London, 1989; Olenchak & Hebert, 2002; Terenzini et al., 1996). Due to their deficiency in the social capital needed for higher education, first-generation college students are more easily intimidated by the admissions process than their continuing-generation peers, including course and financial aid planning (Perna, 2002). Researchers also found that because of this deficit in social capital, first-generation college students have a more difficult time connecting academic course studies, major field studies, and career aspirations, which contribute to selecting a major that will also lead to a stable career (e.g., Collier & Morgan, 2008; Lareau, 2011; Terenzini et al., 1996). As a result of inadequate preparedness, first-generation college students begin at a marked disadvantage than their continuing-generation counterparts. For this reason, first-generation college students may require remedial courses and may drop out from course work due to more obstacles connected with their academic pursuits (e.g., Chen & Carroll, 2005; Engle et al, 2006; Mamiseishvili, 2010).

First-Generation College Student Support Systems

Researchers have discovered a correlation between parental education levels and college attendance and persistence of their children; that is, continuing-generation college students are more likely to matriculate into, persist through, and graduate from a higher educational institution than are first-generation college students (e.g., Choy, 2001; Chen, 2005; Olson, 2014; Petty, 2014). One aspect of this is a lack of adequate support and guidance provided from parents and/or other significant role models, specifically with respect to post-secondary academic expectations, preparedness, and success (e.g., Mehta et al., 2011; Olson,

2014; Pittman & Richmond, 2007; Sy, Fong, Carter, Boehme, & Alpert, 2011; Ward et al., 2012). Because of this missing or inadequate support and guidance, first-generation college students lack the social capital, are less involved with college peers and faculty, limiting their integration and social acclimation needed for smoother transitions to college life (e.g., Atherton, 2014; Cushman, 2007; Stephens et al., 2014; Ishitani, 2003).

With respect to support systems, researchers have discovered the familial network of first-generation college students can have mixed effects, offering both encouragement and distress (e.g., Cushman, 2007; London, 1989; Roberts & Rosenwald, 2001; Sy et al., 2011). These conflicting results of familial support are present because of competing obligations; namely, first-generation college students must navigate familial expectations (e.g., contribute finances, provide child care for younger siblings) while endeavoring to negotiate their new academic expectations (e.g., London, 1989; Olson, 2014; Roberts & Rosenwald, 2001; Sy et al., 2011). Olenchak and Hebert (2002) discovered a connection between level of familial frustration and level of college culture assimilation; the more acclimated first-generation college students became to their college culture, the more frustrated they became with their family, as these first-generation students adopted values and norms that conflict to those espoused by their family (e.g., Olson, 2014). Bryan and Simmons (2009) discovered first-generation college students often maintain separate identities: one for the family and one for college.

Furthermore, it is necessary to recognize that first-generation college students are less likely to have peer support. Researchers reported that first-generation college students typically live and work off campus, which immediately affects their engagement with their college environment (e.g., Hicks & McFrazier, 2014; Mamiseishvili, 2010). Due to lack of exposure to

campus environment (i.e., related to off-campus living and working), first-generation college students rarely know about the activities and services provided by the institution, nor do they often feel deep pride or loyalty for their college. Overall, first-generation college students lack an active support network, as well as the means with which to cultivate one.

Academic Expectations of First-Generation College Students

Gibbons and Borders (2010) found that academic self-efficacy was lower for prospective first-generation college students than for prospective non-first-generation college students. Overall, first-generation students want to obtain a post-secondary education, but (a) have less efficacy regarding their ability to do so, and (b) conceive of the education as a means to financial security (e.g., Choy, 2001; Hicks & McFrazier, 2014; Saenz et al., 2007; Terenzini et al., 2001; Ward et al., 2012). When first-generation college students actually succeed in attending and completing post-secondary studies, they have traditionally done so after having first worked after high school graduation (Saenz et al., 2006) and having enrolled in a 4-year program (Hick & McFrazier, 2014).

First-generation college students also tend to hold lower academic expectations. In fact, Choy (2001) discovered that potential first-generation college students profess less hope of attending and completing post-secondary studies than do their continuing-generation counterparts. Moreover, many first-generation college students often believe an associate's or bachelor's degree would prove sufficient (e.g., Hahs-Vaughn, 2004; McCarron & Inkelas, 2006). These lower expectations seem to also connect to lower future aspirations overall (e.g., Choy, 2001; Hahs-Vaughn, 2004; Nuñez & Cuccaro-Alamin, 1998; Sy et al., 2011). These lower expectations and aspirations are connected to a sense of intimidation and insecurity. For example, researchers found first-generation college students were less likely to apply to

colleges with strict admissions requirements (Pascarella et al., 2004), opting instead for the path of least resistance.

Messersmith and Schulenberg (2008) investigated first-generation college students' expectations for completion of college. The researchers queried high school students to discover the students' post-secondary academic aspirations, especially with respect to obtaining a 4-year degree. They found a strong positive relationship between a student's parental education level and that student's expectations for college success (i.e., academic self-efficacy). Interestingly, Kerpelman and colleagues (2008) found parental support for achievement, especially from mothers, was important for African American adolescent future education orientation. Garabaldi (1992) further noted teachers' and parents' involvement can increase adolescent educational expectations (e.g., resist negative peer pressure, participate in extracurricular activities, acknowledge academic achievements, encourage community service). Essentially, students are more likely to do well in college when their parents are more involved.

Based upon the above information, it is understandable why many first-generation college students often believe themselves incapable of persisting in college or expecting greater academic outcomes, as this group typically has fewer opportunities to fully immerse themselves into the college culture (e.g., Aspelmeier et al., 2012; Atherton, 2014; Cushman, 2007; Elliott, 2014; Hicks & McFrazier, 2014; Lorch, 2014; Mamiseishvili, 2010; Mehta et al., 2011; Pascarella et al., 2004; Petty, 2014; Reynolds & Weigand, 2010; Winograd & Rust, 2014). Numerous external factors play a role in the difficulties experienced by first-generation college students once they arrive on a college campus including: (a) difficulty transitioning to the college culture (e.g., Pascarella, 2004), (b) lack of academic readiness (e.g., Chen & Carroll, 2005; Engel et al., 2006; Horn et al., 2000; Terenzini, 2001), (c) lack of familial support (e.g., Cabrera &

LaNasa, 2000; Choy, 2001; Vargas, 2004), (d) lack of financial resources (e.g., Pascarella & Terenzini, 2005; Saenz, 2007; Walpole, 2007), and (e) lack of knowledge about college (e.g., Bedsworth, Colby, & Doctor, 2006; Volle & Federico, 1997). Moreover, first-generation students characteristically have low socioeconomic backgrounds (e.g., Aspelmeier et al., 2012; Bui, 2005) and low academic achievement during their first year of college (e.g., Aspelmeier et al., 2012; Engle & Tinto, 2008; Williams & Hellman, 2004). However, the most significant risk factor for academic success of first-generation college students is simply that they are first generation—these students traverse the unknown collegiate domain with underdeveloped social capital possessed by most continuing-generation college students (e.g., Bourdieu, 1986; Croninger & Lee, 2001; Engle, 2007; Klem & Connell, 2004; Lubrano, 2004; Morales & Trotman, 2004; Stanton-Salazar, 2001).

College Adjustment

When examining first-generation college students and their college experience, it is necessary to consider their overall acclimation to the college cultural environment. While this examination could focus on a number of elements, of particular relevance to the present study were the constructs of college adjustment, belongingness, and academic-self efficacy (course self-efficacy and social self-efficacy) in first-generation college students. What follows in the remainder of this chapter is an examination of these constructs combined with an examination of the theoretical frameworks by Tinto, Astin, and Chickering.

Tinto's Theory of College Adjustment

Inspired by social anthropology, Tinto (1993), in his theory of college adjustment, asserted that positive college adjustment is attained through three essential stages: (a) separation from family, (b) transition into the college setting, and (c) assimilation into the college culture. In

the first stage (i.e., separation from family), students begin the journey of individuating from their families (e.g., homesickness wanes, call frequency decreases, and return visits home spread out). In stage two (i.e., transition), students acquire knowledge needed to navigate their college environment (e.g., registering for classes, handling financial aid, discussing issues with professors, study habits, fraternity/sorority membership) in order to align more with expected behaviors. In the final stage (i.e., assimilation), students have gained proficiency in navigating the college environment and have largely adopted the perspectives, values, expectations, and customs professed by the college culture (e.g., Tinto, 1987, 1988, 1993).

The ease with which first-generation college students adjust to the college culture has been found to be mitigated by the level of similarity between the college cultural environment and the first-generation college students' environment of origin (e.g., Tinto, 1987, 1988, 1993). Moreover, when first-generation students become immersed in their college experience, their adjustment process is more successful (Tinto, 1993). The level to which first-generation college students adjust to college culture is connected to the level in which they interact with their peers, professors, and other college professionals—the more interactive the first-generation college students are, the more effective their adjustment will be, and vice versa (Tinto, 1993). As noted by researchers, first-generation college students typically live at home, commute to their classes, and work off campus, all of which can directly detract from the amount of time first-generation college students spend on campus and learning about college culture by engaging in traditional college experiences (e.g., Bui, 2002; Mamiseishvili, 2010). Moreover, because first-generation college students typically have divergent backgrounds (e.g., educational, socio-economical, ethnic), and are globally ill-prepared for the academic rigors of college courses (e.g., Aspelmeier et al., 2012; Bui, 2002; Terenzini, et al., 1996), these students may lack the academic self-

efficacy required for continued academic success. Overall, first-generation college students tend to struggle to progress through the stages of college adjustment (e.g., Tinto, 1987, 1988, 1993).

When considering college adjustment as an independent construct, it is important to recognize that college adjustment is comprised of a number of factors, including academic, social, and emotional adjustment. These distinct factors ultimately and ideally culminate into a prevailing sense of connection with the selected college (e.g., Baker, & Siryk, 1984, 1986; Tinto, 1993). For first-generation college students, however, the attainment of college adjustment can be a tenuous journey. Often, first-generation college students' parents are unable to provide advice, direction, or suggestions for ways to navigate college expectations (Brooks-Terry, 1988). Moreover, because many first-generation college students are ill prepared for college rigors, they typically experience greater struggles with social and academic adjustment to collegiate expectations (e.g., Hertel, 2002; London, 1989, 1992; Pascarella et al., 2004; Roberts & Rosenwald, 2001; Terenzini et al., 1996).

According to researchers, persistence in college studies and high levels of college adjustment are interconnected (e.g., Cone, 1992; Gerdes & Mallinckrodt, 1997; Tinto, 1993). Students need to be engaged, connected, and involved, (i.e., college adjustment) in order to achieve positive outcomes and persistence (e.g., Astin, 1984; Tinto, 1993). For example, when students earned a high college adjustment score, they were more likely to also have a greater level of persistence in college courses. Conversely, the lower the college adjustment score, the lower the level of persistence. Researchers have further proposed the value of self-efficacy with regards to level of college adjustment, noting self-efficacy is connected to performance, transition, and adjustment to college especially within the first year (e.g., Chemers, Hu, & Garcia, 2001; Majer, 2009; Ramos-Sanchez & Nichols, 2007). Overall, first-generation college

students typically struggle more and, as a result, have lower college adjustment levels (e.g., Brooks-Terry, 1988; Bui, 2002; Dennis et al., 2005; Hertel, 2002; Kojaku et al., 1998; Lohfink & Paulson, 2005; London, 1989; Pascarella et al., 2003; Terenzini et al., 1996).

College adjustment is influenced by a number of components, including academic, social and emotional adjustment (e.g., Baker & Siryk, 1984, 1986; Tinto, 1993). Without positive acclimation in each of these areas, truly successful college adjustment is elusive. First-generation college students often feel disconnected from their peers, especially their continuing-generation counterparts. For instance, continuing-generation college students typically have more functional knowledge of how to navigate college expectations and how to gain access to resources when needed, while first-generation college students do not (e.g., Olenchak & Hebert, 2002; Roberts & Rosenwald, 2001). This information is of great significance when considered with research highlighting the positive impact of peer support and acceptance. More specifically, peer support was closely connected with and found to predict the level of college adjustment among first-generation college students (Dennis, Phinney, & Chuateco, 2005). Finally, Pittman, and Richmond (2007) discovered first-generation college students struggled with belongingness and, as a result, felt less connected with their peers and college culture.

In addition to the generally accepted areas of academic, social, and emotional adjustment, demographic factors such as social class, culture, and race/ethnicity are also significant covariates in college adjustment. Given the cultural disconnect that occurs for first-generation students (i.e., the core values of the college or university culture are, on the most basic levels, in direct opposition to those held by most first-generation college students), it is easy to understand how the transition to college, and overall college adjustment could be a tumultuous journey. For instance, researchers have identified the influence of socio-economic status with respect to the

college adjustment of first-generation college students (e.g., Aspelmeier et al., 2012; Stephens et al., 2012a). Most colleges and universities maintain the values endemic to middle class culture (e.g., independence, assertiveness, future-oriented goal setting) (Stephens et al., 2012b). However, most first-generation college students come from low-income, working class homes where interdependence (i.e., family members contribute with time and money to help ensure the well-being of one another) is more highly prized than independence (Stephens et al., 2012a).

Socio-Cultural Impact

Attainment of higher education can prove to be a social equalizer; in other words, higher education can provide the opportunity for individuals from lower socio-economic backgrounds to gain social clout and move up the socio-economic echelon (e.g., Aspelmeier et al., 2012; Leonhardt, 2005; Ward et al., 2012; Winograd & Rust, 2014). Further, social class position and college adjustment are intricately connected (e.g., Goldrick-Rab, 2006; Ward et al., 2012). Those individuals in middle to high social class status have greater ease with college adjustment than do those from lower socio-economic backgrounds (e.g., Aspelmeier et al., 2012). Another important factor is the recognition that most colleges and universities are founded on middle class principles (e.g., paving one's own path, separating from parents, realizing their potential, finding themselves, developing their own voice, follow their passion, and influence the world) (Stephens et al., 2012a). Moreover, cultural congruity has been found to influence academic adjustment. Researchers have examined how the similarity between students' cultures and university culture impact academic adjustment, success, and persistence (e.g., Gloria, Robinson, Kurpius, Hamilon, & Wilson, 1999; Hicks & McFrazier, 2014). Overall, the greater the sense of familiarity and comfort experienced by students within a university setting, the stronger the predictors for academic adjustment, success, and persistence (Hicks & McFrazier, 2014).

First-generation college students from low socio-economic, minority households have had limited post-secondary preparation from both their high school and families. Parental educational expectations are influenced by social status (e.g., Aspelmeier et al., 2012; Lareau, 1987; Hicks & McFrazier, 2014; Vargas, 2004). Some research indicates that parents from a lower socio-economic status typically agree attainment of a high school diploma is sufficient, while parents from higher socio-economic positions expected children to minimally attain a bachelor's degree (e.g., Aspelmeier et al., 2012; Ward et al., 2012).

As noted, most first-generation college students come from low-income, minority, working class homes where interdependence is more highly prized than independence (Stephens et al., 2012a). This fact may stem from the fact that first-generation college students largely identify as Latino/a or African-American (e.g., Chen & Carroll, 2005; Hicks & McFrazier, 2014). As a result, these students are often torn between cultural, familial loyalty, and academic obligations.

Another important cultural factor is the notion of intragroup marginalization. The core values of a college or university are based on middle-class values (e.g., independence, assertiveness, future-oriented goal setting); here, college is an expected part of life (Stephens et al., 2012a). However, most first-generation students have less exposure and access to middle-class cultural capital, and instead are socialized with working-class values, emphasizing interdependence (Stephens et al., 2012a). These conflicting economic, social and cultural factors contribute to first-generation students' potential exposure to intragroup marginalization and the distancing that results when one member of a specific cultural group (e.g., Latino culture, African-American culture) adopts character traits typical of the dominant culture (i.e., White American culture) (Castillo & Cano, 2007). This distancing is a socially imposed penalty often in

the form of teasing and criticism (Castillo, 2009). The purpose is to punish the individual for deviating from the cultural norms in favor of embracing the norms of a counter-culture. Thus, college students who acculturate into the culture of their college are likely forced to contend with intragroup marginalization.

Emotional Adjustment

Most first-generation college students tend to have lower senses of self-esteem and self-efficacy (e.g., Chemers et al., 2001; Hicks & McFrazier, 2014; Majer, 2009; McGregor et al., 1991; Ramos-Sanchez & Nichols, 2007). Researchers have discovered first-generation college students typically experience frustration and isolation when endeavoring to acclimate to their new college culture (e.g., Bergerson, 2007; Bryan & Simmons, 2009; London, 1989; Hicks & McFrazier, 2014; Morales, 2011-2012; Olenchak & Hebert, 2002; Roberts & Rosenwald, 2001). First-generation college students often report feelings of isolation from their continuing-generation counterparts because of differences in educational background and exposure; in other words, first-generation college students are often very conscious of the historical differences (e.g., academic preparedness, financial resources, study and research skills) between themselves and their continuing-generation counterparts (Ward et al., 2012).

In a qualitative study conducted by Bergerson (2007), a low socioeconomic Latina student was queried. She revealed sensing greater social support from her immediate family and friends than from any individuals from the university. She reported additional disconnect with regards to her perceptions of academics. Specifically, she indicated feeling disconnected from other students in her college courses because these students seemed focused on social activities and events while she was focused on performing well in her studies (Bergerson, 2007). The student also acknowledged that an additional factor adding to her sense of isolation

from her collegiate peers was likely connected to her need to work off-campus (Bergerson, 2007).

Another qualitative study of first-generation college students revealed that students often feel they are behind their peers in college preparation and academic skills needed for college (Reid & Moore, 2008). During interviews, the students made statements that indicated they did not have the kinds of experiences needed during high school to build their self-efficacy for success in college. For example, one student reported taking classes for English as a second language (ESL), which required much less writing than regular English classes. The student reported feeling overwhelmed when asked to write long research papers in college. Another student reported being overwhelmed when required to write one-page essays, because he was able to write less than a page without penalty when he was in high school; however, that same student was then penalized for writing less than three pages in college, and reported feeling overwhelmed by college-level expectations.

Belongingness

Belongingness is the sense of fitting in and feeling connected to one's environment, as well as being accepted, respected, and included by others (e.g., Goodenow, 1993; Griffin, 2015; Gummadam, Pittman, & Ioffe, 2015; Pittman & Richmond, 2007; Reynolds & Weigand, 2010; Winograd & Rust, 2014). As such, belongingness is a fundamental human need that motivates individuals to cultivate harmonious relationships (e.g., Baumeister & Leary, 1995; Walter & Cohen, 2011). Researchers have found that individuals who have more social connections (i.e., perceive more belonging) also tend to have a number of other positives in their lives. Better physical health, higher self-esteem, less depression, and less loneliness are all examples of benefits often experienced by individuals with higher senses of belongingness (e.g., Griffin,

2015; Pittman & Richmond, 2008; Walter & Cohen, 2011). The full impact belongingness can have on the experience of first-generation college students can be understood through close examination of Astin's theory of student involvement.

Astin (1985, 1999) explained that student involvement is connected to students' academic experiences and levels of success. He indicated that students' levels of involvement could be identified by the physical and psychological energy they devoted to their education. That is, student involvement is tangible; while intra-psychic factors (e.g., motivation) certainly have a role, the greatest emphasis should be that of behavior, or action (Astin, 1985). When students devote extensive time to their academic pursuits (i.e., action), they are typically (a) on campus more often, (b) more active in campus groups, and (c) more inclined to engage with peers and faculty. Thus, these types of students are more involved. Astin (1985, 1999) proposed a causal link between involvement and adjustment; the more involved students are in their academics and campus life, the greater their college adjustment and academic success. Moreover, a sense of belongingness has also been connected to students' abilities to adjust successfully to college, such that as belongingness increases so does adjustment and vice versa (e.g., Gummadam et al., 2015; Mehta et al., 2011; Pittman & Richmond, 2008).

Astin's involvement theory focuses on the processes that facilitate student development and is based upon the notion that (a) the amount of student learning and development in an educational program is proportional to the quality and quantity of involvement in that program, and (b) the effectiveness of any educational policy or practice is directly related to the ability to increase student involvement (Astin, 1985). Additionally, Astin (1985) presented five basic principles of the involvement theory. First, students' levels of involvement can be identified by the physical and psychological energy with which they engage with various elements campus

life. This engagement could be tailored to the level of involvement with a specific class assignment, or it can be more generalized to overall engagement with college life (e.g., through participation in college events, and organizations). Second, the level of involvement with a specific activity falls along a continuum (e.g., students who live on campus are much more likely than commuter students to interact more with faculty, become involved in student government, and participate in student organizations; students who participate in honors programs are more likely than other students to persist in college, and seek graduate and professional degrees; students who frequently interact with faculty are more likely than other students to be satisfied with their college experience and peers); that is, one student may engage more or less than another student with respect to such activities as test preparation, homework completion, or student organizations. Moreover, a student may devote more time and effort to completing an assignment for one class and give less to an assignment from a different class. Third, involvement is both a quantitative and qualitative value. For example, the number of assignments submitted, the amount of time spent on preparing for assessments, and the amount of days absent are example of quantitative values. Conversely, the level in which students understand an assignment and the level in which students feel confident about producing a product are examples of qualitative values. Fourth, the quantity and quality of engagement in an activity (e.g., course assignment, event, and organization) directly impacts the levels of personal learning and development a student experiences. Finally, the effectiveness of any educational endeavor (e.g., institutional program or policy, departmental offerings, course activities, instructional approach) can be assessed with respect to the level of resulting student involvement.

