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MANY DO SUCCEED, YOU KNOW: AFRICAN AMERICAN ADULT STUDENT SUCCESS AND RETENTION IN COMMUNITY COLLEGES

Shawn Allison

MANY DO SUCCEED, YOU KNOW: AFRICAN AMERICAN ADULT STUDENT SUCCESS AND RETENTION IN COMMUNITY COLLEGES

by

Shawn Dewayne Allison

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Acknowledgments

"The Journey of a thousand miles begins with one step" This familiar proverb by ancient Chinese philosopher, Lao Tzu has many interpretations, but here it describes a person beginning his or her journey to reach their goal or destination. The proverb represents an allegory about deep insight and determination. One must take that first step in order to finish journey; great things result from simple beginnings. This meandering journey has been marked by the ebb and flow of setbacks and milestones, respectively. Keeping focused on the vision allows for perseverance to the end.

First and foremost, I would like to acknowledge my Lord and Savior, Jesus Christ who without Him, this "end" would not be possible. (Philippians 4:13). He has provided the strength and encouragement to reach this goal.

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Abstract

This study explores the factors, attributes, and commitment that contribute to African American adult student success, retention, and completion in the community college environment. This study explores what factors contribute to African American student retention as opposed to those factors that serve as deficit; literature abounds with reasoning why minorities fail at both the two-year and four-year college setting. What then are reasons they succeed—are these reasons different from other minorities or the larger non-minority student body? Does gender effect outcomes? To answer these questions of success and retention, these variables were measured by specific components the Community College Student Experience Questionnaire (CCSEQ). The CCSEQ is a student self-assessment instrument that provides information on the quality of students' educational experience as well as students' progress toward important educational goals (Pearson et. al, 2009) based on their effort in academic activities, interaction with faculty, staff, and institution as a whole, and the utilization of resources. The participants in this study were graduates of a large Southeastern community college during the fall of 2019. This quantitative study consisted of an analysis of the data extracted from the CCSEQ. This analysis compared compare graduation participants based on gender and race (as defined as minority or non-minority). The CCSEQ results and matched samples of fall graduate responses were analyzed by ANCOVA addressing seven variables that relate to Tinto's theory of retention in three broad categories (internal retention factors, external retention factors, and success factors). The secondary and tertiary purposes of this study are to determine the strength of relationship between the students' tendency to persist and their perception of the collegiate environment, perceptions of gains, and quality of effort. While there was no significance found in these seven independent variables, controlling for African American students as a covariate, there was

significance found for independent variables minority and gender. The study analyzed the effect of the gender and the minority variables on each score and studied the interaction effect of gender x minority. In addition, this study provides analysis about the effect of being African American (defined as covariate AA Black) on each score. Overall, independent variable minority had an effect on two scores, but not AA Black. AABlack had basically the same effect as the other non-white minorities on these two scores. Otherwise independent variable gender also had an effect on two other scores. Some interaction effect between variables gender and minority was observed on the mean plots, but the variance in each group is too large to detect a statistically significant interaction.

Keywords: African American student covariate, community college, quantitative methodology, retention, success, persistence, CCSEQ, background characteristics, ANCOVA.

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Chapter 1 - Introduction

There is ample literature on why African American (AA) students fail in college or are not retained and many times the literature casts a negative light on these students in explanation of their retention or graduation completion (Allen, 1992; Bean & Metzner, 1985; Ford, et al., 2011; Tinto, 1975). However, there is limited work on what factors contribute to their success and more on the system that is used to frame and stereotype these students as unprepared or unqualified (Cooper & Thornton, 1999). Brooks, et al. (2013) purport studying and evaluating factors affecting African American success would help college and university retention staffs better understand the unique obstacles facing African-American students, and consequently, improve retention, however, they note the design and structure of college campuses serve a predominately white student body and do not account for the cultural differences of a diverse student body.

Academic factors that contribute to successful student transfer include the quantity of courses at the high school level and foundational courses early in the college curriculum (Crisp, & Nora, 2010). Thus, successful freshman year academic outcomes predicted degree completion, and subsequent academic success at the transfer institution, whereas delaying college enrollment, enrolling part-time, and working more hours did not (Crisp, & Nora, 2010). Unfortunately, Sandoval-Lucero et al. (2014) note not all college retention models consider the role that culture plays in the persistence of diverse students, assuming they will persist if they integrate into the college culture. Further, people who are marginalized in higher education often struggle with a sense of self-doubt and lack of academic self-efficacy.

In a review of the literature on African American student success and retention in higher education, I was dismayed at the amount of information that exists on why African American

students (and other minorities) fail in higher education (Allen, 1992; Cochran, et al., 2014; Cokley, 2000; Farley & Frey, 1994; Love, 1993; Strayhorn, 2012). Seidman (2005) reported that while minority students are entering college at a higher rate, they continue to leave at a higher rate than non-minorities. Libassi's (2018) analysis of federal data from 2013 through 2015 suggests through the elimination of graduation gaps at colleges and universities, the number of degrees and certificates earned by black and Hispanic graduates in each degree type as the same rate as white students, more than one million more would have earned a bachelor's degree in just those three years.

"African American men in particular, face specific challenges after enrolling at predominantly white campuses" (Perrakis, 2008). Many studies have characterized African American males as an endangered species (Cuyjet, 1997; Davis & Jordan, 1994; Jackson, & Moore, 2006; Washington, 2013). According to the Chronicle of Higher Education in 2007, 46,425 African American male students received their undergraduate college degree compared to 90,996 African American female students (Brooks et al., 2013). However, Brooks et al. (2013) indicate the growing ratio of females to males (of all races) graduating from college has been expanding since the 1970s and continues to be reflected on college campuses in more recent years. In school, black males are disproportionately disciplined, more likely to face expulsions, and suspended longer and more frequently than White students (Palmer & Young, 2009; Richardson, & Evans, 1992). Black males are also overwhelmingly concentrated in special education and are disproportionately tracked into low academic ability classrooms (Epps, 1995). Disproportionate representation of ethnic and racial minority students in special education has long been a source of concern for educators and policymakers (Vallas, 2009). Cokley, et al. (2014) indicate black children are over identified for behavior issues at schools and under

identified for mental health concerns. According to the U.S. Department of Education, black children are almost three times more likely than white children to be labeled as having a mental disorder and almost twice as likely to be labeled as having an emotional/behavioral disorder resulting in special education intervention (Epps, 1995; Losen & Orfield, 2002). This overrepresentation and segregation of racial minority students in special education is repeatedly emphasized by the intersections of race, culture, gender, and disability for urban education (Sullivan, & Artiles, 2011).

Surely there are African American students that do prevail, and they are successful despite multiple obstacles. How then can research highlight impediments to success and not find out from these students what they say about their own efforts in academia that leads to their successes in school? How can research highlight impediments to success and retention and not find out what factors contribute to the student academic retention and ultimate completion?

Background of this Study

The U.S. population continues to become more ethnically diverse at an increasing rate. College enrollments are becoming more ethnically diverse as a result of these changing patterns. The literature on face-to-face student retention, small-scale studies of general online learning, provide significant evidence that gender, ethnicity and non-traditional student risk factors can impact college persistence (Adelman, 2006; Aragon & Johnson, 2008; Bean & Metzner, 1985; Dupin-Bryant, 2004; Moore et al., 2004; Morris et al., 2005; Muse, 2003; Wladis et al., 2015). This study looks at what differences might exist between community college students who take courses online and those who do not, including an aim at how ethnicities, genders, and student status (traditional and non-traditional) are represented.

Non-Traditional Enrollment

Community college leaders need to address the factors that contribute to the attrition of all students, especially those classified as nontraditional students. The accepted definition of a nontraditional student is based on a Predominately White Institution (PWI) four-year model and not a community college paradigm (Davidson & Wilson, 2013; Pascarella & Terenzini, 1980, p. 62). Based on the accepted definition, a nontraditional student is over 24 years old, a commuter, and/or in a part-time enrollment status (Bean & Metzner, 1985; Museus & Quaye, 2009). Now introduce a marginalized group such as African Americans into the definition and the need to identify factors for success increases (Derby & Watson, 2006; DeSousa, 2001). Derby and Watson (2006) identified orientation course structure, setting personal and professional goals, creating an academic plan, as well as interaction with faculty and administrators as the embodiment of the foundational constructs for student success. 2013a

Desegregation of public institutions engendered enormous growth of African American students at predominantly White higher education institutions (Farley, 2002). However, low retention among African American students continued to increase. "African-American students experience exclusion, racial discrimination, and alienation on predominantly white campuses" (Carter, 1999, p. 20). Despite recent gains in the number of black and Latin youth who attend college, black and Latin youth still attend and graduate from college at much lower rates than do their White peers (National Center for Education Statistics, 2005). McCabe (2009) reported the campus climate is frequently identified as contributing to these educational inequalities. Past research has documented the often difficult experiences of students of color on college campuses and has looked at how to improve the campus climate for them (McCabe, 2009). However, there are few studies that compare students' experiences across race and gender (Hazari, et al., 2013).

Retention rates at Historical Black Colleges and Universities (HBCU's) were higher than that of PWIs (Allen, 1992) and more recently, JBHE (2014) reported a *U.S. News* ranking lists HBCUs' retention rates for the following HBCU's: Spelman College (88 percent retention), Morehouse College (82.5 percent), Howard University (82.3 percent), Florida A&M University (79.5 percent) and Winston-Salem State University (78.3 percent) as the top five HBCUs for having students return to campus after freshman year. In this report out of 64 HBCUs reported, 22 had retention rates of 40 percent or higher. As a comparison, the top 10 predominantly White institutions (PWIs), had retention rates that ranged from 97.5 to 99 percent, but the graduation numbers for minority students was lower (Lynch, 2014). To quantify lower retention numbers, Ginder et al., (2014) reported graduation rates at Title IV institutions where the students started as full-time, first-time students in a 2007 – 2010 cohort, the Black/African American graduation rate was 36.9 percent.

Promoting diversity and student success is important (Love, 2008) because it is the right thing to do, but also because by 2050, minorities will be the new majority, thus affecting economic conditions, societal living, and employment (Colby & Ortman, 2017; Ortman & Guarneri, 2009; Wimberly, 2002). Community colleges are the predominant entry point for postsecondary instruction for many students of color, including African Americans (Hagedorn et al., 2001). "The retention of these students remains an important yet perplexing and complicated issue at community colleges, where most students commute, have employment and/or family responsibilities, and are generally poorer than traditional four-year college students" (Hagedorn et al., 2001, p. 244). Similarly, Glenn (2003) states although black students were graduating from high school at higher rates, they were graduating from college at disproportionately lower rates than other demographics for myriad reasons including socioeconomic, tuition costs, and financial

needs. The National Center for Education Statistics (2017) reported for the 2010-2013 cohort at two-year institutions, African American students were still graduating at a lower rate than other demographics. African Americans were graduating at a 25.8% rate versus 32.8% for all other demographics.

PWIs are continually challenged with retaining African American students because of barriers to matriculation including racial climate, campus climate, culture, and lack of diverse faculty and staff. African American students spend significant time and energy attempting to establish their credibility at PWIs (Hunn, 2014). Often, African American students are unsuccessful, perceive themselves as unwanted, or receive clear messages that they are not wanted at PWIs (Gusa, 2010; Hunn, 2014). "White students sometimes see themselves as superior, more competent, and more intelligent than their African American counterparts and will manifest this by excluding African American students from academic and social interaction" (Hunn, 2014, p. 304).

Online Enrollment

Online enrollment in higher education has continued to grow in recent years (Salvo et al., 2017). In fact, the demand by students specifically in online courses at community colleges has become greater than the demand for onsite courses (Salvo et al., 2017). Salvo et al. (2017) believe that online courses may become more prominent than onsite courses in the near future. The Babson Survey Research Group co-sponsored by the Online Learning Consortium (OLC) and Pearson and Tyton Partners, reported the number of higher education students taking at least one distance education course in 2014 was up 3.7 percent from the previous year (Faculty Focus Company News, 2015). Enrollment in online courses rose at a faster pace between fall 2015 and fall 2016 compared to the previous three years (Seaman et al., 2018). In school year 2015 - 2016,

the year-to-year addition of 337,016 distance education students represented a 5.6 percent increase, which exceeds the gains seen over the past three years. Further Seaman et al. (2018) indicated in 2016, 31.6 percent of all students took at least one distance education course (a total of 6,359,121 students). Despite the growth of online education in American higher education, minimal research has examined the various student populations and institution types of online learners (Ortagus, 2017).

Student retention and completion rates with respect to online course impact needs to be study and one segment of the student body has shown a heightened need; the African American adult student (Brooks & Steen, 2010; Hagedorn et al., 2001; Hunn, 2014). The U.S. Department of Education (National Center for Education Statistics, 2011) reported that African Americans are more likely than any other demographic group to take their entire undergraduate program online (Salvo et al., 2017). Convenience was cited as a chief motivating factor for African American male college students (Tucker, 2014) to take courses online by allowing "flexibility needed to achieve their academic goal(s)" (p.80). Ashong and Comander (2012) state "due to the increasing number of African-Americans enrolling in higher education in general, the number of African-American students participating in online courses has also seen a corresponding increase." (n. p.).

In 2013, African American students made up an average of nearly 15 percent of the student body in the online bachelor's programs that reported data to *U.S. News* (Haynie, 2014). However, the percentage of African American students among the brick-and-mortar programs that submitted data was 12.6 percent (Haynie, 2014). Cristi Ford, director of the Research Academy for Integrated Learning at the University of the District of Columbia, a historically black university, posits there would likely be higher numbers of African-Americans pursuing

online learning as historically black colleges and universities make a greater push to expand their online offerings (Haynie, 2014). Because a variety of background characteristics can influence postsecondary students' academic achievement (Pascarella & Terenzini, 1991, 2005), online learners cannot be studied as a homogenous group.

African American Culture and Enrollment

Cooper and Thornton (1999) asked the rhetorical question "how can African American students be prepared for the new millennium?" (p. 1). The “economic vitality of the United States in the 21st century is contingent upon the productivity of well-trained people and the steady stream of scientific and technical innovations they produce” (Donnor, & Shockley, 2010, p. 44). There is a need to recognize the changes in job distribution and to prepare students with the skills needed in a growing number of occupations (Levy & Murnane, 2004). Additionally, expansion of international markets through globalization has resulted in a shift in output from durable goods to the development of and provider of information technology. These economic shifts demand the requisite skills needed to ensure a high-tier workforce (Waks, 2003) including soft-skills (Gordon-Nembhard, 2005). For the African American student (especially the male student), the education policies that govern curriculum and instruction are essential to shaping the capacity of learning opportunities vital to their collective social and economic advancement (Donnor, & Shockley, 2010).

Cooper and Thornton’s (1999) question remains relevant in the 21st century and had been a theme for policymakers and researchers in the past (Boykin, 1985, 1994). According to Boykin (1985, 1994), there are nine interrelated dimensions of African-American culture that include spirituality, harmony, movement, verve, effect, communalism, individualism, oral traditions, and social time perspective that collectively suggest a need for expanded conceptual and research

frameworks that more fully capture the range of experiences of African Americans, particularly in educational contexts. The use of culturally sensitive research approaches can be a catalyst for educational change (Kershaw, 1992). Lee and Slaughter-Defoe (1995) pointed out:

> Educational research and practices that reflect a cultural paradigm emphasize cultural solidarity, education for self-reliance in the African American community, and specific ways in which cultural knowledge, practices and values that characterize the historic and contemporary African American experience can be drawn upon to improve the education of African Americans. (p. 361)

Tillman (2002) states "culturally sensitive research approaches both recognize ethnicity and position culture as central to the research process." (p. 3). Further, Tillman (2002) posits a theoretical framework for culturally sensitive research approaches for African Americans based on culturally aligned research methods, culturally specific knowledge, cultural resistance to theoretical dominance, culturally sensitive data interpretations, and culturally informed theory and practice. There is a growing body of literature focused on conducting research under the umbrella term people of color that place the cultures of an ethnic group at the center of the inquiry (Milner IV, 2007; Tillman, 2002).

Scholars from African American, Native American, Chicana and Chicano, and Maori backgrounds have argued for the use of research approaches that recognize the explicit cultural knowledge and norms that exist within a group (Love, 1993; Tillman, 2002). Tillman references two journals (The International Journal of Qualitative Studies in Education (QSE) and Qualitative Inquiry (QI)) who have featured conceptual, theoretical, and empirical work on culturally sensitive research approaches. Moving through the current millennium, the economic and social barriers to the academic and social success of many African American adult students

remain in place (Gordon, et al., 2009; Moore-Thomas & Day-Vines, 2010). This reality provides impetus for developing education programs designed to self-empower African American adult students for academic and social success under any socioeconomic conditions that exist in their lives.

Statement of the Problem

While there is research to support the correlation between lower-income groups and their ability to stay in college (Aries, & Seider, 2005; Flowers, 2004; Tinto, 1975) and external and institutional factors like racial climate, campus climate, culture, and lack of diverse faculty and staff (Hunn, 2014; Phinney, et al., 2006; Saenz, et al., 1999) that contribute to their retention rate, there is limited research on the positive attributes and experiences African American students have in the community college environment that contribute to their retention and success (Cochran, et al., 2014; Farmer & Hope, 2015; Yearwood & Jones, 2012).

Seidman (2005) describes African American student retention at a greater risk of failure noting factors from a deficit perspective that contribute to these failures such as low levels of parental support, limited resources to pay for college, low self-esteem, and low social expectation for going to college and completing a college degree. Ford, et al. (2001) argue that a deficit orientation held by educators hinders access to programs for diverse students including African Americans and it is this thinking that hinders the ability and willingness of educators to recognize the strengths of African American students. "Too often, educators interpret differences as deficits, dysfunctions, and disadvantages; thus, many diverse students gain the ‘at risk’ label."(p.52). This deficit thinking sees both male and female African American students as lacking parental support and limited resources, which negatively affects college-going rates and retention. Educators must move beyond a deficit mindset in order to recognize the strengths of

African American students for changing the educator's thinking about differences for recruiting and retaining culturally diverse students.

Tinto (1975, 1987) proposed that institutions must focus on the integration of students into the academic and social spheres of the college environment in order to retain them. Academic and social integration are conditions for student success; the more students are academically and socially involved, the more likely they are to persist and graduate (Astin, 1993; Tinto, 1975, 1987, 1993). Adherence to the norms of the respective social spheres within the organization serves as an indicator of the student's level of integration (Smith, 2017). For example, academic performance in the classroom is an indicator of a student's degree of integration into the academic sphere. Consequently, the degree of a student's involvement in the institution's extra-curricular activities demonstrates integration into the social sphere (Smith, 2017). However, Bean and Metzner (1985) suggested that since most community college students are commuters (i.e., nonresidential), opportunities for social integration are limited. Liu, et al. (2009) posits social integration at the community college level could be even more limited in online settings as research suggests that online course retention rates are low and existing research does not provide a clear understanding of the unique characteristics of students who persist and succeed in online courses.

Bean and Metzner's (1985) research indicated that environmental factors (e.g., work and family responsibilities) have the greatest influence on a community college student's decision to remain in college or drop out. Tinto's framework for student integration and its application on the nontraditional student population warrants review because nontraditional students are not taken in consideration and thus his model is color blind. Aragón, et al., (2017) note "Colorblindness, proposes that differences between groups of people should not matter, and that

we all should be equal in regard to treatment, opportunity, and outcomes." (p. 1). Further, "colorblindness might arise from intentions to be sensitive to all students' needs, but for women and people of color who are questioning their sense of belonging, language and cues of colorblindness raise concerns." (p. 2).

Tinto's model does not allow for understanding and analyzing how African American adult students are able to integrate into the institution academically and socially, but rather views them from a deficit perspective. Museus (2014) analyzes Tinto's (1975, 1993) theory of student departure and delineates four major limitation critiques of this model in explaining success among racially diverse populations: (1) cultural foundations critique refers to the culturally biased foundation of the theory, (2) self-determination critique focus on the limitations of the self-deterministic nature of the theory, (3) integration viability critique emphasizes the questionable validity of the concepts of academic and social integration as viable predictors of success, and (4) psychological dimension critique highlights that much of the theory does not account for psychological dimensions of students' sense of connection to the institution. Dowd, et al., (2011) pointed out that reliance on traditional theoretical models and assessments instruments, without meaningful consideration of the racial and cultural realities can mislead policy makers and educators into thinking that they are developing comprehensive understandings of college success. Based on their interviews with experts in the student development field, Wolf-Wendel, et al. (2009) observed, that an important concern about the major student development theories is "the extent to which they fail to represent the experiences of students historically underrepresented in higher education" (p. 422).

Purpose Statement

The purpose of this study is to understand what factors contribute to African American adult student course success and retention in the community college environment. Specifically, what factors contribute to their success/retention despite the deficit factors traditionally associated with African Americans? This study includes the comparison of African American student data to other groups by race, age, gender, and enrollment status. Prior quantitative research on student departure is important considering Braxton, et al.'s (2004) reviewed attempts to test Tinto's theory on two-year and other community students. They proposed a theory of student departure to apply to commuter institutions. In contrast to residential, four-year institutions, they expected academic integration or "academic communities" (p. 48) to play an important role in enhancing student commitment beyond major influences like student entry characteristics, family, work, and finances. Deil-Amen (2011) stated scholars should rethink how to better conceptualize and measure the concepts of two-year college students suggesting Braxton, et al. (1997) discussed strengthening Tinto's model by identifying new sources of academic and social integration. Deil-Amen's (2011) study considered how Braxton, et al.'s (1997) concepts should be altered to apply more appropriately to two-year students and the relevance of class, race, and ethnicity for their integrative experiences. The CCSEQ addresses the two-year environment as well as class, race and the student collegiate experiences. The use of self-reported responses from students who answered the electronic version of the CCSEQ were analyzed to identify successful strategies which encourage persistence and success among African American community college students.

Research Question

This study includes feedback data from the Community College Student Experience Questionnaire (CCSEQ). The student information data and statistical design addresses the following overarching question:

Is there a difference between CCSEQ scores using Tinto's retention and engagement theory to examine factors that contribute to adult student community college retention and success based on socio-economic characteristics while controlling for whether the participants are African American students or not?

This is a gender and minority/non-minority analysis that looked at differences between African American men and women, however, there is limited research on African American students in general so there will be occasionally specific references to African American men and specific references to African American women. Academic success is a function of both personal characteristics such as mental ability, academic skills, motivation, and goals, and the characteristics of the environment, which can be conceptualized as a system of nested interdependent structures. There are a multiplicity of factors that contribute to the academic success of Black students (Cooper & Thornton, 1999). There are different facets of the schooling experiences of African American students, including the cultural, social, personal, parental involvement to sheer personal determination, thus there is no single explanation for the success of this group of students (Cooper & Thornton, 1999). To support Cooper and Thornton's assertion, Barbatis (2010) identified four themes for success for students of color: (1) precollege characteristics, (2) external college support/community influences, (3) social involvement, and (4) academic integration.

Significance of Study

This project is significant because it determines which factors have a significant difference as related to African American student persistence and success compared to other students and provides higher education administrators (especially those in the community college sector) with insight on how to influence student retention positively and contribute to a healthy academic environment. It is also known that students persist at higher rates when they feel a part of a larger community (Astin, 1993; Harper & Hurtado, 2007; O'Keefe, 2013; Schlossberg, et al., 1989).

Engagement in co-curricular experiences such as student organizations, undergraduate research, internships, and service-learning projects are examples of such community-building that contributes to a healthy academic environment (Houze, 2014). These experiences usually apply in traditional classes. Students enrolled in most supplemental online learning programs remain in their brick-and-mortar school and are able to maintain personal and social connections with most of their teacher and fellow students. However, students served in full-time online courses/programs may not have the ability to interact with their teachers and classmates before and after class and thus overcoming this perceived sense of social isolation can be a major challenge (Barbour & Plough, 2009).

Holley and Taylor (2009) considered how components of socialization (knowledge acquisition, investment, and involvement) are influenced by the online context. Their findings suggested the importance of considering non-academic influences in regard to non-traditional student experiences. In order to understand undergraduate student socialization in an online professional degree program, Holley and Taylor used the framework defined by Weidman, et al. (2001), which commonly applied to graduate and advanced professional students. Holley and

Taylor (2009) extended the Weidman et al. (2001) theoretical model to undergraduate students who were enrolled in a professional academic discipline. "For online students who already hold active membership in a professional community, socialization occurs on two levels: first, to the student role in the academic context and, second, to an enhanced practitioner role in the professional context." (p. 259). Undergraduate students participate in an online professional program to gain job security and advancement (Holley & Taylor, 2009). Given the unique employment characteristics, age, and demographics of this student population, the framework identified by Weidman et al. (2001) is well-suited to support Holley and Taylor's analysis as well as this study and Holley and Taylor (2009) concentrated on three areas of their framework (involvement, knowledge acquisition, and investment) and this framework aligns with Tinto's (1993) model used in this study. With respect to engagement, Holley and Taylor's research highlighted how engagement with others can facilitate student identity, socialization, and learning. "Students not only engage with their academic peers and instructors, but also with professionals in their workplace." (p. 266).

