UNDERSTANDING THE RELATIONSHIP BETWEEN STUDENT ENGAGEMENT AND

PERSISTENCE AMONG COMMUNITY COLLEGE STUDENTS

By Thomas E. Chatman, Jr.

Dissertation Presented in Partial Fulfillment of the Requirements for the

Degree of Doctor of Education

School of Behavioral Sciences

Liberty University, Lynchburg, Virginia

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ABSTRACT

Community colleges enroll large numbers of students each year. However, their retention rates are dismal and have remained stagnant for more than 30 years. The low retention rates have serious implications for community colleges and the community at large. Low retention rates impact such things as individual health and well-being as well as funding for colleges to operate. As such, this correlational study was designed to understand the relationship between student engagement and specific student characteristics and persistence in college. The specific student engagement variables examined were student-faculty interaction, college GPA, academic self-efficacy, late registration, and sense of belonging. Moderation and mediation analysis examined the effects of race, first-generation status, and high school GPA. Data from the Community College Survey of Student Engagement (CCSSE) that was administered at Tidewater Community College (TCC) was used for the analysis. The analysis revealed that high school GPA and student-faculty interaction are positively related to college GPA. Additionally, it found student-faculty interaction to be positively related to persistence. None of the moderation and mediation hypotheses were supported in the study. Given some of the issues found with the research design used for this study, it was recommended that future research consider conducting focus groups or interviews to study persistence instead of using archival data.

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First, I would like to thank God for allowing me the opportunity to complete my dissertation. I started my doctoral journey over 25 years ago at the University of Minnesota. Because of some life situations, I did not complete the journey then. However, I circled back in 2016, with much fear and trepidation, to finish what I started. It was truly by God's grace that I was able to complete this process with a full-time job and three children.

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CHAPTER ONE: INTRODUCTION

Although community colleges provide open-access to prospective students and enroll large numbers of students each year, their retention rates are dismal and have remained stagnant for more than 30 years (Habley, Bloom, & Robbins, 2012). According to Tinto (2012), almost one-half of enrolled students drop out of two-year public institutions between their first and second semesters of college. Given the negative consequences of being uneducated, increased accountability for higher education institutions, global competitiveness implications, and shifts in governmental funding, community college administrators must address factors that impact student retention in order to stay in business (Community College Survey of Student Engagement 2002, p.1).

In several studies, student engagement has been identified as having a positive impact on student educational outcomes to include learning, persistence, and degree attainment in several studies (Chickering & Gameson, 1987; Tinto, 2012). Although low retention rates have been a concern for two-year institutions for some time, most of the published literature has been based on the typical student who attends a 4-year residential institution (Tinto, 2012) and very little on student retention in two-year community colleges (Yu, 2015). As such, this is an area that community colleges, seeking to improve student retention rates, can investigate in order to develop programs and policies that support it.

Consistent with recommendations for community colleges seeking to understand factors that impact student retention (Astin, 1993), this study targeted research to understand the relationship between student engagement and specific student characteristics and student retention and persistence. Results from the Community College Survey of Student Engagement (CCSSE) that was administered to a sample of the student population at Tidewater Community

College (TCC), located in Hampton Roads, Virginia, were analyzed to understand the relationship between student engagement, as defined by CCSSE, and a student's intention to enroll in classes within the next 12 months. High school GPA, race, first-generation status, academic self-efficacy, sense of belonging, and late registration were also analyzed to understand how these factors may directly or indirectly affect a student's decision to enroll in classes within the next 12 months (persistence). Additionally, the purpose of this study was to provide insight into how the college might increase retention rates among the student population.

Significance of the Problem

Community colleges play a major role in educating individuals and serve as a major entry and access point for many Americans who would otherwise not have the opportunity to pursue higher education. Their open-door policies have made two-year postsecondary education within reach – financially, geographically, practically - of virtually every American (Ma & Baum, 2016). In the fall of 2013, 46% of all undergraduate students of the approximately 7 million students were enrolled in public two-year colleges (National Center for Statistics, 2015), and according to the U.S. Department of Education (2015), nearly 43 percent of all undergraduates are enrolled in a community college.

There are several benefits to earning a college degree (Tinto, 1993). These benefits support the need to understand the factors that impact student retention and persistence. Some of the benefits are discussed below.

Health Benefits

Ross and Mirowsky (1999) found a positive relationship between the level of education and certain pro-health behaviors. In particular, their study found that as the level of education increased, the number of students smoking cigarettes reportedly declined. In a related study,

Perna (2005), found a positive relationship between health insurance and educational attainment. The research showed that high school graduates who were covered by health insurance increased with educational attainment, ranging from 79% of those with no post-secondary education to 92% for those who attained at least a bachelor's degree.

Psychological Benefits

Educational attainment appears to contribute to mental fitness and one's ability to handle challenging situations. In a a series of studies (Baum, Ma, & Payea, 2013) found that students who have completed additional schooling beyond high school are better able to handle mental challenges. Similarly, Gurin, Dey, Hurtado, and Gwin (2002), in researching the benefits of educational attainment, found that it contributes to both social and personal growth when compared to lower levels of educational attainment.

Financial Benefits

Financially, people who have a college degree earn over one million dollars more during their lifetime than do those who do not have one. For individuals who have an associate's degree, their lifetime earning is about $354,000.00 more than people who only complete high school (Tinto, 2012). According to the Baum, Ma, and Payea (2013), "The financial return associated with college credentials and the gaps in earning by education level has increased over time" (p. 5). Additionally, Adelman, Ewell, Gaston, and Schneider (2014)r eported that individuals with a bachelor's degree earn 84% more over their lifetime than those without a degree.

Community Benefits

People who are college-educated appear to contribute to strong and healthy communities. Individuals who earn a college degree appear to demonstrate more civic engagement and pro-community behaviors (Baum & Ma, 2010). In one study, it was revealed that only 26% of high

school graduates with no postsecondary education voted in the 1996 presidential election and in other elections within a recent two-year period, compared with 42% of high school graduates who completed a bachelor's degree. These were the findings even after controlling for sex, race/ethnicity, SES, and test scores (Perna, 2005). It is also reported that there are lower crime rates among those holding a bachelor's degree (Fiske, 2004).

Global Benefits

Globally speaking, there are benefits to earning a college degree. According to Tierney (2006), a college-educated workforce helps our nation remain competitive, which is important for financial security and sustainability. Additionally, a more educated citizenry contributes to a higher tax pool and increases the United States' (U.S.) global competitiveness. Finally, educational attainment is associated with a more involved and supportive citizenry and a more competent and efficient workforce (Pascarella & Terenzini, 2005; Snyder & Dillow, 2012; Tinto, 2012).

Workforce Benefits

Without a significant increase in degree attainment patterns, the U.S. will fall 16 million degrees short of the number necessary to match leading nations and to meet workforce needs of 2025 (U.S Department of Labor, 2000). The *National Collegiate Retention and Persistence to Degree Rates* report (File, 2013) revealed that the national first-to-second year retention rate for public community colleges was 55%. Another study put this figure at 60% for full-time students and 40% for part-time students across the nation (Snyder & Dillow, 2012). Given the high percentage of minorities that attend community colleges, the report showing even lower retention rates for these groups is noteworthy as it relates to improving student retention and persistence for this population (Swail, Redd, & Perna, 2003). These statistics and reports shed light on the

importance of increasing retention rates among higher education institutions, particularly community colleges.

Stakeholder Benefits

Understanding the importance of a college education and the negative impact of low graduation rates, federal and statement governments, business leaders, philanthropic organizations, researchers, and policymakers have begun focusing on the idea, in earnest, that more Americans need to enroll and succeed in college by earning some type of credential. The Lumina Foundation, the Bill and Melinda Gates Foundation, Phi Theta Kappa Honor Society, and the American Association of Community Colleges, for example, are in full support of a call to the U. S. to increase the number of individuals who have college credentials with targets set for 2020 and 2025 (Price & Tovar, 2014).

In addition to the call to the U.S. to increase the number of individuals who earn a college credential, there have been major increases in access to higher education. It is reported that access doubled from nearly 9 million students in 1980 to nearly 20 million in 2011 (Radford, Berkner, Wheeless, & Shepherd, 2010; Supiano, 2011). As it relates to access to higher education via community colleges, there has been significant and rapid expansion as well (Goldrick-Rab, 2010; Zientek, Yetkiner, Ozel, Fong, & Griffin, 2013). Moreover, nearly 40% of students in higher education are enrolled in community colleges (Shapirom Dundar, Yuan, Harrell, & Wakhung, 2014). As such, community colleges serve as critical entry points for many individuals seeking a college credential and are more likely to have challenges regarding persistence among its students.

Problem Statement

Unfortunately, the increased access to higher education, the overwhelming public and private support, and the development of programs to improve retention have not translated into increased degree completion. For example, 36% of community college students obtained a formal credential in six years, 45% left without achieving their original educational goals, and 11% never intended to earn a credential (Hoachlander, Kora, & Horn, 2003). Additionally, about half of all first-year community college students drop out of college before they start their second year, and this rate has held steady for over 40 years (Schuetz, 2008). Finally, according to Okeefee (2013), attrition rates are reaching between 30 and 50 % in the U.S. and over 20% in Australia. These persistence issues can have serious negative implications, as noted earlier, for individuals and society as a whole. The low graduation rates in the U.S. are affecting more than just the individuals who are not graduating. In 2010, a shortage of college graduates to fill over 20 million jobs was reported (Carnevale, 2010). Additionally, the U.S. labor market now requires postsecondary education for most entry-level positions and mid-level occupations. The low graduation rates are not being ignored by colleges and universities. The low rates of student retention and persistence are of great concern for colleges and universities (Tinto, 2012). Accordingly, there have been national efforts put forth to address the low number of students who complete a postsecondary credential (Frederick, 2010). Some of the efforts by colleges have paid off, and they have seen positive yields in persistence among their students. However, many colleges, although seeking to improve student retention and persistence rates, have not been so fortunate (Carey & Hess, 2011).

As a result of persistently low retention rates in general among college students, researchers continue to investigate this issue. Unfortunately, most of the research has focused on

the typical student who attends a 4-year, residential institution (Wild and Ebbers, 2002) and very little on student retention in two-year community colleges (Yu, 2015). Therefore, the results should be interpreted cautiously in trying to understand the reasons why students do not persist and graduate from community colleges (Tinto, 1987).

The scarcity of retention research for two-year community colleges is problematic and needs to be addressed with more research (Tinto, 1987). As noted by Mohammadi (1996) and Astin (1977), there is quite a bit of diversity regarding demographic characteristics, academic abilities, and educational goals for community college students and they typically leave college prior to goal completion at a greater rate than do students who attend four-year institutions (Astin, 1977; Mohammadi, 1996).

The following description by Baird (1990) captures the essence of the community college students and highlights the importance of engaging in targeted research to better understand retention among this population:

> Community college students are older, attend part-time more often, do not reside on campus, have lower aspirations, have lower high school grades, have more modest financial resources, are employed for more hours, have more family responsibilities, have relatively little interaction with other students outside the classroom, and are not strongly involved in campus activities when compared to students at four-year institutions (p. 1).

Although there has been some research on retention and persistence among community college students, the results have been mixed and inconsistent (Craig and Ward, 2008). Therefore, it is suggested that each community college conduct targeted research to understand how various factors impact student retention and persistence so it can engage in actions to

improve outcomes and ultimately increase student retention and persistence towards graduation (Astin, 1993).

Finally, Tidewater Community College, the college used for this study, has a vested interest in understanding and improving student retention. A new funding model that incorporates student retention measures was recently implemented at the college. This model is different from the previous model that was based primarily on tuition and other fees. The college now receives points based on how well it performs in the following three categories − Entry, Retention and Progress, and Completion. Accordingly, if students do not persist and are not retained, the college will not receive funds to cover operating and other expenses such as staffing.

Given steadily declining enrollment over the last few years, failure to meet retention benchmarks could have a devastating effect on the college. For example, due to low enrollment in 2017 and 2018, the college had to eliminate several programs, freeze hiring, and lay off over 30 faculty and staff members. This scenario at the college makes it is imperative to understand and address student retention. Failure to do so could result in more layoffs and possible school closure. Another sister college is in such a situation because of declining enrollment and low retention rates. The closure of such an institution as TCC would be devastating to the region as it is a major player in supplying the workforce with much-needed skilled and credentialed employees.

Purpose Statement

The primary purpose of this study was to understand the relationship between student engagement, as defined by the CCSSE, and persistence (intent to enroll within the next 12 months) at Tidewater Community College. As noted previously, the vast majority of research

and theory on student persistence and retention has focused on 4-year colleges and universities (e.g., Pascrella & Terenzini, 2005; Townsend & Bragg, 2006). Using the CCSSE, the intent of this study is to contribute to the body of knowledge regarding the role student engagement plays in retention among community college students. The moderating effects of HSGPA, CGPA, race, first-generation status, academic self-efficacy, sense of belonging, and late registration on student retention will also be investigated. The findings from this study could help college administrators, faculty, and academic advisors better understand and address student retention and ultimately improve it.

Research Questions

The specific research questions to be answered are the following:

RQ1: Is HSGPA positively related to CGPA?

RQ2: Is student-faculty interaction positively related to CGPA?

RQ3: Is student-faculty interaction positively related to the intent to enroll in the next 12 months?

RQ4 Is HSGPA positively related to faculty-student engagement?

RQ5: Does student-faculty interaction mediate the relationship between HSGPA and CGPA?

RQ6: Do race and first-generation status moderate the HSGPA, student-faculty interaction, CGPA, and Intent-to-Enroll causal sequence?

RQ7: Is academic self-efficacy positively related to CGPA?

RQ8: Is academic self-efficacy positively related to the intent to enroll in the next 12 months?

RQ9: Is HSGPA positively related to academic self-efficacy?

RQ10: Does academic self-efficacy mediate the relationship between HSGPA and CGPA?

RQ11: Do race and first-generation status moderate the HSGPA, Academic Self-efficacy, CGPA, and Intent-to-Enroll causal sequence?

RQ12: Is late registration negatively related to CGPA?

RQ13: Is late registration negatively related to the intent to enroll in the next 12 months?