Overall, the involvement theory encourages a switch in educational lenses. Instead of

scrutinizing what educators are doing, it becomes imperative to examine what students are doing (Astin, 1985). The goal is to elicit and encourage development of specific behaviors (i.e., involvement). Most counselor educators will not be working directly with first-generation college students at the undergraduate level, but they will work with first-generation students at the graduate level and prepare counselors-in-training to work with first-generation college students. In doing so, counselor educators, as proposed in Astin's theory, should endeavor to encourage (e.g., college counselors, career counselors, school counselors, marriage, couple and family counselors, clinical mental health counselors and student affairs professionals) to partner with faculty and student services to recognize first-generation college students' assets (i.e., proactivity, goal direction, optimism and reflexivity) (Garrison & Gardner, 2012). Faculty, through flexible curricula and reflexive assignments, along with student services (i.e., student affairs professionals, college counselors, and career counselors), can recognize strengths (i.e., resourcefulness, strategic thinking, self-reliance, practical realism, flexibility, persistence, positivity, hopefulness, self-confidence, insightfulness, compassion, gratitude, and balance) and facilitate first-generation students in identifying and using their assets to acclimate and become involved with their college environment (Garrison & Gardner, 2012). By encouraging and facilitating this involvement, students are more likely to gain a sense of connectedness and belonging in their new college life, which in turn would likely impact persistence, performance, and graduation.

When considered in a college setting, perceptions of belongingness can impact students' academic experiences. Researchers have discovered that students' senses of belongingness can help their resiliency with academic challenges, as well as contribute to overall academic performance, motivation, and engagement (e.g., Cham, Hughes, West, & Im, 2014; Mounts,

2004; Osterman, 2000; Pittman & Richmond, 2008; Walter & Cohen, 2011); that is, the extent to which students believe they fit into their college environment will impact what they do and how well they do in college. For instance, when students do not believe they belong in their college environment, they are less likely to participate in class or ask questions, which in turn affects academic performance (e.g., Griffin, 2015; Gummadam et al., 2015). In contrast, when students feel that they belong in their college, they tend to have greater academic confidence, speak more with professors, and accept academic challenges (e.g., Winograd & Rust, 2014). Moreover, sense of belongingness has also been connected to students' abilities to adjust successfully to college, such that as belongingness increases so does adjustment and vice versa (e.g., Gummadam et al., 2015; Mehta et al., 2011; Pittman & Richmond, 2008). Thus, as the research proposes, the more students are able to actively engage in their environment, the more likely they are to feel they belong, and the more likely they are to be academically successful (e.g., Reynolds & Weigand, 2010).

Researchers have also noted that belongingness has a positive connection with psychological perspectives (e.g., Freeman et al., 2007; Pittman & Richmond, 2007). For instance, a positive sense of belongingness has also been connected with positive academic self-efficacy, social interaction, and self-worth (e.g., Freeman et al., 2007; Pittman & Richmond, 2007; Zumbunn, McKim, Buhs, & Hawley, 2014). Positive belongingness has also been associated with improved health, decreased depression, and lower anxiety (e.g., Griffin, 2015; Pittman & Richmond, 2008; Walter & Cohen, 2011). Belongingness has also served as a mediating factor with students from lower socio-economic classes. More specifically when students from this group feel a high level of belonging, their academic performance and adjustment are positively affected (e.g., Ostrove & Long, 2007).

By narrowing the discussion to that of first-generation college students, the importance of belongingness is even more substantial, as underrepresented groups such as first-generation college students often experience a greater disconnect (e.g., Aspelmeier et al., 2012; Winograd & Ruck, 2014). For example, generational status (i.e., first-generation or continuing-generation) has been connected to perceived levels of belongingness, where first-generation college students often feel less connected to their college environment than do their continuing-generation counterparts (e.g., Aspelmeier et al., 2012; Pittman & Richmond, 2007; Winograd & Rust, 2014). Researchers have proposed that the disconnect experienced and felt by first-generation college students results from them having to self-navigate unfamiliar expectations and requirements and values inherent in their college culture, while also having to self-navigate the expectations, requirements, and values inherent in their family (e.g., Reynolds & Weigand, 2010; Stephens et al., 2014); that is, first-generation college students tend to struggle more because they have had different experiences which have formed different expectations (i.e., social capital) (e.g., Stephens et al., 2014). Furthermore, because first-generation college students typically have less social capital than continuing-generation college students with which to navigate the unfamiliar territory of higher education, they are more likely to struggle with adapting and adjusting (e.g., Bergerson, 2007; Bryan & Simmons, 2010; Elliott, 2014; London, 1989; Olenchak & Hebert, 2002; Reynolds & Weigand, 2010; Roberts & Rosenwald, 2001).

The lack of family understanding of the challenges first-generation students face causes these students to “boundary cross” between their family life and their educational “world” (Somers, Woodhouse, & Cofer, 2004). First-generation college students may also perceive a disconnect with their college environment (e.g., lack an inclusive working-class culture, lack working-class role models, lack connecting higher education to interdependent goals of family

and contributing to one's community) first-generation students are also less likely to participate in campus activities (e.g., joining student organizations, interacting with professors and administrators, becoming a part of a peer network) (Stephens, Brannon, & Markus, 2015). First-generation students often struggle to find the "right" way to act as college students and find themselves questioning whether they belong and can be successful in college (e.g., Johnson, Richeson, & Finkel, 2011; Ostrove & Long, 2007).

Importance of Social Capital

Social capital is the actual connection formed between individuals—connections that will yield resources that will help students navigate personal and/or academic challenges (e.g., Bourdieu, 1986; Croninger & Lee, 2001; Klem & Connell, 2004; Morales & Trotman, 2004; Stanton-Salazar, 2001). This implies a connection between supportive relationships and personal/academic motivation, retention, success, and graduation (e.g., Bourdieu, 1986; Stanton-Salazar, 2011). Because individuals have emotionally connected with others, the underlying implication is that individuals will feel more connected to, more accepted by, and more loyal to the surrounding environment. When the idea of social capital is positioned within higher education, the relevance of social capital can be seen when examining first-generation college students. That is, when first-generation college students develop their social capital, they are open to recognize the significance of their individual social-class backgrounds while also gaining the personal strength to risk making connections that can lead to personal and academic successes (Stephens et al., 2014). In short, researchers propose that developed social capital can lead to greater adjustment and belongingness within the collegiate environment.

Many researchers studying first-generation college students assert that first-generation college students may struggle in higher education because they do not possess the type of

social/cultural experiences needed or expected for success in post-secondary education (e.g., Gonzalez, Stone, & Jovel, 2003; Jun & Colyar, 2002; Perna & Titus, 2005; Stephens et al., 2014). That is, first-generation college students tend to lack the social capital required of higher educational pursuits (e.g., Bourdieu, 1986; Croninger & Lee, 2001; Klem & Connell, 2004; Morales & Trotman, 2004; Stanton-Salazar, 2001; Stephens et al. 2014). Connected to underdeveloped social capital is the recognition that first-generation college students have unique social experiences during their studies (e.g., Chen, 2005; Choy, 2001; Lohfink & Paulsen, 2005; Nunez & Cuccaro-Alamin, 1998; Pascarella et al., 2004; Terenzini et al., 1996). Specifically, first-generation college students, for a number of reasons, typically have less interaction with their peers and rarely engage in extracurricular events (e.g., sports, organizations, Greek societies) (Choy, 2001; Pascarella, et al., 2004; Pike & Kuh, 2005). The potential result of this decrease in social involvement is lack of academic persistence and eventual discontinuance of study (e.g., Chen, 2005; Choy, 2001; Ishitani, 2003; 2006; Nunez & Cuccaro-Alamin, 1998).

Within higher education, the capital generated by supportive relationships comes from connections made with peers, as well as faculty and staff. Lohfink and Paulsen (2005) discovered that academic involvement was a significant factor in future persistence in college studies. Initially, researchers have discovered that social adjustment and, by extension, college fit (i.e., belongingness) is negatively impacted when interaction with peers is decreased (Inkelas, Daver, Vogt, & Leonard, 2007); consequently, first-generation college students likely have a better transition and feel more connected to their academic environment when interaction with their peers is involved. Additionally, researchers have noted that involvement with faculty is positively connected to college experience, academic performance, and future persistence

(Lohfink & Paulsen, 2005). Despite this, researchers have found that first-generation college students typically perceive that their professors are less concerned about their academic development and success (Terenzini et al., 1996). Thus, it is necessary to devise a method of effectively reaching first-generation college students. Overall, when first-generation college students have supportive relationships within their higher education environment, researchers have noted that the resulting increase in social capital positively impacts academic success (e.g., Morales, 2010; Stanton-Salazar, 2001, 2011).

Researchers have also noted that first-generation college students tend to devalue the typical social events and activities found in university settings (e.g., Hertel, 2002; Lohfink & Paulsen, 2005) because typical campus activities interfere with work and financial obligations (e.g., Aspelmeier et al., 2012; Bui, 2002; Hertel, 2002; Hicks & McFrazier, 2014; Terenzini et al., 1996). Beyond this, first-generation college students are typically focused on base-level needs (e.g., food, shelter, bills). For this reason, first-generation college students typically have a different focus and purpose from those of their continuing-college students, a distinction that can interfere with adjustment and belongingness.

Another interesting factor regarding social capital is that first-generation college students develop doubt and insecurity of their academic abilities while actually working through their studies (e.g., Penrose, 2002; Rendon, 1992). In his research, Penrose (2002) found that first-generation college students do not begin their academic careers with doubt and insecurity; rather, these fears are cultivated while in attendance. More specifically, Penrose (2002) found that doubt and insecurity develop as first-generation college students move toward academic specialization because they have greater awareness of the disparities of their verbal and quantitative abilities and feel that they do not have the skills necessary to participate in the academic community. Similarly,

the typical conventions and protocols of the college environment (i.e., academic demands, valuing independence, thinking about goals and dreams, and communicating in the abstract) may actually fuel the alienation (i.e., lack of belongingness) experienced by first-generation college students (Rendon, 1992).

Academic Self-Efficacy

Self-efficacy describes the level of doubt or confidence individuals have in their abilities to do something (Bandura, 1997). Individuals are more willing to do what they believe they can successfully complete (e.g., Elliott, 2014; Salazar, 2005). That is, individuals who have high levels of self-efficacy tend to have higher levels of commitment and perseverance than individuals with lower self-efficacy levels (e.g., Elliott, 2014; Reynolds & Weigand, 2010; Salazar, 2005; Schunk, 1981; Schunk & Hanson, 1985; Schunk, Hanson, & Cox, 1987; Straus, 2000). In contrast, individuals with lower efficacy tend to anticipate difficulty or failure, and as a result, often refuse to try something new (e.g., Bandura, 1997; Salazar, 2005; Straus, 2000). In short, efficacy, success (e.g., academic or personal), and/or failure are closely connected (e.g., Krumrei-Mancuso, Newton, Kim, & Wilcox, 2013; Mehta et al., 2011; Multon, Brown, & Lent, 1991; Putwain, Sander, & Larkin, 2013; Ward et al., 2012).

Bandura's theory has been expanded upon and adjusted to fit a number of different venues (i.e., clinical problems such as phobias, addiction, depression, and smoking behaviors; stress in a variety of contexts; pain control; and athletic performance), including academic success (e.g., Krumrei-Mancuso et al., 2013; Mehta et al., 2011; Multon et al., 1991; Putwain et al., 2013; Ward et al., 2012; Bandura, 1994). The connection of efficacy beliefs and educational development has been extensively researched and expanded (e.g., Elliott, 2014; Putwain et al., 2013; Reynolds & Weigand, 2010; Zimmerman, 1995). A substantial body of work describes the

particular construct of academic self-efficacy and its impact as a predictor of academic achievement (e.g., Elias & Loomis, 2002; House, 1992; Putwain, Rampp & Guffey, 1999; Warkentin, Bates, & Griffin, 1994). Thus, what follows is an examination of the connection between self-efficacy and academic success.

Academic Self-Efficacy and Academic Success

Academic self-efficacy is positively or negatively developed depending upon previous academic performance; with this information, students develop their expectations and aspirations around education (Elliott, 2014). With positive academic self-efficacy, students are more inclined to interact with faculty, discuss future options, and persist to graduation (e.g., Elliott, 2014; Torres & Solberg, 2001). Academic self-efficacy is also contextually based (e.g., Hall, Smith, & Chia, 2008; Zimmerman, 1995), which can explain why individuals may excel in one specific area of education and not in others; that is, individuals may believe themselves to be capable of one subject but not in another. Overall, academic self-efficacy is what students believe to be true about their academic capabilities.

Positive academic self-efficacy is correlated to student academic success (e.g., Chemers et al., 2001; Choi, Fuqua, & Griffin, 2001; Elias & Loomis, 2002; Elliott, 2014; Gore, Leuwerke, & Turley, 2006; Hicks & McFrazier, 2014; Lorbach & Jinks, 1999; Cunningham et al., 2000; Reynolds & Weigand, 2010; Schunk & Miller, 2002). When students have higher perceived levels of academic self-efficacy, they are typically more academically successful (e.g., DeWitz, Woolsey, & Walsh, 2009; Elliott, 2014; Hicks & McFrazier, 2014; Schunk & Miller, 2002). Students with a positive academic self-efficacy are typically more open to challenge themselves with higher-level questions and activities in order to obtain academic excellence in the studied content. These students are likely more willing to dedicate more time working through

assignments and studying materials (e.g., DeWitz & Walsh, 2002; Torres & Solberg, 2001). They are also more likely to go beyond what is expected and persist in finding answers to their own questions (Zimmerman & Cleary, 2006). Increased grade point average and academic self-efficacy have been positively correlated. A similar correlation exists between academic self-efficacy and college persistence (e.g., Pajares & Schunk, 2001; Zajacova, Lynch, & Espenshade, 2005).

Researchers have identified a cyclical connection between academic self-efficacy, academic engagement, and academic success. When students perceive they are capable of succeeding academically they engage more willingly with the course material and, consequently, typically attain higher grades and greater acquisition of knowledge (Zimmerman & Cleary, 2006). This cyclical relationship, however, is not only positive. For example, if students cannot regulate their course work, they will earn lower grades, which will negatively affect their academic self-efficacy. As this continues (i.e., earning lower grades), students begin to internalize the lower grades as being reflective of their abilities; thus, they are developing low academic self-efficacy. With lower academic self-efficacy, students tend to expect less of themselves, expect less for their futures, and accept mediocrity (e.g., Winograd & Rust, 2014; Zimmerman & Cleary, 2006). For these students, each low score is one more piece of evidence attesting to their academic inabilities. Conversely, students with a strong sense of academic self-efficacy are more resilient and more likely to navigate through academic challenges (Zimmerman & Cleary, 2006). In other words, individuals with higher levels of academic self-efficacy tend to view errors as learning opportunities and places of needed growth. Similarly, each academic success serves as validation of academic abilities.

Phinney and Haas (2003) focused on ethnic minority first-generation college students in the first year of college only, utilizing surveys and a narrative approach. The researchers gave surveys to 25 first-generation college students. Two items on this survey were used to assess college academic self-efficacy. The participants then used journal writing to complete narratives related to coping in college. The researchers used a phenomenological analysis and determined that greater coping was related to greater expressed self-efficacy. Moreover, Phinney and Haas (2003) found that higher levels of self-efficacy, self-confidence, and self-determination were experienced by students who also experienced social support while pursuing their academic goals. As a result of increased efficacy, confidence, and determination, these students not only believed they had greater academic success but also felt better equipped to deal with stressful experiences, which is a skill that has also been connected to academic adjustment (Mehta et al., 2011).

A problem arises, however, when examining first-generation college students, as they tend to have lower academic self-efficacy (e.g., Gibbons & Borders, 2010; Wang & Castaneda-Sound, 2008). Cruce and colleagues (2005) concluded from their research that academic self-efficacy is a factor that may explain the gap in educational attainment for first-generation students. This group of college students often perceives post-secondary education as arduous and beyond their anticipated levels of acquisition (i.e., they have low academic self-efficacy) (Gibbons & Borders, 2010).

Framework, Constructs, and Variables

The above review of literature shows first-generation college students are unique when compared to their continuing-generation counterparts. Accordingly, several factors are believed to influence Academic Success and Persistence among first-generation college students. These

relevant factors include College Adjustment, Belongingness, and Academic Self-Efficacy (i.e., Social Self-Efficacy and Course Self-Efficacy). The theoretical framework guiding this study, the specific constructs of interest for this study, and the instruments and related variables selected to measure the constructs for this research study are summarized in Table 1.

Table 1

Theoretical Framework, Constructs, Instruments, and Variables

Theoretical Framework	Constructs	Instruments/Variables
Tinto's Theory of College Adjustment	College Adjustment	Student Adaptation to College Questionnaire (SACQ)
College adjustment is attained through separation from family, transitioning and assimilating into the college culture.	Academic, Social, Emotional Adjustment, and Institutional Attachment	Academic, Social, Personal-Emotional, University Attachment
Astin's Theory of Student Involvement	Belongingness	Psychological Sense of School Membership (PSSM)
Learning and development are impacted by level of student involvement	Extent students feel part of the college campus culture	Caring Relationships, Acceptance, Rejection, Belongingness
Chickering's Theory of Student Development	Social Self-Efficacy	College Self-Efficacy Inventory (CSEI)
Clarify purpose, establish one's identity and develop: competence, autonomy, and integrity	Cultivate supportive relationships, identify resources to navigate personal and academic issues	Social Self-Efficacy Sub-scale
	Course Self-efficacy	College Self-Efficacy Inventory (CSEI)
	Level of doubt or confidence in one's academic abilities.	Course Self-Efficacy Sub-scale

Three assessment measurements were used to examine the proposed research questions (i.e., Student Adaptation to College Questionnaire (SACQ), Psychological Sense of School Membership Scale (PSSM), and College Self-Efficacy Inventory (CSEI)). The use of these measurements has been supported in the literature (e.g., SACQ: Baker & Siryk, 1984; PSSM: Ye

& Wallace, 2014; You et al., 2011; CSEI; Gore, Leuwerke, & Turley, 2006; Solberg, O'Brien, Villareal, Kennel, & Davis, 1993). Chapter III contains a detailed explanation of each assessment.

Implications for Counselor Educators

Because of the information noted throughout this literature review, it is important that counselor educators make concerted efforts to aid in the acclimation, persistence, and graduation of first-generation college students. Drawing upon the combined significance of College Adjustment, Belongingness, and Academic Self-Efficacy (i.e., Course Self-Efficacy, and Social Self-Efficacy) research, counselor educators will have a solid knowledge base with which to approach the needs of first-generation college students. Then, because consideration has been given to the unique challenges experienced by first-generation college students, first-generation college students can have an increased likelihood of persistence and academic success. To this end, counselor educators who work with, train, and supervise future counselors (e.g., college counselors, career counselors, school counselors, marriage, couple and family counselors, clinical mental health counselors and student affairs professionals), will also be able to affect the experiences of first-generation college students even before matriculation.

Summary

This literature review focused on topics relevant to this research study and was divided into five main sections. The first section of the literature review was a definition of first-generation college student. This section was followed by an overview of first-generation college students, which included information on demographics, preparedness, support systems, and academic expectations of first-generation college students. The third section of the chapter covered the construct of College Adjustment, wherein Tinto's theory was applied. The fourth

section of this chapter discussed the construct of Belongingness, where Astin's theory was applied and the significance of social capital was also discussed. The final section of this chapter discussed the construct of Academic self-efficacy (i.e., Course Self-Efficacy and Social Self-Efficacy) in conjunction with Chickering's theory.