Campus-based student activities are important for non-traditional, distance-based students as well. As the movement to complete online programs expands, virtual student services become a critical factor in student satisfaction and retention (Jones & Meyer, 2012). The convenience of online student services is not only a necessity for distance students but a preference for campus-based students as well (Fontaine & Cook, 2014). "Student affairs professionals are adapting student support services to accommodate the growth of online non-traditional learners." (Fontaine & Cook, 2014, n. p.). However, Dare, et al. (2005) provide the perspective that although there is an increasing array of online student services available to

distance learners, there has been weak relationship between student affairs and distance education.

This study focused on African American adult students and their retention rates in community colleges and what factors contribute to their success despite the barriers that literature highlights as reasons for failure. This study contributes to the literature because it critiques and bridges the gaps in recognizing success factors as they relate to these African American students and their success and retention in community colleges. Acevedo-Gil, and Zerquera, (2016) note community colleges serve high proportions of students from marginalized backgrounds including students from low income backgrounds and students of color. However, the success rate for community college students completing a degree or certificate within a six-year timeframe is lower than other institutional pathways at 39% (Shapiro, et al., 2014). Exploring factors that aid African American adult students to graduation contributes more than statistical enrollment and retention performance for the institution and may serve as a guide for future student success and retention. This study adds the perspective from the African American adult students who had success in college including successes before and during college that aid in the support of enhancing precollege experiences, campus environments, and support systems.

Higher education institutions can use this study to develop a paradigm to help African American students overcome the inequalities that foster disproportionately low graduation percentages thereby supporting economic integration into American society as well as celebrate and recognize factors that contribute to success. This study can contribute to policy that universities/government entities develop to promote success in higher education for African American students.

Theoretical Framework

Predicting who will stay in college is a complex challenge because as a theoretical concept it can be ambiguous and abstract (Strayhorn, 2012). Tinto's theoretical model (1975, 1993) was used as the framework lens through which college student retention was analyzed. Prior research has established that the model has predictive validity when applied to analyses of attrition from two-year intuitions (Bers, & Smith, 1991, p. 539; Pascarella & Chapman, 1983). Tinto's (1975, 1993) theory on engagement and persistence has been a major theoretical/explanatory model. Tinto outlined a theory of college student departure that describes the longitudinal process of "dropping out" (Strayhorn, 2012) as a consequence of the meanings that students ascribe to their interaction in the academic and social realms of college. Tinto's initial writing focused only on academic and social integration as key factors in determining engagement and persistence and finally success at the college level. As the model developed, Tinto added pre-college factors that may influence students' ability to engage, persist, and ultimately succeed. While the model has limitations, Tinto's theoretical model is useful because it recognizes factors beyond the control of the academic institution. These factors may influence retention and success, including students' academic abilities, and study skills.

This study used Tinto's model to study retention as measured by the CCSEQ. Tinto uses the terms academic and social integration to describe student retention and these categories serve as predicator variables. However, Davidson and Wilson (2013) state that Tinto's model, outside the residential 4-year environment, the commuter, distance, online, community college, and other 2-year institutions, as well as nontraditional, racial, and ethnic minorities have proven that this terminology is not sufficient and may be even harmful to gaining further clarity to student retention. Along with integration, the academic and integration efforts that the student exerts also

contributes to their success and retention. Pascarella and Terenzini (1991) noted that Tinto's interactionalist model of individual student departure is "quite similar to Astin's (Theory of Involvement) in its dynamics" (p. 51). Milem and Berger (1997) used longitudinal data to test a conceptual model of student persistence that integrated behaviors constructs from Astin's work to further specify aspects of Tinto's model. Astin's (1985) theory of student involvement complements Tinto's theory as it is evaluating the amount of energy students dedicate to the college environment, they are a part and the level of achievement they experience.

Students who take advantage of programs offered by an institution based on time investment, participation, interaction, and immersion will experience higher levels of academic and personal development compared to those who devote much less time (Astin, 1999). Rayfield (2012) supports this premise stating, "the more time spent on campus involved in these activities all but ensures that these highly-involved students will be spending more time with their peers, classmates, and instructors." (p. 31). Rayfield (2012) goes on to say these students will experience a higher level of social development within the college environment as well, and higher levels of social involvement can further facilitate the significant impact of the college environment on students' academic and personal development. Figure 1 shows the process of dropout from college and the longitudinal process of interactions between the individual and the academic and social systems in the college (Tinto, 1993).

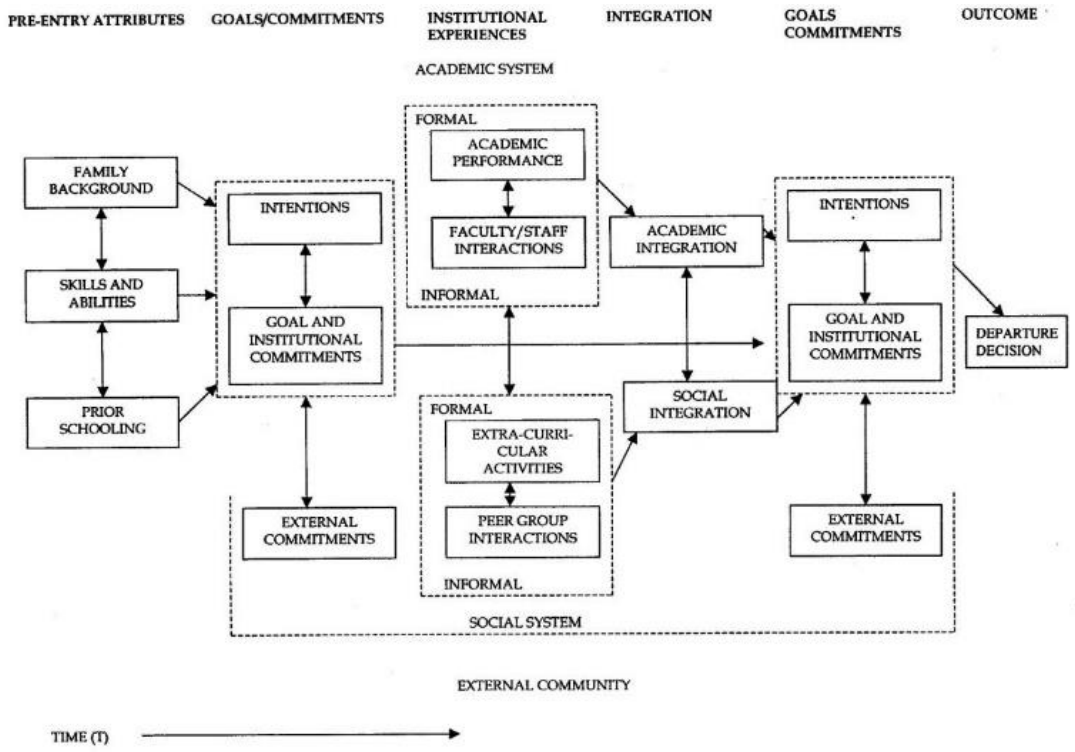


Figure 1

Student Integration Model: A Longitudinal Model of Institutional Departure

Note: Student Integration Model: A longitudinal model of institutional departure. (Tinto, 1993, p. 114)

Assumptions (Data gathering and Participant Characteristics)

Five basic assumptions have been made concerning the data included in this study. First, student attitudes can be measured with the proper use of validated questionnaires (Hinkin, 1998; Schoenfeldt, 1984; Schriesheim, et al., 1993). The CCSEQ has been examined critically and empirically for its reliability and validity (Moss & Young, 1995). It is designed to measure the amount, scope, and quality of effort students put into their college experience, and to measure the amount of progress students estimate they have made toward a set of academic goals (Friedlander, et al., 1991).

Second, students who attend community colleges in the United States have perceptions

concerning their college environment (Ethington, 2000; Weaver & Qi, 2005). Third, respondents to the questionnaire will answer completely all items on the instrument, which asks for data that may be personal in nature. Fourth, secondary data is accurate, including self-reported by the student (i.e., age, gender, and race). And fifth, student ages are 18 years and older.

Limitations

Limitations associated with this study are due to information not available in the CCSEQ data. Student data such as grades in previous courses and socio-economic status (SES) are not included in the CCSEQ. This study does not include the roles or responsibilities specific to the African American family. Additionally, this study analyzes aggregate data from participants at one community college that completed the CCSEQ, therefore, a generalization cannot be made about all community colleges or all African American students.

Delimitations

This study includes both full- and part-time students. This study includes only students who have registered for graduation in fall 2019, completed the CCSEQ, and the findings of the research can be generalized to degree-seeking students at a non-residential (commuter) community college.

Definition of Terms

Throughout the dissertation, various theoretical terminologies are utilized. This section provides brief definitions.

- Adult Learner: The adult student category is commonly defined as a subset of the nontraditional student category to refer to nontraditionally aged students who are participating in higher education for career-related reasons while having other major responsibilities and roles (Panacci, 2015). Adult students are engaged in multiple roles

which impact both the time and the energy they can devote to their role as student (Polson, 1993).

- Attrition. Failure of a student to enroll in consecutive semesters is referred to as attrition (Berger, et al., 2012). Attrition may result from graduation, voluntary withdrawal, or involuntary withdrawal.
- Background factors. Background factors include variables related to the personal characteristics of the students established prior to entry into college (e.g., age).
- Campus Ecology: The study of the aspects that account for the climate of an institution of higher education
- Community college. Public or private higher education institutions whose primary mission is to award associate degrees typically through a two-year program of study (Cohen & Brawer, 2003).
- Community College Student Experience Questionnaire (CCSEQ). The CCSEQ is a self-assessment instrument that provides information on the quality of students' educational experiences as well as students' perception of progress toward important educational goals (Murrell & Glover, 1996; Preston, 1993).
- Degree-seeking. Students who have officially selected a program of study that leads to college degree (e.g., associate or bachelor's) are considered degree-seeking.
- Estimate of Gains. Self-assessment made by students that indicate their perception of the progress they have made toward achieving educational goals.
- Nontraditional student: Over 24 years old, a commuter, and/or in a part-time enrollment status (Bean & Metzner, 1985; Museus & Quaye, 2009).

- Scale. A scale is a group of questions or items provided in the CCSEQ designed to measure how much and how often students engage in various activities provided by the community college they attend (Pearson, et al., 2009).

Chapter Summary

Chapter one provides an overview of the purpose of the study including background information and context, a brief overview of the theoretical framework, the statement of the problem, and an outline of the research design. The remainder of the chapter provides an in-depth explanation of the reason to study from a student's perspective, the factors that contributed to their completion of their degree program.

Chapter 2 - Literature Review

The following review of the relevant literature is comprised of several components. Because the study was designed in an effort to determine success and retention factors of students based on gender and minority status with a focus on the African American student in the community college environment, the chapter will begin with a broad overview of the nontraditional student, the impact of the growing demand of online learning, and retention factors relevant to African Americans. The literature evaluates Tinto's retention model as the theoretical framework for this research and how the Community College Student Experience Questionnaire (CCSEQ) is used to evaluate the retention and success of students in the community college environment.

Trends in Online Enrollment in Higher Education

Online education enrollment in higher education has continued to grow in recent years (Salvo et al., 2017). In fact, the demand by students for online courses at community colleges has become greater than the demand for onsite courses (Lokken & Mullins, 2014). Salvo et al., (2017) state that online courses may become more prominent than onsite courses in the near future. The primary reason cited for online course popularity among all students regardless of color was convenience (Salvo et al., 2017). Other reasons cited for online course popularity were schedule flexibility, institutional flexibility, time limitations, enjoyment of computer technology, and access to higher education by students who otherwise were unable to attend college (Boyd, 2004; Hannay, & Newvine, 2006; Salvo et al., 2017; Xu, & Jaggars, 2011).

The convenience of online learning was particularly valued by students with multiple responsibilities and highly scheduled lives, helping them return to school to complete their education (Bourne et al., 2005; Cole, et al., 2014; El Mansour & Mupinga, 2007; Salvo et al.,

2017). In the fall 2016, there were 6,359,121 students taking at least one distance education course, comprising 31.6% of all higher education enrollments (Seaman, et al., 2018). This portion of students taking online classes represented the total number of students taking all of their courses at a distance, and those who are taking a combination of distance and non-distance courses. The proportion of the higher education student body taking advantage of distance education courses increased four years in a row between 2012 and fall 2016 (Seaman, et al., 2018). It stood at 25.9% in 2012, at 27.1% in 2013, 28.3% in 2014, and 29.7% in 2015 (Seaman, et al., 2018). For each one-year period from 2012 to 2016, the largest numeric increase in the number of distance students occurred at public institutions, compared to private non-profit and for-profit schools (Seaman, et al., 2018). While the year-to-year increase in the number of distance students for the public sector had been the largest among the three sectors, the size of this advantage varied from year to year. Public institutions saw the largest gain between 2015 and 2016, with an enrollment growth of over 200,000 more than the increase observed among private non-profit institutions (299,855 vs 76,406) (Seaman, et al., 2018).

Despite the growth of online education in American higher education, minimal research has examined the various student populations and institution types of online learners (Ortagus, 2017). Because a variety of background characteristics can influence postsecondary students' academic achievement (Pascarella & Terenzini, 1991, 2005), online learners cannot be studied as a homogenous group.

The Importance of Understanding the Adult Learner

Changing demographics saw growth in the 25 to 44-year-old student population while the number of 14 to 21-year-old students decreased (Castillo, 2013; Kasworm, 2003). In the fall of 2011, the average community college student was 28 years old and 60% of community college

students across the United States were over the age of 21 (American Association of Community Colleges, 2013a). From 2001 to 2015, the total enrollment in degree-granting postsecondary institutions increased 25 percent. This is a jump from 15.9 million versus 20.0 million. This number is projected to increase 13 percent, to 22.6 million, from 2015 to 2026, a period of 11 years (Hussar & Bailey, 2018). Enrollment in degree-granting postsecondary institutions of students who are 18 to 24 years old increased 26 percent between 2001 and 2015; and is projected to increase 17 percent between 2015 and 2026. Enrollment in degree-granting postsecondary institutions of students who are 25 to 34 years old increased 35 percent between 2001 and 2015; and is projected to increase 11 percent between 2015 and 2026 and enrollment in degree-granting postsecondary institutions of students who are 35 years old and over increased 13 percent between 2001 and 2015; and is projected to increase 11 percent between 2015 and 2026 (Hussar & Bailey, 2018).

However, there is the beginning of a new statistical trend (Tomar, 2019). According to Inside Higher Ed, 2019 marked the eighth consecutive year-to-year enrollment decline (Fain, 2019). In spring 2019, overall postsecondary enrollments decreased 1.7 percent from the previous spring (NSC Research Center, 2019). The 12-month percentage change (fall-to-fall and spring-to-spring) for each term over the last three years, enrollments increased 3.2 percent at four-year private nonprofit institutions, but this increase was largely due to the recent conversion of a large for-profit institution to nonprofit status (NSC Research Center, 2019). Enrollments decreased among four-year for-profit institutions (-19.7 percent), two-year public institutions (-3.4 percent), and four-year public institutions (-0.9 percent). Taken as a whole, public sector enrollment (2-year and 4-year combined) declined by 1.9 percent in spring 2019 (NSC Research Center, 2019).

College enrollment represents more age groups now than in the past, although 18- to 24-year-olds still hold the edge, at an estimated 12.2 million in 2016. This is up from 12.1 million a year earlier, according to the NCES (National Center for Education Statistics, 2016). An older cohort in 2016 moved to participate in higher education; 25- to 34-year-olds numbered 4.6 million (National Center for Education Statistics, 2016). This was above 2015's total of 4.4 million. Students age 35 and over are an increasing presence, with 3.5 million enrolled in 2016, a slight uptick from 2015. All these age groups, according to NCES, remain on track to grow by 2025 (Acrobatiq, 2017).

As more of the non-traditional students (ages 25 and older) decide to enter higher education, colleges and universities must adjust their focus to meet the needs of these learners (Hunnicutt, 2014). Due to the changing demographic of students from what had been considered the traditional age for entering college students to the 25 to 44 year old demographic, it is important to consider what motivational factors can assist faculty and institutional administrators in addressing this shift.

Defining Student Retention

Defining "retention" is complex and problematic. This is reflected in the large body of research containing inconclusive and often contradictory results (Berge & Huang, 2004). Retention studies typically address degree completion versus non completion (IRP, 2003). However, retention in terms of program completion is only relevant for some classes of students (Berge & Huang, 2004). For others, learning success is most pertinent to achieving their objectives of participation (Kerka, 1988). Defining retention is further complicated by different measures adopted by the respective organization and Berge and Huang (2004) adopted working definitions of retention, attrition, and persistence as follows:

- Retention: is continued student participation in a learning event to completion, which in higher education could be a course, program, institution, or system.
- Attrition: is a decline in the number of students from the beginning to the end of the course, program, institution, or system under review.
- Persistence: is the result of students' decisions to continue their participation in the learning event under analysis.

In the Psychological Model of Student Retention, Bean theorized that retention was a function of how a student's background characteristics influenced interaction with the college environment (Bean & Eaton, 2000). For example, a student's past experiences may have led to a certain locus of control or level of self-efficacy. This in turn influenced how the student initially interacted with the college environment. As the student is exposed to new stimuli, she learns new strategies for navigating the new environment. If the student is successful in navigating this new environment, this leads to the development of a higher self-efficacy and a stronger feeling of *fitting in*, which increases the likelihood of the student remaining in college**.**

Trends in African American Adult Student Retention in Community Colleges

More students are enrolling with less than adequate academic preparation to be successful (Burt, 2009). Burt (2009) African Americans enter higher education with low high school grade point averages (GPA), a need for remedial education in one or more subject areas and African American females outperform their African American male counterparts in GPA (Saunders, et al., 2004). Tsoi-A, and Bryant (2015) reinforce this point suggesting one of the biggest challenges that must be addressed through college and career readiness reform is the disparity in preparation for certain racial and ethnic sub-groups, as well as low-income and first-generation college students. African American students in high poverty schools are the least likely to be

prepared for college (ACT, 2013). These persistence struggles and risk factors among African American students are of particular interest to institutions of higher education that have embraced an open-enrollment admissions philosophy such as community colleges that often attracts a greater proportion of academically underprepared students because of relaxed entrance criteria in support of a desire to promote broader access to education. Roman (2007) states: "Policymakers will likely look to community colleges to accommodate the enrollment demands [in community colleges] since expenditures per student at community colleges are less than at baccalaureate institutions" (p. 20). Even though the community college serves as a means of controlling tuition costs and creates a gateway for more non-traditional students to attend a higher learning institution, African Americans are about 22 percent more likely than their white counterparts to leave college prior to goal completion (Hagedorn et al., 2001; Ottinger, 1991). Among African American males in community colleges, the retention is less than 10 percent (Hagedorn et al., 2001). In more recent research, Tate (2017) found college completion rates varied widely along racial and ethnic lines, with black and Hispanic students earning credentials at a much lower rate than white and Asian students do according to a report released by the National Student Clearinghouse Research Center for the fall of 2010. The report found African American and Hispanic students nationwide who entered a college or university in both two- and four-year showed a disparity in graduation rates by race.

Tate (2017) showed 54.8 percent of those students completed a degree or certificate within six years of entering a postsecondary institution, but that rate fluctuates when broken down by race and ethnicity. White and Asian students completed their programs at similar rates of 62 percent and 63.2 percent, respectively yet Hispanic and black students graduated at rates of 45.8 percent and 38 percent, respectively. Dougherty and Kienzl, (2006) found retention,

completion, and transfer rates are lower for marginalized students than White and more affluent counterparts.

Despite the higher number of African American students enrolled in two-year institutions, there is a scarcity of educational literature and research about the community college system in general and African American students specifically (Bush & Bush, 2010; Hagedorn et. al., 2001). Harris and Wood (2013) noted there was a substantial body of scholarship on men of color in postsecondary education since the late 1990s, yet only recently have scholars begun to pursue empirical insights about the status of men of color who attend community colleges. There is an apparent scarcity of literature concerning African American men and the effects of community college education. Harris and Wood's (2013) research concluded that little attention has been paid to men of color (MOC) in community colleges as only two pieces were published between 2004 and 2006. Harris and Wood's research revealed there was an increase in scholarship on this demographic in community colleges between 2007 and 2009 when five pieces were published in 2008 and 2009 in peer-reviewed journals with scholarly considerations on MOC in community colleges remaining limited until 2010. They found half (14) of the 24 research pieces reviewed were published between 2010 and 2012 (Harris & Wood, 2013). Of the 14 publications, 12 were published in peer-reviewed specialized journals that focused on community colleges or students of color. Of the remaining 16 total peer-reviewed articles were published in journals not necessarily consider "mainstream like Journal of College Student Development, Review of Higher Education, Journal of Higher Education, and Research in Higher Education." (p. 176).

Hagedorn et al. (2001) wrote:

> The under-representation of African American men has serious repercussions not only for the men themselves, but also for our nation as a whole. Whenever a group of individuals is not interacting and achieving at optimum levels, the country is robbed of talent that could enrich the lives of many. (p. 245)

Retention rates among African American students are some of the lowest in the country (Hagedorn et al., 2001). It is therefore important to research this important population and to determine factors and subsequent policy to contribute to academic success. A good number of African American students begin postsecondary instruction at community colleges (Pope, 2002), so it seems intuitive that the identification of factors that promote retention and subsequent success in these institutions is an important endeavor. Past research on the African American male's experiences in U.S. higher education was mostly concerned with exploring the quantitative indicators of enrollment and attrition (Farmer & Hope, 2015). Given the social and economic problems African American males face in the United States, their experiences in college should become a concern and challenge for institutions of higher education.

As graduation rates among African American students in higher education remain disproportionately lower than the graduation rates of their White male counterparts, outcomes of Black students at PWIs deserve attention (Matthews, 2017). Allen (1992) investigated relationships between student outcomes and academic achievement, social involvement, and occupational aspirations, and students' educational backgrounds, educational goals, demographic characteristics, and personal adjustment to college and the college environment. Results suggested that students with high educational aspirations, who were confident that their college choice was correct and who reported positive relationships with faculty exhibit the highest

academic achievement (Matthews, 2017). Black students who attend HBCUs reported higher academic achievement than students who attend PWIs (Matthews, 2017; Nelson-Laird, et al., 2007).

In 2004, HBCUs accounted for fewer than 2% of U.S. higher education enrollment yet they awarded nearly 22% of the bachelor's degrees earned by African Americans (Burt, 2009). Students who feel that they attended the right college reported greater social involvement, while students at predominantly White institutions report substantially lower levels of social involvement (Allen, 1992). Tinto (1975) believed social interaction had a positive effect on grade performance when students establish friendships with persons who have strong academic orientations. Furthermore, a student's initial level of goal commitment is thought to influence academic integration, which in turn affects subsequent goal commitment (Lotkowski et al., 2004).

African American Student Online Retention in Higher Education.

Although minority students are contributors to the increase in online enrollment and they entered college at a higher rate than in previous years, they continued to leave at a higher rate than non-minorities (Seidman, 2005). The Consortium for Student Retention Data Exchange (CSRDE) revealed (regardless of institution type) Whites were retained from the first year to the second year at an 80.3 percent rate; African Americans were retained at a 74.7 percent rate and Hispanic and Asians were retained at higher rates than African Americans. "The only other demographic less than blacks were American Indians at 67.2 percent." (Seidman, 2005, p. 8).

The U.S. Department of Education (National Center for Education Statistics, 2011) reported that African Americans are more likely than any other demographic group to take their entire undergraduate program online (Salvo et al., 2017). African American online students tend

to have lower grades, fewer posting behaviors, less sense of a learning community, and lower satisfaction scores (Salvo et al., 2017). Cochran et al. (2014) discovered African American students were more likely than other ethnic groups to have a cumulative GPA below 3.0, which may have led to lower scores in online courses.