RQ14: Is late registration negatively related to HSGPA?

RQ15: Does late registration mediate the relationship between HSGPA and CGPA?

RQ16: Do race and first-generation status moderate the HSGPA, Late Registration, CGPA, and Intent-to-Enroll causal sequence?

RQ17: Is a sense-of-belonging positively related to CGPA?

RQ18: Is a sense-of-belonging positively related to the intent to enroll in the next 12 months?

RQ19: Is HSGPA positively related to a sense-of-belonging?

RQ20: Does a sense-of-belonging mediate the relationship between HSGPA and CGPA?

RQ21: Do race and first-generation status moderate the HSGPA, sense-of-belonging, CGPA, and Intent-to-Enroll causal sequence?

CHAPTER TWO: LITERATURE REVIEW

For the past 45 years and with increased intensity, the retention of college students has been a major concern for educators and administrators in higher education. To address this concern, research has been conducted to understand it (Bayer, 1968; Campbell & Fiske, 1959; Feldman & March, 1966; Panos & Astin; 1968; Summerskill, 1962). The focus of the research that occurred prior to 1970 focused primarily on the characteristics of students, rather than on their interactions with the college environments. These studies were said to have been grounded in psychology rather than sociology (Astin et al., 2012) and lacked a clear theoretical foundation

on which to build (Spady, 1970). In sum, when a student dropped out of college, it was attributed

solely to his or her personal characteristics, attributes, and shortcomings (Astin et al., 2012;

Habley et al., 2012; Spady, 1970, 1971; Tinto, 1993, 2006).

In the 1970s, as college attendance became more accessible to a more extensive and more

diverse population of students, retention and persistence theoretical frameworks began to emerge

(Bean, 1980; Spady, 1970, 1971; Terenzini & Pascarella, 1977; Tinto, 1975). Spady's (1971)

work, *Dropouts from Higher Education: An Interdisciplinary Review and Synthesis,* represented

a major shift in how student retention was viewed and served as the foundation for building more

comprehensive retention theories. Following this and throughout the 1970s, the connection

between the student and the institution was established and the responsibility of students not

persisting was shared by institutions (Habley et al., 2012). To date, many student retention

studies have been conducted and theoretical models developed: for example, Spady's (1970)

Undergraduate Dropout Process Model, Tinto's Institutional Departure Model (1975, 1993),

Bean's Student Attrition Model (1980, 1982), the Student-Faculty Informal Contact Model

(Pascarella and Terenzini, 1980), Astin's Student Involvement Model (1984), the Non-traditional

Student Attrition Model (Bean & Metzner, 1985) and the Student Retention Integrated Model

(Cabrera, Nora, & Castaneda, 1993).

To understand further why students leave or stay in college, numerous studies have been

conducted on specific variables that impact this decision. Some of these variables to include race,

academic preparedness (high school), social support/social capital, first-generation, late

registration, college GPA, learning communities, student-faculty interaction, engaging pedagogy,

academic self-efficacy, and student engagement (Stewart, Hun Lim, & Kim, 2015; Deil-Amen,

2011; Fontaine, 2014; Barbatis, 2010; Chang, 2005; Bailey, Calcagno, Jenkins, Kienzl & Leinbachm 2005; Community College Survey of Student Engagement, 2005).

Therefore, the goal of this literature review is to compare and discuss seven of the most-cited student retention theoretical models as they appeared in the available literature, discuss research on specific variables such as race, academic self-efficacy, first-generation status, and college GPA that have that have been shown to influence, negatively or positively, student retention and persistence, with emphasis on the community college population.

Frameworks for Student Retention Models

Each of the seven student retention models to be discussed in this section has tenets that are grounded in other conceptual frameworks. These frameworks, although not necessarily specific to college students, provided a strong foundation upon which Spady (1970), Tinto (1975), and Bean (1985), for example, built their student retention models. These are the suicide, rites of passage, and workplace turnover theories/concepts. Each of these will discussed briefly as a prelude to the discussion of the specific models of student attrition/retention.

Suicide Theory

Durkeim (1951) developed the suicide theory to explain why individuals voluntarily withdraw themselves from society. Specifically, the theory indicates that when a person commits suicide, it can be attributed to the individual's lack of social and intellectual integration into the social life of his or her society. As it relates to student retention, a link was made between suicidal behavior and students dropping out of college or not persisting. Tinto (1993), in particular, believed that when a student drops out of college or fails to persist it is tantamount to a person voluntarily withdrawing from society, as in the case with suicide. Similarly, Spady (1971), believed the suicide theory could be used to understand student attrition. As such, the

suicide theory was the foundation of his pioneering work *Dropout from Higher Education: Toward an Empirical Model.*

Rites of Passage Concept/Theory

Van Gennep's (1960) work in the area of rites of passage in tribal societies from the field of anthropology partially influenced Tinto's prevalent and often cited student retention model. Van Gennep's work highlighted the three stages of separation, transition, and incorporation as phases of transition/transmission of relationships between succeeding groups (Elkins, Braxton, & James, 2000). Tinto (1993) used this concept to support his notion of a longitudinal process of student persistence in college. Tinto, in using Van Gennep's three stages model, explained the first stage as the stage when college students have to separate themselves from their old communities to allow for the adoption of the norms and behavior of their new ones. For the second stage, Tinto characterized how college students move towards the final stage of incorporation within the norms of the new community. The last stage was described as a time when students successfully separate themselves from the norms and behaviors of their old communities and they become fully integrated into the new college environment.

Workplace Turnover Theory

Research in the area of workplace turnover by Price (1977) greatly influenced what is currently known about this concept. The Student Attrition Model of Bean (1980) was greatly influenced by research on workplace turnover. In fact, Bean (1980) was the first to adopt the concept. In applying the concept of workplace turnover to student retention, Bean (1980) suggested that employees and students leave for similar reasons. When an employee is not satisfied, he or she is likely to leave the organization. Bean (1980) believed the same thing happens with students when they do not have a satisfying experience in school. Workplace

turnover research also suggests that employee pay is a major factor whether an employee stays or leaves. In the case of college students, the pay variable is equated to college GPA, development, institutional quality, and practical value (Bean, 1980).

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Models of Student Retention

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The Undergraduate Dropout Process Model

The Undergraduate Dropout Process Model (Spady, 1970, 1971) is considered one of the first theoretical frameworks used to describe and understand student retention as well as highlight the role of the student-college relationship (Astin et al., 2012; Habley et al., 2012). Additionally, Spady's model was the first one to link the process of student attrition to Durkheim's suicide theory. Spady's (1970) original model suggested that institutions had a large role to play in student retention and persistence. He indicated there were two systems at play regarding whether a student was successful or not. These were the academic and social systems, with each one containing factors that impacted student retention and persistence. In the academic system, the two main factors were grades and intellectual development. In the social system, normative congruence and friendship support were the main factors.

Spady's 1970 model underwent modifications after a review of other studies in the field. Spady (1970) noted that the literature regarding college dropout literature lacked theoretical and empirical coherence and had no definite theoretical basis. This prompted Spay to explore student retention from a different angle. As such, Spady started to draw connections between the quality of the interactions between the students and the environments of their academic institutions. The interactions that resulted were a reflection of the interplay of the individual students' attributes (disposition, interests, attitudes, skills, etc.) and factors of the institution (courses, faculty members, administrators, and peers). Spady (1971) believed that quality of the interaction

students experience directly impacts how well they integrate into their academic and social systems at their institutions. As such, the more integrated a student is, the more likely it is that he or she will persist.

Spady's (1971) revised and modified undergraduate dropout model process built upon his initial model and subsequent research findings. The modified model explained the dropout decision being influenced by the following variables: family background, academic potential, normative congruence, friendship support, grade performance, intellectual development, social integration, satisfaction, and intellectual commitment. Consequently, future student retention models considered the role the student-college relationship played in a student reaching his or her academic goal of persisting and graduating.

The Institutional Departure Model

As an extension to the Spady's (1970, 1971) theoretical views regarding what impacts a student's decision to drop out from an institution, Tinto (1975) proposed the Institutional Departure Model. This model is also called the Student Integration Model. The current model (Tinto, 1993) is the product of several revisions by Tinto and others (Cabrera, Castaneda, Nora & Hengstler, 1992; Pascarella & Terenzini, 1979, 1980, 1983; Tinto, 1988). This model, as does Spady's (1970, 1971), views interaction between students and the academic and social systems of their institutions as critical in whether a student decides to stay or leave an institution. Following the same line of reasoning as Spady (1970, 1971) regarding why students leave college, Tinto's departure model reflected Durkheim (1951) suicide theory. Finally, Tinto's departure model also reflects the tenets outlined by Van Gennep (1960) regarding the rites of passage in tribal societies.

Tinto's final version of the Institutional Departure Model consists of the academic and social systems, as did Spady's (1971). These two systems are critical to a student's overall success. Tinto (1993) suggested that a student must be integrated in these systems to persist. For example, a student doing well academically as measured by grade point average would be considered academically integrated. A student who is actively involved with peers and faculty in meaningful ways would be considered socially integrated, for example.

Tinto's model of student departure also suggests that goals and commitments that a student has prior to enrolling in college play a role in whether a student stays or leaves college. These goals and commitments are impacted by such things as family background, skills and attributes, and prior schooling. In addition to these pre-entry attributes, there are the experiences that a student has at college that are important in this model. According to the model, a student's experiences with his or her institution will either strengthen or weaken initial goals and commitments. Tinto (1975, 1993) suggests that a student's level of goals and commitments affects the decision to stay in school or leave. A final aspect of Tinto's departure model involves external commitments such as family and job commitments. The model suggests these factors affect both initial and subsequent levels of goals and commitments, which in turn affect a student's decision to stay or leave a college.

The Student Attrition Model

Bean (1980, 1982) proposed the Student Attrition Model to explain student retention and persistence. Bean argued that the process of student retention and persistence is similar to the process of employee turnover based on Price's (1977) concept of employee turnover in the workplace. In other words, students and employees leave for similar reasons. Bean further explained, consistent with the employee turnover concept, that student and employee satisfaction

and their decision to stay or leave is influenced by the organizations of which they are a part. Bean (1980), in making the connection between the tenets of the turnover model to student retention and persistence, defined certain turnover terms in a way that is consistent with higher education language. Bean replaced the "pay" variable used in the turnover model with four educational indicators: student GPA, development, institutional quality, and practical value. To Bean, these indicators are important factors impacting student retention and persistence.

Upon further investigation into Price's (1977) turnover concept, Tinto (1975) and Spady's (1970) student attrition models and other student retention and models (Fishbein & Ajzen, 1975; Pascarella, 1980), Bean (1980) solidified his model to explain student attrition. Bean's (1982) final model reflects variables that affect students' intentions to leave. Bean asserted that woven into a student's intention to leave are variables that fall under four categories: background, organizational, environmental, and attitudinal and outcome variables. He believed any model of student attrition that reflects these would capture the essence of what factors ultimately affect a student's decision to drop out.

Although Bean indicated that his work was based on the work of Tinto (1975), he did not believe student dropout could be explained using Durkheim's suicide theory (1951). He did not see any evidence to support the conclusion Tinto and others were drawing. Therefore, his model does not reflect such tenets in explaining the process of student retention and persistence.

The Student-Faculty Informal Contact Model

Pascarella (1980), using Spady (1970, 1971) and Tinto's (1975) models as a foundation, developed the Student-Faculty Informal Contact Model. At the heart of this model is the assumption that informal contact between students and faculty will have a positive impact on a student's decision to stay or leave college. This is similar to what Spady (1980) and Tinto (1975)

believed regarding the importance of a student's social and academic integration at their institutions. One important point Pascarella highlighted regarding his model was how student-faculty interaction could help especially students with low institutional commitment.

Although Pascarella (1980) found support in previous student retention studies for his model (Pascarella & Terenzini, 1977, 1979. 1980), he did not find enough evidence regarding a direct influence of student-faculty informal contact on student persistence. This was the impetus behind the development and eventual crystallization of his model.

The Student-Faculty Informal Contact Model is a longitudinal model that suggests there is a positive relationship between the amount of student-faculty informal interaction and student retention, particularly among first year students. Pascrella (1980) also noted that the quality of interaction, which is critical to ultimate student success, is influenced by such things as initial student differences, the faculty culture and classroom experiences, peer-culture involvement and the size of the institution. His model also suggested personalities, abilities, educational and professional aspiration, prior schooling achievement and experiences and family and home backgrounds play a role in whether a student persists or withdraws.

Astin's Theory of Involvement

Astin's (1984) theory of involvement is about creating learning environments where students are highly involved and their chances of persisting and graduating are increased. According to Astin (1984), a highly involved student is one who devotes considerable energy to studying, spends much time on campus, participates actively in student organizations, and interacts frequently with faculty members and other students. In Astin's research on college dropouts, he observed that students who were highly involved persisted at a higher rate than those who were not as involved.

Astin's theory is made up of five core postulates:

1. Involvement can be generalized, such as the entire student experience, or more specific, such as studying for an exam.

2. Involvement occurs along a continuum that is distinct for each student at a given time.

3. Involvement can be quantitative or measured, such as the number of hours spent studying, or qualitative, such as whether the student comprehends the reading assignment.

4. Involvement theory states that the amount of learning and personal growth associated with any educational program is directly proportionate to the quality and quantity of student involvement in that program.

5. Involvement theory also says "the effectiveness of any educational policy or practice is directly related to the capacity of that policy or practice to increase student involvement" (Astin, 1999, p. 519)

Astin's (1984) theory of involvement has tenets that are similar to Tinto (1975, 1993) and Bean and Metzner (1985), in particular. For example, their models emphasized the importance of social and academic integration for student retention and persistence, which is an essential component of their models. Astin (1984) indicated that student retention is the other face of student involvement and argued that the greater students' involvement in their academic institutions, the greater is the rate of their persistence. In particular, Astin noted that most of the dropouts indicated that the reason for their departure was related to lack of involvement.

Astin's theory is more closely related to Pascarella's (1980) model in that it places a premium on a student being involved with the institution via interactions with faculty, staff and

peers. Additionally, both models postulate that students who are involved with their institutions persist at a higher rate.