Student involvement, adjustment and development can be understood by examining various stages. These stages typically comprise academic and socio-emotional acclimations (e.g., Astin, 1985; Tinto, 1987, 1993; Chickering & Reisser, 1997). First-generation college students, however, often have difficulty in successfully navigating the collegiate experience (e.g., London, 1989, 1992; Roberts & Rosenwald, 2001; Ward et al., 2012). For this reason, continued examination of more effective methods of reaching this group of college students is needed. Overall, it is important that counselor educators gain a theoretical and practical appreciation for the plight of first-generation college students. Counselor educators will be working with, training, and supervising future counselors-in-training who will, in turn, be working with and helping first-generation college students flourish in their academic pursuits. With awareness of the theoretical information above, counselor educators will be positioned to inform counselors-in training who may work with and help first-generation college students both while in college (i.e., via college counselors, career counselors, marriage, couple and family counselors, clinical mental health counselors and student affairs professionals who have been trained and supervised by counselor educators) and before attending college (i.e., via school counselors who have also been trained and supervised by counselor educators).

CHAPTER III

RESEARCH METHODS

This chapter outlines the research methods used to conduct this study. Accordingly, the chapter is organized into the following sections: (a) research questions, (b) sampling frame, (c) participants, (d) instrumentation, (e) data collection procedures, and (f) data analysis. The chapter concludes with a summary of the research methods.

Research Questions

As stated in Chapter I, the purpose of this study was to explore factors that may influence yearly persistence and graduation rates among first-semester, first-generation college students. While numerous studies have examined various factors contributing to persistence and graduation rates among first-generation college students, this study sought to contribute to the existing knowledge base by examining how College Adjustment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy influence Academic Success (GPA) and Persistence, as well as differences that may exist among race and gender demographics. The specific research questions that guided this study were:

1. To what extent do first-semester, first-generation college students experience College Adjustment as measured by the Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1999)?
2. Is there a statistically significant difference in Social Adjustment (SACQ), Institutional Attachment (SACQ), and Belongingness (PSSM) according to race and gender for first-semester, first-generation college students?

3. To what extent do first-semester, first-generation college students experience Belongingness, as measured by the Psychological Sense of School Membership (PSSM) (Goodenow, 1993)?
4. Do College Adjustment (SACQ), Belongingness (PSSM), Course Self-Efficacy (CSEI), and Social Self-Efficacy (CSEI) predict first-semester, first-generation college students' Academic Success (GPA)?
5. Is there a statistically significant difference in Social Adjustment (SACQ), Institutional Attachment (SACQ), Belongingness (PSSM), Course Self-Efficacy (CSEI), and Social Self-Efficacy (CSEI) between first-semester, first-generation college students who persist to third semester and those who do not?

Sampling Frame

The sampling frame for this study included approximately 1,600 first-semester, first-generation college students. The researcher identified 84 courses with an enrollment of approximately 1,600 students at a large, predominately white, public university in the Midwest as having a significant number of first-semester, first-year students. All course instructors received an email request, 30 instructors of these courses agreed to allow the researcher to visit their class, introduce the study, and recruit participants. During the recruitment process, students were invited to send the researcher their email addresses, then an email link containing the study instruments could be emailed to them to participate in the research. All students who self-reported their first-semester, first-generation status by sending the researcher an email were sent a SurveyMonkey link to all instruments used in the study. Of the 1,600 individuals enrolled in the class, 236 (14.8%) provided email addresses and were subsequently sent a SurveyMonkey link. Of the 236 students who received the link, 82 (34.7%) completed all the instruments.

Participants

One hundred and one students from a large, predominately white, public university in the Midwest consented to participating in this study. Of these individuals, 82 participants had complete sets of data (i.e., completed all study measures). Only participants with complete sets of data were included in the study analysis. Cases that were eliminated did not meet the inclusionary criteria of first- semester, first-generation college student. The final participant sample included 19 males (23.2%), 62 females (75.6%), and 1 transgender individual (1.2%). The majority of participants were Caucasian/White ($n = 53$, 64.6%; male $n = 12$, 22.6%, female $n = 40$, 75.5%, transgender $n = 1$, 1.9%); with smaller numbers of African-American/Black ($n = 18$, 22.0%; male $n = 6$, 33.3%, female $n = 12$, 66.7%); Hispanic/ non-White ($n = 8$, 9.8%; male $n = 1$, 12.5%, female $n = 7$, 87.5%); Asian/Pacific Islander (female $n = 2$, 2.4%); and Other (female $n = 1$, 1.2%) participants. In terms of gender and race, women were overrepresented in the study sample ($n = 62$, 75.6%) when compared to the proportion of women among first-year students at the university ($n = 1,550$, 50.1%). Students who identified as African American/Black ($n = 18$, 22%) were also overrepresented in the sample when compared to the proportion of African American/Black students among the first-year students of the university ($n = 434$, 14%).

Finally, all participants ($N = 82$) were first-generation, first-year students. The mean ACT Score ($n = 82$) was 20.21 ($SD = 3.32$). The mean first-semester grade-point average (GPA) ($n = 82$) was 3.05 on a 4.0 scale ($SD = .87$); the mean second-term cumulative grade-point average (GPA) ($n = 74$) was 2.88 ($SD = .95$). Table 2 provides a summary of participant data.

Table 2

Summary of Participant Data

Variable	<i>f</i>	%
Race/ethnicity		
African American/Black	18	22.0
Asian/Pacific Islander	2	2.4
Caucasian/White	53	64.6
Hispanic/Non-White	8	8.0
Native American/American Indian	0	0.0
Other	1	1.2
Missing	0	0.0
Total	82	100.0
Gender		
Female	62	75.6
Male	19	23.2
Transgender	1	1.2
Missing	0	0.0
Total	82	100.0
Academic Variable		
	<i>M</i>	<i>SD</i>
ACT score (<i>N</i> = 82)	20.21	3.32
1st semester GPA (<i>N</i> = 82) *	3.05	.87
2nd term cumulative GPA (<i>N</i> = 74) *	2.88	.95

Note. *GPA on a 4.0 scale

Instrumentation

To examine the variables of College Adjustment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy, the researcher utilized three measures: The Student Adaptation to College Questionnaire, the Psychological Sense of School Membership Scale, and the College Self-Efficacy Inventory, as well as a demographic questionnaire created by the researcher. The use of these measures has been previously supported in the literature (e.g., SACQ: Baker & Siryk, 1984, PSSM: Ye & Wallace, 2014; You et al., 2011; CSEI: Gore, Leuwerke, & Turley, 2006; Solberg, O'Brien, Villareal, Kennel, & Davis, 1993). The sections below describe each instrument, along with their psychometric properties.

Student Adaptation to College Questionnaire (SACQ)

The Student Adaptation to College Questionnaire (SACQ) is a 67-item self-report measure designed to assess student adjustment to college (Baker & Siryk, 1999). It contains four subscales: Academic Adjustment (24 items), Institutional Attachment (20 items), Personal-Emotional Adjustment (15 items), and Social Adjustment (15 items). The subscales of Academic Adjustment and Personal-Emotional Adjustment share 9 items. Participants are asked to read each statement on the various subscales, and rate how well each statement corresponds to attitudes about themselves and others on a 9-point scale ranging from 1 = *closely applies* to 9 = *doesn't apply*. The definitions of each subscale and the number of items associated with the subscales are presented in Table 3.

Scoring. Item responses are summed to yield subscale and total scores. Raw scores on the Academic Adjustment subscale range from 24 to 216. Raw scores on the Institutional Attachment subscale range from 15 to 135. Raw scores on the Social Adjustment subscale range from 20 to 180. Raw scores on the Person-Emotional Adjustment range from 15 to 135. Raw scores for the total SACQ range from 67 to 603. Higher scores on the measure signify greater levels of adjustment.

Scores on the SACQ can also be converted to T-scores to allow for easier comparisons across subscales. Baker and Siryk (1999) provide a conversion table to convert raw scores for men and women, resulting in the following T-score ranges: ≤ 25 to 39 = Below Average; 40 to 59 = Average; and 60 to ≥ 75 = Above Average. T-scores will be used in the data analysis for this study.

Reliability and validity. Data for Caucasian/white first-semester ($n = 1,180$) and second-semester ($n = 710$) first-year college students, at predominately white institutions (i.e., from

Clark University $n = 1,632$, Holy Cross College $n = 258$) was gathered over several years (i.e., 1980-81, $n = 698$; 1981-82, $n = 376$; 1982-83, $n = 200$; 1983-84, $n = 408$; 1984-85, $n = 208$). The internal consistency reliability coefficient of the SACQ has ranged from .92 to .95 for the total score (Baker & Siryk, 1999). The subscale alphas for the same samples have ranged from .81 to .90 for the Academic Adjustment subscale, .83 to .91 for the Social Adjustment subscale, .77 to .86 for the Personal-Emotional subscale, and .85 to .91 for the Institutional Attachment subscale (Baker & Siryk, 1999). However, the attachment subscale contains one item from the Academic Adjustment subscale and eight from the Social Adjustment subscale, resulting in somewhat inflated correlations between the Attachment subscale and the other two subscales.

Baker and Siryk (1984) also found that the Academic subscale was significantly correlated with the GPA of Caucasian/white first-year college students ($N = 368$, males $n = 75$, females $n = 293$) at a large Belgium university. Additionally, it was discovered first-year students were more likely to withdraw or drop out if they scored low on the SACQ (Baker & Siryk, 1984). Baker and Siryk (1984) further noted counseling center services were less likely to be utilized when students scored high on the Personal-Emotional subscale. Similarly, students scoring high on the Social Adjustment subscale were likely chosen for residence life positions during their junior year of college. Rubin (2010) discovered SACQ results also correlated to social class; that is, the researcher identified that students from higher social classes tended to score higher on the SACQ, while students from lower social classes tended to score lower.

Table 3

Student Adaptation to College Questionnaire Subscale Definitions, Item Count, and Alpha

Subscale	Definition	Count
Academic Adjustment ($\alpha = .66$)	Assesses students' success in coping with various academic demands of college, such as their academic performance, seeking academic support when needed, and their motivation and confidence to do well.	24 items
Social Adjustment ($\alpha = .78$)	Assesses students' success with interpersonal-social demands of college, such as developing satisfying relationships with others in college and involvement in social activities.	20 items
Personal-Emotional Adjustment ($\alpha = .33$)	Assesses students' internal psychological state and level of distress experienced during adjustment to college, and may include depression, anxiety, substance abuse, and self-esteem.	15 items
Institutional Adjustment ($\alpha = .74$)	Assesses the level of attachment to the institution as well as commitment to personal academic and institutional goals, such as feeling connected and sharing views aligning with the institution's mission.	15 items

Note. Full scale = 67 items. College Adjustment (SACQ Full scale) ($\alpha = .83$).

Total Subscale Items = 74. SACQ subscales of Academic Adjustment ($\alpha = .66$) and P-E Adjustment ($\alpha = .33$) share 9 items. Recommended Cronbach's alpha is .70 and above (Pallant, 2007). SACQ subscales of Academic Adjustment ($\alpha = .66$) and P-E Adjustment ($\alpha = .33$) shared items causing lower alpha levels. Due to the lower alpha levels, both subscales were not used individually in any statistical analyses in this study.

Finally, Beyers and Gossens (2002) examined the validity SACQ scores of Caucasian/white first-year college students ($N = 368$, males $n = 75$, females $n = 293$) from a large Belgium university and compared them to findings among students in North America. Using confirmatory factor analysis, the authors confirmed that the four subscales make a distinctive contribution to the measurement of College Adjustment. The authors found the SACQ scores to be reliable and valid within their sample of freshman students.

Psychological Sense of School Membership Scale (PSSM)

The Psychological Sense of School Membership Scale (PSSM) as shown in Appendix E, is an 18-item self-report measure designed to assess the perceived sense of Belongingness within

an academic setting (Goodenow, 1993). The PSSM contains the following subscales: Caring Relationship, Acceptance, and Rejection. A Total Belongingness score is comprised from the items on the three subscales, as well as six additional items. Participants are asked to rank items on a 5-point Likert-type scale that ranges from 1 = *not at all true* to 5 = *completely true* (e.g., Goodenow, 1993; You et al., 2011). A higher score indicates a stronger sense of belonging or connectedness with school. The definitions of each subscale and the number of items associated with the subscales are presented in Table 4.

Table 4

Psychological Sense of School Membership Definitions, Item Count, and Alpha

Subscale	Definition	Count
Caring Relationships	The feeling of fitting in and being a part of the college culture	4 items
Acceptance	Perception of fitting in among peers and a generalized connection to teachers	5 items
Rejection	Negative perception from people or environment	3 items
Total Belongingness ($\alpha = .90$)	The sense of fitting in and feeling connected to one's environment propels individuals to cultivate relationships the extent to which students feel they fit in & part of the college campus culture	18 items

Note. Total Belongingness includes items not on the Caring Relationships, Acceptance, and Rejection subscales. For the purpose of this study, only Total Belongingness scores are used.

Scoring. The level of perceived school belongingness (Total Belongingness) is calculated as the average item response. You et al. (2011) examined the results of a sample of 504 Australian High School students and found the PSSM total score to have strong internal consistency. While the scale's dimensionality was not originally confirmed, the internal consistency of the scale's total score has been subsequently noted (e.g., Ye & Wallace, 2014; You et al., 2011). Ye and Wallace (2014), studied high school students ($N = 890$); male $n = 382$, 42.9%; female $n = 427$, 48%; transgender $n = 11$, 1.2%; nongendered $n = 13$, 1.5%; refused to answer $n = 20$, 2.2%; did not provide a response $n = 37$, 4.2%). The self-reported racial composition was Black/African American ($n = 331$, 37.2%), White/European American ($n =$

312, 35.1%), Asian American ($n = 19$, 2.1%), Pacific Islander ($n = 6$, .7%), American Indian ($n = 21$, 2.4%), multiracial ($n = 113$, 14.9%), and did not provide a response ($n = 68$, 7.6%)

Reliability and validity. Researchers have found this total score to have strong internal consistency range from .78 - .95 (e.g., You et al., 2011). Several studies have explored the reliability of the PSSM (e.g., Cheung & Hui, 2003; Hagborg, 1994; O'Farrell & Morrison, 2003; You et al., 2011). Researchers, for example, have noted the high test-retest reliability of the PSSM (e.g., Hagborg, 1994; Shochet, Dadds, Ham, & Montague, 2006). In a study conducted by Hagborg (1994), ($N = 240$) with white middle and high school students, it was determined that the PSSM had good test-retest reliability ($r = .78$) covering a duration of 4 weeks. Shochet and colleagues (2006) (sample $N = 2,022$ students; males $n = 999$, females $n = 1,023$; ages 12 to 14 years old) further reported test-retest correlations (males = .56), (females = .60) spanning 12 months.

Researchers have also confirmed the concurrent validity of the PSSM (e.g., Hagborg, 1994; Kuperminc, Darnell, & Alvarez-Jimenez, 2008; McGraw, Moore, Fuller, & Bates, 2008; McMahon, Parnes, Keys, & Viola, 2008; O'Farrell & Morrison, 2003; Shochet et al., 2006; Uwah, McMahon, & Furlow, 2008; You et al., 2011) by examining the scale in relation to educational and psychological constructs. More specifically, scores on the PSSM have been correlated with (a) school success, (b) school attendance, (c) academic competence, (d) academic self-efficacy, (e) life expectations, (f) depression, and (g) anxiety (e.g., Goodenow, 1993; Ibanez, Kuperminc, Jurkovic, & Perilla, 2004; McMahon et al., 2008; Kia-Keating & Ellis, 2007; Shochet et al., 2006). Pittman and Richmond (2007, 2008) also used the PSSM to measure college students' sense of belongingness to the campus community during their first year. Their study found a bivariate relationship between Belongingness and College Adjustment.

Though limited, researchers have additionally tested the construct validity of the PSSM (e.g., Cheung, 2004; Cheung & Hui, 2003; Hagborg, 1994; O'Farrell & Morrison, 2003; You et al., 2011). Hagborg (1994) studied 80 White, middle-class, middle school students from a semi-rural area in upstate New York ($N = 80$; males $n = 40$, females $n = 40$). Hagborg (1994) concluded that the PSSM had three factors (i.e., belonging, rejection, and acceptance), and as such, had a multidimensional structure; however, the first factor (i.e., belonging) was the most relevant because it had more items and more cross-factor loadings. Cheung and Hui (2003) examined the factor structure of a Chinese translation of a sample ($N = 559$) 4th, 5th, and 6th grade Hong Kong students (males = 295, females = 252) of the PSSM and identified two factors (i.e., belonging and rejection) without double loadings. Yet another study included items from other measures about social connections in school. These researchers also reported factors of belonging (O'Farrell & Morrison, 2003). Kane, Chalcraft, and Volpe (2014) administered the PSSM to 1,346 business majors of first-semester, first-year students college students (e.g., ethnic mix: White = 43.44%; Asian = 33.44%; Black/African/Caribbean = 16%; Mixed ethnic group = 1.36%; Other ethnic group = 5.76%) across three London universities. The study suggested a positive correlation between attendance and sense of belonging (Kane et al., 2014). Alkan (2016) adapted the PSSM to use with ($N = 509$) Turkish university students. Internal consistency for the study was .84. Oldfield, Rodwell, Curry, and Marks (2018) administered the PSSM to ($n = 618$) (female = 482, male = 133, not specifying = 3) United Kingdom undergraduate university students. Cronbach's alpha for this study was .86, consistent with other studies and also found high internal consistency (.88). In conclusion, the PSSM has been found to be reliable and valid in assessing perceived levels of belongingness (e.g., Goodenow, 1993). The PSSM scale

effectively assesses levels of perceived belongingness within the school setting, among peers, and among faculty (Ye & Wallace, 2014).

College Self-Efficacy Inventory (CSEI)

The College Self-Efficacy Inventory (CSEI) as shown in Appendix D, assesses perceived confidence levels for performing successfully at college (e.g., Gore, Leuwerke, & Turley, 2006; Solberg, O'Brien, Villareal, Kennel, & Davis, 1993). For this study, the Course Self-Efficacy (7 items) and Social Self-Efficacy (9 items) subscales were used to measure Academic Self-Efficacy. The items on the subscales are rated on a 10-point scale, ranging from 0 = *no confidence* to 9 = *extreme confidence*. The results of the CSEI are computed based upon an overall score and subscale scores (Solberg et al., 1993). The CSEI was normed on Mexican-American and Latin American college students (Solberg et al., 1993). Based upon Bandura's social cognitive theory, the definitions of each subscale and the number of items associated with the subscales are presented in Table 5.

Table 5

College Self-Efficacy Inventory Course and Social Subscale Definitions, Item Count, and Alpha

Subscale	Definition	Count
Course Self-Efficacy ($\alpha = .76$)	College students' beliefs in their own abilities to successfully perform academic tasks (Solberg, O'Brien, Villareal, Kennel, & Davis, 1993). Based upon Bandura's (1977) definition of self-efficacy, as well as Deci and Ryan's (1985) definition of competency.	7 items
Social Self-Efficacy ($\alpha = .80$)	Extent of confidence in one's ability to conduct social interactions needed to establish and sustain interpersonal relationships i.e., participate in class discussions, join a student organization. (Erözkan, 2014).	9 items

Scoring. The College Self-Efficacy Inventory is comprised of 20 items that form three

separate subscales: Course Self-Efficacy (7 items), Social Self-Efficacy (9 items), and Roommate Self-Efficacy (4 items); these items have a 10-point scale, ranging from 0 = *no confidence* to 9 = *extreme confidence* (Solberg et al., 1993). However, due to researcher error, these were rated on a Likert-type scale ranging from 0 = *totally unconfident* to 8 = *totally confident*. Prior to data analysis scores were rescaled ($y = 9x/8$) to correct to 0 to 9 scale to analyze the data using the original scale for the instrument. This calculation was performed to correct the standard deviation, which changed with the scale revision; however, it was necessary because the correction allows for better interpretability. The rescale did not change statistical findings but changed numerical values. As the focus of this current study centers on Course Self-Efficacy and Social Self-Efficacy, the four items pertaining to roommate self-efficacy were not included in data collection or analysis.

Reliability and validity. The CSEI was validated with a sample of 164 Mexican-American (70%) and Latino-American (30%) college students (74% were females and 26% were males; 20% were first-generation; 2% were classified as first-year students, 51% second year, 45% third year, and 2% were fourth year students) attending a large west-coast university. The study found total CSEI had good internal consistency reliability ($\alpha = .93$, full scale) and .88 (each subscale) (Solberg et al., 1993).

In another study, Gore and colleagues (2006) used the CSEI with a sample of first year college students ($N = 257$; males = 157, females = 100); ethnicity of the participants were Euro-American (77%), African American (16%), Hispanic (5%), and Asian/Pacific Islander (2%) at a medium sized public Midwestern university for the purpose of validating the measure. Their study revealed a Cronbach α of .92 and .88 for the Course Self-Efficacy subscale and .86 for the Social Self-Efficacy subscale (Gore et al., 2006). Both of these scores illustrated internal

consistency reliability. A Harris-Kaiser rotation analyzing the principal components yielded a three-factor construct (Solberg et al., 1993), which was later validated using a confirmatory factor analysis of the entire scale (Gore et al., 2006).