Characteristics of African American Online Learners. Pascarella and Terenzini (1991, 2005) reported that student characteristics are significant predictors of postsecondary students' college experiences and learning outcomes. Ortagus (2017) supports these predictors of college experiences and outcomes:

> As calls to provide generalizable evidence of the quality of online instruction become louder (Bowen, 2013), the changing profile of online students in the U.S. has become increasingly important given that certain student populations and institution types may engage disproportionately with online education. (p. 48)

African American students who enrolled in online courses are older (Collins, 2014; Williams, 2015), female (Williams, 2015), full-time students (Williams, 2015), who either worked full-time or were unemployed (Williams, 2015). African American online learners had higher incomes (Collins, 2014), were independent (Collins, 2014) and unmarried with dependents (Williams, 2015), had a strong sense of positive racial identity (Collins, 2014), and had a high degree of cultural awareness (Rovai & Gallien, 2005). Williams (2015) found that a majority of online-only African American students attended private for-profit institutions.

Attitudes of African American Online Learners. The attitudes of African Americans were of interest in a study conducted by Okwumabua et al. (2011) because little research was available about this population and their attitudes toward online learning experiences. They used The Online Tutoring Attitudes Scale (OTAS), adapted from the Computer Attitudes Scale (CAS)

(Graff, 2003) to identify psychological factors related to students' attitudes toward online learning/tutoring. Graff, in his overall findings suggested that attitudes toward computers are not related to performance on each of the online tasks employed although there are some connections between cognitive style and performance of these tasks, however, Okwumabua, et al. (2011) "depicted a less than promising outlook for African American students in a growing technological age." (p. 247). The implications of the African American students' attitudes are relevant to intervention, education achievement, and technological advancement with respect to minority population. The OTAS is a 54-item scale that measures attitudes toward online learning/tutoring on four major subscales. These four subscales results were:

(1) Favorable attitudes toward online learning: "In general, students reported negative attitudes toward online learning. A significant number indicated that they were not interested in using the computer and did not believe that online learning experiences would have a positive influence on their academic experiences." (p. 246).

(2) Computer anxiety: "Students did not report experiencing an anxiety toward computers; however, they stated that there was some discomfort when engaging in online learning experiences." (p. 246).

(3) Computer Confidence: "Students did not report high levels of confidence in working online. Sixty-seven percent of students were not confident in their use of computers. Eighty-eight percent of students believed that they would never like being tutored online." (p. 246).

(4) Usefulness of computers and online learning. Students' attitudes toward computers differed from their attitudes toward the usefulness of online learning. Fifty-five percent of students understood that computers could be frequently used in multiple

settings, including home, school, and work, however, only 38% stated that online learning and tutoring were valuable.

The goal of this study was to provide exploratory research findings in an effort to contribute to a better understanding of African American students' attitudes toward online learning and tutoring. Okwumabua, et al.'s (2011) findings showed a less than promising outlook for African American students in a growing technological age. The inconsistency between attitudes toward computers and attitudes toward online learning and tutoring warrant further discussion as they pertain to African American enrollment in online education and implications toward their impact on intervention, educational achievement, and technological advancement.

Traditional Perspective on Retention: Review of Tinto's Retention Theories

Braxton et al. (2000) wrote "Tinto's interactionalist theory of college student departure enjoys near-paradigmatic status, as indicated by more than 400 citations and 170 dissertations pertaining to this theory" (p. 569). Aljohani (2016) supports the statement about the popularity of Tinto's Model of Institutional Departure (1975, 1993) as a subject of "extensive testing and examination over the last four decades and has been cited in many studies investigating the attrition problem in which the constructs, hypotheses and postulations of the models were empirically used, tested and critiqued." (p. 7). Aljohani (2016) posits that multiple studies adopted and tested Tinto's model in different college systems and environments, giving the model more credibility and validity. An initial review of Tinto's (1975, 1987, 1993) work in student departure and engagement sets the stage for this study on the retention of degree-seeking African American adult community college students.

Longitudinal Model of Dropout (Tinto, 1975)

Tinto's (1975) theoretical model attempted to explain the processes of interaction between the individual and the institution that lead different individuals to drop out from institutions of higher education. This also distinguishes between those processes that result in definably different forms of dropout behavior. Tinto's (1975) model (published in the article *Dropouts from Higher Education: A theoretical Synthesis of the Recent Literature*) on college dropout sought to explain the longitudinal process of interactions that lead differing persons to varying forms of persistence and/or dropout behavior (Smith, 2017). The model built in sets of individual characteristics and dispositions relevant to educational persistence in addition to background characteristics of individuals (such as those measured by individual attributes including sex, ability race, and ethnicity) that had direct and indirect impacts upon performance in college. Importantly, these background characteristics and individual attributes also influence the development of the educational expectation, motivation, and commitment to career goals. Tinto's (1975, 1993) model took a sociological approach to the issue and posited that it was the interaction between the two variables (i.e. the college and student), that influenced staying or leaving behavior. This model also takes in consideration "a variety of external forces that may affect a person's decision to stay in college" (Tinto, 1975, p.98). These external factors include the supply and demand of the job market and its impact on whether a student perceives there are no viable jobs in a given market and thus, what is the need to continue in pursuit of a degree that will not contribute to theirs (Tinto, 1975). Another factor that is external to the institution that also may affect retention is a person may withdraw from college for reasons that have little to do with their interactions within the college systems, but Tinto (1975) suggested that those impacts will be best observed through the person's changing evaluations of commitment to the goal of

college completion and to the institution in which he or she is registered. Still the ownership falls back on the individual student.

This theoretical model of dropout argues that the process of dropout from college "can be viewed as a longitudinal process of interactions between the individual, the academic and the social systems of the college during which a person's experiences in those systems" (Tinto, 1975, p. 94). Tinto references "individuals" as entering higher education institutions with a variety of attributes including "sex, race, ability" (p. 94), precollege experiences (e.g., grade-point averages, academic and social attainments), and family backgrounds (e.g., social status attributes, and value climates).

Integration. Tinto's model (1975) measures normative and structural integration. "Integration refers to the state of being unified, a state in which the parts are brought together into a whole" (Shepherd, 1995, p. 70). Structural integration refers to the positions of the members of the organization; each members' position includes title, duties, responsibilities, to whom that person reports, who reports to that person, and related information (Shepherd, 1995). When members of an organization have very different conceptions of the structural system, their agreement is low and that expectations of each other's' position or role may be in conflict. "Normative dimension includes norms and expectations of self and others' behavior as a member of the organization not officially stated nor sanctioned." (Shepherd, 1995, p. 72). Many norms are unstated and are probably not known by newcomers or those outside the inner circle of members. When perceptions of the norms (of the inner circle) are different and not shared, people will violate expectations of each other and attributing such behavior to presumed motivations or attitudes. Structural dimension directs attention to positions, statuses, roles, and

their accompanying rights, duties, and rewards. The normative dimension directs attention to informal perceptions and expectations.

Given prior levels of goal and institutional commitment, it is the person's normative and structural integration into the academic and social systems that lead to new levels of commitment. “Other things being equal, the higher the degree of integration of the individual into the college systems, the greater will be his commitment to the specific institution and to the goal of college completion” (Tinto, 1975, p. 96). Continually modifying the student’s goal and institutional commitments leads to persistence and/or to varying forms of dropout (Tinto, 1975). As this model applies to community colleges, Tinto’s model was first widely validated in the university setting (Davidson & Wilson, 2013; Pascarella & Terenzini, 1980, p. 62). Tinto (1982) had already stated that his [Tinto’s] original model “is not very sensitive to forms of disengagement that occur within the two-year college sector” (p. 689), although Halpin (1990) was among the first to suggest Tinto's model could be applied to two-year colleges. Attinasi and Nora (1992) cited previous research (Cabrera, et al., 1992; Nora, 1990) that focused specifically on Hispanic student persistence. Their findings suggested Tinto's model was a reliable model for persistence among not only traditional college students, but also two-year college students, as well as for groups of minority students.

Tinto’s (1975) model was further developed (Tinto, 1988, 1993). In this model, the likelihood of an institution retaining an individual student is a function of the match between the student's academic ability and motivation or commitment and the school's academic and social characteristics. This theoretical model of college dropout provided the framework for this study, which includes four components: (1) Background Characteristics, (2) Expectations and Motivational Attributes, (3) Individual Educational Expectations, (4) Institutional Manifestation.

This study incorporates the Community College Student Experience Questionnaire (CCSEQ) (Pace et al., 1990) overlaying Tinto's model.

Theory of suicide (Durkheim, 1961). Tinto's Model of Dropouts from Higher Education (Tinto, 1975) has its roots in Durkheim's (1961) theory of individual suicide. According to Durkheim, "suicide is more likely to occur when individuals are insufficiently integrated into the fabric of society. Specifically, the likelihood of suicide in society increases when two types of integration are lacking-namely, insufficient moral (value) integration and insufficient collective affiliation." (Tinto, 1975, p. 91). Durkheim referred to this type of suicide as egoistic suicide. Other types of suicide classified as altruistic and anomic, were viewed as the result of value orientations which give special meaning to suicide (e.g., as exemplified in certain religious sects), and in the latter instance, as the outcome of insufficient regulation of the individual by society during time of significant social upheaval.

These forms of malintegration (defective integration) are seen, in the former instance (i.e. values), as the outcome of one's holding values highly divergent from those of the social collectivity, and, in the latter instance, as the result of insufficient personal interaction with other members of the collectivity (Tinto, 1975). Spady (1970) explains when one views the college as a social system with its own value and social structures, one can treat dropout from that social system in a manner analogous to that of suicide in the wider society (Tinto, 1975).

Sociological model of student dropout in higher education (Spady, 1970). Spady (1970) first recognized that there are two different definitions of attrition generally accepted when conducting research on persistence in higher education (Kerby, 2015). The first definition includes all individuals who leave a college or university where they are registered (Spady, 1970). The second definition refers only to those individuals who never receive a degree (Spady,

1970). Spady also added two other dimensions to attrition; those who are forcibly dismissed from a college or university for academic or disciplinary reasons and those who voluntarily withdraw.

Predictive models and equations that involve college or university grade point average (GPA) can be applied directly to retention only if failure or dismissal is the issue at hand. Conversely, the analysis of withdrawal phenomenon rather than dismissal phenomenon requires a more complex prediction model. Spady proposed a Durkheimian model that Tinto (1975) used to frame his Longitudinal Model of Dropout.

Spady's work both implied temporal order and depicted the assumed direct causal connections between pairs of variables. "Because familial association influences both academic potential and normative congruence, family background provides the foundation for the remainder of the model" (Kerby, 2015, p. 147). The model also suggested the broad range of attributes have a direct influence not only on the student's friendship support and social integration but also on grade performance and intellectual development (Kerby, 2015). "Spady's path model suggested the result of the entire model may lead to changes in students' attitudes, interests, goals, or motivation that will have either positive or negative effects at later stages of the college or university career" (Kerby, 2015, p. 147).

Working from Spady's (1970) "conceptual model of the dropout process, Tinto asserted that theoretical models developed in the past sought to simply describe, not explain the processes that bring individuals to leave institutions of higher education" (Kerby, 2015, p. 147). Tinto also noted, as did Spady, that it was not uncommon for research on attrition to fail to distinguish between academic dismissal and voluntary withdrawal. Tinto (1975) agreed that colleges and universities comprise both academic and social systems and that it is important to distinguish

between normative and structural academic integration of the college or university and that of the social domain of the college. “Structural integration entails the meeting of explicit standards of the college or university, whereas normative integration pertains to an individual’s identification with the normative structure of the academic system” (Yorke & Longden, 2004, p. 90).

Kerby (2015) contrasted Spady’s conceptual model of attrition to Tinto’s arguing that Durkheim’s (1961) theory of suicide was not an adequate means of theoretically describing how varying individuals adopt different forms of withdrawal behavior. Instead, he posited that Tinto contended that Durkheim’s theory only created a descriptive model that specifies conditions under which varying types of withdrawal behavior may occur—that “Durkheim’s largely structural model of suicide was not sufficient in explaining suicidal behavior within society among differing individuals.” (p. 147).

Longitudinal Model of Student Departure (Tinto, 1987) and Longitudinal Model of Departure from Institutions of Higher Education (Tinto, 1993)

The research of investigators such as Bean (1980) and Pascarella and Terenzini (1980) addressed the weaknesses of Tinto's early model of persistence (Metz, 2002). These criticisms of Tinto’s (1975) study led Tinto to emphasize the applicability of his model. This included stages of separation, transition, and incorporation, and to suggest these factors were integral in understanding why students leave college. “Tinto consequently expanded on his 1975 work by acknowledging the need to include additional ethnographic information as background variables and to assess the role academics and social integration factored into his conceptual model of persistence.” (Metz, 2002, p. 8). Tinto's later revision of his 1975 work set the framework for five major theoretical bases for developing and understanding the evolving nature of student

persistence research (Tinto, 1987). Those bases included psychological, societal, economic, organizational, and interaction factors.

Scholarship on college persistence has focused extensively on the application and testing of Tinto's (1987, 1993) theory of student integration. Tinto's model posits that undergraduates' levels of integration into the academic and social systems of their respective campuses shape those students' commitments to their goals and institution, which, in turn, determine their likelihood of persistence (Museus & Quaye, 2009). While empirical research employing Tinto's (1987, 1993) model as a conceptual framework has typically focused on testing the validity of the hypothesized relationships between students' academic and social integration into campus communities, commitments to their institutions and goals, and persistence, Tinto's integration theory is partly based on cultural foundations originating in the field of anthropology (Museus & Quaye, 2009). Further Tinto's integration theory (1987, 1993) is, in part, based on Van Gennep's (1960) stages of cultural transition. Specifically, Tinto's work builds on Van Gennep's theory that individuals go through three stages of transition (separation, liminality, and incorporation: Separation includes a detachment from their former selves, liminality encompasses the transition from one status to the next, and incorporation includes the adoption of the cultural values and norms associated with the newly acquired status." (Museus & Quaye, 2009, pp. 69-70).

Further building on Van Gennep's three-stage process, Tinto (1993) asserted that students must "physically as well as socially dissociate from the communities of the past" to fully integrate into academic life." (p. 96). Thus, an assumption that underlies Tinto's theory is that students who fail to sever ties with their communities of origin and integrate into their campus cultures are less likely to persist (Hurtado & Carter, 1997; Museus & Quaye, 2009).

Although Tinto's (1987, 1993) theory helped advance knowledge regarding the persistence process for college students, researchers have critiqued the underlying assumptions of Tinto's integration theory for their cultural bias and inadequacy in explaining the departure of students of color (Hurtado & Carter, 1997; Museus & Quaye, 2009; Nora & Cabrera, 1996). Receiving scrutiny is the assumption that students must dissociate from their home cultures and adopt the values and norms of the dominant campus culture to succeed (Museus & Quaye, 2009).

Reason (2003) indicated that Tinto's model has become outdated. The changing demographics of college require the model be altered. As an increasing number of students from formerly underrepresented groups come to campus, the effects of race, gender, ethnicity, age, and other demographic variables will change (Cox, 2012). "New studies must reexamine our understanding of these variables and their relationships to retention" (Reason, 2003, p. 187). Reason (2003) insisted that the increasing diversity of the nation's institutions of higher learning and the commitment to increase retention nationwide demands a reevaluation of the model.

Tinto's notion that students need to assimilate to be successful in college was inaccurate according to Guiffrida (2003). Cox (2012) instead, emphasized the need for African American students to be involved in African American student organizations to become socially integrated into the institution. Guiffrida (2003) insisted that the students' affiliation with African American organizations enabled the students to establish relationships with African American faculty, help other African American students at the institution, and to interact with other African American students.

Guiffrida (2003), however, did agree with Tinto's model that social integration impacts student retention and satisfaction. Guiffrida's (2006) qualitative study involving 88 African American undergraduates, recommended that Tinto needed to revise his theory to be more

culturally sensitive to minority students even though the results largely supported Tinto's (1993) theory of student departure. Much of Tinto's retention research centered on the longitudinal process of college student departure, examining the trajectory of the student's entry into the institution and subsequent, degree completion (Nora, et al., 2005; Simmons, 2013; Tinto, 1993). However, embedded in this pathway are individual and institutional determinants that shape student departure and persistence decisions (Simmons, 2013). These determinants can enable higher education institutions to develop practices or policies that retain more of its enrolled students (Simmons, 2013; Tinto, 1993).

Tinto's (1993) Retention and Success Factors

Like Tinto's first model, his 1993 version labels four elements that contribute to retention and success. The first phase consisting of pre-entry attributes include elements related to family background, skills, abilities, and prior schooling (Connolly, 2016). Connolly (2016) states "Although one cannot underestimate the significance of post-entry educational experiences, to a certain extent it is the pre-entry attributes associated with students, which provide insight into understanding how they will ultimately respond to their educational environment and persist." (n.d.). Tinto (1993) develops the theory that intellectual attributes shape an individual's ability to meet academic demands. Intellectual attributes are influenced by background factors. Further developing this theory that background serves as a linchpin in student retention and success, Heilbrun, (1965), Rossmann and Kirk, (1970), and Waterman and Waterman (1972) stress the roles personality, motivation and disposition play in influencing the student's willingness to meet those demands. Bean's (1982) work also lays foundation for Tinto establishing the condition that the background characteristics of students must be considered to understand the student's interactions within the environment of the higher educational institute.

At the second element of the Tinto model is the acknowledgement that external commitments to others like family, friends, and work obligations and an ongoing effect on the student during his or her time at college. The external factors serve as supportive or negative influences on the student achieving goals, interactions with others, and profoundly, on deciding to stay or leave the institution (Tinto, 1993). In this second stage of the Tinto model is introduced the acknowledgment that external commitments to others and entities outside of the institution, such as family, friends, and work obligations, have an ongoing effect throughout the time spent in college. The external forces can either be supportive or have a negative influence on a student's goals and commitments, subsequent interactions with the institution, and ultimately, his or her departure decision (Tinto, 1993). Primary to Tinto's original model was the degree to which students are successful in their pursuits determines the degree to which they are committed to their career and educational goals as well as to the institution. Connolly (2016) notes in Tinto's original model that the degree to which students are successful in their pursuits, determines the degree to which they are committed to their career and educational goals as well as to the institution; success and accomplishment serve at impetus for future success. Pace (1979b) states the combined influences of the college environment as perceived by the student and the effort expended by the student lead to student development.

Supporting this premise, Bean's (1980) research established conditions that resulted in similar outcomes stating:

> …the student interacts with the institution, perceiving objective measures, such as grade point average or belonging to campus organizations, as well as subjective measures, such as the practical value of the education and the quality of the institution, and that these variables are in turn expected to influence the degree to which the student is satisfied

with the institute of Higher Education. The level of satisfaction is expected to increase the level of commitment (p.160)

The third element of Tinto's model serves to address the academic and social systems of the institution, the institutional experiences, and the interactions within. Academic and non-academic staff are both seen as having the ability to influence the departure decision (Connolly, 2016). Tinto's (1993) model stresses overtime, the external community, made up of individuals or entities with which the student interacts, continues to be a factor. Braxton et al. (1995) has shown that institutional characteristics and culture have both direct and indirect effects on the student's tendency to become involved in both academic and non-academic activities. Clagget (1992) aligns with Braxton et al. (1995) noting the college as an impact on determining the amount of student involvement and thus the gains and retention. Levin and Levin (1991) note the institution affects minority student academic success serving as a contributor to the prediction of student performance stating it is the student's interactions with peers, advisers, and faculty that increase satisfaction with the institution, create a sense of belonging, and strengthen commitment to the institution's educational goals and standards.

The fourth element of Tinto's (1993) model is the refinement idea that a student's involvement in the social environment as well as the academic environment is critical to success in college. This idea was proposed by Spady (1970) in his study of retention and attrition. As previously noted, Spady's model was based on Durkheim's theory of suicide, which suggests that, when people are not sufficiently involved with society in terms of interpersonal relationships (affiliations) and values or morals, the likelihood for probable self-inflicted death exists. Spady too used family background as the foundation for his model on social integration.

Tinto (1993) found that a student's sense of academic and social belonging impacts retention and graduation, and this impact is increased or decreased by interactions with the environment at the college or university. His findings on student expectations were further extended by Braxton et al. (1995). The integration of academic and social elements results in the student/institutional experiences, which effect or modify student intentions, commitment to self and institution, and ultimately to the goals of the student. The institution plays a significant role in this integration as positive campus experiences tend to increase integration in both academic and social systems. Conversely, negative experiences tend to weaken integration (Tinto, 1993). Yet, to compensate for the effects of the institution, Tinto emphasized that a strong inner drive, internal motivation two career and academic goals, can offset negative experiences based on the culture or environment of the institution. Likewise, taking an excerpt from the poem by John Donne (1624), "no man is an island, no man stands alone", positive interactions can be mitigated by external community and forces that are beyond the institution's ability to influence (Tinto, 1993).

Kember (1995) claims that the testing of Tinto's model by a number of researchers has confirmed its validity, although some have found that factors external to the institution play a greater role in student drop-out than the model suggests (Kember, 1995). It has also been found that Tinto's model was not as effective in predicting persistence in commuter colleges, as it had been at residential institutions (Pascarella et al., 1983). Tinto's original model was found to not be as effective in studying community college students as many of these students do not live on campus and thus, do not have the opportunity for full college life social integration. This factor can influence the community college student's decision to withdraw or persist differently

(Connolly, 2016). This emphasizes the impact of pre-enrollment attributes like background on student retention and success (Pascarella, et al., 1983).

During the last two decades, retention or attrition theory has begun to guide research efforts. One of the most notable theories on retention or attrition in the last two decades has been Tinto's model of student departure (Connolly, 2016). Tinto (1993) proposed that students enter college with pre-existing attributes and experiences and previously noted. These attributes and experiences chart the course for their academic journey of formal and informal socialization, interaction, and integration. Very much like a ship on the sea is impacted by winds and currents external to the ship, this charted academic course is affected by external forces and as a result of this interactional process, the student ultimately decides either to stay involved or to leave the educational environment.

Non-Traditional Student Description

Non-traditional students are defined in many ways. A nontraditional student was identified by the presence of one or more of the following seven characteristics: (1) delayed enrollment into postsecondary education, (2) attended part time, (3) financially independent, (4) worked full time while enrolled, (5) had dependents other than a spouse, (6) was a single parent, or (7) did not obtain a standard high school diploma (Horn, 1996; Wyatt, 2011). Bean and Metzner (1985) defines non-tradition students as over 24 years old, a commuter, and/or in a part-time enrollment status. Jones and Watson (1990) define non-traditional students typically as older adults, minorities, and individuals of low socioeconomic status.

Horn (1996) conducted research using data from the three administrations of the National Postsecondary Student Aid Study (NPSAS) conducted in 1986-87,1989-90, and 1992-93 (NPSAS:87, NPSAS:90, and NPSAS:93 respectively) to examine enrollment trends of

nontraditional students. The nontraditional student was characterized into three (3) categories based on these seven characteristics: (1) minimally nontraditional (one characteristic), (2) moderately nontraditional (two or three characteristics), or (3) highly nontraditional (four or more characteristics).

Most often age (especially being over the age of 24) is the defining characteristic for this population (i.e. nontraditional). Overall, students who are identified as nontraditional according to these criteria are more likely to be women, to belong to a racial ethnic minority group, and have less educated parents than traditional students (Horn, 1996). The enrollment trends identified by Horn (1996) over the 6-year period from 1986 to 1992 of these surveys, indicated that the prevalence of nontraditional students with two or three non-traditional characteristics, increased over the time period from one in four undergraduates in 1986 to almost one in three in 1992. The proportion of highly nontraditional students (those with four or more characteristics), on the other hand, declined.

Toynton (2005) states "the terms mature student and adult learner are used synonymously to define those whose prior knowledge includes a significant element derived from work or life experience in addition to, or instead of any prior formalized study" (p. 107). Prior knowledge and work experience define Toynton's population of students, age serves as the defining criteria for classifying students as traditional or nontraditional. "Today's literature supports two characteristics for classifying students as either traditional or nontraditional: age and enrollment status." (Wyatt, 2011, p. 13). These two characteristics are the most widely used in defining student populations at higher educational institutions throughout the United States. Horn (1996) identified nontraditional students by reviewing their enrollment patterns. This identification of

nontraditional students was supported in the findings of the National Center for Education Statistics (2002) (NCES) study on nontraditional undergraduates.

Bean and Metzner (1985) defined the nontraditional student as someone who possesses one of three characteristics: over 24 years old, part-time enrollment, or commuter. The definition is based on what is considered atypical for a four-year institution; however, it describes the typical community college student (Smith, 2017). Bean and Metzner proposed that external environmental factors (i.e., life factors) are more influential in the decision to persist or withdraw than are academic factors. In the initial presentation of Bean and Metzner's (1985) definition, part-time enrollment was recognized as a characteristic of the nontraditional student. Horn and Carroll (1996) also list part-time attendance as a characteristic of the nontraditional student. While the typical student at a four-year institution may enroll on a full-time basis (i.e., at least 12 credit hours per semester), part-time enrollment is more common in the community college environment (Smith, 2017).