The Non-Traditional Undergraduate Student Attrition Model

Bean and Metzner (1985) developed the Non-Traditional Undergraduate Student Model to explain the process of student retention and persistence for non-traditional students in particular. The model is based on four sets of variables: academic performance, intent to leave, background and defined variables. With these variables, the model suggests that students with lower academic performance are more likely to withdraw. Additionally, students' high school academic performance is considered a contributing factor in how well a student does in college. The next item for consideration in this model is the student's intention to leave. This is influenced primarily by psychological outcomes such as satisfaction, goal commitment, and stress. A student's high school achievements and educational goals are the background and defining variables linked to student persistence. Lastly, there are the environmental factors that directly affect student persistence. These include finance, working hours, outside encouragement, family responsibilities, and opportunity to transfer, which are factors of particular importance for non-traditional students (Tinto, 1993). As a special note regarding environmental factors, the model suggests that such factors make it unlikely that a student will engage with other students, and faculty, which is important for student retention and persistence.

Although previous studies (Flanagan, 1976; Jacoby & Girrell, 1981; Pascarella, 1983) had been done on commuter students, Bean and Metzner (1985) found them to be very descriptive in nature, offering little insight into the process of student retention and persistence hence the development of Non-Traditional Undergraduate Student Attrition Model. Finally, although the model focuses on non-traditional students in particular, it has tenets similar to those

found in models by Spady (1970) and Tinto (1980). For example, the model suggests that academic performance and intent to leave college are important factors to consider when investigating reasons why students persist or withdraw from an institution.

Given the importance of academic integration and social integration for student persistence (Spady, 1970; Tinto, 1975), this model is of particular importance in understanding student persistence from a non-traditional student perspective.

The Student Retention Integrated Model

This model, created by Cabrera, Nora, and Castaneda (1993), reflects the convergence of Tinto (1975) and Bean's (1982) models of student attrition. The genesis of this convergence was the findings of a study by Cabrera (1992), which suggested an integrative framework for understanding student retention was more appropriate. Upon empirical testing of the suggested integrative model, Cabrera et al., (1993) found support for the integrated model and proposed the Student Retention Integrated Model.

The Student Retention Integrated Model proposes the following variables as impacting, directly and indirectly, student persistence: financial attitude, encouragement from friends and family, academic integration, college GPA, institutional commitment, goal commitment, and intent to persist. This model highlighted the complex role environmental variables play in student retention. This is different from what Tinto (1975) perceived regarding environmental factors but consistent with claims by Bean (1982).

<div align="center">

Variables that Impact Student Retention

</div>

The previous section discussed some of the popular models of student retention that have been postulated dating back to 1970. These models provide a framework for understanding the process of student retention and highlight student engagement variables that directly and

indirectly influence a student's decision to leave or stay in school. Such models are important for researchers, college administrators and others responsible for student success and retention (Tinto, 1993). The next section will elucidate many of the variables proposed in the models of student retention discussed previously and provide more insight regarding the factors that influence a student's decision to leave or stay in school. Race, first-generation status, high school GPA, academic self-efficacy, sense of belonging, college GPA, late registration, faculty-student interaction, late registration, and college GPA were the specific variables investigated in the study.

Race

Data regarding the impact that race has on persistence in college suggest that minority students do not to persist in college at the same rate as their peers from the majority culture, and they do not graduate at the same rate (Hagedorn, Maxwell, & Hampton, 2001; LeSure-Lester, 2003; Hune, McEwen, Kodama, Alvarez, Lee, & Liang, 2002). Leppel (2002), in investigating how race impacts retention, found that the rates of Black students are consistently lower than those of majority students. Of all the ethnic groups least likely to graduate with a bachelor's degree, Latinas/Latinos were identified as the ethnic group most likely to drop out (Berkner, He, & Calladi, 2002). Race plays a significant role in student retention and persistence, even when a student has a strong academic background. Oseguera, Locks, and Vega (2009) noted that issues associated with race can threaten the academic performance and persistence of students despite their having strong academic backgrounds.

Gender

Student persistence and retention statistics are heavily influenced by demographic variables such as gender (Keels, 2013). Horn (2006) noted that female students tended to

graduate at higher rates from college than their male peers across the board. Evidence of the underrepresentation of successful male college students is documented as well. Research has shown that the majority of all Bachelor's and Master's degrees across the nation are awarded to women (Aud et al., 2012). In examining the retention of students in an online course, Cochran et al. (2014) found that males are more likely to withdraw from an online class than females. Understanding the role gender plays in student retention is consistent with Bean and Metzner's (1985) student attrition model. In this model, as noted previously, gender is proposed as one of the factors that impacts student attrition for nontraditional students.

First-Generation Status

A significant amount of research indicates that students whose parents have not attended college often face considerable challenges in accessing postsecondary education, succeeding academically once they enroll, and completing a degree (Ishitani 2006; Woosley and Shepler 2011). Further research indicates that First Generation College Students (FGCS) are typically less prepared upon entering college (Choy, 2001; Holland, 2010); FGCS tend to be less engaged with the college lifestyle as a whole (Lowery-Hart & Pacheco, 2011). Other factors that are important for student success are typically lacking or an issue for FGCS. For example, FGCS tend to experience a greater level of fear of failure (Bui, 2002); take more developmental education classes (Gibbons & Woodside, 2014); and lack the adequate motivation and commitment to persist to graduate compared to their counterparts (Pascarella, Pierson, Wolneak, and Terenzini (2004). Additionally, FGCS often have other characteristics that put them at an increased risk of dropping out, such as low socioeconomic status, children of their own, and working full time (Chen and Carroll 2005; Horn and Premo 1995; Choy 2001; Lohfink and Paulsen, 2005).

The role of parents seems to play a huge role in overall college success. Collier and Morgan (2008) note that when FGCS enroll in college, they cannot benefit from their parents' college-going experience, which is a valuable source of cultural capital that helps students navigate college (e.g. how to register for classes, using support services or how to manage their course load). This lack of cultural capital negatively impacts even those FGCS who have strong academic backgrounds.

In order to fully understand and address factors that impact student retention and persistence in higher education, particularly among community college students, an understanding of the challenges that FGCS face is critical. Considering the potential negative impact of some of the challenges FGCS face as they pursue their academic goals, understanding the impact of such variables is imperative.

High School GPA/Achievement

High school grade point average (HSGPA) has been recognized by several researchers as a reliable predictor of academic achievement and college persistence (Allen, Robbins, Casillas, & Oh, 2008); Astin, 1971, 1973; Hoffman & Lowitzi, 2005). Additionally, Tross, Harper, Osher and Kneidinger (2000), in a study investigating the relationship between high school academic achievement and later college persistence, found a positive relationship. In other words, HSGPA was positively related to college retention and persistence. In investigating factors that predict college academic performance, researchers also found HSGPA to be the strongest predictor among any other factors considered (Hoffman & Lowitzi, 2005; Livingston, 2007; Munro, 1981). Finally, Astin (1987,1997), in a longitudinal study and in one involving over 8,000 students, found high school grades to be viable predictors of college retention and persistence. For example, students entering college with a high GPA from high school were seven times more

likely to graduate with a degree in four years than students entering with a lower GPA from high school.

Standardized tests such as the SAT and ACT that high school students take prior to enrolling in college, have also been studied to determine the relationship between scores and college persistence. Several studies have revealed a positive relationship between SAT/ACT scores and college persistence (Braunstein &McGrath, 1997; Noble, 2003; Tracey & Robbins, 2006). Tracey and Robbins (2006) found a statistically significant relationship between ACT scores and college persistence when they examined the ACT composite scores of first-time freshmen enrolled at 87 colleges and universities. Although most research reveals a positive relationship between ACT and SAT scores and college persistence, Munro (1981) and Pascarella and Terenzini (1983), noted that such scores do not have a direct link to a student's decision to leave a college or stay.

As noted in the studies above, high school achievement in the form of HSGPA and SAT/ACT scores revealed a positive association with college retention and persistence. This study will investigate the impact that self-reported HSGPA has on college academic performance and intent to enroll within the next 12 months. HSGPA and SAT/ACT scores are currently used by the college used for this study to determine whether a student is ready for college-level math or English.

Social Support

As to be expected, social support from family, friends, and other individuals has a positive effect on student retention and persistence. Tinto (1993) recognized this and incorporated social support theory into his model of student retention. Tinto's basis for incorporating this variable in his model is associated with the work of McCarthy, Pretty, and

Catano (1990) and Pearson (2012), which indicated that supportive relationships prevent and reduce the harmful effects of stress, and enhance individuals' ability to cope effectively with stress in special social situations. In a study that highlighted the value of peer relationships, it was found that peer discouragement to leave college was positively related to persistence (Anderson, 1981). In a similar study, Lombardi, Murray, and Kowitt (2016) investigated the relationship between social support and academic success for college students with disabilities. Their study went beyond examining social support in general and looked specifically at the relationship types. The researchers sought to determine if the type of relationship matters when it comes to student retention and persistence. The types of relationship examined were parent, peer, and partner. An examination of main and moderating effects showed relationship types have differential effects on academic success outcomes. The findings of this study highlighted the importance of considering relationship types and quality of social support when trying to understand the relative importance of social support for student retention and persistence. These findings are consistent with other research that found relationship types and characteristics of those relationships matter. For example, Derogatis (1974) found that a person having a psychological disturbance could have a negative influence on a person's ability to benefit from social support. Therefore, a person's characteristics may mediate the supportive behavior of others.

Baker and Robnett (2012) investigated the role that experiences during college play in student retention and persistence among Blacks and Latinos. In this study, both groups had similar pre-college experiences and background characteristics (high school grades, SAT scores, private school attendance rates, economic background, and gender). Although these two populations had similar pre-college experiences and background characteristics, the study

revealed different retention and persistence rates. Black students were more likely to be retained that the Latinos students. Further analysis to understand the differing retention and persistence rates revealed that the Black students were more likely to have connections with others on campus, were more likely to study with other students, and participate in a club. These findings highlight the importance of social support from within the college environment, particularly for the retention of minority students. According to Tinto (1993), the connection to others on campus contributes to student retention and persistence. These findings are also consistent with theories of student retention and previous research regarding the importance of campus support and involvement (Fischer, 2007; Astin, 1984; Tinto, 1993).

In a similar study, Aruguete (2017) sought to understand the factors that predict academic success of first-generation students at a college. In surveying students in this study, the researchers discovered that first-generation students showed lower grades and lower critical-thinking scores compared to their peers. In addition, they reported having less faculty contact and less time for academic tasks. In terms of what factors predicted success for this population, academic preparedness and contact with faculty members were of particular importance. In other words, students who had strong academic backgrounds prior to entering college and those who spent meaningful time with instructors were more likely to persist and graduate.

The findings discussed in this section highlight the importance of social support for undergraduate students who are a part of an underrepresented group. They provide insight into the role different types of social support play in retention and persistence. Additionally, these findings are consistent with theoretical models of student retention discussed previously that suggest colleges play a significant role in student retention and persistence (Bean, 1980; Spady, 1971; Terenzini & Pascarella, 1977; Williams, 1971; Astin, 1984)

Student Commitment

Another variable that is relevant in understanding student retention and persistence is commitment. This variable has been examined in order to better its impact on persistence rates (Tinto, 1975). In this context involving student retention, commitment is a decision to continue to graduation or transfer to a new institution. Given the role that student commitment plays in retention and persistence, college administrators are very interested in understanding it. The work of Rusbult around investment (1983) has influenced Tinto's (1993) work regarding the role that commitment plays in student retention. Although initial commitment (the commitment students hold prior to interacting with their college or university) is important, subsequent commitment is of great importance because of its defining role in persistence (Hatcher, Kryter, Prus, & Fitzgerald, 1992). In related research, Savage, Strom, Ebesu Hubbard and Aune (2019) found that as students' level of satisfaction increased, students' quality of alternatives decreased, and as students' investment size increased their subsequent commitment to the goal of graduation from their institution increased. These findings shed light on the complex nature of commitment in student retention and provide greater understanding of how both Tinto (1993) and Rusbult's (1983) theories can be used to understand and improve student persistence.

Academic Self-efficacy

Academic self-efficacy refers to a person's beliefs concerning the confidence in performing various academic tasks (Bandura, 1997) and has been positively associated with academic achievement (Gore, 2006; Hsieh, Sullivan, & Guerra, 2007). In a study where students expressed high efficacy regarding learning the French language, the findings showed they had higher levels of academic success (Mills, Pajares, & Herron, 2007). Along the same lines, other researchers studying the role of academic self-efficacy in academic success among various ethnic

groups found it to be associated with academic achievement (Bembenutty, 2007; Gloria& Ho, 2003).

Komarraju and Nadler (2013) found that high self-efficacy is associated with academic achievement for college students. In particular, the students who were more confident and self-assured were more likely to report higher levels of academic performance. Noteworthy and relevant to this research were their findings that students who had high academic self-efficacy persisted through difficult and boring course work, were self-motivated and self-sufficient, and exercised more impulse control in the face of distractions. All these characteristics were found to be associated with higher academic achievement when compared to students who did not express high academic self-efficacy. Finally, this research highlighted the value of academic self-efficacy and the role it can play in students persisting and eventually graduating. As noted previously, this study will investigate the salience of academic self-efficacy in relation to academic performance and student retention and persistence.

Sense of Belonging (validation)

A sense of belonging, defined as the psychological sense that one is a valued member of the college community is a variable that has shown to have a positive relationship with college student persistence. Strayhorn (2012) noted that a sense of belonging is associated with positive outcomes in college, including academic achievement, satisfaction, and adjustment.

Hurtado and colleagues (2007), in a study examining the impact of sense of belonging on first-year students majoring in science, found several variables to be positively related to students' sense of belonging. These were, for example, SAT scores, interacting with graduate students or teaching assistants, and getting advice from other students. In a related study with an emphasis on coping skills in part-time students, Kember and Leung (2004) found that various

coping skills, such as negotiating with one's family to allow time to study and establishing social connections with like-minded students, were related to a sense of belonging. So, students with a greater sense of belonging exhibited more proactive and assertive skills in support of their persistence and academic performance.