The construct validity of the CSEI measurement has also been studied. Gore and colleagues (2006) discovered that correlations between CSEI scores and college GPA were significantly stronger when evaluated near the end of the first college semester. Moreover, CSEI was a stronger predictor of GPA when assessed during the second semester of college (Gore et al., 2006). Yet another intriguing connection was with self-efficacy of career decision-making. Gore and colleagues (2006) noted that, albeit a weak association, CSEI scores related to measures of career decision-making self-efficacy. Finally, Torres and colleagues (2001) examined a model of college outcomes of 189 students (Latinas = 112, and Latino males = 67), the study revealed a correlation between self-efficacy, stress, and persistence—elements that are relevant to the current study.

Demographic Questionnaire

A demographic questionnaire as shown in Appendix C, was developed by the researcher to obtain descriptive background information about the sample, including gender, ethnic group, participation in college activities, enrollment status, transfer student status, employment status, course load, and parental education. Participants were asked to indicate if they had a primary language other than English. Additionally, participants were also asked to indicate information about their family, including the highest level of education attained by each parent/guardian, occupation/employment status of each parent/guardian, and estimated annual household income.

In addition to the demographic data described above, participants were asked to rate two statements using a 7-point scale where 1 = *lack confidence* and 7 = *extreme confidence*. The two

statements were: (a) “I will finish college,” and (b) “I have selected the right major for me.”

Final questions on the demographic questionnaire regarded various aspects of students’ most difficult course (i.e., class size, teaching method, and method used to test course material).

Data Collection Procedures

The Human Subjects Institutional Review Board approved all procedures for this study as shown in Appendix G. Participants were recruited in-person, and participation in this study occurred online. The researcher invited potential participants currently enrolled in sections of First Year Experience or in any of several large section undergraduate courses (e.g., Introduction to Psychology, Holistic Health, and Personal and Social Impact of Drug Use and Alcohol) via an in-person class invitation announcement. Some instructors agreed to offer extra credit for participation in this research. A total of the 236 students received the link, 82 students (34.7%) completed all the instruments.

The participants for this study were self-identified first-generation college students who were in their first semester of their first year of undergraduate studies at a predominately white, public university in the Midwest region of the United States. Because first-generation college students come to college with potential barriers to their academic success, the collection of data in the fall semester would provide examination of the earliest points of concern for these first-generation college students (e.g., Griffore & Griffore, 1982; Hays & Oxley, 1986). Students who indicated willingness to participate in the study were sent an e-mail further inviting participation in the study. To be considered for participation, students had to be: (a) in their first year of undergraduate studies, (b) between the ages of 18 and 20 years, and (c) identified as a first-generation college student (i.e., parents did not complete a 4-year degree during the student’s childhood).

To encourage the greatest number of respondents, the following method was used. The researcher visited each class to describe the study and asked any interested individuals to share their email address on an individual slip of paper. Each person expressing interest was contacted via e-mail (i.e., Appendix A). The email described the nature of the research project, as well as the researcher's goals. Moreover, in this email, the researcher requested those who were interested in participating in the study complete the web-based questionnaire accessible by clicking the link (via e-mail) or by typing in the URL (listed in the email). Once students completed the online survey, they were directed to a new survey where they could opt to enter their email, name, and class to be able to receive extra credit for participation. The researcher provided each instructor with a list of students who participated in the research.

Participants were informed they would be entered into a drawing for a \$50 Visa gift card. Completion of the final survey alerted the researcher to remove participants' names from the email notification list. Those not responding to the first request within 5 days were sent a follow-up e-mail request for participation and were again given a link to the survey. Those still not responding to the request within another 5 days were e-mailed a third time.

Finally, to further ensure an appropriate participant pool, the web-based survey contained rule-out questions:

When did you graduate from high school? (Month/Year)

What is your current year in college?

1 = first year; 2 = Sophomore; 3 = Junior; 4 = Senior; 5 = Other

My mother/female guardian had or attained a bachelor's degree prior to my entering college. 1 = yes 2 = no 3 = does not apply

My father/male guardian had or attained a bachelor's degree prior to my entering college. 1 = yes 2 = no 3 = does not apply

That is, when participants provided an answer that ruled them out, i.e., graduated high school prior to 2013, or was not in the first year of college, or mother/female guardian or father/male guardian attained a bachelor's degree, the participant was directed to an ancillary site. In this new window, participants who were ruled-out would be informed that, based upon responses, they were ineligible to participate in the study.

Data Analysis

As described in the Data Collection Procedures section above, data for this study were collected through an online administration of the survey instruments. Once data were collected, data were entered into the Statistical Package for Social Sciences (SPSS) program version 25 for analysis. Preliminary data analysis was used to check for errors, and to summarize and visualize the data. Preliminary data analysis consisted of obtaining descriptive statistics (e.g., frequencies, distributions, mean, median, standard deviation, skewness, and kurtosis) for all demographic items, as well as for the following instruments used in this study: College Adjustment (Total SACQ), Academic Adjustment (SACQ subscale), Social Adjustment (SACQ subscale), Personal Emotional Adjustment (SACQ subscale), Institutional Attachment (SACQ subscale) (Baker & Siryk, 1999), Belongingness (PSSM) (Goodenow, 1993), Course Self-Efficacy (CSEI subscale), and Social Self-Efficacy (CSEI subscale) (Solberg et al., 1993).

According to Pallant (2013), in addition to ANOVAs and *t*-tests being sensitive to a small sample size, a non-significant result may occur due to insufficient power. Pallant (2013), therefore, recommends adjusting the alpha level to .10 or .15 to compensate. This recommendation was considered, and an adjusted alpha level of .10 was adhered to in the interpretation of the statistical results for this study. Additionally, a sample size calculation was performed using G*Power 3.1.9.4 program, which determined that a sample size of

approximately 74 was required in order to obtain a medium effect size for the ANOVAs and independent samples *t*-tests in this study. It was estimated that a sample size of 74 would give 80% power for a statistically significant relationship using a 10% significance level. A sample size calculation using G*Power 3.1.9.4 program, was also calculated for the multiple regression analysis, the calculation determined a sample size of approximately 64 plus the number of predictors (i.e., 4) was required in order to obtain a medium effect size for the multiple regression analysis with multiple independent variables. It was therefore estimated that a total sample size of 69 would give 80% power for a statistically significant relationship using a 10% significance level.

Assumptions for *t*-tests, ANOVAs and regression analysis were examined, including for normality, multicollinearity, and homoscedasticity, Descriptive statistics were used to answer research questions 1 and 3. Finally, inferential statistics were used to answer research questions 2, 4, 5 inferential statistics were also used for the exploratory analyses. The specific analyses conducted for each research question and exploratory analyses are described in the subsections below.

Research Question 1

To what extent do first-semester, first-generation college students experience College Adjustment as measured by the Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1999)?

Research question 1 explores the extent to which first-semester, first-generation students experience various levels of College Adjustment as measured by the SACQ. This research question does not seek to make any predictions about the sample in this study, nor does it seek to make any comparisons among groups. Therefore, to answer research question 1, descriptive

statistics including means, medians, standard deviations, and range for the normalized T-scores of each subscale on the SACQ are reported.

Research Question 2

Is there a statistically significant difference in Social Adjustment (SACQ), Institutional Attachment (SACQ), and Belongingness (PSSM) according to race and gender for first-semester, first-generation college students?

Research question 2 explores racial and gender group differences in levels of Social Adjustment and Institutional Attachment as measured by the T-scores of the SACQ (Baker & Siryk, 1999), and Belongingness as measured by the Psychological Sense of School Membership (PSSM) (Goodenow, 1993). To investigate whether differences exist among the categories of race and the levels of Social Adjustment (SACQ), Institutional Attachment (SACQ), and Belongingness (PSSM) for first-semester, first-generation college students, three separate one-way analysis of variance (ANOVA) procedures were conducted, as ANOVAs are sensitive to a small sample size (Pallant, 2013). One-way ANOVA compares the means of two or more groups of participants on a single, continuous dependent variable (Cronk, 2014). In this analysis, race (i.e., African American/Black, Asian/Pacific Islander, Caucasian/White, and Hispanic/Non-White groups) was the independent variable, while T-scores for Social Adjustment (SACQ) and Institutional Attachment (SACQ), and Belongingness scores (PSSM) were the dependent variables. Prior to analysis, the other race category ($n = 1$) was eliminated.

To investigate whether differences exist between the categories of gender and levels of Social Adjustment, Institutional Attachment, and Belongingness for first-semester, first-generation college students, three independent-samples *t*-tests were conducted. *T*-tests are sensitive to a small sample size, and like one-way ANOVAs, independent samples *t*-tests

compare the means of two independent-samples on a single continuous dependent variable (Cronk, 2014). In this set of independent-samples *t*-tests, gender (i.e., male and female groups) was the independent variable, while T-scores on the Social Adjustment (SACQ) and Institutional Attachment (SACQ), and Total Belongingness scores (PSSM) were the dependent variables. Prior to analysis, the transgender category was excluded, as only one participant endorsed this designation.

As a final note, according to Pallant (2013), in addition to ANOVAs and *t*-tests being sensitive to a small sample size, a non-significant result may occur due to insufficient power. Pallant (2013), therefore, recommends adjusting the alpha level to .10 or .15 to compensate. This recommendation was considered, and an adjusted alpha level of .10 was adhered to in the interpretation of the statistical results associated with this research question.

Research Question 3

To what extent do first-semester, first-generation college students experience Belongingness, as measured by the Psychological Sense of School Membership (PSSM) (Goodenow, 1993)?

Research question 3 explores the extent to which first-semester, first-generation college students experience Belongingness as measured by Total Belongingness scores on the PSSM. This research question does not seek to make any predictions about the sample in this study, nor does it seek to make any comparisons among groups. Therefore, to answer research question 3, descriptive statistics including means, standard deviations, and range from participant scores of Total Belongingness on the PSSM is reported.

Research Question 4

Do College Adjustment (SACQ), Belongingness (PSSM), Course Self-Efficacy (CSEI), and Social Self-Efficacy (CSEI) predict first-semester, first-generation college students' Academic Success (GPA)?

Research question 4 explores how well College Adjustment, Course Self-Efficacy, Social Self-Efficacy, and Belongingness, predict Academic Success as measured by end of semester cumulative GPA. To answer this research question, a four-variable multiple linear regression was conducted. Multiple linear regression explores the relationship between one continuous dependent variable and several independent variables (Pallant, 2013). In this study, end of semester cumulative GPA was the dependent variable, while College Adjustment (Total SACQ), Course Self-Efficacy (CESI), Social Self-Efficacy (CSEI), and Belongingness (PSSM) were the independent variables.

Prior to interpreting results from multiple linear regression, several assumptions including outliers, multicollinearity, and independence of residuals were explored (Pallant, 2013). Multicollinearity was explored using Tolerance, Variance Inflation Factor, and condition indexes. Tolerance indicates how much variability in an independent variable is not explained by the other independent variables in the model. Values of less than .10 indicate that the multiple correlation between other variables may be too high. The variance inflation factor is the inverse of the Tolerance value. VIF values above 10 indicate multicollinearity. Pearson correlation coefficients were also used to determine the presence of multicollinearity. Correlation coefficients for this study ($r = .30$ and $r = .70$) demonstrates a moderate linear relationship, and no multicollinearity concerns.

Due to small sample size, a non-significant result may occur due to insufficient power. Pallant (2013) recommends adjusting the alpha level to .10 or .15 to compensate. This recommendation was considered, and an adjusted alpha level of .10 was adhered to in the interpretation of the statistical results associated with this research question.

Research Question 5

Is there a statistically significant difference in Social Adjustment (SACQ), Institutional Attachment (SACQ), Belongingness (PSSM), Course Self-Efficacy (CSEI), and Social Self-Efficacy (CSEI) between first-semester, first-generation college students who persist to third semester and those who do not?

Research question 5 explores persistence among first-semester, first-generation college students. Specifically, this study explored those students who persist or do not persist to third semester and the group differences in levels of Social Adjustment, and Institutional Attachment as measured by the Student Adaptation to College Questionnaire (SACQ), Belongingness as measured by the PSSM, Course Self-Efficacy, and Social Self-Efficacy as measured by the CSEI. Classification of Persistence or Not Persistence was determined through university records. To investigate whether differences exist among the categories of students who persist and students who do not persist and the levels of Social Adjustment, Institutional Attachment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy for first-semester, first-generation college students, five separate one-way analysis of variance (ANOVA) procedures were conducted. ANOVAs were used as they are sensitive to a small sample size (Pallant, 2013). One-way ANOVA compares the means of two or more groups of participants on a single, continuous dependent variable (Cronk, 2014). In this analysis, race i.e., (African American/Black, Asian/Pacific Islander, Caucasian/White, and Hispanic/Non-White groups) was the independent

variable, while Social Adjustment (SACQ), Institutional Attachment (SACQ) T-scores, Belongingness (PSSM), Course Self-Efficacy (CSEI), and Social Self-Efficacy (CSEI) scores were the dependent variables. Prior to analysis, the Other race category was excluded from this analysis, as only one participant endorsed this designation.

To investigate whether differences exist between the categories of gender and levels of Social Adjustment (SACQ), and Institutional Attachment (SACQ), Belongingness (PSSM), Course Self-Efficacy, (CSEI) and Social Self-Efficacy (CSEI) for first-semester, first-generation college students, independent-samples *t*-tests were conducted. Like one-way ANOVAs, independent samples *t*-tests compare the means of two independent-samples on a single continuous dependent variable (Cronk, 2014). In this set of independent-samples *t*-tests, gender (i.e., male and female groups) was the independent variable, while Social Adjustment (SACQ) and Institutional Attachment (SACQ) T-scores, Belongingness (PSSM), Course Self-Efficacy (CSEI), and Social Self-Efficacy (CSEI) scores were the dependent variables. The transgender category was excluded from this analysis, as only one participant endorsed this designation.

Due to small sample size, a non-significant result may occur due to insufficient power. Pallant (2013) recommends adjusting the alpha level to .10 or .15 to compensate. This recommendation was considered, and an adjusted alpha level of .10 was adhered to in the interpretation of the statistical results associated with this question.

Exploratory Analyses

Exploratory analyses were conducted to determine the impact the variables of gender, having a Pell grant, minority status, belonging to an academic support program have on Academic Success (GPA) and Persistence. ANOVAs, independent-samples *t*-tests,

crosstabulations, and individual chi-square tests were performed. The transgender category was removed from both Academic Success by gender and Persistence by gender analyses, as only one participant reported as transgender. An adjusted alpha level of .10 was adhered to in the interpretation of the statistical results for the exploratory analyses.

Summary

Chapter III presented the research methods used to conduct this study. Five research questions were identified. These questions explored levels of College Adjustment (Total SACQ), Social Adjustment (SACQ subscale), Institutional Attachment (SACQ subscale), Belongingness (Total PSSM), Course Self-Efficacy (CSEI subscale), Social Self-Efficacy (CSEI subscale) among first-semester, first-generation college students, and differences in these variables according to race and gender. Additional research questions also explored how well Social Adjustment (SACQ subscale), Institutional Attachment (SACQ subscale), Belongingness (Total PSSM), Course Self-Efficacy (CSEI subscale), Social Self-Efficacy (CSEI subscale) predict Academic Success and Persistence to the third semester. Participants of the study included 82 first-generation, first-semester undergraduate students from a large, mid-western, predominately white, public university. Data were collected through an online administration of the study's instrumentation, which included Student Adaptation to College Questionnaire (Baker & Siryk, 1999), the Psychological Sense of School Membership Scale (Goodenow, 1993), and the College Self-Efficacy Inventory (Solberg et al., 1993), as well as a demographic questionnaire created by the researcher. Once data were collected, data were entered into the Statistical Package for Social Sciences (SPSS) program version 25 for analysis, which included descriptive statistics for all study variables, one-way ANOVAs to explore differences in race, independent-samples *t*-tests to explore differences between genders, multiple regression to predict end of semester cumulative

GPA, and independent-samples *t*-tests to predict Persistence to the third semester. Additional exploratory analyses (e.g., ANOVAs, independent-samples *t*-tests, and individual chi-square tests) were also conducted to determine the impact the variables of gender, having a Pell grant, racial minority status, belonging to an academic support program, and the effects of Academic Success (GPA) and Persistence. Chapter IV presents the results of these statistical analyses, answering the study's research questions.

CHAPTER IV

RESULTS

Chapter IV presents the statistical findings of this dissertation. In order to identify the potential impacts of Belongingness, Course Self-Efficacy, Social Self-Efficacy and College Adjustment on Academic Success and Persistence among first-semester, first-generation college students, the Psychological Sense of School Membership (PSSM), Student Adaptation to College Questionnaire (SACQ), Course Self-Efficacy (CSEI) and Social Self-Efficacy (CSEI) of the College Self-Efficacy Inventory (CSEI) were administered to first-semester, first-generation students at a large, mid-western, predominately white, public, research intensive university. In the sections below, results of preliminary analyses exploring instrument reliability, power, and statistical assumptions are presented. Descriptive statistics of demographic and persistence risk factor data obtained from the study's demographic questionnaire are presented next. Descriptive statistics and the results of statistical testing including ANOVAs and *t*-tests were used, as they are sensitive to a small sample size (Pallant, 2013), to answer several of the study's research questions. The chapter concludes with a brief summary of the major findings, which are explained in greater detail in Chapter V.

Data Analysis

Descriptive statistics (e.g., frequencies, distributions, mean, median, standard deviation, skewness, and kurtosis) for all study variables are presented in Table 6. Prior to interpreting results from multiple linear regression, several assumptions including outliers, multicollinearity, and independence of residuals were explored (Pallant, 2013). Multicollinearity was examined using Tolerance, Variance Inflation Factor, and condition indexes. Tolerance indicates how much variability in an independent variable is not explained by the other independent variables

in the model. Values of less than .10 indicate that the multiple correlation between other variables may be too high. The variance inflation factor is the inverse of the Tolerance value. VIF values above 10 indicate multicollinearity. Pearson correlation coefficients were also used to determine the presence of multicollinearity. Correlation coefficients for this study ($r = .3$ and $r = .7$) demonstrates a moderate linear relationship, and no multicollinearity concerns.

Due to small sample size, a non-significant result may occur due to insufficient power. Pallant (2013) recommends adjusting the alpha level to .10 or .15 to compensate. This recommendation was considered, and an adjusted alpha level of $< .10$ was used for statistical interpretation in this study to compensate for a small sample size.

Reliability

Table 6 presents the intercorrelations and descriptive statistics for all study variables. As shown in Table 6, adequate internal consistency was obtained for the full scales of the instruments used in this study according to Pallant's (2013) recommendations that Cronbach's alpha coefficient be above .70; however, Cronbach's alphas for College Adjustment (SACQ) subscales were lower than those of the full scale scores: Academic Adjustment ($\alpha = .66$) (SACQ subscale), Social Adjustment ($\alpha = .78$) (SACQ subscale), Personal Emotional Adjustment ($\alpha = .33$) (SACQ subscale), Institutional Attachment ($\alpha = .74$) (SACQ subscale) (Baker & Siryk, 1999). The two Cronbach's alphas for Academic Adjustment ($\alpha = .66$) and Personal Emotional Adjustment ($\alpha = .33$) (SACQ subscale) are below .70 and were not included in any subscale analyses. As detailed in the SACQ manual (Baker & Siryk, 1999), nine items (i.e., items 1, 4, 16, 26, 36, 42, 56, 57, and 65) contribute to the lower alpha levels of the two SACQ subscales of Academic Adjustment and Social Adjustment. This also explains why although the full scale SACQ consists of 67 items, items on the SACQ subscales total to 74.