Cultural Frameworks for Persistence and Retention

Museus and Quaye (2009) offer three important alternative cultural frameworks for understanding the experiences and persistence of students of color:

(1) The concept of cultural integrity: Expecting college students to sever ties with their traditional cultural heritages places an unnecessary burden on nontraditional (i.e., students who are not White, middle-class, and ages 18–24) college students to assimilate to their respective campus environments (Museus & Quaye, 2009; Tierney, 1992, 1999). The responsibility should be on the institution to facilitate student socialization. Tierney (1999) highlighted the importance of "cultural integrity," which is focused on the affirmation of students' cultural identities and propelled by "programs and teaching strategies that engage students' racial/ethnic backgrounds

in a positive manner toward the development of more relevant pedagogies and learning activities" (p. 84). Persistence

(2) A cultural perspective of student departure: Braxton, et al. (1997) noted while Tierney's assessment of Tinto's (1987, 1993) theory held merit, he failed to move beyond his critique to articulate a more valid perspective of the persistence process. Kuh and Love (2000) subsequently offered a different cultural perspective of student departure by outlining eight culturally based propositions that seem to be especially instructive for understanding minority student persistence built on the premise that the level of incongruence between students' precollege cultures and dominant campus culture is inversely related to persistence. This premise also includes students for whom there exists a high level of distance between those cultures must either acclimate to the dominant campus culture or become immersed in one or more enclaves (i.e., subcultures) to successfully find membership in and persist through college.

(3) The concept of cultural agents: empirical research conducted on college students establishing connections with cultural agents (e.g., faculty and peers) on their campuses. Those cultural agents can be grouped into two different, but not mutually exclusive, categories: collective and individual.

Retention

Berger et al. (2012) stated the 1990's might have been called the era of the emergence of persistence. They recognize persistence and retention are distinct concepts. More scholars had begun to recognize that retention is important for students and campuses themselves, many students attend more than one college as a means of earning an undergraduate degree. Berger, et al. (2012) defines persistence as "the desire and action of a student to stay within the system of higher education from beginning through degree completion" (p. 12). Rovai (2003) states that

persistence is “the behavior of continuing an action despite the presence of obstacles” (p. 1). Both definitions suggest that persistence is a perceptive concept seen through the efforts of the student. “The student’s efforts or action to persist involves an internally processed commitment to acclimate into their collegiate environment towards degree attainment.” (Johnson Sr., 2014, p. 43). Conversely, Berger, et al. (2012) define retention as a focus on the ability of a particular college or university to successfully graduate the students who initially enroll at that institution.” (p. 8). Retention includes an institution’s efforts, and ability to keep the student’s interest. Hagedorn (2012) defines retention as “staying in school until completion of a degree” (p. 83).

These two perspectives provide a better understanding of student retention and student persistence. These definitions should aid researchers in their categorization of persistence studies of college students. Berkner and Hunt-White (2008) provides insight on this topic: The difference between these two perspectives reflects the fact that many students transfer out of the first institution attended. When beginning students leave the institution where they first enrolled and then enroll at a different institution, they continue to persist in postsecondary education, but from the perspective of the institution where they started, they have no longer been retained. “Students may “stop out” by leaving an institution for a semester or more, and then returning to that or a different institution later. Students who have “stopped out” can only be identified as such after they have returned” (p. 15).

Low persistence rates among African American students at PWIs is a troublesome concern for the nation (Love, 1993). PWIs are challenged with retaining African American students because of barriers to matriculation including racial climate, campus climate, culture, and lack of diverse faculty and staff (Hunn, 2014; Love, 1993). African American students spend significant time and energy attempting to establish their credibility at PWIs (Love, 2008). Many

times, students are not successful because they perceive themselves as unwanted or receive clear messages that they are not wanted at PWIs (Hunn, 2014).

Seidman (2005) describes African American student retention factors from a deficit perspective stating contributing factors such as low levels of parental support, limited resources to pay for college, low self-esteem, and low social expectation for going to college and completing a college degree. Further noting "For both male and female African American students, lack of parental support and limited resources negatively affect college-going rates and retention." (p. 8). Ford et al. (2001) state reactions to differences among students such as a deficit perspective, manifest themselves in various ways and they exert a powerful influence in educational settings. Ford et al. (2001) go on to posit others have studied the cultural styles of African American students, noting such characteristics as verve, mobility, oral tradition, communalism, spirituality, and affect and deficit thinking can exacerbate misunderstandings of these cultural characteristics. "Many African American college students are first-generation, and from single-parent homes, and do not have a positive parental role model" (Seidman, 2005, p. 16). While there is research to support the correlation between lower-income groups and their ability to stay in college (Flowers, 2004; Tinto, 1975) and external and institutional factors like racial climate, campus climate, culture, and lack of diverse faculty and staff (Hunn, 2014) that contribute to the retention rate, there is an opportunity to look at what positive experiences African American students bring to the college experience and are exposed to in the community college setting that contribute to their retention. There have been studies on African American student success; Love (1993) found that while 22 of the 27 program elements in these studies focused on success, none of them focused on the students as leaders, as those that succeed, or as winners. "The victim perspective pervades the programs." (Love, 1993, p. 34).

There is a need for research and programs developed from a success perspective as little research exists that distinguished between successful and unsuccessful African American students, but rather again, more focus on the deficit mindset. For instance, Ford, et al. (2001) noted "deficit thinking contributed to past beliefs about ethnicity and intelligence." (p. 53). In their research, they lead readers back two centuries to demonstrate how a priori assumptions and fears associated with different ethnic groups -- in particular African Americans, "led to conscious fraud-dishonest and prejudicial research methods, deliberate miscalculations, convenient omissions, and data misinterpretation among scientists studying intelligence" (p. 53). These assumptions and practices gave way to the prevailing belief that human races could be ranked in a "linear scale of intrinsic and unalterable mental worth" (Gould, 1996, p. 20).

Solorzano and Yosso (2001) state there are at least four general theoretical models used to explain the lower educational attainment of minority students: (1) genetic determinist, (2) cultural determinist, (3) school determinist, and (4) societal determinist. Each model uses Whites as the benchmark to compare people of color.

Factors Affecting Retention of Community College Students

Derby and Watson (2006) assert that African American students maintain lower enrollments within community colleges versus four-year institutions as compared to other ethnicities, but a significant proportion of African American students attend community colleges. Coley (2000) states that African American students contributed 12% to community college enrollments in 1995 - 1996, and Kazis (2002) posits the African American student represent 16% of the community college population are of 15-18 years of age and possess a 10% completion rate. A more recent report from the U.S. Department of Education (National Center for Education Statistics (2017) offered data on enrollments in higher education in the fall of 2016

reporting there were 853,215 Black students attending two-year colleges. They made up 13.7 percent of all students at two-year educational institutions (total = 6,206,013 students).

Between the retention and integration theories of Tinto (1975, 1982, 1987) and Bean and Metzner's (1985) definition of nontraditional students and the *Complete College America* (2011) report *Time is the Enemy*, four factors emerge as having the greatest impact on the persistence of community college students (Smith, 2017). These factors are age, enrollment intensity, residency status (i.e. commuter student versus a student who resides on campus), and academic progress (Smith, 2017), however, most community colleges students do not live in college housing. While over a one quarter (28%) of community colleges have some form of residential facility (Turk, & González Canché, 2019), according to the American Association of Community Colleges (2016), only 1% of students live in college housing. Thus, 99% of community college students are commuters. Therefore, the remaining factors (i.e., age, enrollment intensity and academic progress) are the primary influences when addressing the community college student's persistence and attrition.

The college student persistence literature has indicated that on-campus housing positively affects student persistence (Turk & González Canché, 2019). This evidence, however, has largely been based on the experiences of students at 4-year institutions—not community colleges. Turk & González Canché conducted a study aimed to address this gap in the literature by comprehensively evaluating the impact of both living at and simply attending a community college that offers on-campus housing options. Their findings indicated that after matching on individual and institutional characteristics, students living on campus were more likely to transfer to the 4-year sector and more likely to earn a bachelor’s degree, however, they were no more or less likely to earn an associate degree along the way. Their findings suggest that students

who are using the community college as a steppingstone toward a 4-year degree were positively influenced above random chance by living on campus. They “hypothesized that the lack of an effect on associate degree completion may be explained by students’ decisions to transfer to the 4-year sector or enter the workforce without “cashing in” their credit hours on an associate degree first.” (p. 4).

Race and Retention. With the increased diversity on university and college campuses nationwide, it is important to recognize this surge in diversity does not necessarily translate to increased harmony and less discordant interactions within and across faculty, students, and staff (Clauss-Ehlers & Parham 2014). What this increase in diversity does presents are new challenges for colleges and universities as well as faculty and staff, to retain their recorded diversity gains against a backdrop of major social and political issues that influence resultant campus profiles.

Newman, et al. (2015) note "Black men are often portrayed in the scholarly literature in a monolithic manner" (p. 565). They provide an example of scholars having often conducted analyses on these men that have failed to be attentive to within-group differences (e.g., class, generation, status). Moreover, Harper and Nichols (2008) contend that African American men are a heterogeneous group, as different as the institutions serving them. For instance, Newman, et al. (2015) examined background differences between Black men in two- and four-year colleges. Based on national data, they found that Black men in two-year colleges were more likely to be older, married, to have delayed their enrollment into postsecondary education, were less likely to have high degree aspirations, and have adequate levels of preparation for college. An example of out and within-group differences noted were “some Black men experience institutional climates as being supportive and nurturing. In contrast, many Black college men are targeted by peers,

administrators, and faculty members through negative stereotypes and out-right racism." (p. 565). These differences contribute to disproportionate rates of degree completion (Newman et al., 2012, p. 97).

Campus Connectedness / Culture. Gay's (2010) assertion that "Eurocentric orientations and emphases are more inappropriate than ever before for students from culturally, racially, and ethnically diverse backgrounds" (p. 143). This situation exists for a number of reasons, among them being that "most culturally diverse students and their teachers live in different worlds, and they do not fully understand or appreciate one another's experiential realities" (p. 144). Tierney (1999) proclaimed that Tinto failed to take into consideration that many of higher education's policies and models are based on Eurocentric, not African American, concepts which differ dramatically. In higher education, Tierney (1999) stated higher education should "not view the academic world as a place into which students need to fit and assimilate or face intellectual suicide" (p. 83).

It is a widely accepted notion that attending college for the first time can be overwhelming (Woldoff, et al., 2011); the first year experience brings with it ambivalence as "students feel both excitement and apprehension upon arrival to a new place away from home" (p. 1048). However, African American students who attend college at PWIs face special challenges (Feagin, et al., 1996). These special challenges include living in a predominantly White environment. African American students who find themselves attending PWIs in rural areas have to also deal with acclimating to rural life and meeting students who come from mostly rural areas versus the urban areas they may be more familiar with. Woldoff, et al. (2011) notes:

> Contrary to the notion of the United States as a harmonious melting pot, many Black college students come from racially segregated, predominantly Black residential

> environments (Denton & Massey 1993; Massey 2004). Adjustment to a White community atmosphere, not to mention a rural one, brings with it challenges to adapting to life in another culture. (1048)

Retention is and remains a critical issue for many years to come (Mertes, 2013). While many community colleges have developed programs aimed at increasing retention rates, these programs often are built on theories that focus on the White majority (Mertes, 2013). While a review of the literature shows that these foundational theories are applicable in two-year college environments (Pascarella, & Terenzini, 1980; Tinto, 1975; Tinto, 2006), little consideration has been given to the marginalizing effects retention theory and associated interventions have had on underrepresented students. Tinto (2006) writes:

> Like any early body of work, the study of student retention lacked complexity and detail. Much of the early work was drawn from quantitative studies of largely residential universities and students of majority backgrounds. As such it did not, in its initial formulation, speak to the experience of students in other types of institutions, two- and four-year, and of students of different gender, race, ethnicity, income, and orientation. (p. 3)

The colorblind approach taken by many community college retention programs, deemphasize the significance of exploring the needs and experiences of underrepresented students (Mertes, 2013). Neville et al. (2013) characterize color-blind racial ideology (CBRI) "as consisting of two interrelated domains: color-evasion (i.e., denial of racial differences by emphasizing sameness) and power-evasion (i.e., denial of racism by emphasizing equal opportunities)" (p. 455). They go on to say mounting empirical data suggest that the color-evasion dimension is ineffective and in fact promotes interracial tension and potential inequality.

CBRI may be conceived as a legitimizing ideology used to justify the racial status quo. Neville et al. (2013) suggest there are four types of CBRI: denial of (a) race, (b) blatant racial issues, (c) institutional racism, and (d) white privilege.

African American Student Success

The argument is made that researchers and policymakers have denounced the use of deficit models to explain the negative schooling experiences of African Americans (Cooper & Thornton, 1999). They are engaged in research exploring and isolating the multiplicity of factors that contribute to the academic success of Black students. These researchers have chosen to shift the framing of their inquiries from a focus on the academic failure of African American students to an examination of alternative structures, organizations, and practices that lead to greater academic achievement. Similarly, Winfield (1991) states "in the past, theories focusing on risk and deficiencies implied the need for a series of educational practices and policies based on remediation in order to make non-White racial/ethical groups "equal" to their White middle-class counterparts" (p. 6).

There has been some focus on African American student success rather than failure, viewing educational resilience not as a fixed attribute of some individuals, but rather as the culmination of processes, mechanisms, and conditions that can be replicated across various school and family contexts (Cooper & Thornton, 1999; Sandoval-Lucero et al., 2014; Winfield, 1991). Utilizing such an approach helps to identify potential individual, school, and community factors that lead to and foster academic success among African American students (Cooper & Thornton, 1999).

Past studies on African American students at PWIs have concentrated on attrition and its causes (Barnett, 2004). These causes or factors include academic under-preparedness (Loo &

Rolison, 1986), who stated their survey “confirmed previous findings that the academic alienation of many black and Chicano students was due to poorer academic preparation in high school and the "culture shock" of encountering a class and culture instinctively different from their background” (p. 72), socioeconomic status in which Ottinger (1991), stated “Socioeconomic status still affects persistence even when ability is taken into account” (p. 8) and negative campus climate where Mabry (1991) states “An increasing number of African-American students are deciding that an education at a predominately white school isn’t worth the racial hassle” (p. 78); all of these factors contribute to student attrition. In more recent studies, researchers have focused less on attrition as an end result and more on the factors that facilitate persistence from the entry points of college through to graduation (Choy, 2002; Fries-Britt & Turner, 2002).

Perrakis' (2008) analysis reinforces how much students are alike in their fundamental desire to succeed in college despite the stereotypes about differences that researchers assume serve as obstacles to their success. Perrakis (2008) conducted a study seeking to isolate factors associated with academic success, using grade point average (GPA) and course completion, among two male student populations within the Los Angeles Community College District (LACCD): these populations were African American and white men. In order to determine the factors associated with academic success, two levels of analysis were conducted. The first analyses set determined if gender was a significant factor in course completion and GPA for all students in the LACCD. Then the study sample was split by gender, and secondary analyses were conducted to determine if race was a significant factor for men in the LACCD, and if so, what similarities and differences could be noted between African American and white male students with regard to course completion and GPA. This study employed a quantitative

approach to research by using data collected from five thousand surveys distributed by the Transfer and Retention of Urban Community College Students (TRUCCS) project team at the University of Southern California.

At the outset of the study Perrakis (2008) expected variables related to socioeconomic status, employment status, and race to be significant for men but not for women. This turned out not to be true. He stated what was significant to men in the sample was a feeling of belonging on campus. This was not significant for women. Race, age, high school GPA, calculus completion, reasons for enrollment, and dedication to persistence were significant for both genders in the sample. For the variables of significance to men, a t-test was conducted to determine mean differences between the African American and white men in the sample. White and black men were similar in age and both are similarly unsure whether they belong on campus (Perrakis, 2008). The main difference between African American and white men on these nine campuses is in academic preparation and performance. This study found that a series of factors alone and in combination predict the academic success of male students (regardless of race) in the LACCD.

"It was surprising to learn that academic preparation was more significant than race or gender for students in this sample. The majority of the literature in higher education focuses on differences that have historically divided students; the findings of this study highlight the unexpected homogeneity of the LACCD student population" (p. 20). African American students (like their White counterparts) want a sense of belonging--a sense of community and factors such as their intellect, finances, and social status do not define successful African American students.

Despite the literature of why African American adult learners are not successful (lacking in both personal skills and social support (Terenzini, et al., 1996), family conflict (Miller & Lu, 2003; Tseng, 2004), and first generation college students (Owens, et al., 2010), Richardson and

Skinner's (1992) study showed strategies for success for ethnic minority, first generation, college students despite their initial shortcomings, noting many minority students who are the first in their families to attend college do very well. Ethnic minority young people from lower socioeconomic backgrounds often see education as the means to better their lives and avoid the difficult lives of their parents (Lopez, 2001).

The argument is made in the Dennis et al. (2005) study that there is an intersection in the aspects of the person and of the environment in predicting achievement in college. According to ecological theory, development is the result of interactions between characteristics of the person and the environment over the course of one's life (Bronfenbrenner, 2004; Bronfenbrenner & Morris, 1998). Academic success is a function of personal characteristics (Dennis et al., 2005). This includes characteristics such as mental ability, academic skills, motivation and goals. Academic success is also a function of environmental characteristics, which can be conceptualized as a system of nested interdependent structures (Dennis et al., 2005). Environment includes many systems of influence (Bronfenbrenner, 2004; Bronfenbrenner & Morris, 1998; Dennis et al., 2005) which have focused on proximal processes that involved patterns of interaction between the person and the immediate environment. The most common and important proximal processes for adolescents and young adults are face-to-face interaction with, and support from, family members and peers; these processes play an important role in academic outcomes. Dennis et al.'s (2005) study found that "non-cognitive variables such as positive self-concept and the availability of supportive individuals are predictive of academic success in college for minority students, and can sometimes be even more important than traditional measures of cognitive skills such as the SAT" (p. 224). In selecting aspects of the person and the environment to measure, this study sought to include non-cognitive variables that

have been shown to be important for ethnic minority students who are the first in their family to attend college.

Although background characteristics such as gender, ethnicity, socioeconomic status (SES), and high school GPA were expected to be related to college outcomes (Fry, 2002; Tinto, 1993; Yan, 1999), the goal of Dennis et al.'s (2005) study was to investigate the extent to which personal characteristics of students, specifically their motivations to attend college, and contextual factors, namely, the availability of social support from family and peers, influence college outcomes over and above the effects of these background characteristics.

Herndon and Hirt (2004) found that family is also tied to African American student success. Their research on the relationship between Black college students and their families showed evidence that families lay the foundation for a successful college experience with Black students. They concluded the family is a conduit for educational attainment for several reasons; Families are primary sources of academic potential (the family is the first unit to develop and nurture the student's capacity for learning); families set the parameters of community standards within the home environment; parents are influential in creating the context in which events and phenomena are evaluated.

Museus and Quaye (2009) researched ways to promote success among African American students. Their results found eight intercultural propositions that emerged from the analysis:

(1) Students from different racial backgrounds can experience the same environment in different ways (p. 77).

(2) Minority students' cultures of origin mediate the importance of college attendance and degree completion (p. 79).

(3) Knowledge of both racial/ethnic minority college students' cultures of origin and cultures of immersion are required to understand their abilities to negotiate their respective campus cultures (p. 80).

(4) Cultural dissonance is inversely related to minority students' persistence (p. 81).

(5) Minority students who experience a substantial amount of cultural dissonance must acclimate to the dominant campus culture or establish significant connections with cultural connections with cultural agents at their institution to persist (p. 82).

(6) The degree to which campus cultural agents validate minority students' cultures of origin is positively related to reduced cultural dissonance and greater likelihood of persistence (p. 84).

(7) The quality and quantity of minority students' connections with various cultural agents on their respective campuses is positively associated with their likelihood of persistence (p. 86).

(8) Minority students are more likely to persist if the cultural agents to whom they are connected emphasize educational achievement, value educational attainment and validate their traditional cultural heritages (p. 87).

The results of the Museus and Quaye's (2009) study suggests that an increased understanding of culture can provide researchers with valuable insights in regard to promoting persistence for minority students. "Future research should be designed to understand the role of individual cultural agents in the experiences of racial/ethnic minority students, understanding, supporting and nurturing cultural conclaves on college campuses, capitalizing on students' voices as a means for improving practice" (p. 35). Administrators and staff should seek to make the "strange seem familiar" (p. 35) early in students' college experiences.

Contributing factors for African American Student Success – Self-esteem / Resilience.

Self-esteem and self-concept significantly affect students' academic performance; those with positive self-images or self-perceptions are more likely to do well in school than those who have negative perceptions of themselves. (Flowers, et al., 2003; Moore, et al., 2005). Likewise, "those who have positive self-images are likely to have more positive social skills and relationships." (Ford, et al., 2011, p. 245). Miller and MacIntosh (1999) conducted research on the protective factors that contribute to resilience in school. Protective factors are critical elements in the development of resilience. These factors fall into three categories: individual characteristics, supportive family and positive relationship with at least one parent or relative, and available and useful external community supports. Their research yielded the need for additional research on factors relevant to ethnic minorities.

Miller and MacIntosh (1999) reported in their investigation of these factors the findings of an exploratory study investigating the influence of culturally unique protective factors on resilience in urban African American adolescents. With educational involvement as an indicator of resilience, their study explored the moderating effect of protective factors on competence and mastery in the educational domain in the presence of environmental risk factors.

Contributing Factors for African American Student Success – Engagement.

According to the National Survey of Student Engagement (2009), "Engagement yields larger payoffs in terms of grades and retention for underprepared students and historically underrepresented students relative to otherwise comparable peers" (p. 7). Although approximately 85 percent of students in higher education commute to campus (Horn, et al., 2006), there is very little research about the levels of engagement and learning among commuter

students. There is even less research about black students who commute (Yearwood & Jones, 2012).

Kuh et al. (2010) asserted that "decades of research studies on college impact and persistence suggest a promising area of emphasis: student engagement" (p. 7). They defined student engagement as a two-part phenomenon that includes the time and energy students devote to educationally purposeful activities and the extent to which the institution gets students to participate in activities that lead to student success (Kuh et al., 2008), thus engagement is simply "a two way street" (Kuh, 2009a, p. 696).

Yearwood and Jones (2012, pp. 117-118) conducted research that focused on analyzing black student success and its relation to levels of engagement at commuter schools. Their research yielded the following results:

- Members of fraternities and sororities are significantly more engaged in the areas of Active and Collaborative Learning, Student–Faculty Interaction, and Enriching Educational Experiences than students who are not members of a fraternity or sorority.
- Students who interact with faculty often are significantly more engaged in the areas of Active and Collaborative Learning, Enriching Educational Experiences, and Supportive Campus Environments than those who do not interact with faculty often.
- Students who participate in co-curricular activities often are significantly more likely to have higher levels of engagement in the areas of Level of Academic Challenge and Student–Faculty Interaction than students who do not participate in co-curricular activities.

Because commuter students often view the institution as a place to visit (Yearwood & Jones, 2012), "administrators should conduct a needs assessment to consider student perspectives and determine co-curricular activities that are most meaningful to them" (p. 121). Another way to enhance participation is by marketing (Yearwood & Jones, 2012). First, commuter colleges and universities can improve marketing by utilizing on-campus media (such as Facebook and Twitter) Administrators should encourage each department to create an account on at least one of the social networking sites.

Greene, et al. (2008) conducted a study whose primary aim was to understand the relationships between minority status and student engagement and minority status and academic outcomes in two-year colleges—they sought to determine whether students from various racial and ethnic groups attending two-year colleges differ in the amount of time and energy they devote to educationally effective practices and to determine the extent to which this investment, net of the effect from various pre-college variables, contributes positively to desired outcomes. "Overall results were consistent with findings from previous research: African American students reported being more engaged and demonstrated generally lower academic outcomes than their White peers." (p. 527). Results for the Hispanic community college students exhibited a weak consistency with previous findings. Hispanic students exhibited higher levels of engagement only on mental activity factors and Hispanic students earned significantly lower grades than their White students. In addition to race variables, GPA was negatively associated with hours employed, credit hours enrolled in a term, in addition to being positively associated with reading placement, writing placement, mathematics placement, delayed entry to college, and total credit hours prior to the current semester.