Finally, Walton and Cohen (2007), in examining a sense of belonging among African American students pursuing computer science degrees, found that sense of belonging plays a role in student success. The findings of their study suggested that fostering students' sense of belonging may be an effective means of improving college performance of potentially marginalized students. These findings are of interest given the characteristics of the typical community student and the focus of this study.

A concept related to sense of belonging is validation. Rendon (1994, 2002) defined validation as interactions with students, initiated by faculty and others in the campus community, that engender feelings of self-worth and a belief in the students' ability to succeed in the college environment. She described it as involving demonstrations of recognition, respect, and appreciation for students and their families and communities. Rendon (1994, 2002) believed that validation more so than integration emphasized by Tinto (1993) may be more salient for retention, especially for non-traditional and underserved students, as well as for those in community college settings. Rendon and Garza (1996) noted a critical issue regarding students who typically attend community colleges. The issue was that students who did not grow up assuming they would go to college could have insufficient ease with, and knowledge about, college environments to become readily integrated without additional assistance. Given the emphasis Tinto's (1993) landmark model places on integration and the disproportionate low

retention rates among community college students, this argument is very intriguing and worth consideration in this present study.

College GPA

Academically, how well a student does in college appears to be related to how well he or she did in high school as well as his or her academic performance in college. Adelman (1999) noted that the academic abilities a student brings to college are a strong predictor of baccalaureate attainment. Similarly, (Pascarella & Terenzini, 1991; 2005) noted that academic performance early on during college years has shown to be a strong predictor for degree attainment. Other researchers found similar results when investigating academic preparation and performance in relation to final degree completion (e.g., Adelman, 2006; DesJardins, Kim, & Rzonca, 2003; Reason 2003).

Researchers investigating the impact that college grade point average has on persistence found that it is a strong predictor for degree completion (Attewell, Heil, & Reisel, 2011; Mettler, 2011; Reason, 2003). Nakajima, Dembo, and Mossler (2012) investigated factors likely to influence a student to drop out or stay in school. The study found that cumulative college GPA was one of the strongest predictors of student persistence. In other words, students who had higher cumulative GPAs were twice as likely to stay in college. Craig and Ward (2008), in their research on retention in community colleges, found that cumulative GPA was the factor most strongly related to student success. This research is consistent with previous research on retention that shows a relationship between academic achievement and staying in school. As noted, high school and college GPA will be examined in this study in relation to persistence and academic performance.

Life Stress

Early studies by Sarason, Johnson, and Siegel (1978) indicated that life demands and responsibilities such as outside employment and raising a family are negatively related to GPA. In a related study, Carter (2006) reported that family responsibilities were among the five most prevalent of 60 reasons for attrition of older and part-time students. This is of particular importance given the typical demographics of community college students (Tinto, 2010). Another important finding regarding community college students showed that family pressure and obligations were listed as major reasons for withdrawal among community college students (Brainard & Alfred, 1973). In a study that investigated the impact of external pressures, Metzner (1984) found that a global measure of stress was significantly related to attrition for students attending an urban commuter university. Finally, life demand surveys (Sarason et al., 1978; Lazarus, Kanner, & Folkman 1980; Holmes & Rahe, 1967) have been negatively related to adjustment and commitment measures (Baker & Siryk, 1989). These findings are consistent with the models that suggest external factors impact a student's ability to integrate to college and persist (Bean & Metzner; Tinto, 1993).

Late Registration

Late registration for classes is something that is common among community colleges. There are individuals in the college community who are for and against it. Both sides appear to have valid arguments. The issue is of importance in the current community college context because of increasing scrutiny and assessment of student success (American, 2013). The literature paints an interesting picture that does not settle the issue. Ford, Stahl, Walker, and Ford (2008) found that there was a significant inverse relationship between registration time and course grade, i.e., the later students registered, the lower their grades. Inverse and significant

results were also found for the relation between registration time and students' course average, semester GPA, and cumulative GPA.

On the other hand, Perkins (2002) found that there were no statistically significant differences in the outcomes of on-time and late registrants. This finding is the opposite of the other findings and indicates the need to continue to explore, most likely on an institution-specific level, the true impact that late registration has. This study will investigate the impact that late registration has on overall student retention and academic performance.

Student-faculty Interaction

Early research by Wilson and Gaff (1975) demonstrated the impact of instructor contact outside the classroom. Their research revealed that faculty who were consistently nominated by students and professional colleagues as "most outstanding," as having the "most impact" on students, and as playing a role in students' "choice of major" were those who interacted most frequently with students outside the classroom. Further, Braxton, Bayer, and Noseworthy (2004) noted that each student interaction with faculty, staff, and administrators determines how the student will view the college or university's commitment to student welfare. When a student has a positive experience, it contributes to his or her confidence in the college (Bean & Eaton, 2000). This builds confidence in the student's belief that he or she can be successful, which leads to more positive interactions and experiences. The positive interactions with staff, which impacts commitment to the institution and social integration, have a ripple effect on student success. As noted by Braxton (et al., 2004), these factors operating together increase the likelihood of persistence. Although students' interactions with faculty have been the focus of considerable study, only a limited number of researchers have examined student-faculty interaction in a

community college setting (Astin, 1993; Cabrera et al. 2001; Ishiyama 2002; Lamport 1993;

Thompson 2001; Kuh & Hu, 2001).

This research will test the following hypotheses:
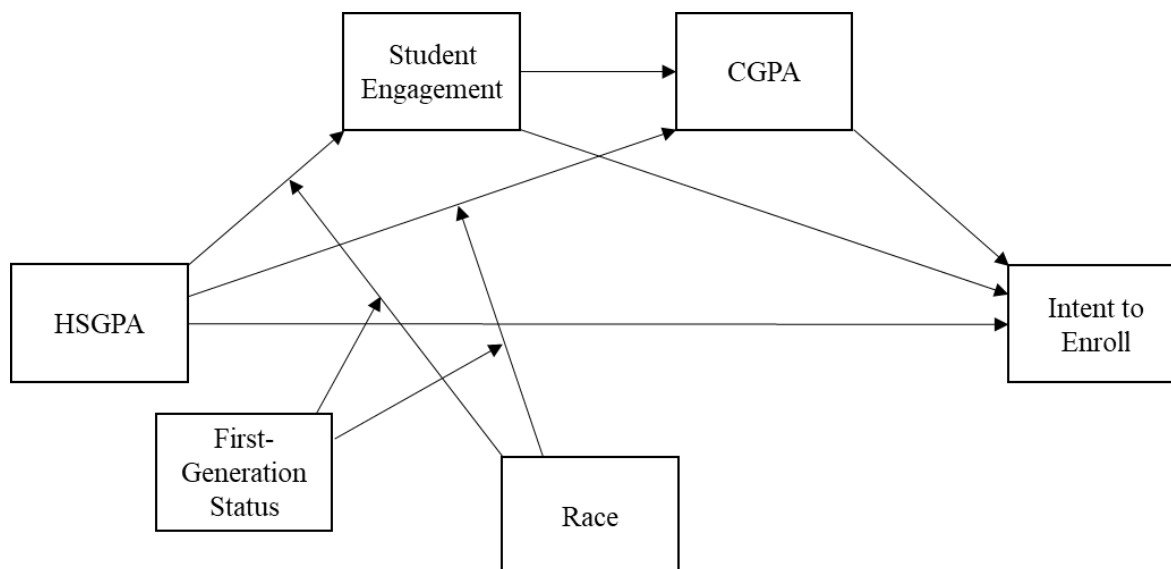
H1: HSGPA will be positively related to CGPA.

H2a: Student-faculty interaction will be positively related to CGPA.

H2b: Student-faculty interaction will be positively related to the intent to enroll in the next 12

months.

H2c: HSGPA will be positively related to faculty interaction.

H2d: Student-faculty interaction will mediate the relationship between HSGPA and CGPA.

H2e: Race and first-generation status will moderate the HSGPA→ Student-faculty

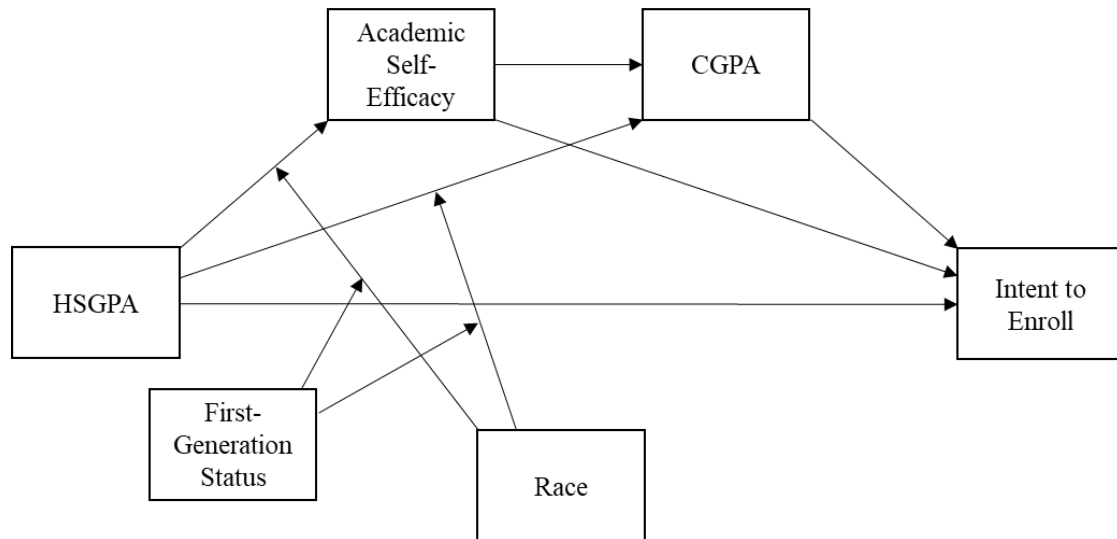interaction →CGPA→Intent-to-Enroll causal sequence.

H3a: Academic self-efficacy will be positively related to CGPA.

H3b: Academic self-efficacy will be positively related to the intent to enroll in the next 12

months.

H3c: HSGPA will be positively related to academic self-efficacy.

H3d: Academic self-efficacy will mediate the relationship between HSGPA and CGPA.

H3e: Race and first-generation status will moderate the HSGPA→ Academic Self-

efficacy→CGPA→Intent-to-Enroll causal sequence.

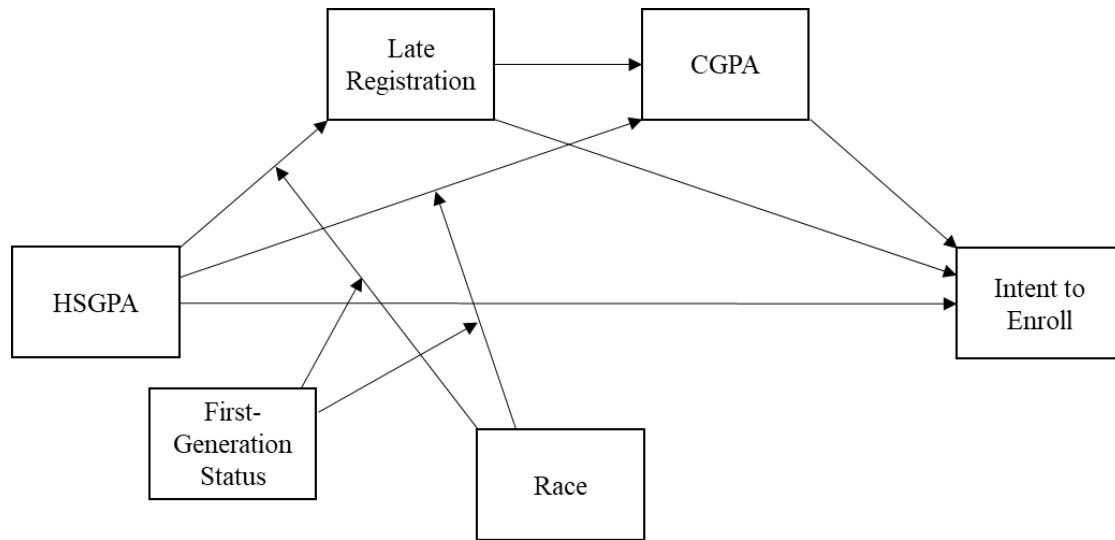H4a: Late registration will be negatively related to CGPA.

H4b: Late registration will be negatively related to the intent to enroll in the next 12 months.

H4c: HSGPA will be positively related to late registration.

H4d: Late registration will mediate the relationship between HSGPA and CGPA.

H4e: Race and first-generation status will moderate the HSGPA→ Late

Registration→CGPA→Intent-to-Enroll causal sequence.

H5a: A sense-of-belonging will be positively related to CGPA.

H5b: A sense-of-belonging will be positively related to the intent to enroll in the next 12 months.

H5c: HSGPA will be positively related to a sense-of-belonging.

H5d: A sense-of-belonging will mediate the relationship between HSGPA and CGPA.