Table 6

Correlations and Descriptive Statistics for College Adjustment, Belongingness, Self-Efficacy and Academic Success

Measure	1	2	3	4	5	6	7	8	9	10	11
1 College Adjustment	—										
2 Academic Adjustment	.76***	—									
3 Social Adjustment	.87***	.44***	—								
4 P-E Adjustment	.49***	.47***	.28**	—							
5 Institution Attachment	.67***	.43***	.57***	0.13	—						
6 Belongingness	-.38***	-.37***	-.42***	-.41***	-0.08	—					
7 Course Self-Efficacy	-0.19*	-.40***	-0.13	-0.19*	0.02	.49***	—				
8 Social Self-Efficacy	-.23**	-.33***	-0.17	-.23***	0.00	.47***	.53***	—			
9 ACT Score	-0.20*	-0.13	-0.16	-.28**	-0.08	0.13	0.05	-0.02	—		
10 1st Sem. GPA	0.08	-0.11	0.15	-0.11	0.19*	-0.03	0.15	0.03	0.21*	—	
11 2nd Sem. GPA	0.02	-0.11	0.07	-0.13	0.13	-0.07	0.04	-0.09	.25**	.91***	—
Mean	44.76	39.99	39.88	40.61	41.85	3.78	43.00	49.36	20.21	3.05	2.88
Standard Deviation	7.60	6.28	6.69	4.96	6.94	0.58	8.31	13.44	3.32	0.87	0.95
Median	45.00	39.00	39.00	41.00	40.00	3.78	42.75	51.75	20.00	3.32	3.14
Minimum	33.00	26.00	28.00	29.00	31.00	2.44	22.5	15.75	15.00	0.27	0.00
Maximum	62.00	54.00	56.00	52.00	72.00	4.89	63.00	73.13	27.00	4.00	4.00
Range	29.00	28.00	28.00	23.00	41.00	2.44	40.50	57.38	12.00	3.73	4.00
Alpha	0.83	0.66	0.78	0.33	0.74	0.90	0.76	0.80	—	—	—
Skewness	0.40	0.16	0.33	-0.14	1.14	0.01	0.23	-0.41	0.47	-1.21	-1.13
Kurtosis	-0.52	-0.48	-0.35	-0.31	3.02	-0.85	0.03	-0.51	-0.69	0.92	0.97
N	82	82	82	82	82	82	82	82	82	82	74

*Correlation is significant at the .10 level (2-tailed). **Correlation is significant at the .05 level (2-tailed). ***Correlation is significant at the .01 level (2-tailed). Possible SACQ Total and Subscale T-Scores: 25 – 75. T-score ranges: ≤ 25 to 39 = Below Average; 40 to 59 = Average; and 60 to ≥ 75 = Above Average.

Possible Belongingness (PSSM) scores ranges from 1 = *not at all true* to 5 = *completely true*.

Possible Course Self-Efficacy Scores range from 0 – 63 and Social Self-Efficacy Scores range from 0 – 81.

Note. Recommended Cronbach's alpha is .70 and above (Pallant, 2007). SACQ subscales of Academic Adjustment ($\alpha = .66$) and P-E Adjustment ($\alpha = .33$) share 9 items. Due to the lower alpha levels, both subscales were not used individually in any statistical analysis.

Although the intercorrelations in Table 6 between the variables of Belongingness, College Adjustment, Course Self-Efficacy, and Social Self-Efficacy are high, multicollinearity was tested and was not present. Table 6 also demonstrates low correlations for Belongingness, College Adjustment, Course Self-Efficacy, and Social Self-Efficacy with the variable of Student Success (GPA). The sample was also examined for skewness (i.e., skewness = +1.0 or – 1.0) and kurtosis (i.e., kurtosis = +3.0 or -3.0), the College Adjustment subscale of Institutional Attachment demonstrated both skewness and kurtosis (i.e., skewness = 1.14, and kurtosis = 3.02). These results are explained by the distribution of this sample (i.e., the sample contained more females than males, and females in this sample had higher Institutional Attachment scores, demonstrating the females in this study were more attached).

Demographic and Persistence Risk Factor Data

A 26-item demographic questionnaire was used to gather three types of data from participants: (1) demographic information (e.g., gender, race, major, etc.); (2) exclusion criteria (e.g., year in college, parent/guardian 4-year college degree status, etc.); and (3) college persistence factors that are especially risky for first-generation college students (e.g., working more than 10 hours weekly, no declared major, English as a second language, lack of confidence that they will finish 4-year college, etc.) (e.g., Berger & Braxton, 1998; Horton, 2015; Ishitani, 2016).

Demographic data from the survey are summarized in Table 7. This table depicts how participants compared demographically to the overall population of the university in terms of gender, race, Pell Grant, which are critical to this study. Information for the comparisons was obtained from the university's Office of Institutional Research. Females were overrepresented in

the study sample ($n = 62$, 75.6%) when compared to the proportion of female students among first-year students at the university ($n = 1,939$, 48.1%). Students who identified themselves as African American/Black ($n = 18$, 22.0%) were also overrepresented in the sample when compared to the proportion of African American/Black students among the first-year students of the university ($n = 656$, 16.3%). Additionally, Pell Grant recipients who participated in this study were overrepresented in the sample ($n = 59$, 72.0%) when compared to the proportion of Pell Grant recipients at the university ($n = 1,122$, 27.8%). Of note, subsidized loan recipients who participated in this study were also overrepresented in the sample ($n = 55$, 67.1%) when compared to the proportion of subsidized loan recipients at the university ($n = 1,533$, 38.0%). This under- and over-representation potentially influenced the outcomes of this study.

Table 7 also summarizes participants by college. Overall, 92.7% of the first-semester, first-generation college students in this sample had a declared major. The largest group of participants in this sample declared a major in the college of Health and Human Services ($n = 30$, 36.6%) which is substantially greater when compared to all first-year students at the university ($n = 461$, 11.4%). The next largest group of participants in this sample declared a major in the college of Business ($n = 18$, 22.0%) which is slightly greater when compared to all first-year students at the university ($n = 768$, 19.0%). Overall, approximately 70.5% of the participants in this sample were confident they had chosen the right major.

Table 7

First-Generation Sample and Total University First-Year Student Demographic Characteristics

Personal Characteristics	Sample (N = 82)	University (N = 4,034)
Gender		
Male	19 (23.2%)	2,095 (51.9%)
Female	62 (75.6%)	1,939 (48.1%)
Transgender	1 (1.2%)	-----
Race/ethnic group		
African American/Black	18 (22.0%)	656 (16.3%)
Asian/Pacific Islander	2 (2.4%)	75 (1.9%)
Caucasian/White	53 (64.6%)	2,679 (66.4%)
Hispanic/Non-White	8 (8.0%)	269 (6.7%)
Other	1 (1.2%)	355(8.8%)
Grants/loans		
Pell Grant	59 (72.0%)	1,122 (27.8%)
Subsidized loan	55 (67.1%)	1,533 (38.0%)
By College		
Engineering	3 (3.7%)	609 (15.1%)
Business	18 (22%)	768 (19.0%)
Education	8 (9.8%)	372 (9.2%)
Fine Arts	3 (3.7%)	229 (5.7%)
Arts & Sciences	8 (9.8%)	801 (19.9%)
Health & Human Services	30 (36.6%)	461 (11.4%)
Other	12 (14.6%)	584 (14.5%)

Table 8 summarizes the exclusionary criteria and persistence risk factors endorsed by participants. Regarding parental support, participants reported that 87.8% of their mothers supported (i.e., endorsed) their decision to pursue a bachelor's degree, while 84.1% of their fathers supported (i.e., endorsed) their decision to pursue a bachelor's degree. Within this study, 37.8% of the participants also participated in one of the on-campus federally funded TRIO programs (e.g., Upward Bound, TRIO Student Success Program, FESP-Future Educators Success Program, Educational Opportunity Center).

Table 8

Study Exclusion Criteria and Participant Persistence Risk Factor Data

Variable	<i>f</i>	%
Mother/female guardian supports bachelor's degree		
Yes	72	87.8
No	5	6.1
Does not apply	5	6.1
Mother/female guardian has a bachelor's degree		
Yes	0	0.0
No	81	98.8
Does not apply	1	1.2
Father/male guardian supports a bachelor's degree		
Yes	69	84.1
No	4	4.9
Does not apply	9	11.0
Father/male guardian has a bachelor's degree		
Yes	0	0.0
No	73	89.0
Does not apply	9	11.0
WMU Welcome Week		
Participated in WMU Welcome Week	71	86.6
Did not participate in WMU Welcome Week	11	13.4
Upward Bound		
Participated in Upward Bound	3	3.7
Did not participate in Upward Bound	79	96.3
Educational Opportunity Center		
Participated in Educational Opportunity Center	1	1.2
Did not participate in Educational Opportunity Center	81	98.8
Trio Student Success Program		
Participated in Trio Student Success Program	25	30.5
Did not participate in Trio Student Success Program	57	69.5
FESP – Future Educator Success Program		
Participated in FESP	2	2.4
Did not participate in FESP	80	97.6
GEAR UP		
Participated in GEAR UP	1	1.2
Did not participate in GEAR UP	81	98.8
MLK Program		
Participated in the MLK Program	4	4.9
Did not participate in the MLK Program	78	95.1
Mentoring for Success		
Participated in Mentoring for Success	9	11.0
Did not participate in Mentoring for Success	73	89.0
Grants/loans received, mark applicable		
Pell Grant	59	72.0
Subsidized loan	55	67.1
Unsubsidized loan	58	70.7
Kalamazoo Promise	1	1.2
Tribal scholarship	0	0.0
Other scholarship	43	52.4

Table 9 presents how confident participants in this study were that they would finish college and had selected the right major. In this sample, 91.5% ($n = 75$) of the participants were confident they would finish college. A large percentage of participants, 70.5% ($n = 58$), also expressed confidence that they had selected the right major.

Table 9

Participant Confidence in Persistence to Graduation and Selection of Major

Statement	Rating						
	1	2	3	4	5	6	7
I will finish college.	0 (0.0%)	0 (0.0%)	2 (2.4%)	5 (6.1%)	16 (19.5%)	15 (18.3%)	44 (53.7%)
I have selected the right major for me.	5 (6.1%)	1 (1.2%)	3 (3.7%)	15 (18.3%)	22 (26.6%)	13 (15.9%)	23 (28.0%)

Note. Scale ranges from 1 = *Lack Confidence* to 7 = *Extreme Confidence*.

Table 10 reports participants' perceptions of their most difficult college course by subject area, and the class size of their most difficult course. As shown, the largest group of students identified Social and Behavioral Sciences ($n = 23$, 28.0%) as their most difficult college course by subject area. In terms of class size, classes with larger numbers of students, 50 or more, were identified as most difficult by the largest group of participants ($n = 29$, 35.4%).

Table 10

Participant Ratings of Most Difficult College Course by Subject Area and Class Size

Most Difficult College Course by Subject Area	<i>f</i>	%
College-Level Writing	7	8.5
College-Level Mathematics	17	20.7
Fine Arts	2	2.4
Humanities	1	1.2
United States: Cultures and Issues	0	0.0
Other Cultures and Civilizations	3	3.7
Social and Behavioral Sciences	23	28.0
Natural Sciences with Lab	10	12.2
Natural Sciences and Technology	1	1.2
Health and Well-Being	10	12.2
Other	8	9.8
Class Size of Most Difficult College Course		
1-15 students	13	15.9
15-30 students	22	26.8
30-50 students	18	22.0
50+ students	29	35.4

Table 11 provides information about the frequency of various instructional strategies used in the participants' classes. As shown, participants indicated that their instructors used a variety of teaching methods. For example, 48 participants (58.5%) indicated that their instructors used lecture in every class. Twenty-seven participants (32.9%) reported that their instructors also used discussion in every class. Participants also reported that their instructors never used strategies such as group work ($n = 34$, 41.5%), essay exams ($n = 42$, 51.2%), and writing assignments outside of class ($n = 26$, 31.7%).

Table 11

Frequency of Instructional Strategies Used in Class

Strategy	Rating						
	1	2	3	4	5	6	7
Lecture ^a	5 (6.1%)	4 (4.9%)	7 (8.5%)	11 (13.4%)	3 (3.7%)	4 (4.9%)	48 (58.5%)
Discussion ^a	8 (9.8%)	10 (12.2%)	12 (14.6%)	11 (13.4%)	9 (11.0%)	5 (6.1%)	27 (32.9%)
Group work ^a	34 (41.5%)	10 (12.2%)	12 (14.6%)	6 (7.3%)	8 (9.8%)	3 (3.7%)	6 (11.0%)
Multiple-choice tests ^b	19 (23.2%)	4 (4.9%)	7 (8.5%)	9 (11.0%)	4 (4.9%)	2 (2.4%)	37 (45.1%)
Essay exams ^b	42 (51.2%)	10 (12.2%)	7 (8.5%)	2 (2.4%)	3 (3.7%)	4 (4.9%)	14 (17.1%)
Short answer exams ^b	34 (41.5%)	9 (11.0%)	9 (11.0%)	7 (8.5%)	8 (9.8%)	3 (3.7%)	12 (14.6%)
Outside writing assignments ^c	26 (31.7%)	7 (8.5%)	6 (7.3%)	15 (18.3%)	14 (17.1%)	3 (3.7%)	11 (13.4%)

Note. ^a Scale ranges from 1 = *Never* to 7 = *Every Class*. ^b Scale ranges from 1 = *Never* to 7 = *Every Exam*.

^c Scale ranges from 1 = *Never* to 7 = *Every Assignment*.

Research Question 1

To what extent do first-semester, first-generation college students experience college adjustment as measured by the Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1999)?

As mentioned in Chapter III, College Adjustment (SACQ) consists of four subscales: Academic Adjustment (Academic Adjustment), Social Adjustment (Social Adjustment), Personal-Emotional Adjustment (P-E Adjustment), and Institutional Attachment (Institution

Attachment). The full scale SACQ is denoted as (College Adjustment). Scores on the SACQ were converted to average T-scores to allow for easier comparisons across subscales. Baker and Siryk (1999) provide a conversion table to convert raw scores for men and women, resulting in the following T-score ranges: ≤ 25 to 39 = Below Average; 40 to 59 = Average; and 60 to ≥ 75 = Above Average. To better understand what an average T-score represents, a T-score of 60 is one standard deviation above the mean, and a T-Score of 40 is one standard deviation below the mean, and account for two-thirds of the distribution. Approximately 16 percent of T-scores are below 40 and approximately 16 percent of T-scores are above 60. An average T-score below 40 for students are within the low range and represents the number of individuals in 100 who scored at or below the students in this study (Baker & Siryk, 1999). Descriptive statistics including minimum and maximum scores, medians, means, and standard deviations for each subscale on the SACQ appear in Table 6 and were used to answer research question 1.

As shown in Table 6, the participants in this study generally had average scores on the SACQ and its subscales. The mean full scale SACQ, denoted as College Adjustment, was 44.76 ($SD = 7.60$), followed by Institutional Attachment ($M = 41.85$, $SD = 6.94$), P-E Adjustment ($M = 40.61$, $SD = 4.96$), Academic Adjustment ($M = 39.99$, $SD = 6.28$), and Social Adjustment ($M = 39.88$, $SD = 6.69$), all of which fell within or just below the Average range of scores.

Research Question 2

Is there a statistically significant difference in Social Adjustment, Institutional Attachment, and Belongingness according to race and gender for first-semester, first-generation college students?

Due to the study's small sample size, three separate one-way analysis of variance (ANOVA) and *t*-test procedures for race and gender were used to answer research question 2.

The results of these analyses are presented in the sections below. Levene's test for equality of variances was met for Social Adjustment ($p = .70$), Institutional Attachment ($p = .51$), and Belongingness ($p = .75$) for race, and was also met for Social Adjustment ($p = .39$), Institutional Attachment ($p = .56$), and Belongingness ($p = .22$) for gender. Tables 12 and 13 summarize the ANOVA results, means, and standard deviations for race. Table 14 summarizes the t -test results, means, and standard deviations for gender. Effect size was determined using eta squared. Guidelines for interpreting eta squared are those proposed by Cohen (1988), with .01 representing a small effect, .06 representing a moderate effect, and .14 representing a large effect.

Race

Social Adjustment. A one-way ANOVA was conducted to explore differences in Social Adjustment across racial groups. No statistically significant difference was found ($F(3, 77) = 1.38, p = .26, \eta^2 = .05$, observed power = .35) among African American/Black ($M = 40.50, SD = 6.71$), Asian/Pacific Islander ($M = 49.00, SD = 4.24$), Caucasian/White ($M = 39.64, SD = 6.34$), and Hispanic/Non-White ($M = 39.25, SD = 7.81$) first-semester, first-generation college students.

Institutional Attachment. A one-way ANOVA was conducted to explore differences in Institutional Attachment across racial groups. No statistically significant difference was found ($F(3, 77) = 1.09, p = .36, \eta^2 = .04$, observed power = .28) among African American/Black ($M = 40.73, SD = 6.30$), Asian/Pacific Islander ($M = 50.00, SD = 1.41$), Caucasian/White ($M = 41.92, SD = 7.27$), and Hispanic/Non-White ($M = 42.38, SD = 6.57$) first-semester, first-generation college students.

Belongingness. A one-way ANOVA was conducted to explore differences in Belongingness across racial groups. No statistically significant difference was found ($F(3, 77) =$

.46, $p = .71$, $\eta^2 = .00$, observed power = .22) among African American/Black ($M = 3.65$, $SD = .54$), Asian/Pacific Islander ($M = 3.83$, $SD = .39$), Caucasian/White ($M = 3.79$, $SD = .60$), and Hispanic/Non-White ($M = 3.91$, $SD = .58$) first-semester, first-generation college students.

Table 12

ANOVA for the Effects of Race on Social Adjustment, Institutional Attachment, and Belongingness

Variable and Source	SS	MS	F (3, 77)	p	η^2
Social Adjustment					
Between	177.76	59.25	1.38	.26	.05
Within	3,304.19	42.91			
Institutional Attachment					
Between	158.03	52.68	1.09	.36	.04
Within	3,731.18	48.46			
Belongingness					
Between	.46	.15	.46	.71	.00
Within	26.27	.34			

Table 13

Means and Standard Deviations by Race for Social Adjustment, Institutional Attachment, and Belongingness

	African Am. N = 18		Asian N = 2		Caucasian N = 53		Hispanic N = 8	
Variable	M	SD	M	SD	M	SD	M	SD
Social Adjustment	40.50	6.72	49.00	4.25	39.64	6.34	39.25	7.82
Institutional Attachment	40.72	6.30	50.00	1.41	41.93	7.27	42.38	6.57
Belongingness	3.65	.54	3.83	.39	3.79	.60	3.91	.58

Note. Possible Social Adjustment and Institutional Attachment scores range from 25 – 75. Belongingness ranges from 1 = *not at all true* to 5 = *completely true*.

Gender

Social Adjustment. An independent-samples t -test was conducted to compare the Social Adjustment scores by gender. There was no statistically significant difference in Social

Adjustment scores between males ($M = 39.32$, $SD = 6.27$) and females ($M = 39.87$, $SD = 6.76$; $t(79) = -.32$, $p = .75$, two-tailed, $\eta^2 = .00$, observed power = .06).

Institutional Attachment. An independent-samples t -test was conducted to compare the Institutional Attachment scores by gender. There was a statistically significant difference in Institutional Attachment scores between males ($M = 38.95$, $SD = 6.59$) and females ($M = 42.58$, $SD = 6.81$; $t(79) = -2.05$, $p = .04$, two-tailed, $\eta^2 = .05$, observed power = .53). The results for Institutional Attachment demonstrate that it is unlikely the difference is due to chance. Females appear to be more attached to the institution than male students.

Belongingness. An independent-samples t -test was conducted to compare the Belongingness scores by gender. There was no statistically significant difference in Belongingness scores between males ($M = 3.64$, $SD = .50$) and females ($M = 3.84$, $SD = .60$; $t(79) = -1.31$, $p = .19$, two-tailed, $\eta^2 = .02$, observed power = .26).

Table 14

Means and Standard Deviations by Gender for Social Adjustment, Institutional Attachment, and Belongingness

Variable	Male ($N = 19$)		Female ($N = 62$)		$t(79)$	p	η^2
	M	SD	M	SD			
Social Adjustment	39.32	6.27	39.87	6.76	-.32	.75	.00
Institutional Attachment	38.95	6.59	42.58	6.81	-2.05	.04	.05
Belongingness	3.64	.50	3.84	.60	-1.31	.19	.02

Note. Possible Social Adjustment and Institutional Attachment scores range from 25 – 75. Belongingness ranges from 1 = *not at all true* to 5 = *completely true*.

Research Question 3

To what extent do first-semester, first-generation college students experience Belongingness, as measured by the Psychological Sense of School Membership (PSSM) (Goodenow, 1993)?

The Psychological Sense of School Membership (PSSM), an 18-item survey designed to quantify students' sense of belongingness to their educational institution (Goodenow, 1993), is most often used with results being presented as a single score (Ye & Wallace, 2014). In this study, participants responded to the PSSM so that the researcher could determine the extent to which first-generation college students experience school belongingness. The means, standard deviations, range, minimum, and maximum scores for the PSSM appear in Table 6. The PSSM scores for this study group resulted in a range of responses (2 to 5). The sample, on average, scored 3.78 ($SD = .58$) on a 5-point Likert scale. Goodenow (1993) determined that the PSSM scale midpoint, 3.0, was the "tipping point" for students' sense of belongingness, or sense of commitment to "education and social integration." Scores below 3.0 indicate students are at risk for disengaging from their educational experience because they do not believe the setting is a good fit for them. Therefore, the above average PSSM mean on the sense of Belongingness for this group of first-year, first-semester, first-generation students suggest they are likely to engage with their environment and believe their institution is a good fit for them.

Research Question 4

Do College Adjustment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy predict first-semester, first-generation college students' Academic Success (GPA)?