African American students', self-reported levels of engagement may represent an Effort Outcome Gap (EOG); the result of having to put forth more effort in attempting to compensate for a pervasive combination of academic and institutional barriers to educational success. The EOG reflects the possibility that African American students are working harder to persist and achieve educational goals that their peers, who generally are less academically "at-risk" (p. 529) and who face fewer institutional barriers, can reach with less effort and engagement.

Contributing Factors

Leadership

Leadership development has long been considered an important outcome of higher education, but the patterns of leadership development among students of color have not been widely studied (St. John, et al., 2009). St. John et al. (2009) developed a theory of leadership as an outcome of engaged learning. Findings from this study of high-achieving, low-income students of color included: academic and social engagement were positively associated with holding leadership positions; compared to other minority groups, African Americans were more likely to be engaged academically and socially and to hold leadership positions as a consequence of engagement; and the amount of grant/scholarship aid was positively associated with holding leadership positions.

Three compelling findings emerged from this study that add substantially to the general understanding of engagement and leadership development among high-achieving minority students: (1) Scholarships make a substantial difference in opportunities for academic and community engagement; (2) academic and community engagement are significantly associated with holding leadership positions; and (3) African Americans are more likely to hold leadership positions than students from other race/ethnic groups, a consequence of their more substantial

engagement. Each of these findings merit consideration in future research and have implications for public policy and student affairs administration.

Faculty Interaction

Following Tinto's (1993) theory of academic integration, some researchers posit that interaction with faculty exerts a mostly indirect effect on student learning, by encouraging students to become more involved in the academic aspects of campus life (Twale & Sanders, 1999). Other researchers connect faculty interaction with strengthening students' critical thinking skills, teaching them "how to think rather than what to think," or "learning to think like a professional" in one's field (Light, 2001, p. 117). Others connect faculty interaction with particular learning styles of students (Zhang & Sternberg, 2001). And finally, faculty interactions with students may be predictive of student learning because of the expectations conveyed to students about their ability to succeed—the Pygmalion Effect; the self-fulfilling prophecy that influences students to achieve in ways that confirm those expectations (Tauber, 1997). In Lundberg and Schreiner's (2004) research, satisfying relationships with faculty members and frequent interactions with faculty members, especially those that encourage students to work harder, were strong predictors of learning for every racial group. However, there were limitations to Lundberg and Schreiner's research because information about the race of the faculty members was missing. It is reasonable to assume that they were predominately White, but the data is not available to confirm this assumption. In the limited research that has investigated the quality of relationships between faculty and African American students, two primary factors emerged as influencing these relationships (Guiffrida, 2005). The first is Black students may experience difficulty connecting with White faculty because they do not perceive them as realistic role models. Tinto (1993) concluded that while mentor program are generally

effective in increasing college retention for all students, the availability of “like-person role models” was especially important to the success of students of color (p. 186). Second, research indicates that students often perceive faculty at PWIs as culturally insensitive (Guiffrida, 2005). Feagin et al. (2014) concluded that African American students attending PWI perceived while faculty as unapproachable because of their stereotypical comments, insensitivity to African American culture, and generalization of students’ opinions as representing those of all African Americans.

Social Capital

How can African American students be prepared for the new millennium? Researchers and policymakers have asked the question of how African American students can prepare for a new millennium (Cooper & Thornton, 1999). This question is posed as if "successful African American students constitute a rare, and only rarely sighted, species that had not yet been classified. They seem to accept almost intuitively that successful African American students are somehow different from their peers and from their non-African American counterparts" (Cooper & Thornton, 1999, p. 1). Research produced on the sociological factors that contribute to this presumed difference includes factors such as poor and underfunded schools, economically depressed communities, single-parent families-all aimed at explaining the seemingly inevitable failure of large numbers of African American students (Cooper & Thornton, 1999). Yet, some of these students do succeed.

Cooper and Thornton (1999) offered a different perspective on this often-neglected population contending that the successful African American student is more than a statistical anomaly. They considered factors why African American students are successful in their

literature review of nine articles that explored different facets of the schooling experiences of high-achieving African American students, including the cultural, social, and personal.

The first three articles investigated the importance of the family and community context. Yan (1999) began this discussion by exploring the role of parental involvement in the academic success of African American students. Yan (1999) used social capital theory and the concept of educational resilience as the bases of his conceptual framework. He contends that variables influencing parental involvement, which may make social capital more readily available to more students, may enhance African American students' opportunities for academic success.

Social capital refers to the social networks and social interactions that facilitate educational attainment (Coleman, 1988), particularly those established between parents, students, and schools. There is considerable evidence that social capital leads to improved student achievement, better school grades, and reduced dropout rates. (Yan, 1999).

Community College Student Experience Questionnaire (CCSEQ)

Since the 1970's instruments have been available for assessing some aspects of student engagement (Kuh, 2009). These include the College Student Experience Questionnaire (CSEQ) (Kuh et al., 1997; Pace, 1990). There were a few other national surveys with similar types of questions, such as the Cooperative Institutional Research Program's Entering Student Survey and its follow-up version, the College Senior Survey (Astin, 1993). These instruments were designed and primarily used for research purposes rather than accountability and improvement (Kuh, 2009). Many of these surveys were long and cumbersome to administer. This resulted in lower-than-desired responses rates (Kuh, 2009).

CCSEQ – History and Description

Pace's (1984) theory of quality of effort is based on the premise that students' ability to learn, and their development, is highly dependent on their level of involvement in the college experience. This experience is made up of curricular and extra-curricular activities taking place both inside and outside of the classroom (Rayfield, 2012). According to Pace's theory, students expending more effort in the college experience will be more likely to attain college-related goals and achieve higher levels of development (Pace, 1984). This success, however, is contingent upon an adequate opportunity for students to put forth a high quality of effort provided by the institution, thus positive student outcomes are a joint effort. Pace (1984) explains that "accountability for achievement and related student outcomes must consider both what the institution offers and what the students do with those offerings" (pp. 6-7).

The CCSEQ is a standardized self-reporting survey instrument that offers the opportunity to self-examine the degree of interaction between the learner and the college (Murrell & Glover, 1996). While used in both four-year and two-year institutions the CCSEQ is designed to gather information from community college students in four areas: "amount, breadth, and quality of effort in both in-class and out-of-class experiences, progress toward important educational outcomes; satisfaction with the community college environment' and demographic and background characteristics." (p. 199). The college activities assessed in the CCSEQ are like those of the CSEQ, however, they focus on activities that are most available and pertinent to community college and two-year students.

The CCSEQ is used to determine the self-reported scores from the survey in all four of the components previously noted. The CCSEQ obtains information from the students about their community college experiences and "measures the amount, breadth, and quality of efforts

students put into taking advantage of resources and opportunities available in the college setting." (Friedlander & MacDougal, 1992, p. 20). It also measures through self-evaluation, the quality of effort students put into course related activities (Friedlander & MacDougal, 1992). As an instrument, it serves as a measure of the student's perceptions of college programs, college courses, their estimate of gains in their course progress, the college environment, college activities, and a students' quality of effort. (Johnson, 2014). The CCSEQ is a survey instrument that measures the quality of student effort in both in- and out-of-class activities (Johnson, 2009). Murrell (2004) defines the CCSEQ as a self-reporting standardized instrument that is used to examine the degree of interaction between students and the community college. More specifically, the CCSEQ has also been used to measure students' self-reported levels of participation in specific courses, activities (Balest, 2001), and by gender, and age (Rayfield, 2012), to examine the differences in self-reported quality of effort and estimates of gains scores (Frakes, 2005), and African American male perceptions of the collegiate environment (Johnson, 2014). CCSEQ information can be used to study certain programs or to identify groups for comparison. The CCSEQ "provides institutions and researcher with information about student academic and social integration into the 2-year college setting." (Douzenis, 1994, p. 262).

According to Lundberg (2014) the CCSEQ measures student learning by success and retention, dependent on the quality of effort students invest in the college experience. This quality of effort is measured mostly by the frequently the student engages in interactions with peers, faculty, curriculum, and campus facilities (Ethington & Polizzi, 1996; Lundberg, 2014). Social environment is critical to student success so in addition to quality of effort variables, the CCSEQ contains questions about the quality of the college social environment that measures certain characteristics of the institution and student. Measurement includes "frequency that

students use the facilities, courses, programs, and activities offered by the college and measures about the types of conversations and discussions in which students engage." (Lundberg, 2014, pp. 83-84). Perceptions of the quality of the social environment are measured including to students' perceptions of other students, faculty, and administrative personnel.

Development of the CCSEQ

The CCSEQ was developed by Friedlander et al. (1990) to measure student engagement via in-class and out-of-class activities and examine students' self-perceptions of their educational outcomes. The CCSEQ provides information pertaining to students' personal, social, and academic integration, and connects the concept of persistence to what the student does with what the campus provides. These connections explores personal, social, academic events that may appear to be significant to the student and correlate those experiences to student outcomes.

Similar to the College Student Experience Questionnaire (CSEQ) (Pace, 1979a, 1984), which was developed for the assessment of the college experience at four-year institutions, the CCSEQ is derived from Pace's (1976b) model for studying student learning and development. It is a self-report instrument that assesses the level of student involvement in a variety of in-class activities, as well as background information, perceptions of the institutional environment, and self-assessments of progress and gains in 23 areas (Ethington, 2000). The CCSEQ was promoted as being appropriate for assessing both part- and full-time students, older and younger students, and both transfer and vocational students (Ethington & Polizzi, 1996). The CCSEQ is well suited for the community college research environment considering the unique characteristics of the students who attend community colleges (Summers, 2003) including older students, ethnic students, and students working both full- and part-time work schedules. Since its publication, the CCSEQ has been administered to students in several community colleges for purposes of

institutional assessment, evaluation, and improvement efforts as well as research on community college students (Ethington & Polizzi, 1996). Friedlander et al. (1993) surveyed 26 community colleges across the U.S. that had administered the CCSEQ and reported the efforts initiated by these institutions toward enhancing students' growth and development after assessing their students' responses to the CCSEQ.

Content of the CCSEQ

The CCSEQ provides a window through which it is possible to observe the quality of student involvement in the educational opportunities at the college and to observe the reactions of students to their experiences (Sworder, 1992). The idea behind this research tool is the concept of Quality of Effort and that all learning requires time and effort by the student (Mohammadi et al., 1996). Pace (1979) and Astin (1984, 1991) (cited in Mohammadi et al., 1996) argue that "what the students learn in college will depend to a considerable degree on the quality of effort they invest in their college experience" (p. 4). The CCSEQ contains six sections.

The premise of the CCSEQ is that student learning is dependent on the quality of effort students invest in the college experience, measured mostly in terms of how frequently they engage in interactions with peers, faculty, curriculum, and campus facilities (Lundberg, 2014). In addition to quality of effort variables, the CCSEQ contains questions about the social environment, measures about characteristics of the institution and student, frequency with which students use the facilities, courses, programs, and activities offered by the college, and measures about the types of conversations and discussions in which students engage (Lundberg, 2014). The quality of the social environment measures students' perceptions of other students, faculty, and administrative personnel. To support the use of the CCSEQ in this research, Barnett (2010) states that community college students are three to four times more likely to exhibit factors that

affect their ability to attain a degree as compared with their four-year college counterparts. Barnett included many factors supporting his statement that are part of the CCSEQ including, but not limited to age, part-time status, representation of members of racial and ethnic minorities, and families, with lower incomes. To further support the use of the CCSEQ, Liao et al. (2012) indicated most research on persistence centers around the college experience outside of the classroom including interactions with faculty, involvement with extracurricular activities, and overall engagement with the college environment. The following are select categories of the CCSEQ.

Background, Work, and Family. This section provides an overview of the student's physical and social characteristics and lays the foundation for the other segments of the questionnaire. Items in questionnaire include age, gender, ethnicity, language, employment, hours worked and if this work how does affect school, family responsibilities and their effect on schoolwork, and work study programs.

College Programs. This section of the CCSEQ includes survey items designed to provide information about the amount of time and effort students put forth in their academic endeavors, their productivity in completing these endeavors, and the rationale for attending the institution.

College Courses. This section of the instrument contains two parts (Rayfield, 2012). The first part indicates the types of courses the student will participate and the frequency in which they will participate. The second allows the student to specify the degree or certificate they are pursuing (e.g. degree, diploma, certificate).

College Activities. The CCSEQ measures how much students capitalize on what the college offers regarding courses, library resources, writing, arts, music, theatre, science, athletics,

faculty contacts, college activities, career/occupational skills, computer technology, clubs and organizations, career planning.

Estimate of Gains. The questionnaire also measures the estimate of gains. Rayfield (2012) state the estimate of gains section of the CCSEQ allows students to express their perceptions concerning the amount of progress or gains they believe they have experiences in the pursuit of educational goals. Examples of the goals are included in the actual CCSEQ. The estimate of gains expresses the amount of progress or development students believe they have experienced academically and professionally.

College Environment. This section of the CCSEQ is aimed at determining the level of students' satisfaction with the institution. Students are able to share their opinions of specific aspects of the college they are attending, the availability of college facilities, effectiveness of the instructors, and the students' experiences and interaction with their peers.

Uses Past and Present

The CCSEQ has been used in the past by institutions and scholars alike as a means of gathering data for research that addresses a host of community college environment related topics on student participation and development (Rayfield, 2012). The CCSEQ has been used by institutions to:

- Gather information from students on their quality of efforts and gains in self-reported progress (Murrell & Glover, 1996)
- Community college student persistence (Preston, 1993)
- Prepare for self-study and accreditation review
- Assess institutional effectiveness (Ethington & Polizzi, 1996)
- Evaluate general education, transfer and vocation programs (Ethington & Polizzi,

1996)

- Measure student interests, impressions and satisfaction (Dowd et al., (2011)
- Discuss methods to improve and increase student involvement (Dowd et al., (2011)
- Encourage dialogue between academic and student affairs (Rayfield, 2012)

Higher education scholars have used the instrument for similar reasons in recent years. Both dissertations (Frakes, 2005; Rayfield, 2012; Williams, 2015) and research articles (Lundberg, 2014; Moss, & Young, 1995; Preston, 1993; Sworder, 1992) exploring issues from ethnicity to program participation have been produced using the CCSEQ as the primary means of acquiring data.

The CCSEQ seeks to inquire about factors that lean themselves to student success and retention. This questionnaire takes an anti-deficit inquiry approach to answering the success and retention questions and is suitable for the theme of this research. Similarly, Harper (2010) constructed an anti-deficit achievement framework customized for the study of students of color in STEM. The framework included a series of possible questions that researchers could explore to better understand how students of color persist and successfully navigate their ways to and through various junctures of the STEM pipeline. These questions shed light on three specific points (pre-college socialization and readiness, college achievement, and post-college persistence in STEM). His anti-deficit achievement framework is informed by the theories from psychology, sociology, and education. One relevant to this study are theories on college student retention (Swail et al., 2003; Tinto, 1993). An anti-deficit inquiry explores the undercurrents of retention in STEM and factors that keep students of color enrolled through degree attainment instead of concentrating on the social, academic and cognitive, financial, and institutional barriers to persistence. In sum, Harper's (2010) "framework is mostly about the questions researchers ask.

Implicit is an important overarching assumption: those who endeavor to improve student success in STEM would learn much by inviting those who have been successful to offer explanatory insights into their success." (p. 71-72).

Summary

The relevant research which relates to retention and success is important because there is an overwhelming amount of literature on why African American student fail in higher education. This study looks at retention and success in the community college environment using the Community College Student Experience Questionnaire to measure effort and gains aligning with Tinto's Model of Retention. As community colleges are a vehicle to higher education for attainment for African American students it is important to understand the factors that contribute to their success and retention. It is also important to compare these factors to those of other demographics to look for similarities or differences.

Chapter 3 - Methodology

Introduction

This quantitative study consisted of an analysis the data extracted from the results of the Community College Student Experience Questionnaire (CCSEQ), which is a researcher-developed survey instrument to address associated research questions that was administered in fall 2019 to graduates at a large Southeastern community college. The analysis compared fall 2019 graduation participants based on gender and race (minority or non-minority) while controlling for the covariate African American. The time frame of this study was limited to the fall of 2019. The CCSEQ results and matched samples of fall graduate responses compared retention and completion between these demographic populations.

The purpose of this study is to identify factors that contribute to African American student success and persistence in the community college environment. This was achieved by the comparison of perceptions of graduating students using the CCSEQ. The secondary and tertiary purposes of this study are to determine the strength of relationship between the students' tendency to persist and their perception of the collegiate environment, perceptions of gains, and quality of effort in maintaining retention and achieving success. This chapter provides a description of the major elements of the study including research design, instrumentation, variables, participants, data collection procedures, and data analysis procedures.

Research Method

This study employed a quantitative data analysis design to access descriptive findings, without changing or manipulating the environment to describe characteristics (Nassaji, 2015). The CCSEQ used in this quantitative design, evaluated descriptions of trends, attitudes, or opinions of a population by studying a sample of that population. A quantitative design can use

existing numerical data to examine relationships through statistical analysis and provides direction for further investigation and/or understanding. Results may be generalized to the population studied, thereby providing statistical validity. The research method used to investigate African American students' perceptions compared means scores of scales based on socio-economic factors utilizing a factorial ANCOVA.

Factorial ANCOVA

The two-way ANCOVA (also referred to as a "factorial ANCOVA") is used to determine whether there is an interaction effect between two independent variables in terms of a dependent variable (i.e., if a two-way interaction effect exists), after adjusting/controlling for one or more continuous covariates (Laerd Statistics, 2018). The ANCOVA determines whether there is a statistically significant two-way interaction effect; its results determined whether the research is misleading or incomplete.

The two-way ANCOVA was used for this experimental study design. In this type of study design, the two independent variables were manipulated so that different participants are measured by different conditions in the Tinto model framework (internal retention, external retention, and success factors). This study wants to know if there is an interaction effect between the two independent variables "minority" and "gender". A covariate (AABlack) was used to statistically control for other independent variables that are thought to influence this interaction effect. If there is a statistically significant two-way interaction effect, this indicates that the effect that one independent variable has on the dependent variable depends on the level of the other independent variable, after controlling for the covariate. The tests performed determined if any statistically significant difference existed in the relationship between the seven scaled variables that were divided into three groups based on Tinto's model. The variables were

identified by one of three variable name prefixes: (IR = Internal Retention Factors, ER = External Retention Factor, and Success = Success Factors). These seven scale variables were then coded as (1) IR_Career, (2) IR_Computer, (3) ER_Counseling, (4) Success_Courses, (5) Success_Writing, (6) Success_Faculty, and (7) Success_Library.

Gender and minority were selected as dichotomous independent variables in this model (gender = male or female and minority = minority or non-minority). To address the focus on African American students, a covariant, dichotomous variable called AABlack was created (AABack = African American, yes and African American, no). The justification for using AABlack as a covariate instead of an independent variable is because of unequal sample size (*n = 21*). Minority includes the following specific ethnicities (black/African American, Hispanic, Asian, Native American Indian, Pacific Islander) and non-minority includes White/Caucasian ethnicity.

The original data files from the questionnaire results were exported into Microsoft Excel, which allowed for an efficient way to create the new scale seven variables. These seven scale dependent variables were created because the original number of questionnaire questions within each of the CCSEQ subcategories varied in number from seven to ten. To correct for these differences, these new scale variables combined the questions for each scale into one overall report for each factor. The scale definitions remained consistent with the original questionnaire structure (*very often = 4, often = 3, occasionally = 2, and never = 1*). These Excel files were then exported back into SPSS with the revised factorial dependent variables.

The ANCOVA is a statistical technique that assesses potential differences in a scale-level independent nominal-level variable having two or more categories. This study seeks to identify factors contributing to success and retention at the community college based on components of

Tinto's (1993) framework, which include: (1) background characteristics, (2) expectations and motivational attributes, (3) individual educational expectations, and (4) institutional manifestations, which represent interactions that lead students to varying forms of persistence and/or dropout behavior (Tinto, 1993). Tinto states "students choose to persist when they perceive intellectual and social congruence, or a normative fit between the student and the values, social rules, and academic quality of the college community." (Deil-Amen, 2011, p. 2).

The ANCOVA allowed for the measurement of more than two groups. However, dichotomous variables were created in case the assumptions of the ANCOVA were so violated that validity was affected and to examine group differences. Dichotomous variables can account for some differences in statistical models while several variables may differ across a wider range of racial groups if they were used. "Although using dichotomous variables can account for some differences, in statistical models where several variables differ across racial and ethnic groups, a single statistical model can eclipse circumstances under which some variables may differ across groups." (Carter, & Hurtado, 2007, p. 29). This model uses two independent variables and one covariate. This required hypotheses or rationale for each interaction (these hypotheses addressed each socio-economic group: minority, gender, and African American). The independent variables (gender and minority) in the ANCOVA are categorical (nominal) variables because they are not ordered.

Population

In this study, dual enrollment students, non-degree-seeking students, and certificate-seeking students were excluded from the population before a descriptive analysis was performed. The community college in this study serves a community of dual enrolled students (i.e., concurrently enrolled in both high school and college courses). Generally, dual enrolled students

are in college classes taught by college faculty. With dual enrollment classes, the high school administration (and not the student) chooses the higher education institution that offers the courses. In addition, the high school may place restrictions on the student's ability to withdraw from a course, since the course counts for high school credit. Because of these restrictions on the student's ability to voluntarily attend or withdraw, this study did not consider dual enrollment students as part of the general student population. In addition, students under 18 at the start of the specific semester were removed, as these students are considered minors. Only degree-seeking, graduating students remained in the dataset. The population for this study includes those graduating during the fall 2019 semester at this Southeastern urban community college that persisted to graduation and completed the CCSEQ.

Community colleges often attract students who seek to take specific courses, but do not intend to complete a degree or certificate. These students were excluded from the study population as they had not indicated an intention to persist beyond the term of enrollment. In addition, students who were certificate-seeking were excluded from the study population. Certificate programs at the institution are one year or less in length, do not have the same admission requirements as degree programs, and do not have general education course requirements. Finally, this population included students who were in their last semester of college and enrolled in fall 2019 in four, eight, twelve, or sixteen week courses and had registered for graduation with an associate general education, college transfer (AA, AS, AFA), or associate in applied science (AAS) degree. A raw data set was extracted from the fall 2019 semester. All participants were enrolled in designated online, traditional, hybrid or classes or were enrolled in a combination of classes at completion of their degree.

Sample

The survey was sent out to 493 graduating students and 109 students responded and of these 109 respondents, there were 72 usable records as some students did not complete the questionnaire in its entirety or had selected zero (0) for a questionnaire response. The data analysis consisted of masked student identity information. All students who participated in the survey were either full- or part-time. Only students who had registered for graduation in the given semester (fall 2019) and completed the CCSEQ were included in this study.

The institution classifies students into various types: continuing students, new students, dual enrolled students (i.e., high school students enrolled in a college class), previously enrolled (i.e., readmitted) students, and transfer students. In this study, all individuals from the population that were included in the sample group possessed a common characteristic: graduating in fall 2019.

This study was conducted in a manner that ensures the privacy of the student data and compliance with the Federal Education Right Protection Act (FERPA) guidelines. FERPA is a federal law that protects student educational records and prohibits the release of personally identifiable information associated with educational records (United States Department of Education, 2011). In this study, personal identifiable information was removed by the institution prior to providing the data to the researcher.

Research Context

The research method in this study is in relation to the specific research context including the research question posed and the resources available for the research, which includes the community college graduating class of 2019 data and the CCSEQ. Wilhelm Dilthey in the 19th century argued that human and natural sciences make up two separate, but equal moods of

scientific knowing. In this context he distinguished between *explanation* and *understanding* (where understanding means descriptions of meaning contents (Allenwood, 2012).

This research seeks to link *"explanation"* to the quantitative approach, but also using the CCSEQ, to *"understand"* some of the differences in groups. Quantitative analysis documents occurrences based on hypotheses and theories that have already been established and are being evaluated (Tinto's model of retention). The use of multiple variables in this research is to document factors influencing student outcomes; focusing on overarching "truths" that are applicable to a range of settings and populations (Lucas et al., 2007). In addition to testing hypotheses and theories, this quantitative research seeks to contribute to the improvement of the academic success of diverse, underrepresented populations in higher education. Generalizability must also be considered in this research approach as it might be difficult to accept an "average finding" (Carter & Hurtado, 2007) when considering a diverse student body. It is prudent to provide evidence that a finding is applicable in other contexts and student populations.

Data Collection

This study collected data from the CCSEQ with support from the University of Memphis (U of M) Center for the Study of Higher Education (CSHE) and the Center for Research in Educational Policy (CREP). The CSHE granted permission to use the CCSEQ instrument (see Appendix D). Approval was also granted from the U of M Institutional Review Board (IRB) (protocol # PRO-FY2020-27) for research involving human subjects classified as exempt (see Appendix B). This IRB approval also included the use of secondary data if needed from the subjects of this study. Secondary data, graduate identification, and subsequent student contact for the administration of the questionnaire to participants was granted by the institutional research department of the community college examined in this study (See Appendix C).