H5e: Race and first-generation status will moderate the HSGPA→ A sense-of-belonging→CGPA→Intent-to-Enroll causal sequence.
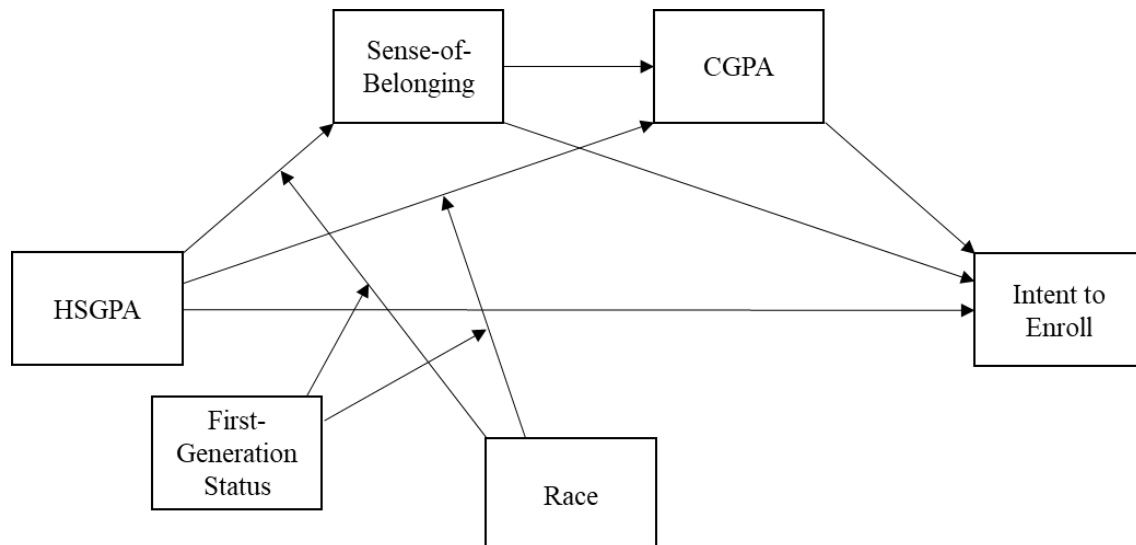
CHAPTER THREE: METHODS

Participants

The sample for this study included 1,276 students from a two-year community college. Classes were randomly selected to participate in the survey and voluntarily completed the CCSSE as a part of their class. The demographical characteristics are outlined in Table 1.

Table 1
Demographical Characteristics

Student Characteristic	Survey Respondents	All Students at CCSSE Member Colleges
Enrollment Status		
Full-time students	72%	41%
Part-time students	28%	59%
Gender Identity		
Man/Male	42%	42%
Woman/Female	53%	57%
Other & I prefer not respond	4%	N/A
Race/Ethnicity		
White	50%	55%
Black or African American	9%	12%
Hispanic or Latino	15%	16%
American or Alaskan Native	1%	5%
Asian	4%	4%
Native Hawaiian or Other Pacific Islander	1%	1%
Two or more	8%	3%
Race or Ethnicity Unknown	8%	4%
International Student or Non-resident Alien	4%	1%
Age		
18-19	32%	24%
20-21	24%	16%
22-24	14%	12%
25-29	11%	12%
30-39	10%	12%
40-49	4%	6%
50-64	2%	3%
65+	<1%	1%

Institutional Characteristics

The participants for the study attended the 14th largest public two-year community

college in the U.S and the second largest provider of undergraduate public education in Virginia.

It has the largest undergraduate African American enrollment in Virginia higher education and 10th largest associate degree producer among two-year colleges for African American students. The college serves approximately 30, 000 students per year with roughly 36% attending full-time and 64% part-time. The average age is 27 years with 49% 18-24 years of age; 48% White; 32% African American; 21% other minorities. Finally, approximately 50% receive financial aid.

Measure

The CCSSE is a voluntary, national survey designed to provide knowledge about student behaviors that relate closely to student success and student retention. The items in the survey are based on empirically confirmed good practices in undergraduate education that are associated with higher levels of student learning and persistence in college (Pascarella & Terenzini, 2005). The work of Pace (1984) regarding student effort and measuring the quality of college students' experience; Astin's (1984) work on student involvement; as well as related work by Chickering and Gamson (1987) and Kuh, Pace, & Vesper, (1997) provide a theoretical basis for the CCSSE.

The CCSSE is used extensively among community colleges. Eighteen states and statewide systems have committed to using it. Additionally, the CCSSE has been an integral part of several national projects focused on the improvement of student outcomes in community colleges, including Vincent Tinto's Pathways project, the MDRC's Opening Doors project, and the Irvine Foundation's Student Support Partnership Integrating Resources and Education (SSPIRE) project.

CCSSE completed a major validation research study (McClenny & Marti, 2006) in which they examined the relationship of responses on the survey instrument to external data sets containing measures of student outcomes. Three separate sets of outcome data were used: data from 2-year Hispanic-serving institutions and a related association; data from all the community

colleges in Florida; and data from the "round one" Achieving the Dream colleges in five states. The findings indicated that across all data sets there is significant empirical support for the link between CCSSE measures and external outcomes such as persistence, course completion, credit hour accumulation, grade-point average, and certificate or degree attainment.

The 2018 administration was the second to use the Center's refreshed CCSSE survey instrument. As a result, CCSSE 2018 utilizes a two-year cohort (2017 and 2018 CCSSE participant colleges only) in all its data analyses, including the computation of benchmark scores. This cohort is referred to as the 2018 CCSSE Cohort. The 2018 CCSSE Cohort includes 537 institutions from 47 states, the District of Columbia, Guam, Marshall Islands, Micronesia, and two Canadian provinces. Two hundred seventy-four are classified as small (<4,500), 125 as medium (4,500-7,999), 100 as large (8,000-14,999), and 38 as extra-large institutions (15,000+) credit students. In the future, CCSSE cohorts will return to the Center's customary three-year cohort model. CCSSE survey items are grouped conceptually into five key areas, or benchmarks, of student engagement and success:

1. Active and Collaborative Learning, based on the idea that students learn more when they are actively engaged in their own learning and have opportunities to think about and apply what they are learning in different settings. An example includes the following: Ask questions in class (CLQUEST); Frequency: In your experience at this college during the current school year, about how often have you done each of the following? Asked questions in class or contributed to class discussion: 1 = Never, 2 = Sometimes, 3 = Often, 4 = Very often (CCSSE question 4a).

2. Student Effort, based on the notion that the more effort students put into their learning, the more successful they will be. An example includes the following: Writes two or more

drafts (REWROPAP); Frequency: In your experience at this college during the current school year, about how often have you done each of the following? Prepared two or more drafts or a paper of assignment before turning it in: 1 = Never, 2 = Sometimes, 3 = Often, 4 = Very often (CCSSE question 4c).

3. Academic Challenge, based on the idea that the more students are challenged intellectually and creatively, the better they will learn, an example includes the following: Work hard (WORKHARD); Frequency: In your experience at this college during the current school year, about how often have you done each of the following? Worked harder than you thought you could to meet an instructor's standards or expectations: 1 = Never, 2 = Sometimes, 3 = Often, 4 = Very often (CCSSE question 4p).

4. Student-Faculty Interaction, based on the concept that student learning will be more effective and student persistence toward educational goals will be stronger with more interaction between students and faculty. An example includes the following: Talk about class ideas to faculty outside of class (FACIDEAS); Frequency: In your experience at this college during the current school year, about how often have you done each of the following? Discussed ideas from your reading or classes with instructors outside of class: 1 = Never, 2 = Sometimes, 3 = Often, 4 = Very often (CCSSE question 4n). And

5. Support for Learners, based on the notion that students are more satisfied with, and will learn more from, colleges that actively support their learning. An example includes the following: College support (ENVSUPRT): Amount of emphasis by college: To what extent does this college emphasize each of the following? Providing the support you need to help you succeed at this college: 1 = Very little, 2 = Some, 3 = Quite a bit, 4 = Very much (CCSSE question 9b).

Survey questions, which in 2018 totaled 37 or more, are grouped into one of these five benchmark areas, and the scores are calculated so that the mean, or average, CCSSE score for any benchmark is always 50, and the standard deviation, or spread around the mean, is always 25.

Although any number of variables could have been investigated in relation to student persistence and retention, this study will focus on student-faculty interaction, academic self-efficacy, college GPA, late registration, and sense of belonging, all which are related to the five student engagement benchmarks reflected in the CCSSE.

The student-faculty interaction variable of interest is based on one of the CCSSEE subscales/benchmarks. This subscale/benchmark includes the following items to which students responded: a. used email to communicate with an instructor (EMAIL), b. discussed grades or assignments with an instructor (FACGRADE), c. talked about career plans with an instructor or advisor (FACPLANS) d. discussed ideas from your readings or classes with instructors outside of class (FACIDEAS), e. received prompt feedback (written or oral) from instructors on your performance (FACFEED); and f. worked with instructors on activities other than coursework (FACOTH). For the academic self-efficacy, sense of belonging, late registration, and college GPA variables of interest, specific survey questions were used as proxies.

Statistical Analysis

This study will use the Pearson's r test to understand any correlations between the various student engagement variables (student-faculty interaction, sense of belonging, academic self-efficacy, and late registration) and the outcome variables (college GPA and intent to enroll). Hayes Process Models 12 and 80 will be used to assess moderated mediation and serial mediation.

CHAPTER FOUR: FINDINGS

Results

The overarching purpose of this correlation study was to examine the relationship

between various forms of student engagement among community college students, as defined by

the CCSSE, and a student's intent to enroll. For the purposes of this study, a student's intent to

enroll in classes within the next 12 months is used as a proxy for persistence, which is of great

importance to community college administrators and stakeholders interested in improving

graduation rates.

The first analysis performed was Pearson's r to test the following hypotheses: H1, and

H2a-c, H3a-c, H4a-c, and H5a-c (See Table 1). To assess moderated mediation of the

hypothesized indirect paths, moderation of the A path in each of the proposed models was

assessed with high school GPA as X, Race and First Generation college student as the

moderators, each of the four proposed mediators (faculty-student interaction, sense of belonging,

academic self-efficacy, and late registration) and college GPA as the outcome variable. Each of

the models was assessed independently to ensure that the proposed mediators did not compete

for the same variance in college GPA. Since the moderation hypotheses were not supported

(H2e, H3e, H4e, and H5e) using Hayes Process Model 12 (See Table 2), mediation was assessed

using Hayes Process Model 80 (See Table 3). The mediation hypotheses were also not supported

(H2d, H3d, H4d, and H5d).

Correlational Hypothesis Analysis

H1: HSGPA will be positively related to CGPA. For this hypothesis, there was a positive

correlation between the two variables, R= .189, significant at the .01 level1 (2-tailed). (See

Table1). This finding was expected and is consistent with literature regarding student success and persistence in college (Astin, 1971, 1973; Hoffman & Lowitzi, 2005).

H2a: Faculty interaction will be positively related to CGPA. For this hypothesis, there was a positive relationship between the two variables, R= .004. However, this was not statistically significant (See Table 1). The positive relationship, although not statistically significant, is consistent with research findings highlighting the importance of faculty-student interaction and academic success. The statistically insignificant results support the need for additional research regarding the role faculty-student interaction plays in academic success, particularly in a community college setting, which is limited (Braxton et al., 2004).

H2b: Faculty-student interaction will be positively related to the intent to enroll in classes within the next 12 months. For this hypothesis, there was a positive relationship between the two variables, R =.004. However, this relationship was found not to be statistically significant. A positive relationship between faculty-student interactions was expected and is consistent with previous studies (Braxton et al., 2004) that found such factors increase the likelihood of persistence. The lack of statistical significance could be related to the same size (n=1,276), the status of the student (transient versus degree-seeking), and the rank of student (first-year versus second-year). As stated previously, this finding highlights the need for additional research regarding the role faculty-student interactions play in academic success and student persistence.

H2c: HSGPA will be positively related to faculty-student interaction. For this hypothesis, there was a negative correlation between the two variables, R= -.048 (See Table 1). This finding was not expected, especially a negative correlation. Given that HSGPA is a strong predictor of college achievement and eventual persistence (Astin 1987, 1997), it was assumed that the same would be true for faculty-student interactions and HSGPA. However, it appears that other factors

may play a more significant and direct role and that HSGPA should not be considered as a factor in faculty-student interactions.

H3a: Academic self-efficacy will be positively related to CGPA. For this hypothesis, there was a statistically significant negative relationship between the two variables, R= -.123, (See Table 1). Tehis finding was not expected given the abundance of research (Gore, 2006; Hsieh et al., 2007) that indicates there is a positive relationship between academic self-efficacy and academic success in college. One factor that could explain this finding involves the way in which academic self-efficacy was defined in this study. For this study, one question was used to denote academic self-efficacy. Perhaps using several survey questions regarding academic self-efficacy would make a difference in future research of this nature. Additionally, the finding could be related to the lack of diversity among the sample. The majority of the respondents for the survey were White (50%).

H3b: Academic self-efficacy will be positively related to the intent to enroll in classes within the next 12 months. For this hypothesis, a negative relationship was found between the two variables, R= -.072 (See Table 1). This finding was not expected based on previous studies indicating a positive relationship between academic self-efficacy and persistence (Nadler and Komarraju, 2013). As noted previously, sample size, the status of the student (transient versus degree-seeking), and the rank of the student (first-year versus second-year) could explain why a negative relationship was found between academic self-efficacy and intent to enroll.

H3c: HSGPA will be positively related to academic self-efficacy. For this hypothesis, there was negative correlation between the two variables, R= -.007 (See Table 1). This finding was not expected considering the positive relationship HSGPA has with college academic

achievement and persistence. Additionally, research indicates that academic self-efficacy is positively associated with academic achievement in general (Gore, 2006; Hsieh et al., 2007).

H4a: Late registration will be negatively related to CGPA. For this hypothesis, there was a statistically significant positive relationship between the two variables, R= .082 (See Table 1). This finding was not expected given research that indicates there is a significant inverse relationship between registration time and course grade. However, there is research that shows there are no statistically significant differences in the outcomes of on-time and late registrants (Perkins, 2002).

H4b: Late registration will be negatively related to the intent to enroll in the next 12 months. For this hypothesis, there was statistically significant positive relationship between the two variables, R= .052 (See Table 1). As with the previous hypothesis related to late registration, this finding was not expected. However, as noted previously, there are mixed findings regarding the negative impact that late registration has on academic achievement and persistence.

H4c: HSGPA will be negatively related to late registration. For this hypothesis, there was a positive relationship between the two variables, R= .064 (See Table 1). This finding was not expected for the reasons previously stated regarding the negative relationship noted in research between late registration and academic achievement. As noted, there are conflicting research findings regarding late registration and academic achievement, which could explain this unexpected finding.

H5a-c: For each one of these hypotheses regarding a sense of belonging, a negative correlation was found (See Table 1). A positive relationship was expected for each of these hypotheses consistent with research indicating that a sense of belonging is associated with positive outcomes in college, academic achievement, satisfaction, and adjustment (Strayhorn,

2012). Perhaps the small sample size (n: 1,276), the makeup of the sample, and the way in which a sense of belonging was defined (using one of the survey questions as a proxy) account for the unexpected findings.