A multiple linear regression was used to assess the ability of the independent variables of College Adjustment (SACQ), Belongingness (PSSM), Course Self-Efficacy (CSEI), and Social

Self-Efficacy (CSEI) to predict the dependent variable of Academic Success (GPA). First semester GPA was transformed prior to analysis by using the square root to reduce skewness. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity (Pallant, 2013). Box plots revealed case number 76 was non-normally distributed and greater than three standard deviations away from the mean and as a result case number 76 was removed (Tabachnick & Fidell, 2001).

Table 15 summarizes the results of the regression analysis. The analysis shows Course Self-Efficacy, Social Self-Efficacy, College Adjustment, and Belongingness did not significantly predict first semester GPA for this sample of first-generation college students ($\beta = .06$, $t(76) = .45$, n.s.); $\beta = -.10$, $t(76) = -.69$, n.s.); ($\beta = .20$, $t(76) = 1.42$, n.s.); ($\beta = -.04$, $t(76) = -.26$, n.s.). Using the enter method, it was found that College Adjustment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy did not statistically significantly explain the amount of variance in first semester GPA for this sample of first-generation college students ($F(4, 76) = .61$, n.s., $R^2 = .03$, $\text{adjusted } R^2 = -.02$, observed power = .20).

Table 15

Regression Analysis Summary for Student Variables Predicting Academic Success

Variable	B	SE B	β	t	p
1 st sem. Square Root GPA	1.55	0.38		4.07	0.00
College Adjustment (SACQ)	0.00	0.01	0.06	0.45	0.65
Belongingness (PSSM)	-0.05	0.07	-0.10	-0.69	0.49
Course Self-Efficacy (CSEI)	0.01	0.01	0.20	1.42	0.16
Social Self-Efficacy (CSEI)	.00	0.00	-.04	-.26	0.79

Note. $R^2 = .01$ ($N = 81$, $p < .01$).

Research Question 5

Is there a statistically significant difference in Social Adjustment, Institutional Attachment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy between first-semester, first-generation college students who persist to third semester and those who do not?

Due to the study's small sample size, five separate independent-samples *t*-tests were used to answer Research Question 5. The results of these analyses are presented in the section below. Levene's test for equality of variances was met for Social Adjustment ($p = .48$), Institutional Attachment ($p = .35$), Belongingness ($p = .14$), Course Self-Efficacy ($p = .14$), and Social Self-Efficacy ($p = .58$). Table 16 summarizes the *t*-test results, means, and standard deviations. Effect size was determined using eta squared. Guidelines for interpreting eta squared were those proposed by Cohen (1988), with .01 representing a small effect, .06 representing a moderate effect, and .14 representing a large effect.

Social Adjustment

An independent-samples *t*-test was conducted to compare the Social Adjustment scores for students who persisted to third semester and those who did not. There was no statistically significant difference in scores for students who persisted to third semester ($M = 39.73$, $SD = 6.88$) and those who did not ($M = 40.19$, $SD = 6.39$; $t(80) = .29$, $p = .77$, two-tailed $\eta^2 = .00$, observed power = .06).

Institutional Attachment

An independent-samples *t*-test was conducted to compare the Institutional Attachment scores for students who persisted to third semester and those who did not. There was no statistically significant difference in scores for students who persisted to third semester ($M =$

42.23, $SD = 7.45$) and those who did not ($M = 41.04$, $SD = 5.76$; $t(80) = -.72$, $p = .47$, two-tailed, $\eta^2 = .01$, observed power = .11).

Belongingness

An independent-samples t -test was conducted to compare the Belongingness scores for students who persisted to third semester and those who did not. There was no statistically significant difference in scores for students who persisted to third semester ($M = 3.79$, $SD = .55$) and those who did not ($M = 3.77$, $SD = .65$; $t(80) = -.13$, $p = .90$, two-tailed, $\eta^2 = .00$, observed power = .05).

Course Self-Efficacy

An independent-samples t -test was conducted to compare the Course Self-Efficacy scores for students who persisted to third semester and those who did not. There was no statistically significant difference in scores for students who persisted to third semester ($M = 42.63$, $SD = 9.00$) and those who did not ($M = 43.79$, $SD = 6.80$; $t(80) = .59$, $p = .56$, two-tailed, $\eta^2 = .00$, observed power = .09).

Social Self-Efficacy

An independent-samples t -test was conducted to compare the Social Self-Efficacy scores for students who persisted to third semester and those who did not. There was no statistically significant difference in scores for students who persisted to third semester ($M = 48.90$, $SD = 12.80$) and those who did not ($M = 50.37$, $SD = 14.94$; $t(80) = .46$, $p = .65$, two-tailed, $\eta^2 = .00$, observed power = .07).

Table 16

Means and Standard Deviations by Persistence for Social Adjustment, Institutional Attachment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy

Variable	Persisted (<i>N</i> = 56)		Did Not Persist (<i>N</i> = 26)		<i>t</i> (80)	<i>p</i>	η^2
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Social Adjustment	39.73	6.88	40.19	6.39	.29	.77	.00
Institutional Attachment	42.23	7.45	41.04	5.76	-.72	.47	.01
Belongingness	3.79	.55	3.77	.65	-.13	.90	.00
Course Self-Efficacy	42.63	9.00	43.79	6.80	.59	.56	.00
Social Self-Efficacy	48.90	12.80	50.37	14.94	.46	.65	.00

Note. Possible Social Adjustment and Institutional Attachment scores range from 25 – 75. Belongingness ranges from 1 = *not at all true* to 5 = *completely true*. Possible Course Self-Efficacy Scores range from 0 – 63 and Social Self-Efficacy Scores range from 0 – 81.

Exploratory Analyses

Exploratory analyses were conducted to determine if there was a statistically difference between first and second semester Academic Success (GPA), as well as the impact of gender, having a Pell grant, minority status, and belonging to an academic support program on Academic Success (GPA) and Persistence. Independent-samples *t*-tests and individual chi-square tests were performed. The transgender category was removed from both Academic Success by gender and Persistence by gender analyses, as only one participant reported as transgender.

Differences Between First and Second Semester GPA

A paired-samples *t*-test was conducted to evaluate differences between first and second semester GPA within the entire sample. There was a statistically significant decrease from first ($M = 3.12$, $SD = .83$) to second ($M = 2.88$, $SD = .95$) semester GPA ($t(73) = 5.32$, $p < .01$, two-tailed, $\eta^2 = .28$). The mean decrease in GPA was .24 with a 95% confidence interval ranging from .15 to .33.

Gender

First semester GPA. An independent-samples *t*-test was conducted to compare first semester GPA for male and female students. There was no statistically significant difference in GPA for male students ($M = 2.88$, $SD = .84$) and female students ($M = 3.10$, $SD = .89$; $t(79) = -.97$, $p = .34$, two-tailed, $\eta^2 = .02$).

Second semester GPA. An independent-samples *t*-test was conducted to compare second semester GPA for male and female students. There was no statistically significant difference in GPA for male students ($M = 2.75$, $SD = .85$) and female students ($M = 2.91$, $SD = .99$; $t(71) = -.61$, $p = .54$, two-tailed, $\eta^2 = .01$). Table 17 summarizes the results of the two independent-samples *t*-tests.

Table 17

Means and Standard Deviations by Gender for 1st and 2nd Semester GPA

Variable	Male		Female		<i>t</i>	<i>p</i>	η^2
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
1 st semester GPA ^a	2.88	.84	3.10	.89	-.97 ^c	.34	.02
2 nd semester GPA ^b	2.75	.85	2.91	.99	-.61 ^d	.54	.01

Note. ^a 1st semester GPA Male ($N = 19$), Female ($N = 62$); ^b 2nd semester GPA Male ($N = 17$), Female ($N = 56$); ^c $t(79)$; ^d $t(71)$.

Pell Grant

First semester GPA. An independent-samples *t*-test was conducted to compare first semester GPA for students who had a Pell Grant and those who did not. There was no statistically significant difference in GPA for students who had a Pell Grant ($M = 3.00$, $SD = .93$) and those who did not ($M = 3.19$, $SD = .69$; $t(80) = -.92$, $p = .36$, two-tailed, $\eta^2 = .02$).

Second semester GPA. An independent-samples *t*-test was conducted to compare second semester GPA for students who had a Pell Grant and those who did not. There was no

statistically significant difference in GPA for students who had a Pell Grant ($M = 2.85$, $SD = 1.01$) and those who did not ($M = 2.94$, $SD = .39$; $t(72) = -.61$, $p = .70$, two-tailed, $\eta^2 = .01$).

Table 18 summarizes the results of the two independent-samples t -tests.

Table 18

Means and Standard Deviations by Pell Grant for 1st and 2nd Semester GPA

Variable	Pell Grant		Did Not Have a Pell Grant		t	p	η^2
	M	SD	M	SD			
1 st semester GPA ^a	3.00	.93	3.19	.69	.92 ^c	.36	.02
2 nd semester GPA ^b	2.85	1.01	2.94	.39	-.61 ^d	.70	.01

Note. ^a 1st semester GPA Pell Grant ($N = 59$), Did Not Have a Pell Grant ($N = 23$); ^b 2nd semester GPA Pell Grant ($N = 52$), Did Not Have a Pell Grant ($N = 22$); ^c $t(80)$; ^d $t(72)$.

Race

First semester GPA. An independent-samples t -test was conducted to compare first semester GPA for students who identified as a racial minority and those who did not. There was no statistically significant difference in GPA for students who identified as a racial minority ($M = 2.84$, $SD = 1.01$) and those who did not ($M = 3.17$, $SD = .78$; $t(80) = 1.63$, $p = .11$, two-tailed, $\eta^2 = .11$).

Second semester GPA. An independent-samples t -test was conducted to compare second semester GPA for students who identified as a racial minority and those who did not. There was no statistically significant difference in GPA for students who identified as a racial minority ($M = 2.69$, $SD = 1.15$) and those who did not ($M = 2.98$, $SD = .81$; $t(72) = 1.27$, $p = .21$, two-tailed, $\eta^2 = .08$). Table 19 summarizes the results of the two independent-samples t -tests.

Table 19

Means and Standard Deviations by Racial Minority Status for 1st and 2nd Semester GPA

Variable	Racial Minority		Not a Racial Minority		<i>t</i>	<i>p</i>	η^2
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
1 st semester GPA ^a	2.84	1.01	3.17	.78	1.63 ^c	.11	.11
2 nd semester GPA ^b	2.69	1.15	2.98	.81	1.27 ^d	.21	.08

Note. ^a 1st semester GPA Racial Minority (*N* = 29), Not a Racial Minority (*N* = 53); ^b 2nd semester GPA Racial Minority (*N* = 26), Not a Racial Minority (*N* = 48); ^c *t* (80); ^d *t* (72).

Persistence and GPA

First semester GPA. An independent-samples *t*-test was conducted to compare first semester GPA for students who persisted to third semester and those who did not. Levene's test for equality of variances was not met between those who persisted and those who did not ($p < .01$); therefore, the alternative *t*-value, which compensates for unequal variances was utilized. There was a statistically significant difference in GPA for students who persisted to third semester ($M = 3.31$, $SD = .63$) and those who did not ($M = 2.49$, $SD = .1.05$; $t(33.83) = -3.73$, $p < .01$, two-tailed $\eta^2 = .15$).

Second semester GPA. An independent-samples *t*-test was conducted to compare second semester GPA for students who persisted to third semester and those who did not. Levene's test for equality of variances was not met between those who persisted and those who did not ($p < .01$); therefore, the alternative *t*-value, which compensates for unequal variances was utilized. There was a statistically significant difference in Academic Success (GPA) for students who persisted to third semester ($M = 3.20$, $SD = .62$) and those who did not ($M = 2.07$, $SD = .1.16$; $t(24.62) = -4.20$, $p < .01$, two-tailed $\eta^2 = .20$). Table 20 summarizes the results of the two independent-samples *t*-tests.

Table 20

Means and Standard Deviations by Persistence for 1st and 2nd Semester GPA

Variable	Persisted		Did Not Persist		<i>t</i>	<i>p</i>	η^2
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
1 st semester GPA ^a	3.31	.63	2.49	1.05	3.73 ^c	.01	.15
2 nd semester GPA ^b	3.20	.62	2.07	1.16	-4.20 ^d	.01	.20

Note. ^a 1st semester GPA Persisted (*N* = 29), Did Not Persist (*N* = 53); ^b 2nd semester GPA Persisted (*N* = 26), Did Not Persist (*N* = 48); ^c *t* (80); ^d *t* (72).

Academic Support Program Participation

College Adjustment. An independent-samples *t*-test was conducted to compare the College Adjustment scores for students who participated in an academic support program and those who did not. There was no statistically significant difference in scores for students who participated (*M* = 43.56, *SD* = 7.95) and those who did not (*M* = 45.60, *SD* = 7.31; *t* (80) = 1.21, *p* = .23, two-tailed, η^2 = .11).

Belongingness. An independent-samples *t*-test was conducted to compare the Belongingness scores for students who participated in an academic support program and those who did not. There was no statistically significant difference in scores for students who participated (*M* = 3.87, *SD* = .68) and those who did not (*M* = 3.72, *SD* = .50; *t* (80) = -1.13, *p* = .26, two-tailed, η^2 = .10).

Course Self-Efficacy. An independent-samples *t*-test was conducted to compare the Course Self-Efficacy scores for students who participated in an academic support program and those who did not. There was no statistically significant difference in scores for students who participated (*M* = 42.85, *SD* = 8.44) and those who did not (*M* = 43.10, *SD* = 8.31; *t* (80) = .14, *p* = .89, two-tailed, η^2 = .00).

Social Self-Efficacy. An independent-samples t -test was conducted to compare the Social Self-Efficacy scores for students who participated in an academic support program and those who did not. There was no statistically significant difference in scores for students who participated ($M = 48.74$, $SD = 13.49$) and those who did not ($M = 49.81$, $SD = 13.52$; $t(80) = .35$, $p = .73$, two-tailed, $\eta^2 = .01$).

First semester GPA. An independent-samples t -test was conducted to compare the first semester GPA for students who participated in an academic support program and those who did not. There was no statistically significant difference in GPA for students who participated ($M = 3.06$, $SD = .89$) and those who did not ($M = 3.05$, $SD = .87$; $t(80) = -.06$, $p = .95$, two-tailed, $\eta^2 = .00$).

Second semester GPA. An independent-samples t -test was conducted to compare the second semester GPA for students who participated in an academic support program and those who did not. There was no statistically significant difference in GPA for students who participated ($M = 2.81$, $SD = .95$) and those who did not ($M = 2.98$, $SD = .95$; $t(72) = -.76$, $p = .45$, two-tailed, $\eta^2 = .06$). Table 21 summarizes the results of the six independent-samples t -tests.

Table 21

Means and Standard Deviations by Academic Support Program for College Adjustment, Belongingness, Course Self-Efficacy, Social Self-Efficacy for 1st and 2nd Semester GPA

Variable	Program Participant		Not in a Program		<i>t</i>	<i>p</i>	η^2
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
College Adjustment (SACQ) ^a	43.56	7.95	45.60	7.31	1.21 ^c	.23	.11
Belongingness ^a	3.87	.68	3.72	.50	-1.13 ^c	.26	.10
Course Self-Efficacy ^a	42.85	8.44	43.10	8.31	.14 ^c	.89	.00
Social Self-Efficacy ^a	48.74	13.49	49.81	13.52	.35 ^c	.73	.01
1 st semester GPA ^a	3.06	.89	3.05	.87	-.06 ^c	.95	.00
2 nd semester GPA ^b	2.81	.95	2.98	.95	-.76 ^d	.45	.06

Note. ^a 1st semester GPA Program Participant (*N* = 34), Not in a Program (*N* = 48); ^b 2nd semester GPA Program Participant (*N* = 31), Not in a Program (*N* = 43); ^c *t* (80); ^d *t* (72).

Persistence and Group Membership

Gender. To examine if a difference exists with regards to gender and persistence, a chi-square test for independence, with a Yate's continuity correction, indicated no significant association between gender and persistence for this sample, $\chi^2(1, n = 81) = .13, p = .72$, phi = .07.

Academic support program. To examine if a difference exists with regards to students who belong to an academic support program and persistence, a chi-square test for independence, with Yate's continuity correction, indicated no significant association between belonging to an academic support program and persistence for this sample, $\chi^2(1, n = 82) = .02, p = .89$, phi = .04.

Pell grant. To examine if a difference exists with regards to students who have a Pell grant and persistence, a chi-square test for independence, with a Yate's continuity correction, indicated no significant association between qualifying and receiving a Pell grant and persistence for this sample, $\chi^2(1, n = 82) = .18, p = .68$, phi = -.08.

Race. To examine if a difference exists with regards to identifying as a racial minority and persistence, a chi-square test for independence, with a Yate's continuity correction, indicated no significant association between identifying as a racial minority and persistence for this sample, $\chi^2(1, n = 82) = .42, p = .52, \phi = -.10$.

To summarize, the chi-square test for independence indicated no significant association between gender, or belonging to an academic support program, or having a Pell grant, or minority status, and persistence. Table 22 summarizes the results of the crosstabulations and four chi-square tests.

Table 22

Frequency of Persistence by Gender, Academic Support Program, Pell Grant, and Racial Minority Status

Variable	Persisted		Did Not Persist		$\chi^2(1)$	p
	n	%	n	%		
Gender	56	69.1	25	30.9	.13	.72
Academic Support Program	24	70.6	10	29.4	.29	.77
Pell Grant	39	66.1	20	33.9	.18	.68
Racial Minority	18	62.1	11	37.9	.42	.52

Summary

There was a statistically significant difference in Institutional Attachment scores between males ($M = 38.95, SD = 6.59$) and females ($M = 42.58, SD = 6.81; t(79) = -2.05, p = .04$, two-tailed, $\eta^2 = .05$, observed power = .53). The results for Institutional Attachment demonstrate that it is unlikely the difference is due to chance. Females appear to be more attached to the institution than male students.

Results also indicate participants of this study, in terms of Belongingness as measured by the PSSM, demonstrated an above average Belongingness score for this sample of first-year,

first-semester, first-generation students, suggesting they are likely to engage with their environment and believe their institution is a good fit for them.

However, results for Course Self-Efficacy, Social Self-Efficacy, College Adjustment, and Belongingness did not significantly predict first semester GPA for this sample of first-generation college students ($\beta = .06$, $t(76) = .45$, n.s.); $\beta = -.010$, $t(76) = -.69$, n.s.); ($\beta = .20$, $t(76) = 1.42$, n.s.); ($\beta = -.04$, $t(76) = -.26$, n.s.). Results also found that College Adjustment, Belongingness, Course Self-Efficacy and Social Self-Efficacy did not statistically significantly explain the amount of variance in first semester GPA for this sample of first-generation college students ($F(4, 76) = .61$, n.s., $R^2 = .03$, $\text{adjusted } R^2 = -.02$, observed power = .20). There was also no statistically significant difference in Social Adjustment, Institutional Attachment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy scores for students who persisted to third semester and those who did not.

Exploratory analyzes were conducted to evaluate differences between first and second semester GPA within the entire sample. There was a statistically significant decrease from first ($M = 3.12$, $SD = .83$) to second ($M = 2.88$, $SD = .95$) semester GPA, $t(73) = 5.32$, $p < .01$, two-tailed, $\eta^2 = .28$. The mean decrease in GPA was .24 with a 95% confidence interval ranging from .15 to .33. Additional exploratory analyzes were conducted to determine the impact academic success (GPA) had on persistence. There was a statistically significant difference in 1st semester GPA for students who persisted to third semester ($M = 3.31$, $SD = .63$) and those who did not ($M = 2.49$, $SD = .1.05$; $t(33.83) = -3.73$, $p < .01$, two-tailed $\eta^2 = .15$). There was also a statistically significant difference in 2nd semester GPA for students who persisted to third semester ($M = 3.20$, $SD = .62$) and those who did not ($M = 2.07$, $SD = .1.16$; $t(24.62) = -4.20$, $p < .01$, two-tailed $\eta^2 = .20$).

Exploratory analyses were conducted to determine the impact the variables of gender, having a Pell grant, racial minority status, and belonging to an academic support program have on academic success (GPA) and persistence. There was no statistically significant difference in the groups based on gender, having a Pell grant, racial minority status, or belonging to an academic support program for academic success (GPA) or persistence. Exploratory analyses were also conducted to compare College Adjustment, Belongingness, Course Self-Efficacy and Social Self-Efficacy scores and participation in an academic support program. There were no statistically significant differences in College Adjustment, Belongingness, Course Self-Efficacy and Social Self-Efficacy scores and participation in an academic support program. These results are explored in greater detail in the next chapter.