Dependent variable categories from the CCSEQ for this study include: (1) career/occupational skills, (2) computer technology, (3) counseling and career planning, (4) course activities, (5) writing activities, (6) faculty interaction, and (7) library activities. Each of these variables is important because of their impact on the quality and amount of time that students spend in their academic environment and the effort they exhibit in activities, developing and improving skills (Frakes, 2005). These variables align under one of Tinto's retention or success factors ((1) internal success factors = career/occupational skills and computer technology, (2) external retention factors = counseling and career planning, and (3) success factors = course activities, writing activities, faculty interaction, and library activities. The independent variables are gender and minority. Gender is relevant to distinguish differences in minority and non-minority students while controlling for African American students as the covariate in this study. The gender independent variable also allows for the comparison of African American men and women to other demographics.

Variables

Independent

Tinto background/internal factors listed as background characteristics are independent variables (gender and minority) and they are categorical, nominal. A dichotomous variable (minority) was developed to distinguish black/African American, Asian, Latino, Pacific Islander, Native American/Alaskan, and other students from non-minority students (those identified as white or Caucasian). This variable was created because the sample sizes of minorities (other than white) were small, and the creation of this dichotomous variable equalizes the two groups (coded minority = 1 and non-minority = 2). Student race/ethnicity was included in this study because prior research with CCSEQ data found differences in gains based on student race/ethnicity (Horn

& Ethington, 2002) and this study seeks to evaluate African American students' success and retention. Thus, a covariate was created to compare African American students to all other demographic students. This covariate is AABlack coded AABlack Yes = 1, and AABlack No = 2. In the ANCOVA should consist of at least one categorical independent variable and at least one interval independent variable. In ANCOVA, the categorical independent variable is termed as a factor, whereas the interval natured independent variable is termed as a covariate. The task of the covariate in ANCOVA is to remove the extraneous variation from the dependent variable.

Dependent

In Tinto's triad of success and retention factors are the internal retention characteristics, "expectations and motivational attributes". The CCSEQ questions that align with these characteristics are (1) career/occupation skills, and (2) computer technology and they were selected as two of the seven dependent variables. Both variables address reasons, drive, and commitment along with the use of aids (i.e. technology) that serve as vehicles to enhance retention. The second component of Tinto's success and retention triad used in this study are the external retention factors under institutional manifestation characteristics. The CCSEQ questions that align with these characteristics are counseling and career planning.

The quality of institutional manifestation perceived by the student is expressed by the level of engagement in the college experience as in the social environment. This engagement was be measured through a Likert-type scale about student perceptions of their relationships with faculty, counselors, and administrative staff. This measurement included the student's efforts discussing vocational interests, career opportunities, ambitions, abilities and fostering relationships with counselors and staff.

Success represent the third component of Tinto's triad of retention and success factors. Individual educational expectations characteristics are manifested by the effort exerted by

specific activities. The CCSEQ measures these activities in this study by the following four dependent Likert scaled dependent variables: (1) course activities, (2) writing activities, (3) faculty interaction, and (4) library activities. All these success factors are interval variables on a scale measurement. In ANCOVA, the dependent variables are categorical/nominal variables. Even though these seven scale variables are ordinal Likert-scale, there is no analysis for the ANCOVA or two-way ANOVA for non-parametric analysis, but the variables are going to be treated as continuous (Carifio & Perla, 2008; Pallant, 2020).

The four success scaled variables include measures self-reported effort in intellectual learning and study skills include variables such as gains in writing, developing the ability to learn on one's own, and presenting information clearly in speech. Examples of items in work and study habits include hours dedicated to study. Career preparation includes learning related to career goals and opportunities.

The seven variables developed from the CCSEQ rely entirely on students' self-report (Lundberg, 2014). Self-reports lack the internal validity of a pretest–posttest design (Bowman, 2010, 2011), but self-reported data are considered valid if the information given is known to the students, if the questions are phrased clearly, and if students consider the question worthy of a thoughtful response (Pace, 1984). CCSEQ validity is also strengthened in the CCSEQ if survey items satisfy these conditions: (1) students are asked to recall only experiences that have occurred in the current school year, (2) assessments of student's knowledge about the items indicate that they understand the questions, and (3) 95% of the students answer all of the questions on the instrument, indicating that they are taking the questionnaire seriously (Lundberg, 2014).

Hypothesis

The null hypotheses for the ANCOVA assumed no significant difference among the study groups. The alternative hypotheses assume that there is at least one significant difference among the groups. After cleaning up the data, it was tested for the assumptions of the ANCOVA. The F-ratio then be calculated as well as the associated probability value (p-value). In general, if the p-value associated with the F is smaller than .05, then the null hypotheses is rejected, and the alternative hypothesis is supported. If the null hypotheses are rejected, the conclusion is made the means of all the groups are not equal. The research question: Is there a difference between CCSEQ scores using Tinto's retention and engagement theory to examine factors that contribute to adult student community college retention and success based on socio-economic characteristics while controlling for whether the participants are African American students or not?

1. $\boldsymbol{H_0}$**:** There are no differences in students' CCSEQ scores based on minority status as they relate to Tinto's internal and external retention factors compared to other students after controlling/adjusting for the covariate African American students.

   $\boldsymbol{H_a}$**:** There are differences in students' CCSEQ scores based on minority status as they relate to Tinto's internal and external retention factors compared to other students after controlling/adjusting for the covariate African American students.
2. $\boldsymbol{H_0}$**:** There are no differences in students' CCSEQ scores based on minority status as they relate to Tinto's success factors compared to other students after controlling/adjusting for the covariate African American students.

$\boldsymbol{H_a}$**:** There are differences in students' CCSEQ scores based on minority status as they relate to Tinto's success factors compared to other students after controlling/adjusting for the covariate African American students.

3. $\boldsymbol{H_0}$**:** There are no differences in students' CCSEQ scores based on gender as they relate to Tinto's internal and external retention factors compared to other students after controlling/adjusting for the covariate African American students.

   $\boldsymbol{H_a}$**:** There are differences in students' CCSEQ scores based on gender as they relate to Tinto's internal and external retention factors compared to other students after controlling/adjusting for the covariate African American students.

4. $\boldsymbol{H_0}$**:** There are no differences in students' CCSEQ scores based on gender as they relate to Tinto's success factors compared to other students after controlling/adjusting for the covariate African American students.

   $\boldsymbol{H_a}$**:** There are differences in students' CCSEQ scores based on gender as they relate to Tinto's success factors compared to other students after controlling/adjusting for the covariate African American students.

This quantitative analysis associated with the primary research question used specific scores from CCSEQ scores of 2019 fall graduates from the Southeastern community college in relation to Tinto's internal and external success and retention factors. The list of students emailed the survey were provided by the community college's graduation office and the survey was administered by the Center for Research in Educational Policy at the University of Memphis. The purpose of the analysis determined if differences in the academic performance of students based on demographic groups. The matched sample used gender and race (i.e. minority) CCSEQ

composite scores. Completion and retention data was provided by the community college's institutional research department.

Data Analysis

This study used statistical procedures and hypothesis testing to analyze data related to the research topic of factors. The goal of the study is to analyze the effect of the categorical variables Gender, Minority, AA Black on each score. This research design allowed for the explanation of results, and predict outcomes, thus, this study sought to describe the association or relationship among variables. A frequency distribution analysis was performed on the independent variables. Measures of central tendency (i.e., mean and median), range, standard deviation, skewness, and kurtosis was computed. These served as a descriptive analysis of the variables. In addition, a frequency polygon was generated to provide a graphical representation of variable distribution.

Due to the sample size ($n = 72$), normality of distribution and homogeneity of variance are assumed. This is because of the central limit theorem. The central limit theorem gives a mathematical basis for assuming that large sample sizes exhibit normal distributions and have homogeneity of variance (Hinkle, et al., 2003).

Inferential statistics using univariate measures were employed to analyze students' scores from the CCCSEQ. These scores were used to evaluate the factors that influence students' perceived gains as well as their success in graduating from the community college. The results from the CCSEQ instrument were processed using the Statistical Package for the Social Sciences (SPSS) software. Descriptive statistics presented means, standard deviations, and frequencies. Descriptive statistics were produced to permit a descriptive look at the variations in dependent variables due to gender and race (minority) controlling for African American students. Type III method was used for computing sums of squares in the event of an unbalanced number of

individuals on each cell of the ANCOVA analysis. In this research unequal numbers in the cells of the statistical analysis occurred because of random incidences, not because the study was designed that way. Sum of squares analysis was used to measure variation or deviation from the mean. The interpretation of the statistical findings determined by the effect sizes. Post hoc analyses was not used in this study.

Validity and Reliability

Reliability and Validity: The confidence interval of a statistical test provides the ability to estimate the likelihood of a range of values containing the population metric (Smith, 2017). A confidence interval (CI) of 95% suggests that there is a 95% chance that the sample result represents the population. The CI and corresponding confidence level (i.e., p value) are used to draw conclusion based on the sample value. The CI associated with a confidence interval of 95% is stated as $p = 0.05$ (Creswell, 2014). This study used a p-value of 0.05 and a confidence interval of 95%. If the scores of the set of questions are reliable, then they can be combined in one unique score. Then analyze this unique scoring summarizing all the scores of the set. Cronbach's alpha is the most common measure of internal consistency (reliability). It is most used when there is an ordinal question in a survey/questionnaire that forms a scale and there is a need to determine if the scale is reliable. For example for the Expectations and Motivational Attributes, there are two CCSEQ categories: (1) Career/Occupational Skills and (2) Computer Technology that can be combined into another variable (a new variable for each category) if the questions within the categories are related (a high Cronbach's alpha). If they are reliable then they can be combined into a score. Since all the scores of the CCSEQ are ordinal (4 levels), a Cronbach's alpha's technique can be used to measure the reliability between the scores.

A reliability analysis was performed for all seven scales of the internal and external retention and success factors by computing their individual and collective Cronbach's alpha scores. Cronbach's alpha estimates the proportion of variance in the test scores that can be attributed to true score variance. Cronbach's alpha is used to estimate the proportion of variance that is systematic or consistent in a set of test scores. The Cronbach's alpha can interpret score variance reliability and unreliability. If the Cronbach's alpha is high (more than 0.70), then combine the seven different scales used in the CCSEQ questions by either summing them up or taking the average to create a summarizing success score.

Ethington and Polizzi (1996) conducted a study obtaining data from the CCSEQ from its initial development in 1990 through 1994. The analyses focused on 61 activity items comprising the eight quality of effort scale factors in the survey. Students indicated how often they had participated in each of the 61 areas during their current school year. The first stage of these analyses involved the examination of the dimensionality of the 61 quality of effort items. The second stage of analyses examined the structure of each of the eight sets of quality of effort items/factors separately. These analyses were conducted using the entire sample of students and then repeated with subgroups.

The eight factors only explained 53.3% of the common variance among the items. The major factors underlying the items would be expected to have much greater reliability than the entire set of items. This was substantiated with the analyses of each of the eight sets of quality of effort items. For each set, a one-factor solution was the most appropriate and interpretable solution and the Cronbach's alpha internal consistency reliabilities exceeded .82 for each scale.

The sample consisted of 510 students selected by a stratified random sample from the population of students attending a southeastern Texas community college. The CCSEQ was the

survey instrument used to conduct the research. Preston (1993) developed a manual to accompany the CCSEQ, which gave the internal consistency reliability correlations, results of factor analysis, and Cronbach's alpha for the various sections of the questionnaire (CCSEQ).The Cronbach's alpha was calculated on the scales so that the factors obtained in the study could be compared with the results presented in the CCSEQ user's manual.

Assumptions (ANCOVA)

Parametric or hypothesis testing was employed based on the assumption that the observed data are distributed normally to make probable inference. ANCOVA is based on the F-statistic, which requires that the dependent variable is normally distributed in each group. Thus, ANCOVA requires that the dependent variable is normally distributed in each group. Aside from data distribution normality, ANCOVA assumes homogeneity of variance, which means that the variance among the groups should be approximately equal. If the variances of each group differ from the outset, then the null hypothesis will be rejected. The assumption of homogeneity of variance is an assumption of ANCOVA stating that all comparison groups have the same variance.

The ANCOVA utilized F statistics and is robust to violations if group sizes are relatively equal (one of the reasons a dichotomous variable was created for minorities). If the ratio of group sizes is vastly unequal, then the F statistic will be biased. Before ANCOVA is applied, the data is tested for normality and homoscedasticity using the Levene’s tests, which tests if k samples have equal variances (Huck, 2012). When large sample variances are associated with small group sizes, the significance level is underestimated, and this can result in the null hypothesis being falsely rejected. ANCOVA also assumes that the observations (samples) are from a population where they are independent of each other and that they were random. If not, then it

will be necessary to address any extraneous or confounding variables that impact internal validity.

- Assumption #1: Dependent variable should be measured at the continuous level (i.e., it is an interval or ratio variable). The dependent variables are ordinal Likert-scale. In principle a non-parametric analysis should be performed, but there is no such analysis as the ANCOVA or two-way ANOVA for non-parametric data. With that said, the variables will be treated a continuous.
- Assumption #2: Independent variables should each consist of two or more categorical, independent groups. The independent variables in this study are nominal, binary variables.
- Assumption #3: The one or more covariates, also known as control variables, are all continuous variables. The AABlack covariate is a binary variable, but will be used.
- Assumption #4: There should be independence of observations, which means that there is no relationship between the observations in each group or between the groups themselves. All the observations are independent, which means all the participants are different.
- Assumption #5: The covariate should be linearly related to the dependent variable for each combination of groups of the independent variables (i.e., each cell of the design). The covariate is not continuous, so this assumption does not apply.
- Assumption #6: There should be homogeneity of regression slopes. Since the covariate is binary, this assumption will not apply.
- Assumption #7: There should be homoscedasticity; the assumption of the two-way ANCOVA is that the variance of the error is identical for all combinations of the values

of the independent variables and covariate. From the histograms of residuals, the assumption made is the variance of the residuals to be constant because the histograms look normally distributed in most cases.

- Assumption #8: There should be homogeneity of variances. All the Levene's tests' p-values are higher than 0.05.
- Assumption #9: There should be no significant unusual points in any combinations of groups of two independent variables. This assumption is met, even if there are some outliers.
- Assumption #10: Residuals should be approximately normally distributed for each combination of groups of the independent variables. This assumption is met.

Ethical Considerations

In the 1970s, the U.S. Congress created a commission to articulate the philosophical and ethical foundations that should underlie and guide any rules to protect human subjects in research (Keteian, 2015). These guidelines included (1) respect for person, (2) beneficence, and (3) justice (Keteian, 2015). Respect for person assumes that individuals are autonomous beings and respect is due to them because of that fact; the individual can make their own judgements as to what will be done to them. Beneficence means the researcher will do good by the human subject—in fact there is an obligation to do good by the subject in research. Justice has several meanings, but relevant to this student is providing justice to those who benefit from the research, ensuring a sense of fairness is provided to those who bear the heaviest burden in the research, and who will benefit the most from the research.

The institution identified graduating students for fall 2019. Once these graduates were identified, the CCSEQ was administered to the participants via email. These students received an

email from the institution containing a link to the CCSEQ instrument and a login password. The students were given a period of two weeks to take the questionnaire. Survey questions were multiple choice (scaled, Likert) and yes/no. Quantitative research questions inquire about the relationship among variable that are sought to be answered (Creswell & Creswell, 2018). “They are frequently used in social science research and especially in survey studies.” (p. 136). A sample of the questionnaire consent letter that is sent to participants can be found in Appendix A. Student anonymity was managed by both the University of Memphis and the community college where the graduating participants attended. The author of this research was not privy to student identifiable information.

Tinto and the CCSEQ

Student success and retention in Tinto’s model is broken into three broad categories: (1) retention-external, (2) retention-external, and (3) success. Under these three headings, there are four sub-categories (1) individual education expectations under success, (2) intuitional manifestation under retention-external, and (3) background and (4) expectations and motivational attributes under retention-internal) (see Figure 2).

Tinto – Success Factors

Individual Educational Expectations. The success scores are represented by the four scales developed from the CCSEQ which fall under the Individual Educational Expectations (Table 5). Each scale was tested to see if they are impacted by gender and minority controlling for African American participants. Individual expectations contribute to the student’s overall success in college as outlined by Tinto (1975). The CCSEQ aligns specific skills and activities with this notion of individual expectations that were analyzed in this study.

Course, Faculty, Writing, Library Activities. The skills and activities are (1) course activities, (2) faculty interaction, (3) writing activities, and (4) library activities. Numerical values were assigned to the four possible outcomes for this activity section and they are: *4 = Very often, 3 = Often, 2 = occasionally, 1 = Never*. These expectations result in perceived returns based on the noted activities, leading to persistence or to differing forms of dropout behavior (Tinto, 1975). In the model of dropout (Figure 1), educational and institutional commitments are placed both at the beginning and the end of the model and become both input and process variables that provide the dynamic component of an individual's progression through the educational system.

Individual educational expectations are an important outcome to study because research has consistently found they are powerful predictors of eventual educational attainment (Feliciano, 2006; Haller & Portes 1973; Sewell et al., 1969). Expectations mediate the relationship between socioeconomic background and attainment, as well as exercising an independent effect on attainment (Sewell et al., 1969; Feliciano, 2006). While individual educational expectations are interchangeability is related between the concepts of educational aspirations and expectations, there are important distinctions (Feliciano, 2006). Educational aspirations may capture general goals or ambitions for the future, whereas expectations more explicitly capture realistic plans (Feliciano, 2006). Since educational expectations involve concrete goals and are thus more likely to correspond to eventual attainment, student activities such as those highlighted in the CCSEQ section on course activities, serve as a vehicle to see educational expectations realized. These experiences or expectations in the CCSEQ contained content that (a) evaluates students' expectations of learning, (b) evaluates student learning experiences, and (c) assesses course outcomes (learning achievements, course satisfaction).

Students evaluate statements describing positive or negative learning experiences. Tinto refers to the theory of cost-benefit analysis, stating individual decisions regarding any form of activity can be analyzed in terms of the perceived costs and benefits of that activity relative to those perceived in alternative activities. “This theory states that individuals will direct their energies toward that activity that is perceived to maximize the ratio of benefits to costs over a given time perspective.” (Tinto, 1975, p. 97). Nayak and Rao, (2008) assert Tinto makes the case that “a person will tend to withdraw from college when he perceives that an alternative form of investment of time, energies, and resources will yield greater benefits, relative to costs over time than will staying in college” (p. 36). Nayak and Rao conclude if external activities become more attractive than college completion, a student will drop out.

Tinto - Retention External Factors

Institutional Manifestation. The CCSEQ category used in this study that aligns with Tinto’s institutional manifestation characteristic in this study is (1) counseling and career planning. The outcome of the Tinto model is the drop out decision (Figure 1). Tinto states individual characteristics, prior experiences, commitments, and the individual's integration into the academic and social systems of the college most directly relates to continuance in college (1975). “Given prior levels of goal and institutional commitment, it is the person's normative and structural integration into the academic and social systems that lead to new levels of commitment.” (p. 96). Swanson et al. (2003) indicate the relation between normative developmental transitions, contextual influences, and life-stage illustrate how structural conditions provide opportunities for successful academic outcomes.

Swanson, Cunningham, and Spencer’s research indicated that negative stereotyping and tracking from early experiences in educational settings influence African American males' scholastic achievement. Tinto (1975) postulates, the higher the degree of integration of the

individual into the college systems, the greater will be the commitment to the specific institution and to the goal of college completion, noting “it is the interplay between the individual's commitment to the goal of college completion and his commitment to the institution that determines whether or not the individual decides to drop out from college” (p. 96).

Kuh (2009) identified ways engagement in the college experience predicted learning for community college students who were members of a student organization. Kuh identified institutional practices that increased student engagement in the college experience, particularly through interaction with peers and faculty around educationally meaningful tasks. The identification of these practices is grounded in and expands upon Astin’s (1996) involvement theory, which states that students benefit more from the college experience when they are more deeply and meaningfully involved in it. Kuh’s engagement model also focuses on the institution’s responsibility for creating an engaging college environment. Lundberg (2014) suggests that both involvement and engagement are central to the notion that student investment in the college experience, particularly with peers and faculty, pays off in terms of student learning. While the CCSEQ characteristics of clubs and organizations, counseling and career planning, and college environment are measures of institutional manifestation, this study focused on counseling and career planning.

Counseling and Career Planning. In the counseling and career planning section of the questionnaire, the student answered eight questions that were developed into a new scale to equalize responses with a scaled range of: *4 = Very often*, *3 = Often*, *2 = occasionally*, *1 = never*.

Tinto’s external factor institutional manifestation is based on several components that make up the college environment. The environment can be categorized into two broad features

(Fleming, et al., 2005). The first involves the physical aspects of the college (buildings, university grounds, and the sense of community they evoke). Environment also includes the composition of the student body, which can be defined by gender, race, socioeconomic status, geographic origins, and demographics and determining the values, makeup, attitudes, and personality of the individuals within the student body. However, one does not obtain a "feel" for the campus environment by strictly looking at these specific characteristics alone (Fleming, Howard, et al., 2005), but rather a combination of the physical and the secondary category including the psychological or cultural feel of the campus itself. Cultural feel is more easily defined as the campus climate, which includes campus, faculty, staff, career services, advisor accessibility. Tinto (1999) states "to be serious about student retention, institutions must recognize that the roots of attrition lie not only in their students and the situations they face, but also in the very character of the settings, now assumed to be natural to higher education, in which they ask students to learn." (p. 5). Tinto asks the questions, what should students look like during the critical first year of college when student persistence is in question, what sorts of educational settings should institutions construct to promote student retention?

Tinto - Retention Internal Factors

Expectations and Motivational Attributes. The CCSEQ categories in this study that aligned with Tinto's expectations and motivational attributes are (1) career/occupational skills and (2) computer technology.

Career/Occupational Skills. Survey participants were asked to respond to nine questions related to their participation in college career/occupational programs or a course in which they learned occupational skills. These nine questions were developed into a new scale to equalize responses with a scaled range of *4 = very often, 3 = often, 2 = occasionally, and 1 = never.*

Computer technology. **S**upporting career and occupational skills in the ability to maneuver the internet as well as use computer skills. This section of the survey also askes participants about their ability to use a computer for analysis, communication, gathering information, database management, and serving as a learning tool. There are 10 scaled questions that were developed into a new scale to equalize responses with a scaled range of: The rating scale is *4 = very often, 3 = often, 2 = occasionally, and 1 = never.*

Expectations are the act or state of expecting or anticipation of something happening, however, Johnson (2009) states that merely expecting something to happen will not make it happen. Happening is the manifestation of an outcome. Expectations can take the form of expecting others to do something, but for this study expectations are what the individual sees as a projected outcome, expectations drive motives. In this study the intention of the motive is retention and success as outlined by Tinto. Tinto purported that students' background characteristics, initial intentions, and aspirations towards college, influence their academic and social integration, which in turn affect their persistence (Neuville et al., 2007).

Preston (1993) used the CCSEQ to build a foundation for developing a two-year student persistence model. His study examined one independent categorical variable, goal commitment, and six dimensions of the student's perception of gains construct as the dependent variables. These six dimensions were Likert-type scales which measured the gains a student had perceived they had made on twenty-three general education goals. Of these goal-commitment variables included "(1) preparing to transfer, (2) those who were preparing for a new career, (3) trying to remain current or upgrade their skills, (4) attending for personal interest, and (5) trying to upgrade their basic English skills." (p.20).

Tinto – Background Characteristics

The CCSEQ components associated with Tinto's background characteristics are background, work, and family. Students' backgrounds and personal characteristics impact the college experience. Personal characteristics are presumed to impact students' status in college, as measured by whether they attend college on a full-time or part-time basis. Status is hypothesized to later influence students' quality of effort in social activities as well as academic activities. Effort in academic and social activities lead to perceptions of the environment manifested by perceptions of the institution, faculty, and staff, as being stimulating, challenging, and helpful and supportive, respectively. These perceptions coupled with quality of effort lead to perceived gains in personal and social development (Ethington, & Horn, 2007).

Background, work, family: In this portion of the questionnaire the student was asked to provide demographic and background information that was important in the analysis of the survey responses. The CCSEQ produced a wealth of demographic and socio-economic self-reported data, but this study is focused on gender and race (defined as minority).