Table 1. Pearson's *r*, Means, and Standard Deviations.

	1	2	3	4	5	6	7	8
(1) HSGPA	1							
(2) Faculty Interaction	-.048	1						
(3) Academic Self-Efficacy	-.007	-.080**	1					
(4) Late Registration	.064	-.028	-.050	1				
(5) Sense of Belonging	-.033	-.245	.315**	-.018	1			
(6) CGPA	.189**	.046	-.123**	.082*	-.111**	1		
(7) Intent to Enroll	-.073	.004	-.072	.052	-.028	.064	1	
(8) Race	-.128**	.090*	-.044	-.094*	-.004	-.117**	-.079	1
(9) 1st Generation Status	-.026	.049	-.009	.002	-.102*	.042	.011	.131**
Mean	2.95	.455	1.53	2.86	1.87	3.05	1.74	.34
SD	.797	.195	.791	.461	.851	.797	.546	.475

*Correlation is significant at the .05 level (2-tailed).

**Correlation is significant at the .01 level (2-tailed).

Moderated and Mediation Analysis

H2d: Faculty-interaction will mediate the relationship between HSGPA and CGPA. For this hypothesis, faculty-interaction did not mediate the relationship between HSGPA and CGPA. The indirect effect of HSGPA on faculty interaction was $b = -.014$ and $b = .133$ for faculty interaction on CGPA (See Figure 2 and Table 3). Based on previous research regarding the impact of faculty-interaction on academic achievement, it was expected that this variable might account for some of the variance in the relationship between HSGPA and CGPA. As noted, this was not the case.
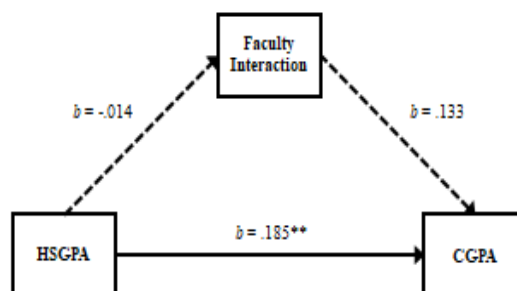
Figure 2. *Mediation model.*
* $p < .05$, ** $p < .001$

H2e: Race and first-generation status will moderate the HSGPA→Faculty

Interaction→CGPA→Intent-to-Enroll causal sequence. For this hypothesis, race and first-

generation status were not moderators in the causal sequence. In other words, these did not have

a statistically significant impact on this causal sequence. See Table 2. Race and first-generation

status as moderators were of interest because of research findings that indicate they tend to

influence, negatively or positively, academic achievement and persistence (Leppel, 2002;

Lesure-Lester, 2003).

H3d: Academic self-efficacy will mediate the relationship between HSGPA and CGPA.

For this hypothesis, there was no statistically significant mediation. In fact, there was negative

mediation, b = -.054. In other words, the increase in HSGPA caused a decrease in the academic

self-efficacy. See Figure 14 and Table 3. Research regarding this indicates that academic self-

efficacy is related to academic achievement. Therefore, it was assumed in this study that this

would have some positive effect on the relationship between HSGPA and CGPA. The way in

which academic self-efficacy was defined and the lack of diversity in the sample used for this study could account for this unexpected finding.
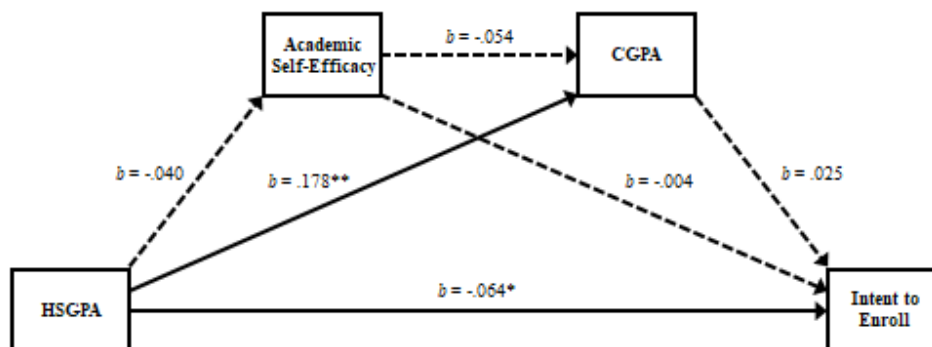

Figure 14. *Serial mediation model.*
* $p < .05$, ** $p < .001$

H3e: Race and first-generation status will moderate the HSGPA→ Academic Self-efficacy→CGPA→Intent-to-Enroll causal sequence. As noted previously, the moderation hypotheses for this study were not supported. In other words, race and first-generation did not play a role in the direction or strength of the variables in the causal sequence. An abundance of research indicates that race (Hagedorn, Maxwell, & Hampton, 2001) and first-generation (Woosley & Shepler, 2011) can have a positive and negative effect on the variables in the hypothesized causal sequence. However, the majority of the respondents for this study were white. This lack of diversity could explain this finding and the reason this hypothesis is not supported. See Table 2.

H4d: Late registration will mediate the relationship between HSGPA and CGPA. For this hypothesis, late registration did not mediate the relationship of the two variables. See

Figure 5. Given research that notes the negative impact that late registration has on achievement and persistence, it was expected that this variable would mediate the relationship between HSGPA and CGPA. As noted previously, there are mixed research findings regarding whether late registration has a negative impact on academic achievement and persistence. This could explain the finding for this particular hypothesis.
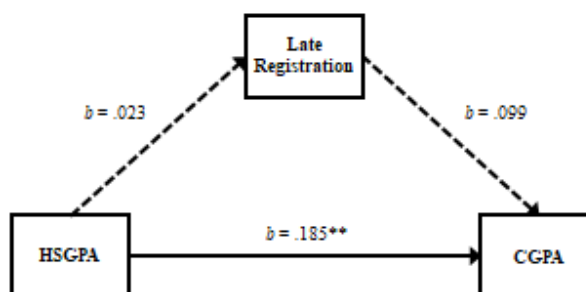
Figure 5. *Mediation model.*
$* p < .05, ** p < .001$

H4e: Race and first-generation status will moderate the HSGPA→Late Registration→CGPA→Intent-to-Enroll causal sequence. For this hypothesis, race and first-generation status were not moderators. See Table 3. As noted previously, race and first-generation status were investigated as potential as moderators because of previous studies noting the influence these variables have on academic outcomes. It was expected that these variables would have some statistically significant effect on the causal sequence. Potential reasons for these findings could be related to the sample size and reason students were enrolled in college

(just taking a course versus seeking a degree) and their status as a student (first-year versus second-year).
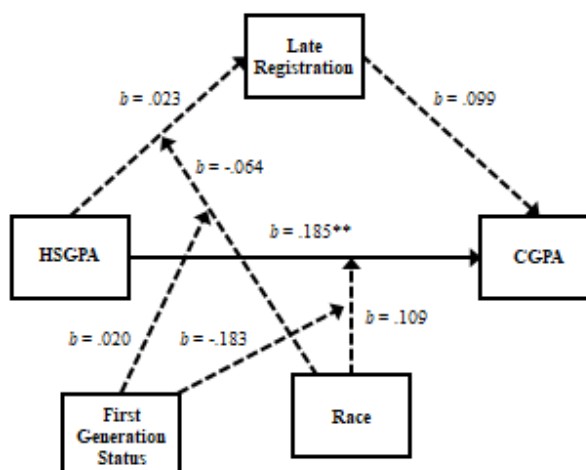
Figure 9. Moderated Mediation Model

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

H5d: A sense-of-belonging will mediate the relationship between HSGPA and CGPA. This hypothesis was not supported indicating that a sense-of-belonging did not impact the relationship between HSGPA and CGPA (See Figure 18 and Table 3). Based on the research that shows a sense-of-belonging is associated with positive outcomes in college, including academic achievement, satisfaction, and adjustment, it was hypothesized that it would have some effect on the relationship between HSGPA and CGPA in this study. Apparently, a sense of belonging and HSGPA impact CGPA independently and should be studied as such.

H5e: Race and first-generation status will moderate the HSGPA→ A sense-of belonging→CGPA→Intent-to-Enroll causal sequence. For this hypothesis, race and first-generation status were not moderators in this causal sequence (See Table 2). As noted

previously, race and first-generation status were investigated as potential moderators based upon research that indicates these variables impact academic outcomes. It was expected that these variables would have some statistically significant effect on the causal sequence. Potential reasons for these findings could be related to the composition of the sample, which lacked diversity.
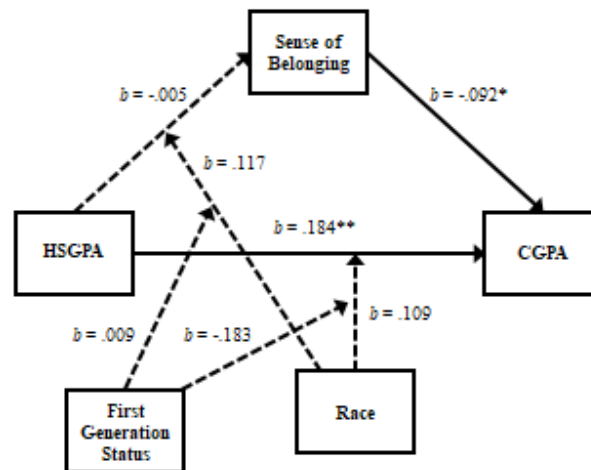
Figure 10. Moderated Mediation Model
*p < .05, ** p < .001

Model 12:

Table 2. *Conditional Process Analysis Results for Moderated Mediation Model.*

Source	*b*	*se*	*t*	*p*	*LLCI*	*ULCI*
Late Registration: $R = .123$, $R^2 = .015$, $MSE = .214$, $F(7, 557) = 1.226$, $p = .286$						
HSGPA	.023	.025	.927	.354	-.026	.072
Race	-.096	.042	-2.273	.023	-.180	-.013
HSGPA x Race	-.064	.055	-1.171	.242	-.172	.044
1st Gen Status	.010	.045	.217	.829	-.078	.098
HSGPA x Race x 1st Gen	.020	.121	.169	.866	-.217	.257
Faculty Interaction: $R = .126$, $R^2 = .016$, $MSE = .038$, $F(7, 557) = 1.287$, $p = .254$						
HSGPA	-.014	.011	-1.303	.193	-.034	.007
Race	.031	.018	1.725	.085	-.004	.066
HSGPA x Race	-.022	.023	-.955	.340	-.067	.023
1st Gen Status	.017	.019	.884	.377	-.020	.054
HSGPA x Race x 1st Gen	.081	.051	1.604	.109	-.018	.181
Sense of Belonging: $R = .092$, $R^2 = .009$, $MSE = .628$, $F(7, 558) = .681$, $p = .689$						
HSGPA	-.005	.043	-.110	.912	-.089	.079
Race	-.089	.073	-1.220	.223	-.231	.054
HSGPA x Race	.118	.094	1.253	.211	-.067	.302
1st Gen Status	-.001	.077	-.010	.992	-.152	.150
HSGPA x Race x 1st Gen	.009	.207	.044	.865	-.397	.415
Academic Self-Efficacy: $R = .116$, $R^2 = .013$, $MSE = .724$, $F(7, 558) = 1.085$, $p = .372$						
HSGPA	-.037	.046	-.794	.427	-.127	.054
Race	.025	.078	.316	.752	-.128	.178
HSGPA x Race	.089	.101	.883	.378	-.109	.287
1st Gen Status	-.192	.082	-2.325	.020	-.354	-.030
HSGPA x Race x 1st Gen	.056	.222	.252	.801	-.380	.492
College GPA: $R = .286$, $R^2 = .082$, $MSE = .568$, $F(11, 553) = 4.491$, $p < .001$						
HSGPA	.185	.041	4.530	<.000	.105	.265
Late Registration	.099	.069	1.433	.153	-.037	.235
Faculty Interaction	.133	.170	.779	.437	-.202	.467
Sense of Belonging	-.092	.043	-2.153	.032	-.176	-.008
Academic Self-Efficacy	-.054	.040	-1.337	.182	-.133	.025
Race	-.184	.070	-2.637	.009	-.320	-.047
HSGPA x Race	.109	.090	1.215	.225	-.067	.285
1st Gen Status	.116	.073	1.581	.115	-.028	.260
HSGPA x Race x 1st Gen	-.183	.197	-.927	.354	-.570	.204

Model 80:

Table 3. *Conditional Process Analysis Results for Serial Mediation Model.*

Source	b	se	t	p	LLCI	ULCI
Late Registration: $R = .106$, $R^2 = .011$, $MSE = .213$, $F(3, 561) = 2.131$, $p = .095$						
HSGPA	.025	.025	1.003	.317	-.024	.073
Race	-.092	.042	-2.189	.029	-.174	-.009
1st Generation Status	.015	.044	.323	.725	-.071	.101
Faculty Interaction: $R = .099$, $R^2 = .010$, $MSE = .038$, $F(3, 561) = 1.867$, $p = .134$						
HSGPA	-.010	.010	-1.001	.317	-.031	.010
Race	.031	.018	1.768	.078	-.004	.066
1st Generation Status	.013	.018	.690	.491	-.024	.049
Sense of Belonging: $R = .052$, $R^2 = .003$, $MSE = .627$, $F(3, 561) = .513$, $p = .673$						
HSGPA	-.012	.042	-.293	.770	-.095	.070
Race	-.088	.072	-1.227	.220	-.229	.053
1st Generation Status	.005	.075	.023	.942	-.142	.153
Academic Self-Efficacy: $R = .108$, $R^2 = .012$, $MSE = .720$, $F(3, 561) = 2.222$, $p = .085$						
HSGPA	-.040	.045	-.887	.375	-.128	.048
Race	.020	.077	.264	.792	-.131	.172
1st Generation Status	-.196	.080	-2.440	.015	-.354	-.038
College GPA: $R = .276$, $R^2 = .076$, $MSE = .568$, $F(7, 557) = 6.350$, $p < .001$						
HSGPA	.178	.040	4.462	.000	.100	.257
Late Registration	.093	.070	1.349	.178	-.042	.228
Faculty Interaction	.116	.170	.683	.495	-.218	.449
Sense of Belonging	-.090	.043	-2.114	.035	-.174	-.006
Academic Self-Efficacy	-.054	.040	-1.346	.179	-.134	.025
Race	-.183	.069	-2.654	.008	-.319	-.048
1st Generation Status	.123	.072	1.716	.087	-.018	.264
Intent to Enroll: $R = .142$, $R^2 = .020$, $MSE = .297$, $F(8, 556) = 1.430$, $p = .181$						
HSGPA	-.064	.029	-2.167	.031	-.122	-.006
Late Registration	.045	.050	.894	.372	-.054	.143
Faculty Interaction	-.023	.123	-.188	.851	-.265	.218
Sense of Belonging	-.043	.031	-1.378	.169	-.104	.018
Academic Self-Efficacy	-.004	.029	-.133	.894	-.061	.054
College GPA	.025	.031	.822	.411	-.035	.086
Race	-.094	.050	-1.874	.061	-.193	.005
1st Generation Status	.011	.052	.209	.835	-.091	.113

CHAPTER FIVE: DISCUSSION

Overview

The purpose of this research study was to examine the relationship between certain student engagement factors and student persistence in college (intent to enroll in classes within the next 12 months). Student persistence in college is of interest because it is related to several benefits (health, psychological, financial, community, global, workforce, etc.). For community colleges, student persistence is of importance because it is tied directly to funding, which is necessary for them to operate. To fully examine the factors impacting student persistence, directly and indirectly, several research questions and hypotheses were posed and answered in this study. Correlational and mediation and moderation analysis were used to understand the results and their statistical significance.