CHAPTER V

DISCUSSION

The majority of the studies in the literature have examined differences between first-generation college students and continuing-generation college students. The present study, however, sought to expand the knowledge base on first-generation college students by examining variables of adjustment to college for these students within the first semester of the first year. Specifically, this study examined race and gender and the impact of belongingness (PSSM), self-efficacy (CSEI), and adjustment (SACQ) in relation to GPA and persistence for first-semester, first-generation college students. The study attempted to answer: (1) How adjusted are first-generation college students? (2) Is there a difference in Social Adjustment, Institutional Attachment, and Belongingness based on race and gender? (3) Do first-generation college students experience a sense of Belongingness? (4) Do College Adjustment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy affect Academic Success in first-generation college students? (5) Do College Adjustment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy affect Persistence in first-generation college students?

Participants of the study included first-generation, first-semester undergraduate students from a large, public university in the Midwest. Data were collected through an online administration of the College Self-Efficacy Inventory (Solberg et al., 1993), the Psychological Sense of School Membership Scale (Goodenow, 1993), and the Student Adaptation to College Questionnaire (Baker & Siryk, 1999), as well as a demographic questionnaire created by the researcher. Descriptive and inferential statistics were utilized to answer the study's research questions, the results of which were presented in Chapter IV. This chapter discusses these findings within the context of previous research and literature. Accordingly, the section below

offers a discussion of the major findings associated with each of the study's research questions. The remainder of the chapter consists of the following sections: limitations, implications, and directions for future research.

Discussion of Major Findings

As stated above, this dissertation sought to answer five research questions concerning College Adjustment, Belongingness, and academic self-efficacy (Course Self-Efficacy and Social Self-Efficacy) among first-semester, first-generation college students. Students from a large, predominately white public university in the Midwest completed three instruments (e.g., SACQ, PSSM, CSEI) to assess these variables, and comparisons were made according to race and gender. Additional inferential statistics were conducted to determine how well these variables predict Academic Success (GPA) and Persistence. Overall, the findings of this study are mixed when compared to previous research and literature. These findings are discussed in detail below.

Research Question 1: College Student Adjustment

Research question 1 explored how adjusted the first-generation college students of this sample were to their educational environment. Data were collected using the Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1999), which consists of a total scale T-Score and four subscale T-Scores: Academic Adjustment, Social Adjustment, Personal-Emotional Adjustment, and Institutional Attachment. Results showed that the participants of this study reported an average level of overall College Adjustment (mean T-Score = 44.76). When compared to the national norms provided by Baker and Siryk (1999), participants scored at the 31st percentile. Similarly, participants also reported low-average levels of Personal-Emotional

Adjustment, (mean T-Score = 40.61), and Institutional Attachment (mean T-Score = 41.85), scoring at the 18th and 16th percentiles, respectively.

Conversely, participants of this study ranked just below average in terms of Academic Adjustment (mean T-score = 39.99) and Social Adjustment (mean T-score = 39.88). These findings are consistent with research conducted by Bui (2002) and Mamiseishcili (2010), who found that first-generation college students typically live at home, commute to their classes, and work off campus, all of which can directly detract from the amount of time first-generation college students spend on campus and learning about college culture by engaging in traditional college experiences. When considered within the context of Tinto's (1993) theory of college student development, these findings are significant conceptually, as his theory indicates that the more students interact with their peers, professors, and other college professionals, the more effective their adjustment will be. Given that the results of this study show first-generation students may have difficulties with the academic and social aspects of College Adjustment specifically, efforts to increase adjustment may be more effective if focused on academic and social aspects of this construct. This may include collaboration between universities and public school systems to improve the academic preparedness of first-generation students prior to entering college (e.g., provide access to precollege programs and incorporate summer bridge programs for incoming first-year, first-generation students) (Neisler, 1992), upon entering college incorporate additional opportunities and resources to facilitate Academic and Social Adjustment (e.g., establish a commitment from administration, faculty, staff, and on campus service providers to retain first-generation students; build an infrastructure for mentoring students, including connecting students with interested faculty; develop specialized counseling, advising, and skills development programs; provide sufficient resources to support initiatives

designed to retain first-generation students; and ask questions to develop the necessary policies and practices that will provide many ways to achieve academic success) (e.g., Green, 1989; Green, 2006).

Research Question 2: Differences in Social Adjustment, Institutional Attachment, and Belongingness by Race and Gender

Research question 2 explored differences in Social Adjustment, Institutional Attachment, and Belongingness by race and gender. To explore differences in race, three separate one-way ANOVAs were conducted to make comparisons among the racial groups in this study in Social Adjustment and Institutional Attachment measured by the SACQ and Belongingness measured by the PSSM. The results did not reveal any statistically significant differences among the racial groups. This finding is surprising given that previous research and literature indicates first-generation college students coming from low socio-economic, minoritized households often have limited post-secondary preparation from their high school and/or families, which has an overall affect on college adjustment (e.g., Aspelmeier et al., 2012; Lareau, 1987; Hicks & McFrazier, 2014; Vargas, 2004). These results may not be reflective of the actual population, given that this study contained a total of 29 racial minority participants. Additionally, each racial category contained fewer than 20 participants each (e.g., African American/Black = 18; Asian/Pacific Islander = 2; Hispanic/Non-White = 8; Other = 1).

Concerning gender, results of independent samples *t*-tests found no statistically significant differences between the categories of gender in terms of Social Adjustment (males $M = 39.32$; females $M = 39.87$) and Belongingness (males $M = 3.64$; females $M = 3.84$). Results, however, did show a statistically significant difference between the genders in terms of Institutional Attachment (males $M = 38.95$; females $M = 42.58$). Although the results were statistically significant, the associated effect size ($\eta^2 = .05$) was moderate. In this sample, female students

appear to be more attached to the institution than male students. One potential explanation could be related to how differently each gender experiences the college environment. Male students are inclined to be more self-reliant and are reluctant to seek academic related help (Wimer & Levant, 2011). Female college students struggle with body image issues, fear of failure, anxiety and depression (Bishop, Bauer, & Becker, 1998). However, female students are emotionally healthier when they successfully engage in the campus environment (Sax, Bryant, & Gilmartin, 2004).

In this sample, each gender group scored similarly on Belongingness (PSSM), indicating no statistical differences by gender in terms of Belongingness, according to the results of an independent samples *t*-test. Average Belongingness score by gender for this sample were above 3.0, which is considered above the tipping point, demonstrating that students in this study have a sense of commitment to “education and social integration” (Goodenow, 1993). Additionally, students engaging in purposeful activities can significantly enhance success for students who might be considered as at risk based on apparent characteristics upon entering the university (Ward et al., 2012).

Research Question 3: Belongingness

Research question 3 examined reported levels of Belongingness in this study’s sample. Belongingness was measured using the Psychological Sense of School Membership (PSSM) (Goodenow, 1993). Participants scored above average on the PSSM ($M = 3.78$, $SD = .58$), which means that the first-generation students in this study are likely to engage with their environment and believe their institution is a good fit for them. This finding is encouraging given the important relationship between belongingness and overall college adjustment (Astin, 1985). The participants of this study reported a high sense of Belongingness and scored within the average range for College Adjustment. Researchers have also discovered students’ senses of

belongingness can bolster their resiliency with academic challenges, as well as contribute to overall academic performance, motivation, and engagement (e.g., Cham, Hughes, West, & Im, 2014; Mounts, 2004; Osterman, 2000; Pittman & Richmond, 2008; Walter & Cohen, 2011). Given that nearly a third of participants in this study were no longer attending the university by the third semester ($n = 26$, 32%), further exploration is warranted concerning the role of belongingness and college adjustment for first-semester first-generation college students. Specifically, examining belongingness and any differences that may exist between perception and actual academic performance.

Research Question 4: College Adjustment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy as Predictors of Academic Success

Research question 4 examined how well College Adjustment, Course Self-Efficacy, Social Self-Efficacy and Belongingness predicted Academic Success, defined as first semester GPA using multiple linear regression. Preliminary examination of correlations revealed Belongingness and Course Self-Efficacy was positively correlated with Belongingness ($r = .49$, $p < .01$), as was Social Self-Efficacy ($r = .47$, $p < .01$). The relationships between College Adjustment and Belongingness ($r = -.38$, $p < .01$), College Adjustment and Course Self-Efficacy ($r = -.19$, $p < .05$), and Social Self-Efficacy were negatively correlated ($r = -.23$, $p < .05$). Belongingness, Course Self-Efficacy, and Social Self-Efficacy all had results different than what would be expected, as the relationship between College Adjustment and Belongingness; College Adjustment and Course Self-Efficacy; and College Adjustment and Social Self-Efficacy were inverse. Results of the multiple regression analysis, however, did not reveal any statistically significant results. One possible explanation could be found in a recent study (e.g., Jome, Haase, Schuberth, & Connacher, 2013).

Jome et al.'s (2013) research concerning Self-Efficacy indicated that past performance accomplishments are more reliable indicators of one's ability to perform a given task than self-efficacy without the benefit of past experience. Based on this perspective, it is plausible that in the absence of knowledge from others or previous experience navigating a collegiate environment, many first-generation college students do not have high levels of college self-efficacy when they first arrive on campus or at the beginning of the semester. However, it is possible that once these students prove to themselves that they can perform the tasks related to attending college, their levels of self-efficacy quickly increase. If levels of college self-efficacy are calibrated by known performance as students gain more experience navigating the college environment, it could explain why students who were already successful during the beginning of the first semester displayed similar levels of college self-efficacy near the end of first-semester, regardless of their self-efficacy as they started the first-semester of college. Gore et al. (2006), noted correlations between college self-efficacy (CSEI), and college GPA were significantly stronger when evaluated near the end of the first college semester. Additionally, a potential consideration would be to assess college self-efficacy in the second semester; as Gore and colleagues (2006) found that college self-efficacy was a stronger predictor of GPA when assessed during the second semester of college.

Research Question 5: Social Adjustment, Institutional Attachment, Course Self-Efficacy, Social Self-Efficacy, Belongingness, and Persistence

Finally, research question 5 explored differences in Social Adjustment, Institutional Attachment, Course Self-Efficacy, Social Self-Efficacy, Belongingness and Persistence to second and third semesters using five independent samples *t*-tests. Preliminary examination of correlations revealed statistically significant relationships between Social Adjustment and Institutional Attachment ($r = .57, p < .01$), Social Adjustment and Belongingness ($r = -.42, p <$

.01), Belongingness and Course Self-Efficacy ($r = .49, p < .01$), and Social Self-Efficacy ($r = .47, p < .01$), and Course Self-Efficacy and Social Self-Efficacy ($r = .53, p < .01$). The results of the independent samples t -tests found no statistically significant differences between the categories of Social Adjustment, Institutional Attachment, Course Self-Efficacy, Social Self-Efficacy, Belongingness, and Persistence.

The above correlations support similar findings from previous literature, these studies found bivariate relationships exist between belongingness and self-efficacy, and belongingness and college adjustment during the first-year of college (e.g., Bartels, 1995; Brady-Amoon & Fuertes, 2011; Ostrove & Long, 2007; Pittman & Richmond, 2007; Ramos-Sanchez & Nichols, 2007). Therefore, there is reason to believe that any intervention that successfully enhanced a college students' sense of belongingness to the campus community would provide a corresponding increase in that students' college adjustment.

An alternative explanation for these findings may be the potential of sampling bias, as well as an overrepresentation of students who were somewhat successful in the first-semester of their first year. It is possible that the first-generation college students who did not have a sense of belongingness or felt well-adjusted to college were absent during the class session the study was introduced, did not feel connected enough to participate in the study, or had already chosen to drop out by the time data collection started. Moreover, the cross-sectional nature of the study did not provide for comparison of College Adjustment or Belongingness of first-generation college students at the beginning of the first-semester and again during the second-semester. Without such comparisons, this study is unable to determine the impact of the potential barriers (e.g., lack of academic preparation, less financial resources, lack of parental awareness due to little or no higher education experience, unrealistic expectations of college life, and social and personal

worries) first-generation students face as they transition to college (e.g., Horn et al., 2000; Bui, 2002; Pacarella et al., 2004; Stephens et al., 2012a; Stephens et al., 2012b; Ward et al., 2012).

Exploratory Analyses

Exploratory analyses examined the variables of gender, Pell grant, minority status, and belonging to an academic support program had on Academic Success (GPA) and Persistence. The results of the analyses highlighted the importance Academic Success has on Persistence. In this sample, there was a statistically significant result with a large effect size regarding a decrease in Academic Success (i.e., 1st semester GPA = 3.12 to 2nd semester GPA = 2.88, $\eta^2 = .28$). There was also a statistically significant result with a large effect size regarding a decrease in Academic Success (i.e., 1st semester to 3rd semester) and Persistence (i.e.; 1st semester GPA who persisted to 3rd semester = 3.31 compared to 1st semester GPA who did not persist to 3rd semester = 2.49, $\eta^2 = .15$).

Finally, there was a statistically significant result with a large effect size regarding a decrease in Academic Success (i.e., 2nd semester to 3rd semester) and Persistence (i.e., 2nd semester GPA who persisted to 3rd semester = 3.20 compared to 2nd semester GPA who did not persist to 3rd semester = 2.07, $\eta^2 = .20$). These findings, although not readily generalizable, indicate first-generation students in this sample who have a GPA below 3.0 could be at a greater risk of not persisting. This insight can be beneficial in identifying individuals who could be at a greater risk and therefore could benefit from additional resources and information (i.e., academic advising, career exploration, connecting to mentors on and off campus, additional academic, financial and social resources available at the university).

Limitations

In common with all research, the current study contains flaws that may have contributed

to the lack of statistically significant relationships necessary to support the study's proposed hypotheses, or that may have limited the degree to which the results could be generalized. First, researcher error resulted in participants being shown a version of the CSEI featuring a 0 to 8 scale, rather than the 10-point scale, ranging from 0 (i.e., no confidence) to 9 (i.e., extreme confidence) that was created by the authors (Solberg et al., 1993) and featured in previous research. However, a calculation to correct these scores was completed prior to data analysis. While this error likely did not impact the relationships between the variables within the study, it is plausible that the use of a version of the measure that had not been directly compared to the original or previously validated, limits the degree to which the findings of the study are generalizable. The biggest risk of this error may be that the means in the published literature are more varied due to more response choices than those found in the present study.

An additional unforeseen issue was the impact of utilizing electronic consent for this study. Because there was not a hard-copy signed consent document, the researcher was unable to obtain socio-economic information. Therefore, the researcher utilized Pell grant recipient information to examine the potential impact of low SES for purposes of this study.

Similarly, the cross-sectional design of this study limits external validity because the results of this study are specific to first-generation, first-year college students. These results are not generalizable due to several issues, including small sample size, overrepresentation of females, and the underrepresentation of racial minority groups. Moreover, the data discussed here were collected at only one site, in the Midwest United States. Therefore, any findings of the study may not be valid for college students from different regions of the United States, or who do not have similar demographic backgrounds. Additionally, there are several other factors may limit the findings of the study.

Data collection occurred between mid-November and early December, during the first semester of the first year. The present study may have missed students who “dropped out” before November. The fall semester is a critical time of adaptation for first-year students, as students at this time are at the greatest risk for attrition (Billson & Brooks-Terry, 1982). Therefore, early attrition could have been another limitation in this study.

All measures in this study were self-reports, with results that may be affected by common method bias (e.g., the measures were loaded into SurveyMonkey and sent via a link to access the study that presented each item in the same order to every participant). Further, self-selection bias could be present because participants who chose to take part in the study may differ significantly from those who chose not to participate (e.g., to participate in the study, all participants were between 18 to 20 years old, first-generation students, in their first-semester of college).

Another potential limitation is the power of the current study, the power was potentially compromised due to low sample size per variables of interest (i.e., race and gender), which could potentially fail to identify if an effect exists. Therefore, the significance testing could have been compromised. However, an adjusted alpha level was used for this study, and a sample size calculation was performed for ANOVAs and *t*-tests, which determined 74 participants were required to obtain 80% power for a statistically significant relationship using a 10% significance level. Also, using the sample sizes “rule of thumb” (Van Voorhis & Morgan, 2007), a reasonable sample size to measure group differences (e.g., *t*-test, ANOVA) is 30 participants per cell for 80% power, and if the number of participants are decreased, then no fewer than 7 per cell. Although the required number of total participants was met for the inferential statistics performed, there were a number of cells that contained less than 20 participants (i.e., Gender: Males = 19, Transgender = 1; Race: African-American/Black = 18, Hispanic/non-White = 8,

Asian/Pacific Islander = 2, Other = 1). Although both the transgender category and the other race categories were removed for any gender or race analyses, additional exploratory analyses were also conducted to more closely examine the impact of Academic Success (GPA) and Persistence with regard to gender, race, having a Pell Grant, and being a part of an Academic Support Program.

A sample size calculation was also performed for the multiple regression analysis, with the calculation determining that a sample size of 69 was required to obtain 80% power for a statistically significant relationship using a 10% significance level. Again, using the sample sizes “rule of thumb” (Van Voorhis & Morgan, 2007), a reasonable sample size to measure relationships (e.g., correlations, regression) is 50 participants for 80% power. Finally, in addition to *t*-tests, the exploratory analyses also included several chi-square tests. Using the sample sizes “rule of thumb” (Van Voorhis & Morgan, 2007), a reasonable sample size to use when calculating a chi-square is at least 20 participants, with no cell smaller than 5 participants.

Additionally, when the correlation tables were obtained in preparation for the regression, the variables of interest were found to be moderately correlated (i.e., between Belongingness, Course Self-Efficacy, Social Self-Efficacy, and College Adjustment). Moreover, the variables of interest (i.e., Belongingness, Course Self-Efficacy, Social Self-Efficacy, and College Adjustment) did not correlate highly with either outcome variable of Academic Success (GPA) or Persistence. Therefore, because the variables are highly correlated with each other, it appears they are measuring a common construct related to Persistence. One potential insight from the study is that there may be a different construct that better explains Persistence (e.g., socio-economic status; high school GPA).

Additionally, the reliability coefficients for two of the SACQ subscales in this study were low, (e.g., Academic Adjustment $\alpha = .66$, Personal Emotional Adjustment $\alpha = .33$), the two SACQ subscales shared 9 items, contributing to the lower alpha levels. Recommended Cronbach's alpha is .70 and above (Pallant, 2007). Due to the lower alpha levels, neither subscale was used individually in any inferential statistical analyses. Possible factors that could contribute to these anomalies in this sample include: (a) a disconnect between the lack of preparation and expectations in college courses; (b) students not understanding what is being asked or how the work will be evaluated; or (c) the wording of the instrument's questions could have been confusing to the participants.

There is an abundance of evidence from previous literature (e.g., Brooks-Terry, 1988; Brown, 2008; Bui, 2002; Dennis et al., 2005; Hertel, 2002; Kojaku, Nunez & Malizio, 1998; Lohfink & Paulson, 2005; London, 1989; Pittman & Richmond, 2007; Pascarella et al., 2003; Stephens et al., 2012a; Stephens et al., 2012b; Terenzini et al., 1996) to suggest that compared to their continuing-generation peers, first-generation college students experience significantly greater difficulty during the process of trying to earn a college education. Specific obstacles faced by first-generation college students include less effective academic preparation prior to college (e.g., Horn et al., 2000; Pacarella et al., 2004; Terenzini et al., 1996), lower self-esteem compared to continuing-generation student peers (McGregor, Mayleben, Buzzanga, Davis & Becker, 1991), less access to financial and informational resources (Bui, 2002), greater likelihood of maintaining employment and living off campus (Billson & Terry, 1982), greater likelihood of embracing cultural beliefs counter to those most often encountered on college campuses (e.g., Stephens et al., 2012a; Stephens et al., 2012b), and significantly greater likelihood of dropping out of college prior to graduation (e.g., Chen, 2005; Choy, 2001; Kojaku

et al., 1998). The individual level factors of Belongingness, Self-Efficacy, and College Adjustment were studied in hopes of identifying if differences exist and how those factors contribute to Persistence and Academic Success (GPA). From looking at Tinto's (1993) model, there are many factors that contribute to persistence. In this study, both the small sample size and the inability to gain access to socio-economic status information, along with the individual factors of Belongingness, Course Self-Efficacy, Social Self-Efficacy, and College Adjustment were not sufficient to determine if there is an influence on Persistence and Academic Success (GPA).

Implications and Promising Results

There are several factors to consider specific to this study. The sample of students included predominantly white students at a predominately white university (i.e., sample = 64.6%, university = 66.4%). In addition, the sample was primarily female (i.e., sample = 75.6%, university = 48.1%), and included a significant percentage of Pell grant recipients (i.e., sample = 72.0%, university = 27.8%). Moreover, 37.8% of the sample participated in a student support program and had a 68% persistence rate from first to second year.