Since this research is looking at differences between male and female students' retention and success, when gender is taken into account, grade performance tends to be more important for male students than for female students as males tend to drop out more frequently during the first year of college (Tinto, 1975; Saunders, et al., 2004; Tsoi-A & Bryant, 2015). Tinto (1975) states "it is difficult to determine whether grade performance is simply a proxy for this difference or whether it further distinguishes between males and females in specific categories of dropout behavior." (p. 105). The gender variable is coded *2 = Female and 1 = Male.*

Two dichotomous variables were created to analyze minority students to all other students. The first dichotomous variable asked the question if the student was a minority or note:

(Yes) = 1 and minority (No) = 2. To address the need to look specifically at African Americans students, a covariate was created coded as "AABlack" (African American): *AABlack-yes = 1 and AABlack-no = 2.* Additionally, these variables were created because there were 21 black /African American respondents and 39 non-minority respondents. Creating this "minority" variable equalized the groups resulting in 38 minorities (21 AABlack and 17 other minorities) and 39 non-minorities. Figure 2 is a diagram of Tinto's internal and external retention factors and success factors with corresponding CCSEQ categories.

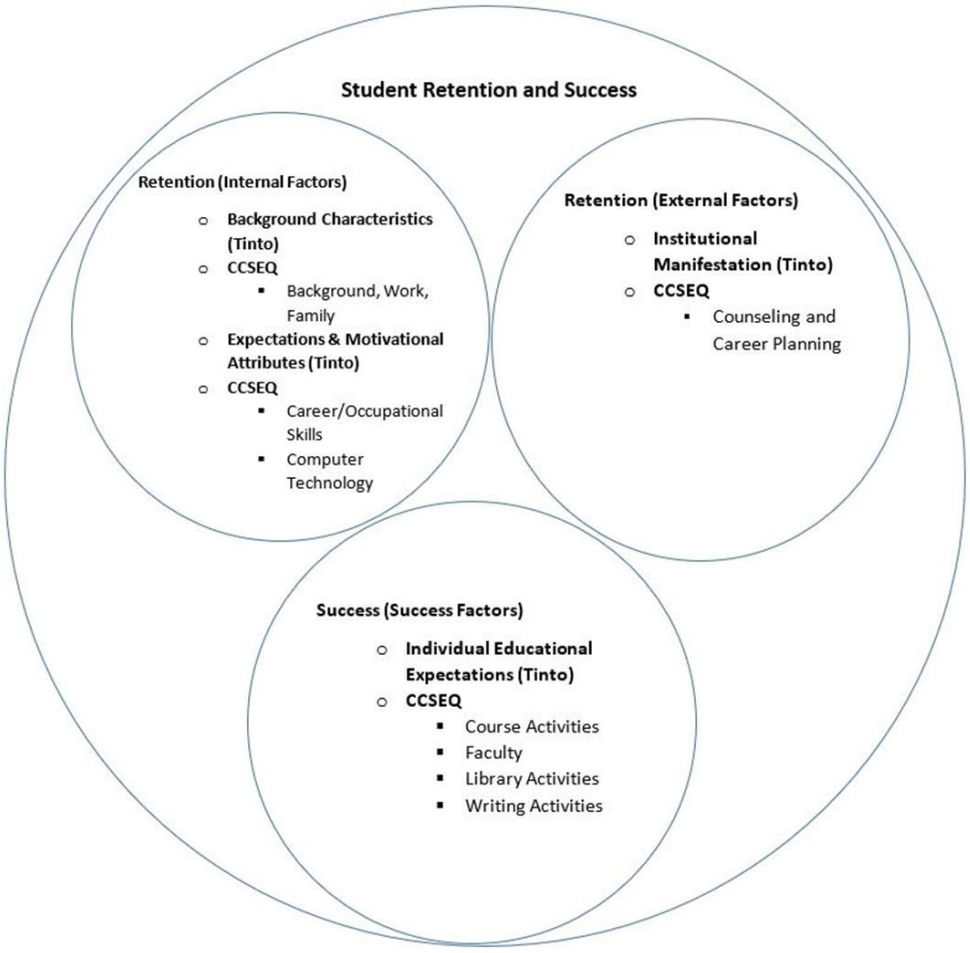


Figure 2

Tinto retention and success factors and CCSEQ variables

Data were collected from specific categories in the CCSEQ (see Table 1) as related to Tinto's model of internal retention, external retention, and success factors used on this study.

Table 1

CCSEQ Variables Related to Tinto's Retention and Success Factors

Community College Students Experience Questionnaire Categories	*Tinto Retention and Success Categories*
Background, work, family	Internal: Background Characteristics
Career/Occupational skills	Internal: Expectations and Motivational Attributes
Computer technology	Internal: Expectations and Motivational Attributes

Table 1 (Continued)

CCSEQ Variables Related to Tinto's Retention and Success Factors

Community College Students Experience Questionnaire Categories	*Tinto Retention and Success Categories*
Course activities	Success: Individual Educational Expectations
Library activities	Success: Individual Educational Expectations
Faculty involvement	Success: Individual Educational Expectations
Writing activities	Success: Individual Educational Expectations
Counseling and career planning	External: Institutional Manifestation

Table 2 represents each of the independent dichotomous variables for this study listing the coding used in SPSS. Tables 3 through 5 represent the dependent scale variables coded very often = 4, often = 3, occasionally = 2, and never = 1. These tables represent Tinto's internal retention, external retention, and success factors.

Table 2

Background Characteristics - Background, Work, and Family

Independent Variables:	Description
Gender	Gender 1 = Male 2 = Female
Minority	Race – dichotomous variable breaking race into minority and non-minority 1 = Minority (Yes) 2 = Minority (No)
AABlack	Race – covariate to identify African American students from all other minorities 1 = African American (yes) 2 = African American (no)

Table 3

Internal Retention Factor - Careers/Occupations and Computer Technology

Variable	Description	Categories
IR Career	Scale Questions: Actions related to career development 1 = Never 2 = Occasionally 3 = Often 4 = Very Often	Internal Retention
IR Computer	Scale Questions: Activities students do to improve computer proficiency 1 = Never 2 = Occasionally 3 = Often 4 = Very Often	Internal Retention

Table 4

External Retention – Institution Manifestation – Counseling and Career Planning

Variable	Description	Categories
ER Counseling	Scaled questions: Taking advantage of counseling services and resources at the college 1 = Never 2 = Occasionally 3 = Often 4 = Very Often	External Retention

Table 5

Individual Education Expectations

Variable	Description	Categories
Success_Courses	Scaled questions - active and engaging course and class participation activities 1 = Never 2 = Occasionally 3 = Often 4 = Very Often	Success
Success_Library	Scaled questions – utilize library reach resources, technology, and staff to develop and improve academic performance 1 = Never 2 = Occasionally 3 = Often 4 = Very Often	Success
Success_Faculty	Scaled questions – Engaging with faculty to enhance academic performance 1 = Never 2 = Occasionally 3 = Often 4 = Very Often	Success
Success_Writing	Scaled questions – Developing writing skills through practice, research, and technology 1 = Never 2 = Occasionally 3 = Often 4 = Very Often	Success

Summary

This chapter provided insight into the methods and procedures used to evaluate the effect on seven dependent variables based on gender and race (defined as minority) while controlling for whether The dependent variables are based on Tinto's retention and success characteristics comprised of Background Characteristics, Expectations and Motivational Attributes, Individual Educational Expectations and Institutional Manifestation (Tinto, 1993). Race and gender are used to compare success and retention at a public community college. Justification for the use of a post-positivistic, explanatory research design was given along with the research question and

hypothesis. An overview of the institution, population, and sample group was provided to establish the research setting. Finally, the intended data collection and data analysis methods were outlined, including a description of the research variables.

Chapter 4 – Results

Introduction

This study examines whether there were significant differences between gender and race (with race defined as minority) with respect to student retention and subsequent success (success as defined by graduation) based on specific factors. Minority is comprised of Black/African American, Hispanic, Asian, Native American Indian, and Pacific Islander. Specific combined scales based on internal retention factors (career/occupational, computer technology), external retention factors (counseling), and success factors (course activities, faculty interaction, library activities, and writing activities) were used to evaluate any differences based on the Community of College Student Experiences Questionnaire (CCSEQ) scores of graduating students from fall 2019 at a large Southeastern community college. The conceptual model and theory used for this study was Tinto's (1993) model of retention. The conceptual models examine student characteristics prior to enrollment at their higher education institution, their persistence at the institution, interactions at the institution, and their retention and success self-perceptions leading to graduation.

Preliminary Analysis

Seven new numerical discrete scale variables were created to represent the seven self-reported CCSEQ factors, which include: (1) career/occupational, (2) computer technology, (3) counseling, (4), course activities, (5) faculty interaction, (6) library activities, and (7) writing activities in the study in order to test differences between the independent variables minority and gender, and the introduction of a covariate (AABlack) representing the African American portion of the minority population. This was done by finding the mean scores for each student from each of the seven scales used in the study (see Table 6).

Table 6

Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
IR Career	72	0	4	1.81	1.160	1.347	.253	.283	-.809	.559
IR Computer	72	1	4	2.66	.668	.446	.126	.283	-.813	.559
ER Counseling	72	1	4	2.33	.837	.701	.524	.283	-.552	.559
Success Courses	72	2	4	3.07	.588	.346	-.201	.283	-.537	.559
Success Writing	72	1	4	2.99	.681	.464	-.283	.283	-.175	.559
Success Faculty	72	1	4	2.41	.715	.511	.394	.283	-.553	.559
Success Library	72	1	4	1.91	.736	.542	.709	.283	.184	.559
Valid N (listwise)	72									

A Tukey post hoc test is not necessary because the independent variables minority and gender are dichotomous and there are no more than two choices in response to determine which pairs are statistically significant. Because of the unequal (n = 21) of African American students and other student ethic groups, the hypotheses tested were on minority and gender. African American students were coded in SPSS as AABlack were used as a covariate for this analysis (see Table 7). There was a total of 34 minorities as opposed to 38 non-minorities in this study. African American students accounted for 61.8% of all minorities. Other minorities reporting in this study were identified as Hispanic or Latino, American Indian/Alaskan Native, Other / Multi-Racial. No students identified as Asian.

Table 7

African American to Other Minority Ratio

AA/Black

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid					
	Yes	21	61.8	61.8	56.4
	No	13	38.2	38.2	92.3
	Total	34	100.0	100.0	

The two-way ANCOVA (also referred to as a "factorial ANCOVA") is used to determine the interaction effect between two independent variables on each of seven dependent variables, after adjusting/controlling for one or more continuous covariates (Laerd Statistics, 2018). The ANCOVA determines whether there is a statistically significant two-way interaction effect; its results determine whether the research is misleading or incomplete.

In this type of study design, the two independent variables were manipulated so that different participants are measured by different conditions in the Tinto model framework ((1) internal retention, (2) external retention, and (3) success factors). This study examined if an interaction effect between the two independent variables and one or more of the dependent variables (if a two-way interaction effect) existed. A covariate (AABlack) was used to statistically control for other independent variables that were thought to influence this interaction effect. The tests were performed to determine if any statistically significant difference exist in the relationship between the seven scaled variables that were divided into three groups based on Tinto's model: (1) IR = Internal Retention Factors, (2) ER = External Retention Factor, and (3) Success = Success Factors). These seven scale variables were coded as (1) IR_Career, (2) IR_Computer, (3) ER_Counseling, (4) Success_Writing, (5)Success_Courses,

(6) Success_Faculty, and (7) Success_Library. Gender and minority were selected as dichotomous independent variables in this model.

The original data files from the questionnaire results were then exported into Microsoft Excel, which allowed for an efficient way to create the new scale variables. Seven scale dependent variables were created because the number of questions in each original category of the CCSEQ varied from seven to eleven. To correct for these differences, these new scale variables combined the questions for each scale into one overall report for each factor. The scale definitions remained consistent with the original questionnaire structure (*very often = 4, often = 3, occasionally = 2, and never = 1*). These Excel files were then exported back into SPSS with the revised factorial dependent variables.

Covariates

Covariates variables are used in ANCOVA models to test the main effect and interaction effects of these variables on the dependent variable. Adding covariates can greatly improve the accuracy of the model and may significantly affect the final analysis results and can reduce the error in the model to increase the power of the factor tests (Glen, n.d.). Examples of common covariates include ambient temperature, humidity, and characteristics of a part or subject before a treatment is applied. A covariate is a variable, a group of like variables, or several variables used to control or account for a portion of the variance in the dependent variable, thus allowing the researcher to test for group differences while controlling for the effects of the covariate (Urdan, 2017). The variable AABlack was used as the covariate to control for that portion (African American) of variance that might be attributable to this minority population because of the unequal sample size of African American students alone.

This covariate was used to adjust the means of the groups of the two categorical independent variables. In an ANCOVA the covariate is generally only there to provide a better assessment of the differences between the groups of the categorical independent variables based on each of the scaled interval dependent variables (Laerd Statistics, 2018).

Fisher's Exact Test

Because of the unequal sample sizes in African American (AA) students, (approximately 70%, n = 51 all students excluding AA compared to 30%, n = 21 AA only, it is more common in the ANCOVA to have a continuous variable rather than a categorical one like AABlack. While African American students are a focal point of this factorial ANCOVA study (compared to a two-way ANOVA) there is a high correlation between minority and AABlack (African American) students, where the latter serves almost as a subset of the entire minority population. This can create more ANCOVA assumption violations than the 70% - 30% imbalance.

The factorial ANCOVA is a variation of a multiple linear regression. However, one problem arising here is that in one of the assumptions of the multiple linear regression, there should not be independent variables that are highly correlated. In the case of this study, minority and AABlack are highly correlated. A Fisher's exact test yielded a p-value below 0.001 indicating a high correlation (See Table 8). This is not a concern because including AA Black as a covariate took into account three categories of minority: the white non-minority, the minority that is not AA Black, and the AA Black minority (See Figure 8).

Table 8

Fisher's Exact Test

*Minority * AA/Black Crosstabulation*

		AA/Black		
		Yes	No	Total
Minority	Yes	21	13	34
	No	0	38	38
Total		21	51	72

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	33.135[a]	1	.000		
Continuity Correction[b]	30.213	1	.000		
Likelihood Ratio	41.690	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	32.675	1	.000		
N of Valid Cases	72				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.92.

b. Computed only for a 2x2 table

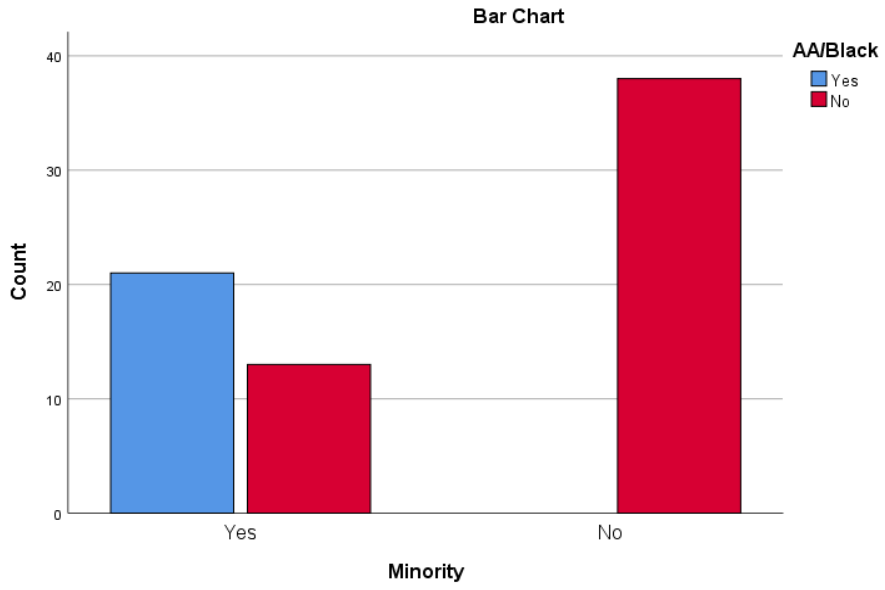


Figure 3

AA Black Covariate Minority Count Versus All Other Minority Count

To solve for the imbalance in sample sizes in future studies, it might be possible to remove some participants randomly in the non-minority group and run a two-way ANOVA. However, in this study, the imbalance is not a significant factor, thus this study does show the intended results to answer the research question and hypotheses. This study could have benefited from a larger sample size and more than one graduating year of participants. Larger samples sizes have the advantage of providing more data for research to work with, however, large sample-size experiments require larger financial and time commitments.

Cronbach's alpha

Cronbach's alpha is an important concept in the evaluation of assessments and questionnaires. Researchers should estimate the quality of the questionnaire to add validity and accuracy to the interpretation of their data (Tavakol & Dennick, 2011). Cronbach's alpha was used to measure internal consistency (reliability) of the model because the CCSEQ consisted of a 4-point multiple Likert question scale in order to understand whether the questions in this questionnaire reliably measure the same latent variable (Laerd Statistics, n.d.). Cronbach's alpha was 0.770 (see Table 9), which indicates a high level of internal consistency for the scale variables. A reliability coefficient of .70 or higher is considered acceptable (George & Mallery, 2003). As the estimate of reliability increases, the fraction of a test score that is attributable to error decreases (Nunnally & Bernstein,1994). The closer Cronbach's alpha's coefficient is to 1.0, the greater the internal consistency of the items in the scale (Gliem & Gliem, 2003).

Table 9

Cronbach's alpha Reliability Statistics

Reliability Statistics
Cronbach's Alpha

Cronbach's Alpha	N of Items
.770	7

A Cronbach's alpha analysis was performed for each of the newly created seven independent variables scores that utilized questions from the CCSEQ. From each of these question groups (IR_Careers, IR_Computer, ER_Counseling, Success_Courses, Success_Faculty, Success_Writing, and Success_Library) the questions were aggregated by taking the total number of questions for each score group and then divided by that number, maintaining the original 4-point Likert scale range *(4 = very often, 3 = often, 2 = occasionally, and 1 = never*). This allowed SPSS to evaluate each score as one question per score. Individual Cronbach's alphas for each of the seven variables is provided in their respective analyses.

Levene's Test

For each analysis of covariance (each of the seven scales), a Levene's test was conducted to test the assumption of homogeneity of variance of the respective scale between the two groups of the independent variables: gender and minority. A series of Levene's F tests indicated that there was no statistical significance found and homogeneity of variance assumption was satisfied ($p > .05$) for all seven measures between gender (See Table 10) or minority (See Table 11).

Table 10

Levene's Test Gender and Minority Results Matrix (Gender)

Levene's test genders	IR Computer	IR Career	ER Counseling	Success Courses	Success Writing	Success Faculty	Success Library
F-value	1.303	1.317	2.292	0.972	0.965	1.454	1.219
p-value	0.278	0.274	0.108	0.383	0.386	0.240	0.301

Table 11

Levene's Test Gender and Minority Results Matrix (Minorities)

Levene's test minorities	IR Computer	IR Career	ER Counseling	Success Courses	Success Writing	Success Faculty	Success Library
F-value	0.126	0.001	0.152	0.499	0.063	0.020	0.020
p-value	0.723	0.976	0.698	0.482	0.803	0.887	0.889

Variable Profile Plots

Appendix G (Figures G1 – G7) are profile plots that highlight possible interaction between independent variables gender and minority for each scale variable, however, it is important to note these plots cannot determine a definitive interaction effect based on parallel or non-parallel lines in the plots from these variables because the profile plot is based on the sample data collected (Fox, 2015). If lines in the profile plot are not parallel (i.e., if they have different patterns or they cross or overlap each other) there *might* be an interaction effect. Alternatively, if the lines are parallel, this might indicate there is not an interaction effect.

In order to determine the effect, a formal statistical test is required to test for the presence of an interaction effect (i.e., via statistical significance testing). With that said, profile plots are still very useful in getting an *initial impression* of data and are particularly useful when deciding how to follow up a statistically significant two-way interaction (i.e., whether to interpret and report main effects in addition to simple main effects) (Laerd Statistics, 2018). Further, the profile plots can be very useful not only in showing where there might be a two-way interaction effect, but also in describing and highlighting possible patterns in the data, furthermore determining whether there is an ordinal interaction or disordinal interaction meaning determining how statistically significant interaction effect (i.e., whether reporting main effects in addition to simple main effects) will take place (Laerd Statistics, 2018).

Univariate Analysis of Variance: IR_Career Scores

From the Tests of Between-Subjects effects IR_Careers reported in Table 12, the independent variable minority has a slight statistically significant effect on IR_Career score (F-value=3.765, p-value=0.057)., i.e. a statistically significant effect with confidence level 90%) while controlling for whether or not the participants were African American students (AABlack).

The covariate African American ethnicity does not have any statistically significant effect on the IR_Career score (p-value=0.143). The descriptive statistics in Table 13 shows if a student is in a minority group, their score will likely decrease when the student is a woman rather than a man. If the student is not in a minority group, the score will increase when the student is a woman. The variable IR_Career measures the effort the student enrolled in a career/occupational program or a course exhibits in which he or she learns occupational skills, contributing to their retention.

Table 12

Test of Between-Subjects Effects - IR_Career

Tests of Between-Subjects Effects

Dependent Variable: IR Career

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	6.744[a]	4	1.686	1.271	.290	.071	5.084	.377
Intercept	20.941	1	20.941	15.787	.000	.191	15.787	.975
AABlack	2.918	1	2.918	2.200	.143	.032	2.200	.310
Gender	.003	1	.003	.002	.962	.000	.002	.050
Minority	4.994	1	4.994	3.765	.057	.053	3.765	.481
Gender * Minority	1.432	1	1.432	1.079	.303	.016	1.079	.176
Error	88.872	67	1.326					
Total	331.543	72						
Corrected Total	95.616	71						

a. R Squared = .071 (Adjusted R Squared = .015)
b. Computed using alpha = .05

Table 13

Descriptive Statistics – IR_Career

Dependent Variable: IR Career

Gender	Minority	Mean	Std. Deviation	N
Male	Yes	1.71	1.235	12
	No	1.83	1.128	18
	Total	1.79	1.152	30
Female	Yes	1.55	1.133	22
	No	2.14	1.179	20
	Total	1.83	1.180	42
Total	Yes	1.60	1.154	34
	No	1.99	1.150	38
	Total	1.81	1.160	72

The Levene's test of equality of Error Variances for IR_Career (Table 14) does not reject the assumption of homogeneity (F-value=0.169, p-value=0.917). This assumption can then be validated.

Table 14

Levene's Test of Equality of Error Variances - IR_Career

Dependent Variable: IR Career

F	df1	df2	Sig.
.169	3	68	.917

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + AABlack + Gender + Minority + Gender * Minority

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), the IR_Career score is not different between males and females (See table 15).

T**able 15**

Estimated Marginal Means – IR_Career - Gender

1. Gender

Dependent Variable: IR Career

Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Male	1.799[a]	.215	1.369	2.228
Female	1.812[a]	.179	1.455	2.169

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

A statistically significant mean effect was found for IR_Career-minority so an estimated marginal means (EMM) test was run to compare the group means adjusted for covariate AABlack. If differences were not statistically significant, then controlling for the covariate did not make a difference in the outcomes (i.e., the means being compared). In that case there would be a report the Descriptive Statistics for outcomes that were not statistically significant. When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), the IR Career score is different between Minority and White (non-minority), but not statistically different (the 95% confidence intervals overlap) in Table 16. The first confidence interval is 0.965 to 1.927 (Yes minority) and the second confidence interval is 1.721 to 2.609 (No minority). These two confidence intervals overlap because 1.927 is above 1.721.

Table 16

Estimated Marginal Means – IR_Careers - Minority

2. Minority

Dependent Variable: IR Career

Minority	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Yes	1.446[a]	.241	.965	1.927
No	2.165[a]	.223	1.721	2.609

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there does not seem to be any statistically significant interaction effect between Gender and Minority. There is no interaction here because whether you are male or female, the minority group has a lower mean than the non-minority group. (See Table 17).

Table 17

*Estimated Marginal Means – IR_Careers - Gender * Minority*

*3. Gender * Minority*

Dependent Variable: IR Career

				95% Confidence Interval	
Gender	Minority	Mean	Std. Error	Lower Bound	Upper Bound
Male	Yes	1.585[a]	.343	.900	2.271
	No	2.012[a]	.297	1.419	2.605
Female	Yes	1.306[a]	.294	.720	1.893
	No	2.318[a]	.284	1.750	2.885

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

The Cronbach's alpha is very high (0.971) among the IR_Career items collectively and individually as noted in Table 18. Therefore, a variable Career Score based on the mean of the Career items was constructed and used for further analysis.