Summary of Findings

For the correlational analysis, one of the twelve research hypotheses was supported (H1: HSGPA will be positively related to CGPA). Although not statistically significant, H2a (Faculty-student interaction will be positively related to CGPA) and H2b (Faculty-student interaction will be positively related to intent to enroll within the next 12 months) indicated a positive correlation. In light of the purpose of this study and previous research findings, these findings are worth noting and discussing. The remaining correlational hypotheses were not supported (H2c, H3a, H3b, H3c, H4a, H4b, H4c, H5a, H5b, and H5c). In other words, academic self-efficacy, late registration and sense of belonging were not related to student persistence as hypothesized in this study.

For the moderation and mediation analysis, none of the hypotheses were supported (H2d, H2e, H3d, H3e, H4d, H4e, H5d, and H5e. In other words, faculty-student interaction, race and

first-generation status, academic self-efficacy, late registration, and sense of belonging did not affect and /or cannot be used to account for any of the variance between the predictor and outcomes variables in this study.

<div align="center">**Summary**</div>

Research Question One

Research question one was designed to ascertain whether HSGPA was positively related to CGPA. Researchers have found that CGPA has a positive impact on student persistence in college and is a strong predictor for degree completion (Mettler, 2011; Reason, 2003). As such, it is important to understand all the factors that impact it among community college students. Additionally, other research has shown that students who had higher GPAs were twice as likely to stay in college and not drop out (Nakajima, Dembo, & Mossler, 2012).

Based on the correlational analysis, the answer to research question one is yes and the research hypothesis was supported. In terms of student persistence among community college students, this finding is of importance for two reasons. First, this finding helps better understand what factors may lead to higher persistence rates among community college students compared to other factors such as college placement tests, which are a mainstay among community colleges (Belfield & Crosta, 2012). Second, this finding supports a current practice among community colleges, including Tidewater Community College (TCC) that uses HSGPA to place students in college level math and English classes instead of the traditional placement tests. The Virginia Community College System (VCCS) recently noted that placement tests and developmental instruction were intended to help underprepared students succeed in college. However, VCCS is becoming aware through research that this model is not helping instead is holding back many students who could succeed in college level courses with the proper support.

Again, this finding is important in that it reinforces a practice that is designed to increase student persistence among community college students, which is greatly needed.

Research Question Two

Research question two was designed to ascertain whether faculty-student interaction is positively related to CGPA. The correlational analysis indicated that there is a positive relationship, although not statistically significant. This finding is nonetheless relevant considering the nature of the study (archival data was used) and other factors (i.e., sample size and lack of diversity in the sample). Pascarella and Terenzini (2005) noted that academic performance early on during college is related to later degree attainment. Similarly, Adelman (2006) found academic performance (CGPA) in college to be closely related to final degree completion.

In this context and for the purposes for which this study was undertaken, this finding is of great importance. The main purpose of this study was to glean from the data analysis factors that impact student persistence both negatively and positively. Appreciating the importance of CGPA in relation to degree completion, the positive correlation between faculty-student interactions highlights one of the factors that research has shown to be a contributing factor in increasing academic performance, which is linked to degree completion.

Research Question Three

Research question three was designed to ascertain whether faculty-student interaction is positively related to the intent to enroll in the next 12 months. The correlational analysis indicated there is a positive, but statistically insignificant, relationship between faculty-student interaction and a student's intent to enroll within the next 12 months. In this study, the survey question that asked a student's intention to enroll in classes within the next 12 months was used

as a proxy for student persistence. Because of the nature and design of this study, information was not available regarding whether a student was transient (just taking one course) or seeking a degree. Therefore, a proxy was used to provide some insight about what things could potentially impact a student's decision to enroll in classes in the future and eventually graduate.

Although the research on student-faculty interaction does not point to a direct link between it and student persistence (Tinto, 2012), its indirect effect is what is relevant. As noted previously, faculty-interaction is positively related to CGPA, which is related to academic success and degree completion. The same is true as it relates to student-faculty interaction and persistence in college. Braxton et al., (2004) point out how the positive interactions students have with faculty increase their commitment to the college and overall sense of belonging. Students' commitment to college and their sense of belonging combined with their positive experiences with faculty have a ripple effect on student success.

Student-faculty interaction is one of the benchmarks for the CCSSE and in validation research showed that student-faculty interaction was correlated with the number of terms enrolled and credit hours completed. Additionally, in the Achieving the Dream and the Florida validation studies, student-faculty interaction was correlated with degree/certificate completion (McClenney, Marti, & Adkins, 2007). This further highlights the importance of this finding, although statistically insignificant.

Research Question Four

Research question four was designed to ascertain whether there was a positive relationship between HSGPA and faculty-student interaction. The correlational analysis showed that there is not a positive correlation between these two variables, and the research hypothesis was not supported. This research question was posed because of the plethora of research linking

HSGPA to academic performance in college and persistence (Astin, 1971; Tross et al., 2000; and Hoffman & Lowitzi, 2005). However, in hindsight, assuming HSGPA would be related to student-faculty interaction was incorrect. It is clear, as noted previously, that HSGPA is positively related to academic performance in college, which is linked to persistence and degree completion. Therefore, it is likely that a student's HSGPA has nothing to do with faculty-student interaction and should not be of research interest in this context. Perhaps if this study were looking at certain personality traits or social skills and faculty-student interaction, this type of question, with revisions, would have been appropriate.

Research Question Five

This research question was designed to ascertain if faculty-student interaction mediates the relationship between HSGPA and CGPA. The primary purpose for this question was to uncover any influences beyond those already known regarding the relationship between HSGPA and CGPA. The mediation analysis revealed that faculty-student interaction did not mediate the relationship between HSGPA and CGPA. In other words, faculty-student interaction cannot be used to explain the relationship between these variables. This is consistent with the previous finding for research question four where faculty-student interaction was found to be unrelated to HSGPA. The goal of this research study was to fully understand the factors impacting student persistence. As such, moderation and mediation hypotheses were posed to ensure to determine the extent to which other related factors might have on the variables of interest in this study.

Research Question Six

This research question was designed to ascertain whether race and first-generation status moderate the HSGPA, Faculty-student interaction, CGPA, and Intent-to-Enroll causal sequence. Race and first-generation status were of interest in this study for three reasons. First, many

students who attend Tidewater Community College are minorities. As of fall 2019, there were 5,556 African-American students enrolled compared to 9,003 White students, many of whom are also first-generation (TCC Office of Institutional Effectiveness, 2020). Second, several studies indicate that FGCS are typically less prepared upon entering college, take more developmental education classes, and lack the adequate motivation and commitment to persist to graduate compared to their counterparts (Choy, 2001; Lohfink & Paulsen, 2005; Lowery-Hart & Pacheco, 2011). Additionally, as it relates to race, research shows that students with backgrounds other than the majority culture do not graduate at the same rate as their peers from the majority culture (Hagedorn, Maxwell, & Hampton, 2001; Oseguera, Locks, & Vega, 2009). Third, the findings of the study could shed light on the need for additional resources and support for minority and first-generation students.

As noted in the results section, race and first-generation status did not moderate the HSGPA, Faculty-student interaction, CGPA, and Intent-to-Enroll causal sequence. One of the important things to highlight about this finding is the sample that was used for this study. As noted in Table 1, 50% of the respondents for the survey were White compared to 9% for Black or African American, and 15% for Hispanic or Latino. To adequately answer the research question, the sample would need to be more representative. Otherwise, the results cannot be interpreted with any degree of confidence. Although the race and ethnicity breakdown was consistent with the typical responses of all students responding to the survey (White, 50% versus 55%; Black 9% versus 12%, and Hispanic, 15% versus 16%), trying to understand the impact of race and first-generation status on any causal sequence would require a more representative sample. This could be done through targeted research that gathers information from specific groups, ensuring there is adequate representation of the population of interest.

Research Question Seven

This research question was designed to ascertain whether academic self-efficacy is positively related to CGPA. The premise for this question is related to the early work by Bandura (1997) linking self-efficacy to performing various academic tasks. Additionally, later research has shown that when students express high levels of self-efficacy, they tend to perform better on academic tasks (Mills et al., 2007). Additionally, one body of research indicated that academic self-efficacy was particularly important for various ethnic groups (Bembenutty, 2007; Gloria & Ho, 2003).

Despite research showing a positive relationship between academic self-efficacy and CGPA, this study did not find such a relationship and the research hypothesis was not supported. Considering the nature of this study (used archival survey data) and the non-representative sample from which the analysis was done, this finding is understandable. Gore (2006), in reviewing the body of research regarding self-efficacy and academic performance, noted that the positive relationship depends on certain conditions. He further indicated that academic self-efficacy beliefs predict college outcomes but that this relationship is dependent on when efficacy beliefs are measured, the types of efficacy beliefs measured, and the nature of the criteria used. As noted previously, one question was used as a proxy for academic self-efficacy. It appears that when researching the relationship between academic self-efficacy and academic performance in college, a researcher must design the study in a way that the variables of interest can be adequately investigated.

Research Question Eight

This research question was designed to ascertain whether academic self-efficacy is positively related to intent to enroll in classes within the next 12 months. Although the research

hypothesis stated that academic self-efficacy would be positively related to intent to enroll, this is not consistent with research. Most of the research, as noted in the previous sections of the paper regarding academic self-efficacy, relates directly or indirectly to academic performance, not intent to enroll as defined in this study. In this study, intent to enroll (question 28) was used as a proxy for persistence because of all the survey questions, this was the only question related to persistence. If this study were longitudinal in nature, actual data could have been collected to determine if a student persisted versus using intention.

Two other issues are worth noting regarding this finding. First, self-efficacy was defined narrowly in this study (one question was used as a proxy), which could have possibly limited the ability to capture a student's true academic self-efficacy. Second, in this sample it was not clear what the status or rank of the students was. For example, some students may have been taking the class as transient students and enrolled at another college. In this case, a student's intentions may skew the results. Knowing the status of each respondent would have helped put the results in context, allowing for an accurate interpretation of the findings. For example, these individuals could have been excluded from the sample.

Research Question Nine

This research question was designed to ascertain whether HSGPA is positively related to academic self-efficacy. The premise for the question was research linking HSGPA to academic performance in college. As noted previously, research indicates there is a positive relationship between academic performance in high school and college and later degree completion (Komaraju & Nader, 2013). Additionally, there is research, as noted in the preceding section, linking academic self-efficacy to academic performance in college. These research findings and a desire to thoroughly understand the factors that influence persistence, research question nine

was posed and the associated research hypothesis established. The analysis for this question and research hypothesis indicated that there is a negative relationship between HSGPA and academic self-efficacy. Given the previous discussion regarding academic self-efficacy, this research finding is consistent with the other findings regarding academic self-efficacy. It appears that assuming HSGPA would be positively related to academic self-efficacy was erroneous. Based on the literature, a student doing well in high school academically is directly and indirectly related to later academic performance in college, not his or her academic self-efficacy. A different type of study and analysis would be warranted to determine if there is any relationship, even a subtle one, between HSGPA and academic self-efficacy.

Research Question 10

This research question was designed to ascertain whether academic self-efficacy mediates the relationship between HSGPA and CGPA. The research analysis indicated that academic self-efficacy does not mediate the relationship between HSGPA and CGPA and therefore the research hypothesis was not supported. This finding is consistent with the findings for research questions seven, eight, and nine regarding academic self-efficacy. It is abundantly clear from the analysis of the results from this study that academic self-efficacy is not related directly or indirectly to the variables of interest in the study. As noted previously, researching the role academic self-efficacy plays in predicting academic outcomes must be carefully orchestrated. As noted by Gore (2006), the relationship found between efficacy beliefs and academic outcomes is dependent on when efficacy beliefs are measured, the types of efficacy beliefs measured, and the nature of the criteria used. Academic self-efficacy was narrowly measured in this study by using one question as a proxy for it. Thus, it is very likely that this was a contributing factor to the

findings related to the role academic self-efficacy plays in academic achievement and overall persistence.

Research Question 11

This research question was designed to ascertain if race and first-generation status moderated the HSGPA, Academic Self-efficacy, CGPA, and Intent-to-Enroll causal sequence. As noted previously for research question six, race and first-generation were examined as potential moderators in this study because of the known impact they have on persistence. For example, minority students tend not to persist at the same rate as the majority culture (Leppel, 2002) and first-generation students face considerable challenges when attempting to complete a college degree (Ishitani, 2006). Nonetheless, these variables were not found to be moderators in this study and the research hypothesis was not supported. As previously stated, the demographics of the sample used could explain this finding. Most of the respondents for the survey were White. As such, race and first-generation status were characteristic of most of the respondents. This could very well explain why these variables were found not to have a moderating effect on causal sequence for this research question. Using a sampling technique that ensures the sample used is diverse and reflective of the actual student population would likely yield results that could shed light on whether race and first-generation status have a moderating effect on the causal sequence of interest.