As stated earlier, the results of this study provide mixed support for previous research. Findings regarding the institutional attachment of the women in this study were particularly notable. In the current study, female participants had a statistically significantly higher level of institutional attachment than their male counterparts. According to Noble, Flynn, Lee, and Hilton (2007), the rates of graduation among female students are twice as high as their male counterparts. The high percentage of women in the current sample could suggest that the sample would have a lower risk of college adjustment problems. The results of the current study did not identify a significant difference in the overall college adjustment among genders; however, the

female students in this sample appeared to be more attached than male students to the university. An important implication can be derived from this finding; namely, given that men have been found to be two times less likely to graduate from college than women, and given that findings from the current study suggest institutional attachment may be an area in which men and women experience significant differences, providing additional support to assist men with becoming more attached to the college environment may be fruitful in terms of increasing graduation rates among the male gender.

Another statistically significant result found in this study suggests persistence from semester to semester may be largely affected by academic success; that is, GPA. It might be useful to know what meaning students make of their academic success (GPA). More specifically, as first-semester first-generation college students discover their end of semester GPA, what meaning are they attributing and how does the knowledge of their end of semester GPA impact decision making as well as their sense of self. This implies that more attention to this important aspect of persistence in higher education may be merited. Recent studies have taken a closer look at college adjustment and have found that learning about self; gaining independence; developing a personal and professional identity; academic adjustment, including managing expectations, meeting deadlines, seeking assistance to succeed in coursework; finding balance, including regulating emotions regarding the shift between home and school and the struggle of explaining college life to their families; managing self-care, including healthy sleep patterns; managing money; and maintaining physical health affect overall college adjustment and satisfaction (e.g., Reid & Moore, 2008; Gibbons & Borders, 2010; DeRosa & Dolby, 2014; Gibbons, Rhinehart, & Hardin, 2019). Research also suggests first-generation college students as a group continue to face many barriers (i.e., family, finances, and lack of information), nevertheless also have a

variety of supports (i.e., money, family, mentors, emotional support, and other types of support) available for achieving a college education (Gibbons et al., 2019). According to this research, both barriers and supports should, therefore, be considered as policies and programming are developed at the university level (e.g., McCarron & Inkelas, 2006; Wange, 2012; Soria, Weiner, & Lu, 2014). The results of the current study, however, suggest that in addition to the areas of focus described above, a key factor in the persistence of first-generation college students may be their ability to earn good grades, implying that one of the best ways colleges and universities can reduce attrition may be through academic remediation and other similar services.

Faculty, administrators, student affairs professionals, and academic advisors of the university are well positioned to facilitate students making quality academic decisions, especially for those college students considered at a higher risk of not persisting or attaining academic success (i.e., ethnic and racial minorities, academically disadvantaged, disabled, low socioeconomic status, first-generation students) (e.g., Jones & Watson, 1990; Kobrak, 1992). Zhao and Kuh (2004), for example, found a positive relationship between belonging to learning communities and academic success. Student support programs were also helpful for students as they moved toward a career goal (Tate et al., 2015). Given the results of this study, more programs focused on learning may benefit first-generation college students, in addition to the workshops commonly focused on topics such as stress and time management strategies made available through courses, webinars, or online presentations.

A final result from the statistical analyses of this study with important implications concerns the academic success of students who identified as racial minorities and those who did not. An adjusted alpha level of $< .10$ was used to compensate for a small sample size, and the finding regarding racial minority status and academic success had a result ($p = .11$) just

beyond the adjusted alpha level of $< .10$ and a moderate effect size ($\eta^2 = .11$). This finding of interest highlighted the potential difference in academic success for students who identified as a racial minority ($M = 2.84$, $SD = 1.01$) and those who did not ($M = 3.17$, $SD = .78$). These results suggest that the racial minority participants from this study could benefit from additional supports and resources to increase their GPA, which based on the results described above, may increase their overall persistence.

Beyond the statistical results in the study, the study's demographic questionnaire item regarding teaching methods used in the most difficult course, which revealed participants perceived classrooms wherein instructors used lecture in every class or instructors never used strategies such as group work, essay exams, or outside writing assignments as most difficult can also shed light on some areas interest. It appears this group of students could benefit from different aspects of socializing within the learning environment. Socializing within the learning environment can promote college adjustment. This would include effective classroom facilitation; that is, establishing ground rules at the beginning of the semester, emphasizing open, respectful, and an encouraging environment; awareness of students' classroom comfort, including speaking up, asking questions, volunteering ideas or opinions, and contributing to class discussions; and overall classroom engagement that purposefully includes students from different backgrounds contributing to all-inclusive discussions (Padgett, Johnson, & Pascarella, 2012). Student affairs professionals from the university could also provide parents and families with information on the demands of their first-generation college student (i.e., sharing information during parent-student orientation, mailings and emails directly to the family, connecting through social media) to better address the negative impact of a potential conflict between the family needs and the university requirements.

Finally, college counselors, career counselors, and clinical mental health counselors working at the university counseling center could also partner with student support programs, academic advising staff, and student affairs professionals to offer workshops on self-care, time management, and effective study habits. These workshops could focus on specific topics, provide opportunities for goal setting, and also the space to process emotions related to self-awareness, change, and responsibility. School counselors, student support program managers, and student affairs professionals could also promote success by helping first-generation students work through their perceived barriers, access their supports, as well as manage ambiguity between the two as they prepare for, begin, and continue college. School counselors, college counselors, career counselors, clinical mental health counselors, student affairs professionals, and academic advisors working with prospective first-generation students also need to be aware of the ways in which barriers to college-going affect barriers to career exploration. These professionals must be aware of and explore students' perceptions of their access to the postsecondary education needed to pursue their career goals (Tate et al., 2015). Information regarding the implementation of the preceding implications may serve to obtain and maintain viable funding options for first-generation student support programs and on campus resources prior to and during college. Moreover, research illuminating students' adjustment processes following involvement in such programs may offer better understanding of additional areas not addressed in this study.

Future Research

Beyond implications for practice, the present study also offers some interesting possibilities for future avenues of research. Research illuminating students' adjustment processes following involvement in academic support programs may offer a more holistic understanding of

the transition and adjustment to college. This study did not examine potential changes in students' College Adjustment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy between the beginning of the academic year and the second semester. A longitudinal study comparing College Adjustment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy, between the beginning of the academic year and the beginning of second semester, and again at the end of the first year could provide greater insights into Academic Success and Persistence. Additionally, it would be useful to empirically test the efficacy of on campus programs specifically designed to enhance College Adjustment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy of first-generation college students to determine if such programs enhance College Adjustment, Belongingness, Course Self-Efficacy, and Social Self-Efficacy and their impact on Academic Success and Persistence.

Future research should also assess differences between reports of college adjustment difficulties at different points during the academic year. Such an approach could identify the students who are most at risk for having college adjustment difficulties. This study included only registered students, while the most vulnerable population, students who dropped out during first semester were not included.

To support this line of study, future research identifying the differences between the types of social interactions will be important to inform program development that is most supportive of college adjustment. Potential insights could also be gained by exploring social interactions in college. Freeman, Anderman, and Jensen (2007), found that students considering leaving their university was correlated with feeling dissatisfied with college. For instance, Terenzini and colleagues (1996) found that non-academic peer social interactions (i.e., being a part of a

fraternity), was negatively related to academic outcomes, while engaging in academic peer interactions (i.e., tutoring), was associated with positive academic outcomes.

Finally, a bulk of evidence supports the notion that first-generation college students face significant obstacles compared to their continuing-generation college students peers, and that first-generation college students experience difficulty adapting to the college environment (e.g., Brooks-Terry, 1988; Brown, 2008; Bui, 2002; Dennis et al., 2005; Hertel, 2002; Lohfink & Paulson, 2005; London, 1989; Pittman & Richmond, 2007; Stephens, Fryberg et al., 2012; Stephens, Townsend et al., 2012; Terenzini et al., 1996). Therefore, research should continue to examine the obstacles faced by first-generation college students and new theories created to determine a clearer picture of what impact generational status may have on the abilities of individuals to persevere through and thrive during college.

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Appendix A
E-mail Invitation

November 19, 2015

Subject: *Adjustment, Belongingness, and Self-Efficacy Variables Impacting College Student Persistence Among First-Year, First-Generation College Students*

Dear {FIRST NAME} {LAST NAME},

I hope this e-mail finds you well. My name is Heather Highhouse; I am a doctoral candidate in the Counselor Education program at Western Michigan University. I am requesting your assistance for my research. The goal of the research is to examine the factors that play a role in the academic success for first-year, first generation college students.

Students who complete the survey will be entered in a drawing for one of six **\$50-dollar** visa gift cards. The survey should take approximately 45 minutes. This research is being supervised by my faculty mentor and chair, Stephen E. Craig, Ph.D., and the Human Subjects Institutional Review Board at Western Michigan University has approved it.

This survey is being sent to you because you provided your email as a part of a class presentation or in response to a flyer. I know time is valuable and I truly appreciate your consideration in submitting the survey.

If you would like to learn more about the study, the consent information and survey are available and can be accessed by clicking on the following link:

If you are not AT LEAST 18-years of age, are not currently enrolled in your first-year of college, and are not a first-generation college student (which means that neither parent in the home you grew up in had a four-year or more degree), I would ask that you please ignore this e-mail. Again, thank you for your time.

Sincerely,

Heather R. Highhouse, MA,
Stephen E. Craig, PhD.
Counselor Education and Supervision
Western Michigan University
E-mail: stephen.craig@wmich.edu

Appendix B
Informed Consent

Western Michigan University

Department: Counselor Education and Counseling Psychology

Principal Investigator: Stephen E. Craig, Ph.D.

Student Investigator: Heather R. Highhouse, M.A.

Name of Study: Examining the Relationship between adjustment, belongingness, and self-efficacy variables impacting persistence for first-year, First Generation college students.

You have been invited to participate in a research project titled *Adjustment, Belongingness, and Self-Efficacy Variables Impacting College Student Persistence Among First-Year First Generation College Students*.

This project will serve as Heather Highhouse's dissertation for the requirements of the Doctor of Philosophy in Counselor Education. This consent document will explain the purpose of this research project and will go over the time commitments, the procedures used in the study, and the risks and benefits of participating in this research project. Please read this consent form carefully and completely, and please ask any questions if you need more clarification.

The purpose of this research is to study the first-year experience of First Generation college students. The researcher for this study will gather general demographic information to attain background information about the participants, in an attempt to learn the factors that impact first-year, First Generation college students' academic journey. The results may better inform counselor educators who are providing on-campus career or personal counseling, academic advising, or instructional guidance about the needs of this group of students. In addition, the results may inform institutional recruitment and retention efforts at the University.

The requirements to participate in the study include: being at least 18-years of age, in your first-year of college, a First-Generation college student (which means that neither parent in the home you grew up in had a four-year or more degree) and enrolled in the first-year of academic studies.

Taking the on-line survey should take no more than 45 minutes to complete and you have the right to withdraw from the study at any time without penalty.

When completing the survey, you will also be asked to provide general information about yourself, such as gender, ethnicity, socioeconomic status, intended major area of study, and your parents' educational background. Additionally, the researcher requests your permission to request social-economic information, ACT scores, fall 2015 and spring 2016 GPA information from the office of Institutional Research as a part of the data to be analyzed. Please keep in mind this study was designed around questions that will develop a profile of first-year, First Generation college students' academic experiences at a major university in the Midwest region of the United States.

As in all research, there may be unforeseen risks to the participant. One potential risk of participation in this project is that you may question the purpose and content of the questionnaire. If there are any concerns Heather Highhouse is prepared to answer any questions that may arise.

Although there are no benefits to you personally for participating in this study, the findings from the study may better inform counselor educators about First Generation college students needs to

persist and to attain academic success. The time commitment required for participation in this study is the only cost to you. After completion of the study, participants will be offered an opportunity to be entered into a drawing for one of six **\$50-dollar** visa gift cards by completing a brief form. You have the right to refuse to complete the form for the drawing. Moreover, the results of the study will be available to you upon request.

All of the information collected from you through SurveyMonkey is confidential. That means that your name will not appear on any papers on which this information is recorded. The results from SurveyMonkey will be transported into SPSS aggregately. Once the data are collected and analyzed, the master list will be destroyed. All other forms will be retained for at least three years in a locked file in the principal investigator's office.

Your participation in the study is completely voluntary. Should you choose to participate, you may choose to stop at any time during the study for any reason without prejudice or penalty. You will experience no personal consequences if you choose to withdraw from this study. You may choose not to participate or you may withdraw from the study at any time by discontinuing answering questions on the survey and/or not submitting the survey to SurveyMonkey. If you have any questions or concerns about this study, you may also contact either Heather Highhouse at 269-998-2925 or Dr. Stephen E. Craig at 269-387-5100.

You may also contact the chair of Human Subjects Institutional Review Board at 269-387-8293 or the vice president for research at 269-387-8298 with any concerns that you have.

This consent document has been approved for use for one year, as indicated by the date stamped at the top of this consent document, by the Human Subjects Institutional Review Board (HSIRB) of Western Michigan University.

Clicking on the "I agree button" indicates that you have read and/or had explained to you the purpose and requirements of the study and that you agree to participate.

Appendix C

Demographic Questionnaire

Thank you for taking the time to complete this questionnaire. Please provide the following information about yourself:

1. Gender 1 = M 2 = F 3 = Transgender
2. When did you graduate from high school? (Month/Year)
3. What high school did you graduate from? _____
4. What is your current college class ranking?
 - 1 = first year
 - 2 = Sophomore
 - 3 = Junior
 - 4 = Senior
 - 5 = Super Senior
 - 6 = Other
5. What is your undergraduate field of study or academic major?
 - 01 = engineering
 - 02 = business
 - 03 = education
 - 04 = fine arts
 - 05 = liberal arts
 - 06 = natural sciences
 - 07 = nursing
 - 08 = social work
 - 09 = health science
 - 10 = communication

- 11 = undeclared

6. With which ethnic group do you primarily identify?

- 1 = African-American/Black
- 2 = Asian-American/Pacific Islander
- 3 = Caucasian/White
- 4= Hispanic/non-White
- 5= Native American
- 6= Other

7. What is the zip code of your permanent residence?

8. Please rate the following two statements:

(a) I will finish college:

1	2	3	4	5	6	7
Lack confidence						Extreme confidence

(b) I have selected the right major for me:

1	2	3	4	5	6	7
Lack confidence						Extreme confidence

9. Is English your first language? If no, please indicate your first language.

10. Are you currently working? If so, how many hours per week do you work?

11. Have you participated in any of the following programs? (Mark all that apply.)

- WMU Welcome Week
- Upward bound
- Educational Opportunity Center

- TRIO Student Success Program
- FESP – Future Educator Success Program
- GEAR UP
- MLK Program
- Mentoring for Success

12. Are you currently receiving any of the following? (Mark all that apply)

- Pell grant
- Subsidized loan
- Unsubsidized loan
- Kalamazoo Promise
- Tribal Scholarship
- Other scholarship

Please provide the following information about your custodial parents.

1. My mother/female guardian supports my interest in obtaining a bachelor's degree (four-year college degree) 1 = yes 2 = no 3 = does not apply
2. My mother/female guardian had or attained a bachelor's degree prior to my entering college. 1 = yes 2 = no 3 = does not apply
3. My father/male guardian supports my interest in obtaining a bachelor's degree (four-year college degree). 1 = yes 2 = no 3 = does not apply
4. My father/male guardian had or attained a bachelor's degree prior to my entering college. 1 = yes 2 = no 3 = does not apply

Please provide the following information about the instructor whose class you are finding to be the most difficult.

1. What is your most difficult college class? _____

2. What is the class size of your most difficult college class?

1-15 students

15-30 students

30-50 students

+50 students

3. How often does your instructor use **lecture**?

1
Never

2

3

4

5

6

7
Every
Class

4. How often does your instructor use **discussion** in class?

1
Never

2

3

4

5

6

7
Every
Class

5. How often does your instructor use **group work** in class?

1
Never

2

3

4

5

6

7
Every
Class

6. How often does your instructor use **multiple-choice** tests?

1
Never

2

3

4

5

6

7
Every
Exam

7. How often did your instructor use **essay** exams?

1
Never

2

3

4

5

6

7
Every
Exam

8. How often did your instructor assign **outside writing** assignments?

1
Never

2

3

4

5

6

7
Every
Exam

9. How often did your instructor use **short answer** exams?

1
Never

2

3

4

5

6

7
Every
Exam

Appendix D

College Self-Efficacy Inventory (Long Form)

Response Scale:

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

Using the scale provided above, please mark the number that best represents the degree to which you feel confident performing the following tasks.

1. Make new friends at college.

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

2. Talk with school academic and support (e.g., advising) staff.

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

3. Manage your time effectively.

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

4. Ask a question in class.

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

5. Participate in class discussions.

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

6. Get a date when you want one.

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

7. Research a term paper.

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

8. Do well on your exams.

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

9. Join a student organization.

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

10. Talk to your professors/instructors.

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

11. Take good class notes

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

12. Join an intramural sports team.

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

13. Ask a professor or instructor a question outside of class.

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

14. Understand your textbooks

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

15. Keep up to date with your school work.

0 = totally unconfident	3 = somewhat unconfident	6 = confident
1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

16. Write a course paper.

0 = totally unconfident	3 = somewhat unconfident	6 = confident
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1 = very unconfident	4 = undecided	7 = very confident
2 = unconfident	5 = somewhat confident	8 = totally confident

Appendix E

The Psychological Sense of School Membership Scale

Instructions: Read each of the 18 statements below and mark only the answer that applies the most to you

1. **I feel like a real part of** (Name of School).

1	2	3	4	5
Very	Untrue	Not Sure	True	Very True
Untrue				

2. **People here notice when I'm good at something.**

1	2	3	4	5
Very	Untrue	Not Sure	True	Very True
Untrue				

3. **It is hard for people like me to be accepted here.**

1	2	3	4	5
Very	Untrue	Not Sure	True	Very True
Untrue				

4. **Other students in the school take my opinions seriously.**

1	2	3	4	5
Very	Untrue	Not Sure	True	Very True
Untrue				

5. **Most teachers at** (Name of School) **are interested in me.**

1	2	3	4	5
Very	Untrue	Not Sure	True	Very True
Untrue				

6. **Sometimes I feel as if I do not belong here.**

1	2	3	4	5
Very	Untrue	Not Sure	True	Very True
Untrue				

7. **There's at least one teacher or other adult I can talk to if I have a problem.**

1	2	3	4	5
Very	Untrue	Not Sure	True	Very True
Untrue				

8. **People at this school are friendly to me.**

1	2	3	4	5
Very	Untrue	Not Sure	True	Very True
Untrue				

9. Teachers here are not interested in people like me.

1	2	3	4	5
Very Untrue	Untrue	Not Sure	True	Very True

10. I am included in lots of activities at (Name of School).

1	2	3	4	5
Very Untrue	Untrue	Not Sure	True	Very True

11. I am treated with as much respect as other students.

1	2	3	4	5
Very Untrue	Untrue	Not Sure	True	Very True

12. I feel very different from most other students here.

1	2	3	4	5
Very Untrue	Untrue	Not Sure	True	Very True

13. I can really be myself at this school.

1	2	3	4	5
Very Untrue	Untrue	Not Sure	True	Very True

14. The teachers here respect me.

1	2	3	4	5
Very Untrue	Untrue	Not Sure	True	Very True

15. People here know I can do good work.

1	2	3	4	5
Very Untrue	Untrue	Not Sure	True	Very True

16. I wish I were in a different school.

1	2	3	4	5
Very	Untrue	Not Sure	True	Very True
Untrue				

17. I feel proud of belonging to (Name of School).

1	2	3	4	5
Very	Untrue	Not Sure	True	Very True
Untrue				

18. Other students here like me the way I am.

1	2	3	4	5
Very	Untrue	Not Sure	True	Very True
Untrue				

Appendix F

Student Adaptation to College Questionnaire (SACQ)


Note: The Student Adaptation to College Questionnaire instrument is copyrighted and unable to be included. The instrument was purchased, and a limited use license issued to give permission to utilize the instrument in this research study.

Appendix G
HSIRB Approval Letter



Date: October 29, 2015

To: Stephen Craig, Principal Investigator
Heather Highhouse, Student Investigator for dissertation

From: Amy Naugle, Ph.D., Chair 

Re: HSIRB Project Number 15-10-13

This letter will serve as confirmation that your research project titled "Adjustment, Belongingness, and Self-Efficacy as Variables Impacting College Student Persistence and Success Among First-Generation, First-Year College Students: Implication for Counselor Educators" has been **approved** under the **exempt** category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note: This research may **only** be conducted exactly in the form it was approved. You must seek specific board approval for any changes in this project (e.g., ***you must request a post approval change to enroll subjects beyond the number stated in your application under "Number of subjects you want to complete the study."*** Failure to obtain approval for changes will result in a protocol deviation. In addition, if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

Reapproval of the project is required if it extends beyond the termination date stated below.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: October 28, 2016