Research Question 12

This research question was designed to ascertain whether late registration is negatively related to CGPA. The premise for this question is research that shows there to be a significant inverse relationship between registration time and course grade (Ford, Stahl, Walker, 2008). Since the purpose of this study was to understand the factors that impact student persistence,

investigating this relationship was appropriate. The data analysis for this question and the associated hypothesis revealed a statistically positive relationship between registration time and academic performance. Therefore, the research hypothesis was not supported. This finding was not expected considering the research that was reviewed. However, as noted in the review of literature section of this paper, there are research studies that indicate there are no differences in academic performance of students who register on time and those who register late (Perkins, 2002). This could explain the results found in the study. Mixed research findings regarding the impact that time of registration has on academic performance, indicates this is a question that needs further exploration. Perhaps there are circumstances under which late registration has a negative effect and circumstances under which it does not. This is of particular importance given the ongoing debate at Tidewater Community College about whether the college should cease allowing students to register late for classes.

Research Question 13

This research question was designed to ascertain whether late registration is negatively related to the intent to enroll in the next 12 months. The premise for this question is similar to the one for research question 12. Late registration is believed to be negatively related to student persistence in general. In this study, a student indicating that he or she plans to enroll in classes within the next 12 months is believed to be positively associated with HSGPA, CGPA, sense of belonging, and faculty-student interaction, not late registration. The research analysis unexpectedly showed a positive relationship between late registration and intent to enroll in classes within the next 12 months. This finding highlights the need to further investigate the impact of late registration on student outcomes. As noted previously, there is conflicting research regarding the actual impact on academic performance and student success (Perkins, 2002; Ford,

Stahl, & Walker, 2008). It could be the case that the negative relationship between late registration and student outcomes depends on the type of student as well as academic abilities. For example, a student who is weak academically is negatively impacted by late registration whereas a student who is strong academically is not. Additional research to include a meta-analysis could uncover such information.

Research Questions 14-15

These research questions were also designed, as were 12 and 13, to ascertain the impact that late registration has on student success outcomes. Research question 14 looked at its impact on HSGPA and research question 15 looked at it as a mediator. For both of these questions, late registration did not have the expected effect on the outcome variables. A negative relationship between late and HSGPA was not found as expected, and late registration did not mediate the relationship between HSGPA and CGPA. This is consistent with the findings for each of the other research questions regarding late registration; it had no negative impact on the outcome variables.

It is abundantly clear that further research is needed to understand the impact of late registration on student success outcomes. As noted for research question 13, the impact of late registration could depend on the student. The sample upon which this analysis was done was not diverse. Most of the students were White. It could be the case that the white students in this study were not negatively impacted by late registration. This would be consistent with research that shows Black and Latino college students face considerable challenges and do not perform as well as the majority culture and are more likely to drop out (Berkner, He, & Calladi, 2002; Lesure-Lester, 2003). If this is the case, the findings make sense as the White students may not be impacted by the negative effects of late registration as their minority counterparts. Therefore,

there the research would show a positive relationship between late registration and persistence instead of a negative one as expected.

Research Question 16

This research question was designed to ascertain if race and first-generation status moderate the HSGPA, Late Registration, CGPA, and Intent-to-Enroll causal sequence. As stated for research questions six and eleven, race and first-generation status were of interest because research findings indicate they tend to influence academic outcomes and persistence. For example, minority and first-generation students do not persist in college at the same rate as that of the majority culture (Oseguera, Locks, & Vega, 2009). Therefore, it was believed that these would impact the HSGPA, Late Registration, CGPA, and Intent-to-Enroll causal sequence. As stated in this discussion section and the previous results section previously, there were no moderating and mediating effects found in the analysis of the data. Race and first-generation status had no effect of consequence on the causal relationship in question. The lack of diversity in the sample used for this study could explain the finding here. The majority of respondents were White, potentially skewing the results in the unexpected direction. Again, a different research design that ensured a more diverse sampling would likely yield results that are more consistent with the research literature regarding race and first-generation status.

Research Questions 17-19

These research questions focused on the impact that sense of belonging has student outcome variables to include HSGPA, CGPA, and intent to enroll in classes within the next 12 months. As stated in the results section, an unexpected negative correlation was found for each of these research questions. Sense of belonging has been found to have a positive relationship with academic achievement, satisfaction, and adjustment in college (Strayhorn, 2012). Research

also shows that a sense of belonging is related to such things as SAT scores, seeking helping, coping skills, and assertiveness (Hurtado, 2007; Kember & Leung, 2004). As such, it was expected the sense of belonging, in this study, would reveal a positive relationship with the outcome variables of interest. One reason for the unexpected findings could be the sample used. As noted previously, most of the respondents were White. Walton and Cohen (2007) noted in their research that sense of belonging plays a particularly important role in the achievement success of African American students pursuing computer science degrees. Considering this, it could be the case that the results would have been more aligned with previous research had the sample been more diverse to include more minority students.

Research Questions 20 and 21

These research questions, as did 17-19, looked at sense of belonging to determine its moderating and mediating effect of certain outcomes. Research question 20 was designed to determine if a sense-of-belonging mediates the relationship between HSGPA and CGPA and research question 21 was designed to determine if race and first-generation status had a moderating effect on the HSGPA, sense-of-belonging, CGPA, and Intent-to-Enroll causal sequence. The data analysis revealed there were no moderating and mediating effects and the research hypotheses were not supported.

The findings for these questions were unexpected for the same reasons stated for questions 17 -19. Further research is needed to answer more accurately the research questions and test the research hypotheses. The research and the sample used could explain the unexpected findings for these questions.

Conclusion

The main purpose of this study was to investigate the relationship between student engagement and student persistence (intent to enroll within the next 12 months) at Tidewater Community College (TCC). Generally speaking, student persistence is of importance because of lackluster persistence and retention rates across the country and new funding models in place that are based on the number of students who graduate versus the number that enroll. TCC is one of the colleges where a new funding model is in place that is based, in part, on student persistence and completion. Although this study examined the data from a sample of students at the college of interest, the goal was also to contribute information to the body of knowledge regarding ways institutions improve student persistence using data from the CCSSE. The knowledge gained from such research can be used to develop policies and programs to enhance and increase student success.

This study investigated student engagement in the form of HSGPA, faculty-student interaction, CGPA, academic self-efficacy, late registration, and sense of belonging and their impact on student persistence. To further understand the role these student engagement factors play in student persistence, the study also examined the potential moderating and mediating effects of certain variables. The purpose of this additional analysis was to determine if any of the variance found in the predictor variables could be explained by other factors.

The correlational analysis of the data collected provided some insight regarding the role certain student engagement factors play in student persistence.

HSGPA and student persistence

HSGPA plays a significant role in student persistence as evident in the findings of this study. As such, HSGPA should be used as a placement tool over other measures such as college-

generated placement tests. This is consistent with research that shows a strong relationship between HSGPA and academic achievement in college and later degree completion (Allen, Robbins, Casillas, & Oh, 2008; Tross et al., 2000). The importance of HSGPA in predicting later academic achievement is already being taken into consideration by many community colleges, including TCC. Additionally, the Academic and Student Affairs Council (ASAC), the Advisory Council of Presidents (ACOP), and the State Board for Virginia's Community Colleges (VCCS) unanimously approved a new policy to guide the way VCCS colleges ensure that incoming students are placed in appropriate math and English courses. The policy recognizes that placement tests are often a barrier for students who enroll in community colleges and are not a true measure of a student's skill level. According to Elanor Saslaw, vice chair, State Board of Virginia's Community Colleges, and member of the Multiple Measures Task Force, the move was a huge leap forward in attracting qualified students and keeping them in community college programs through graduation. The shift away from using placement tests to using HSGPA will increase persistence rates and eventual among community college students. up more students up for academic achievement degree and eventual degree completion.

To my point, Belfield and Crosta (2012), in a study to examine the validity of placement tests and high school information in predicting course grades and college performance, found placement tests do not yield strong predictions of how students will perform in college. Their specific finding showed the correlation across the eight placement tests and the six developmental education courses ranged between 0.08 and 0.18 on average; the correlation across HS GPA and the six developmental education courses ranged between 0.34 and 0.36. They concluded that HSGPA is not only a better predictor but also more consistent than the placement tests.

CGPA and student persistence

Since CGPA is a strong predictor for student persistence (Attewell, Heil, & Reisel, 2011; Reason, 2003), the positive but statistically insignificant finding regarding it indicates that it is nonetheless important. For community colleges, this means attention must be given to factors that impact CGPA, negatively and positively. As noted previously, HSGPA is positively related to academic achievement in college (CGPA), which is related to degree completion. As such, monitoring a student's academic performance is critical to ensuring students at-risk for not persisting are identified and offered support. This support could be in the form of academic advising, personal counseling, tutoring, and other services that would prove beneficial to their overall academic success and eventual degree completion.

Another way community colleges can monitor academic performance and assist at-risk students is by implementing a comprehensive early alert program that has appropriate follow up. Early alert programs, also known as "early warning systems," are a recognized tool for improving student retention in higher education (Simpson, 2014).

Faculty-student interaction and student persistence

Faculty-student interaction plays a role, albeit indirect, in student persistence. When a student has a good experience in or outside the classroom with his or her professor, it contributes to the student's commitment, satisfaction, and confidence (Bean & Eaton, 2000). These kinds of things lead to a student eventually persisting and completing a degree (Braxton, et al., 2004), making faculty-student interaction a key factor in whether a student leaves college or stays.

Several of the models and theoretical frameworks discussed previously in the review of literature section emphasized the importance of faculty-student interaction in student persistence. Pascarella's (1980) Student-Faculty Informal Contact Model posited that informal contact

between students and faculty will have a positive impact on a student's decision to leave or stay in college. Additionally, he posited that the amount of contact makes a difference and factors such as prior schooling achievement, personalities, and family and home backgrounds also play a role in a student's decision to leave or stay in college. This further reinforces the critical role faculty-student interaction plays in retaining and helping students graduate.

Spady (1971) in his Undergraduate Dropout Process Model noted the important role faculty-student interaction plays in student persistence. He indicated that the quality of the interactions students have with faculty influences how well they integrate into their academic and social systems, which increases their chances of persisting. Similarly, Tinto (1975) in his Institutional Departure Model built upon the tenets of Spady's (1971) model regarding the importance of a student being integrated socially and academically. He noted that when a student is actively involved with peers and faculty in meaningful ways, it contributes to overall academic success and persistence. Finally, Astin's (1984) Theory of Involvement drives home the value and importance of faculty-student interaction in student persistence. He indicated that students who interact with faculty frequently persisted at a higher rate than those who did not. Faculty-student interaction is an important piece of the puzzle regarding understanding and improving student persistence among college students, particularly those attending community colleges.

Limitations

Despite efforts to conduct a study that minimized threats to internal and external validity, there were a few threats that must be mentioned and discussed. These involve the type of data used, the way in which the data was collected, and the composition of the sample and the sample size.

Archival data was used for this study primarily because it was convenient, cost-efficient, and captured most of the data of interest. Although the data captured most data of interest, there were limitations. Using this type of data for this study meant the data did not directly respond to the research questions. Consequently, survey questions were used as proxies for the variables of interest. This approach could have skewed the results in a direction not consistent with the intent and purpose of the study. Therefore, the results need to be interpreted in light of this limitation.

The way in which the original data were collected and the actual sample used were also limitations. Data collection was done through surveys that had been completed previously. For the data set used, classes were randomly selected to participate in the survey and voluntarily completed it as a part of a class. This seriously limits the quality of the sample and the overall generalizability of the results. Instead of obtaining a representative sample from all students at the college, a sample was used that was not representative of the general population. Additionally, the students who completed the survey represented those who typically respond to online surveys. According to Goree and Marzalek (1995), the use of online surveys for institutional research carries with it many challenges. One such challenge deals with Internet access. The majority culture typically has greater access than those of the minority culture. Since this study investigated the influence of race and first-generation on student persistence, the response rates for the minorities were significant (White, 50%; Black, 9%; Hispanic, 15%, for example). It is very possible that the lack of diversity in the sample can explain some of the insignificant findings in this study. There was only one research hypothesis supported out of 21.

Recommendations for Future Research

Considering the importance of student persistence and its relationship to eventual graduation, future research should reflect a process that minimizes some of the issues present in this study. Although archival data was convenient and cost-efficient for this study, the results showed that this approach was not effective in investigating the variables of interest. Therefore, it is recommended that future research consider conducting focus groups or interviews with students. Boateng (2012) in evaluating the efficacy of focus groups in social science research suggested that using focus groups along with one-on-one interviews could be an effective way to obtain information from research participants.

Collecting information from respondents that reveals their purpose for enrollment (just taking one class or seeking a degree) as well as their rank is also recommended. Collecting this information will allow the researchers to remove data that could skew the findings. In this study, the purpose and status of the respondents were not known.

The final recommendation concerns the sample. The sample of students used for this study was not reflective of the student population. As such, the findings cannot the general population of students at the college. As noted previously, the majority of the respondents were White and the college has a minority population of 47% (African American). Therefore, future research of this nature should ensure that the sample used is representative of the student population at the particular college.

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January 24, 2020

> **APPENDIX A: IRB Approval**

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

Thomas Chatman, Jr.
IRB Application 4177: Understanding the Relationships Between Student Engagement and Persistence Among Community College Students

Dear Thomas Chatman, Jr.,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study does not classify as human subjects research. This means you may begin your research with the data safeguarding methods mentioned in your IRB application.

Your study does not classify as human subjects research because it will not involve the collection of identifiable, private information.
Please note that this decision only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued non-human subjects research status. You may report these changes by submitting a new application to the IRB and referencing the above IRB Application number.

If you have any questions about this determination or need assistance in identifying whether possible changes to your protocol would change your application's status, please email us at irb@liberty.edu.

Sincerely,

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office

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Liberty University | Training Champions for Christ since 1971