Table 18

Reliability Analysis – Cronbach's alpha – IR_Career

Reliability Statistics

Cronbach's Alpha	N of Items
.971	9

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Career1	14.94	87.614	.862	.968
Career2	14.64	84.577	.918	.966
Career3	14.65	84.231	.906	.967
Career4	14.95	85.234	.891	.967
Career5	14.99	88.381	.830	.970

Table 18 (Continued)

Reliability Analysis – Cronbach's alpha – IR_Career

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Career6	15.00	85.921	.919	.966
Career7	15.00	87.368	.867	.968
Career8	15.03	86.920	.884	.967
Career9	15.36	90.971	.799	.971

Univariate Analysis of Variance: IR_Computer Scores

The Tests of Between-Subjects for IR_Computer effects in Table 19, shows there is no statistically significant effect on IR_Computer score from any independent variables (Gender and Minority) while controlling for whether or not the participants are African American students: all the p-values are above 0.05 and the F-values are small. The covariate African American ethnicity does not have any statistically significant effect on the IR_Computer score (p-value=0.821) either. The p-value for the interaction between Gender and Minority is large (p-value=0.217). The descriptive statistics in Table 20 shows if the participants belong to a minority group, then the scores are likely to be different between men and women: the score is much lower for female participants. If the participants are not in a minority group, then the score will be the same between men and women. The IR_Computer variable reflects the self-reported effort to utilize computer, Internet, social media, and email technologies student demonstrate contributing to their retention.

Table 19

Test of Between-Subjects Effects – IR_Computer

Dependent Variable: IR Computer

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2.401[a]	4	.600	1.374	.252	.076
Intercept	17.515	1	17.515	40.109	.000	.374
AABlack	.023	1	.023	.052	.821	.001
Minority	1.101	1	1.101	2.521	.117	.036
Gender	.654	1	.654	1.499	.225	.022
Minority * Gender	.678	1	.678	1.553	.217	.023
Error	29.258	67	.437			
Total	542.366	72				
Corrected Total	31.658	71				

a. R Squared = .076 (Adjusted R Squared = .021)

Between-Subjects Factors

		Value Label	N
Gender	1	Male	30
	2	Female	42
Minority	1	Yes	34
	2	No	38

Table 20

Descriptive Statistics – IR_Computer

Descriptive Statistics

Dependent Variable: IR Computer

Minority	Gender	Mean	Std. Deviation	N
Yes	Male	3.06	.575	12
	Female	2.65	.700	22
	Total	2.79	.679	34
No	Male	2.55	.616	18
	Female	2.55	.684	20
	Total	2.55	.644	38
Total	Male	2.75	.643	30
	Female	2.60	.686	42
	Total	2.66	.668	72

The Levene's test of Equality of Error Variances for IR_Computer in Table 21 does not reject the assumption of homogeneity (F-value=0.522, p-value=0.668). This assumption can then be validated.

Table 21

Levene's Test of Equality of Error Variances for IR_Computer

Levene's Test of Equality of Error Variances[a]

Dependent Variable: IR_Computer

F	df1	df2	Sig.
.522	3	68	.668

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + AABlack + Minority + Gender + Minority * Gender

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no statistically significant difference in IR Computer score between both minorities because the 95% confidence intervals below overlap (See Table 22).

Table 22

Estimated Marginal Means – IR_Computer - Minority

1. Minority

Dependent Variable: IR_Computer

			95% Confidence Interval	
Minority	Mean	Std. Error	Lower Bound	Upper Bound
Yes	2.869[a]	.138	2.593	3.145
No	2.532[a]	.128	2.277	2.786

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no statistically significant difference in IR Computer score between both genders because the 95% confidence intervals below overlap (see Table 23).

Table 23

Estimated Marginal Means – IR_Computer-Gender

2. Gender

Dependent Variable: IR_Computer

Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Male	2.799[a]	.124	2.553	3.046
Female	2.602[a]	.103	2.396	2.807

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no statistically significant interaction in IR Computer score between gender and minority because the 95% confidence intervals below overlap (See Table 24).

Table 24

*Estimated Marginal Means – IR_Computer-Minority * Gender*

*3. Minority * Gender*

Dependent Variable: IR_Computer

Minority	Gender	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Yes	Male	3.068[a]	.197	2.675	3.462
	Female	2.670[a]	.169	2.333	3.006
No	Male	2.530[a]	.170	2.190	2.870
	Female	2.533[a]	.163	2.208	2.859

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

The Cronbach's alpha is high (0.853) among the Computer items collectively and individually. Therefore, a variable Computer Score based on the mean of the Computer items can be constructed and used for further analysis (See Table 25).

Table 25

Cronbach's alpha – IR_Computer

Reliability Statistics

Cronbach's Alpha	N of Items
.853	10

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Computer1	24.38	45.422	.460	.848
Computer2	25.40	42.586	.415	.853
Computer3	24.35	46.204	.319	.856
Computer4	25.00	41.184	.546	.841
Computer5	25.18	38.519	.703	.825
Computer6	25.09	38.873	.747	.822
Computer7	24.99	40.039	.712	.826
Computer8	25.01	40.381	.695	.828
Computer9	25.99	42.592	.400	.855
Computer10	25.91	40.084	.608	.835

Univariate Analysis of Variance: ER_Counseling Scores

From the tests of Between-Subjects effects in Table 26**,** there is no statistically significant effect on ER_Counseling score from any independent variables (Gender and Minority) while controlling for whether or not the participants are African American students: all the p-values are above 0.05 and the F-values are small. The covariate African American ethnicity does not have any statistically significant effect on the ER_Counseling score (p-value=0.322) either. The descriptive statistics in Table 27 shows if the participants belong to a minority group, then the ER_Counseling score is likely to be much lower for female participants. If the participants are not in a minority group, then the score will be relatively stable and similar between men and women. An increasing trend can be seen from men to women in the non-minority group. The ER_Counseling (external retention counseling) score reflects the self-reported effort a student

demonstrates in communicating with school counselors, discussing career goals, reading literature on four-year colleges, and discussing school performance.

Table 26

Test of Between-Subjects Effects – ER_Counseling

Tests of Between-Subjects Effects

Dependent Variable: ER Counseling

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1.658[a]	4	.414	.577	.680	.033
Intercept	21.191	1	21.191	29.493	.000	.306
AABlack	.715	1	.715	.996	.322	.015
Minority	.050	1	.050	.069	.793	.001
Gender	.509	1	.509	.708	.403	.010
Minority * Gender	.776	1	.776	1.081	.302	.016
Error	48.141	67	.719			
Total	439.469	72				
Corrected Total	49.799	71				

a. R Squared = .033 (Adjusted R Squared = -.024)

Between-Subjects Factors

		Value Label	N
Minority	1	Yes	34
	2	No	38
Gender	1	Male	30
	2	Female	42

Table 27

Descriptive Statistics – ER_Counseling

Descriptive Statistics

Dependent Variable: ER Counseling

Minority	Gender	Mean	Std. Deviation	N
Yes	Male	2.57	.749	12
	Female	2.24	.799	22
	Total	2.36	.787	34
No	Male	2.28	1.052	18
	Female	2.32	.743	20

Table 27 (Continued)

Descriptive Statistics – ER_Counseling

Dependent Variable: ER Counseling

Minority	Gender	Mean	Std. Deviation	N
	Total	2.30	.890	38
Total	Male	2.40	.939	30
	Female	2.28	.764	42
	Total	2.33	.837	72

The Levene's test of equality of Error Variances for ER_Counseling (see Table 28) does not reject the assumption of homogeneity (F-value=1.962, p-value=0.128). This assumption can then be validated.

Table 28

Levene's Test of Equality of Error Variances

Levene's Test of Equality of Error Variances[a]

Dependent Variable: ER Counseling

F	df1	df2	Sig.
1.962	3	68	.128

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + AABlack + Minority + Gender + Minority * Gender

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no statistically significant difference in ER Counselling score between both minorities because the 95% confidence intervals below overlap (See Table 29).

Table 29

Estimated Marginal Means – ER_Counseling - Minority

1. Minority

Dependent Variable: ER Counseling

			95% Confidence Interval	
Minority	Mean	Std. Error	Lower Bound	Upper Bound
Yes	2.315[a]	.177	1.961	2.669
No	2.387[a]	.164	2.060	2.714

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no statistically significant difference in ER Counselling score between both genders because the 95% confidence intervals below overlap (See Table 30).

Table 30

Estimated Marginal Means – ER_Counseling - Gender

2. Gender

Dependent Variable: ER Counseling

Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Male	2.438[a]	.158	2.122	2.754
Female	2.264[a]	.132	2.001	2.527

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no statistically significant interaction in ER Counseling score between minority and gender because the 95% confidence intervals below overlap (See Table 31).

Table 31

*Estimated Marginal Means – ER_Counseling – Minority * Gender*

*3. Minority * Gender*

Dependent Variable: ER Counseling

Minority	Gender	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Yes	Male	2.510[a]	.253	2.005	3.014
	Female	2.120[a]	.216	1.689	2.552
No	Male	2.366[a]	.219	1.930	2.803
	Female	2.407[a]	.209	1.990	2.825

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

The Cronbach's alpha is high (0.916) among the Counseling items collectively and individually as noted in Table 32. Therefore, a variable Counseling Score based on the mean of the Counselling items can be constructed and used for further analysis.

Table 32

Cronbach's alpha - ER_Counseling

Reliability Statistics

Cronbach's Alpha	N of Items
.916	8

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Counseling1	16.23	36.471	.717	.905
Counseling2	16.60	34.507	.740	.903
Counseling3	16.32	35.459	.755	.902
Counseling4	16.12	35.736	.672	.909
Counseling5	16.65	34.178	.800	.898
Counseling6	16.31	35.586	.652	.911
Counseling7	16.83	34.195	.788	.899
Counseling8	17.12	36.078	.662	.909

Univariate Analysis of Variance: Success_Courses Scores

From the Tests of Between-Subjects Effects in Table 33, there is no statistically significant effect on the Success_Courses score from either independent variables (Gender and Minority) while controlling for whether or not the participants are African American students with confidence level 95%: all the p-values are above 0.05 and the F-values are small. However, Gender has a statistically significant effect on the Success_Courses score with confidence level 90% (F-value = 3.080, p-value=0.084 < 0.10). The covariate African American ethnicity does not have any statistically significant effect on the Success_Courses score (p-value=0.304). The p-value for the interaction between Gender and Minority is large (p-value=0.678), which shows no interaction. The descriptive statistics in Table 34 shows whether the participants are in the minority group or not, the scores will be higher for the female participants than the male ones The Success_Courses score reflects the self-reported effort exhibited in participation, instructor engagement, critical thinking application, Socratic dialogue during courses.

Table 33

Test of Between-Subjects Effects – Success_Courses

Tests of Between-Subjects Effects

Dependent Variable: Success Courses

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1.856[a]	4	.464	1.369	.254	.076
Intercept	30.137	1	30.137	88.899	.000	.570
AABlack	.364	1	.364	1.073	.304	.016
Minority	.028	1	.028	.082	.775	.001
Gender	1.044	1	1.044	3.080	.084	.044
Minority * Gender	.059	1	.059	.174	.678	.003
Error	22.713	67	.339			
Total	703.530	72				
Corrected Total	24.569	71				

a. R Squared = .076 (Adjusted R Squared = .020)

Between-Subjects Factors

		Value Label	N
Minority	1	Yes	34
	2	No	38
Gender	1	Male	30
	2	Female	42

Table 34

Descriptive Statistics – Success_Courses

Descriptive Statistics

Dependent Variable: Success Courses

Minority	Gender	Mean	Std. Deviation	N
Yes	Male	2.98	.481	12
	Female	3.20	.574	22
	Total	3.12	.547	34
No	Male	2.86	.681	18
	Female	3.17	.550	20
	Total	3.02	.627	38
Total	Male	2.91	.602	30
	Female	3.19	.556	42
	Total	3.07	.588	72

The Levene's Test of Equality of Error Variances for Success_Courses in Table 35 does not reject the assumption of homogeneity (F-value=0.563, p-value=0.642). This assumption can then be validated.

Table 35

Levene's Test of Equality of Error Variances – Success_Courses

Levene's Test of Equality of Error Variances[a]

Dependent Variable: Success Courses

F	df1	df2	Sig.
.563	3	68	.642

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + AABlack + Minority + Gender + Minority * Gender

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no statistically significant difference in Success Courses score between both minorities because the 95% confidence intervals below overlap (See Table 36).

Table 36

Estimate Marginal Means – Success_Courses - Minority

1. Minority

Dependent Variable: Success Courses

			95% Confidence Interval	
Minority	Mean	Std. Error	Lower Bound	Upper Bound
Yes	3.025[a]	.122	2.782	3.268
No	3.079[a]	.112	2.854	3.303

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no statistically significant difference in Success Courses score between both genders because the 95% confidence intervals below overlap (See Table 37).

Table 37

Estimate Marginal Means – Success_Courses – Gender

2. Gender

Dependent Variable: Success Courses

Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Male	2.927[a]	.109	2.710	3.144
Female	3.177[a]	.091	2.996	3.357

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no statistically significant interaction in Success Courses score between gender and minority because the 95% confidence intervals below overlap (See Table 38).

Table 38

*Estimate Marginal Means – Success_Courses – Minority * Gender*

*3. Minority * Gender*

Dependent Variable: Success Courses

Minority	Gender	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Yes	Male	2.930[a]	.174	2.583	3.276
	Female	3.120[a]	.148	2.824	3.417
No	Male	2.924[a]	.150	2.625	3.224
	Female	3.233[a]	.144	2.946	3.520

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

The Cronbach's alpha is high (0.854) among the Activities items collectively and individually as noted in Table 39. Therefore, a variable Activities Score based on the mean of the Activities items can be constructed and used for further analysis.

Table 39

Cronbach's alpha – Success_Courses

Reliability Statistics

Cronbach's Alpha	N of Items
.854	10

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Activities1	27.23	30.524	.402	.852
Activities2	27.10	30.726	.433	.850
Activities3	27.26	29.616	.482	.846
Activities4	27.60	26.323	.683	.828
Activities5	27.77	28.076	.555	.840
Activities6	27.62	27.790	.588	.837
Activities7	28.30	27.265	.508	.847
Activities8	27.64	26.629	.678	.829
Activities9	27.71	26.733	.668	.830
Activities10	27.61	27.873	.573	.839

Univariate Analysis of Variance: Success_Writing Scores

From the Tests of Between-Subjects Effects (see Table 40), there is a strong statistically significant effect of Minority on the Success Writing score (F-value=9.169, p-value=0.003<0.01, i.e. a statistically significant effect with confidence level 99% as opposed to a confidence level of 95%) while controlling for whether or not the participants are African American students. Gender has a statistically significant effect as well, but with confidence level 90% only (F-value= 2.939, p-value=0.091). The covariate African American ethnicity does not have any statistically significant effect on the Success_Writing score (p-value=0.155). The p-value for the interaction between Gender and Minority is large (p-value=0.335), showing no statistically significant interaction effect. In the descriptive statistics in Table 41 the score increases for female participants whether they are in the minority group or not. The Success_Writing variable

reflects the self-reported efforts demonstrated by the student in development of writing, grammar, reading, and computer assisted writing activities.

Table 40

Test of Between-Subject Effects - Success_Writing Scores

Tests of Between-Subjects Effects

Dependent Variable: Success Writing

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5.743[a]	4	1.436	3.535	.011	.174
Intercept	15.214	1	15.214	37.452	.000	.359
AABlack	.841	1	.841	2.070	.155	.030
Minority	3.725	1	3.725	9.169	.003	.120
Gender	1.194	1	1.194	2.939	.091	.042
Minority * Gender	.383	1	.383	.943	.335	.014
Error	27.218	67	.406			
Total	676.469	72				
Corrected Total	32.961	71				

a. R Squared = .174 (Adjusted R Squared = .125)

Between-Subjects Factors

		Value Label	N
Minority	1	Yes	34
	2	No	38
Gender	1	Male	30
	2	Female	42

Table 41

Descriptive Statistics – Success_Writing

Descriptive Statistics

Dependent Variable: Success Writing

Minority	Gender	Mean	Std. Deviation	N
Yes	Male	3.18	.613	12
	Female	3.23	.608	22
	Total	3.21	.601	34
No	Male	2.57	.642	18
	Female	2.99	.694	20
	Total	2.79	.694	38

Table 41 (Continued)

Descriptive Statistics – Success_Writing

Minority	Gender	Mean	Std. Deviation	N
Total	Male	2.81	.690	30
	Female	3.12	.654	42
	Total	2.99	.681	72

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is a statistically significant difference in Success Writing score between both minorities because the 95% confidence intervals do overlap: The mean score for the minority is above that of the non-minority group (3.303>2.683) and the 95% confidence interval for Success Writing for the minority group (3.037 - 3.569) is above that of the non-minority group (2.437 - 2.928) (Table 42).

Table 42

Estimated Marginal Means – Success_Writing - Minority

1. Minority

Dependent Variable: Success Writing

			95% Confidence Interval	
Minority	Mean	Std. Error	Lower Bound	Upper Bound
Yes	3.303[a]	.133	3.037	3.569
No	2.683[a]	.123	2.437	2.928

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no statistically significant difference in Success Writing score between both genders because the 95% confidence intervals below overlap (although they are almost disjoint: the upper bound of the Male interval (3.097) is just above the lower bound of the Female interval (2.929)) (See Table 43).

Table 43

Estimated Marginal Means – Success_Writing - Gender

2. Gender

Dependent Variable: Success Writing

Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Male	2.860[a]	.119	2.622	3.097
Female	3.126[a]	.099	2.929	3.324

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no interaction between gender and minority in Success Writing score. The scores of the males are always below the scores of the females (See Table 44).

Table 44

*Estimated Marginal Means – Success_Writing – Minority * Gender*

*3. Minority * Gender*

Dependent Variable: Success Writing

Minority	Gender	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Yes	Male	3.246[a]	.190	2.866	3.625
	Female	3.361[a]	.163	3.037	3.686
No	Male	2.474[a]	.164	2.145	2.802
	Female	2.892[a]	.157	2.577	3.206

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

The Cronbach's alpha is high (0.862) among the Writing items collectively and individually as noted in Table 45. Therefore, a variable Writing Score based on the mean of the Writing items can be constructed and used for further analysis.

Table 45

Cronbach's alpha – Success_Writing

Reliability Statistics

Cronbach's Alpha	N of Items
.862	8

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Writing1	20.86	23.414	.648	.842
Writing2	20.99	22.224	.682	.837
Writing3	20.52	24.069	.660	.841
Writing4	20.84	23.607	.617	.845
Writing5	20.08	26.231	.518	.857
Writing6	21.06	23.062	.584	.850
Writing7	20.78	23.859	.579	.849
Writing8	21.23	22.524	.629	.844

Univariate Analysis of Variance: Success_Faculty Scores

From the Tests of Between-Subjects Effects in Table 46, there is no statistically significant effect on the Success_Faculty score from any independent variables (Gender and Minority) while controlling for whether or not the participants are African American students with confidence level 95%: all the p-values are above 0.05 and the F-values are small. The covariate African American ethnicity does not have any statistically significant effect on the Success_Faculty score (p-value=0.909). The p-value for the interaction between Gender and Minority is large (p-value=0.878), which shows no interaction. The descriptive statistics in Table 47 shows that whether the participants are in the minority group or not, the score will be both higher for the female participants rather than the male ones. The Success_ Faculty variable scores reflect the effort exhibited by the student in interacting with the faculty, participating in college activities, inquire about college-related activities.

Table 46

Tests of Between-Subjects Effects – Success_Faculty

Tests of Between-Subjects Effects

Dependent Variable: Success Faculty

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	.571[a]	4	.143	.268	.897	.016
Intercept	14.254	1	14.254	26.754	.000	.285
AABlack	.007	1	.007	.013	.909	.000
Minority	.237	1	.237	.445	.507	.007
Gender	.141	1	.141	.264	.609	.004
Minority * Gender	.013	1	.013	.024	.878	.000
Error	35.696	67	.533			
Total	454.086	72				
Corrected Total	36.267	71				

a. R Squared = .016 (Adjusted R Squared = -.043)

Between-Subjects Factors

		Value Label	N
Minority	1	Yes	34
	2	No	38
Gender	1	Male	30
	2	Female	42

Table 47

Descriptive Statistics – Success_Faculty

Descriptive Statistics

Dependent Variable: Success Faculty

Minority	Gender	Mean	Std. Deviation	N
Yes	Male	2.42	.590	12
	Female	2.53	.777	22
	Total	2.49	.709	34
No	Male	2.30	.859	18
	Female	2.37	.592	20
	Total	2.34	.721	38
Total	Male	2.35	.753	30
	Female	2.45	.692	42
	Total	2.41	.715	72

The Levene's Test of Equality of Error Variances for Success_Faculty (see Table 48) does not reject the assumption of homogeneity (F-value=2.273, p-value=0.088>0.05) with confidence level 95%. This assumption can then be validated.

Table 48

Levene's Test of Equality of Error Variance – Success_Faculty

Levene's Test of Equality of Error Variances[a]

Dependent Variable: Success Faculty

F	df1	df2	Sig.
2.273	3	68	.088

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + AABlack + Minority + Gender + Minority * Gender

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no statistically significant difference in Success Faculty score between both minorities because the 95% confidence intervals below overlap. The non-minority confidence interval is included in the minority confidence interval (See Table 49).

Table 49

Estimate Marginal Means – Success_Faculty - Minority

1. Minority

Dependent Variable: Success Faculty

			95% Confidence Interval	
Minority	Mean	Std. Error	Lower Bound	Upper Bound
Yes	2.482[a]	.153	2.178	2.787
No	2.326[a]	.141	2.044	2.607

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no statistically significant difference in Success Courses score between both genders because the 95% confidence intervals below overlap (See Table 50).

Table 50

Estimate Marginal Means – Success_Faculty - Gender

2. Gender

Dependent Variable: Success Faculty

Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Male	2.358[a]	.136	2.086	2.631
Female	2.450[a]	.113	2.223	2.676

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no interaction in Success Faculty score between Gender and Minority: the male scores are always below the female scores whether the participants are in the minority group or in the non-minority group (See Table 51).

Table 51

*Estimate Marginal Means – Success_Faculty – Minority * Gender*

*3. Minority * Gender*

Dependent Variable: Success Faculty

Minority	Gender	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Yes	Male	2.423[a]	.218	1.988	2.857
	Female	2.542[a]	.186	2.170	2.914
No	Male	2.294[a]	.188	1.918	2.669
	Female	2.358[a]	.180	1.998	2.718

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

The Cronbach's alpha is high (0.898) among the Faculty items collectively and individually as noted in Table 52. Therefore, a variable Faculty Score based on the mean of the Faculty items can be constructed and used for further analysis.

Table 52

Cronbach's alpha – Success_Faculty

Reliability Statistics

Cronbach's Alpha	N of Items
.898	9

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Faculty1	19.08	34.678	.683	.885
Faculty2	19.34	33.727	.795	.877
Faculty3	20.09	33.636	.677	.885
Faculty4	19.75	33.741	.750	.880
Faculty5	19.74	33.590	.664	.887
Faculty6	19.83	33.642	.729	.881
Faculty7	19.92	35.362	.561	.895
Faculty8	20.01	33.302	.776	.878
Faculty9	18.65	39.310	.323	.908

Univariate Analysis of Variance: Success_Library Scores

From the tests of Between-Subjects effects in Table 53, there is no statistically significant effect on the Success_Library score from any independent variables (Gender and Minority) while controlling for whether or not the participants are African American students with confidence level 95%: all the p-values are above 0.05 and the F-values are small. The covariate African American ethnicity does not have any statistically significant effect on the Success_Library score (p-value=0.591). The p-value for the interaction between Gender and Minority is large (p-value=0.463), which shows no interaction. The description statistics in Table 54 shows a participant in a minority group will have a score tending to be higher if the participant is a female. If the participant is not in a minority group, the score will tend to be higher if you are a male. The Success_Library variable score reflects the self-reported efforts by the student in the use of the library and its services, resources, materials, and staff.

Table 53

Test of Between-Subjects Effects – Success_Library

Tests of Between-Subjects Effects

Dependent Variable: Success Library

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	.740[a]	4	.185	.328	.858	.019
Intercept	7.092	1	7.092	12.579	.001	.158
AABlack	.164	1	.164	.291	.591	.004
Minority	.372	1	.372	.660	.420	.010
Gender	.016	1	.016	.028	.868	.000
Minority * Gender	.307	1	.307	.545	.463	.008
Error	37.773	67	.564			
Total	301.918	72				
Corrected Total	38.512	71				

a. R Squared = .019 (Adjusted R Squared = -.039)

Between-Subjects Factors

		Value Label	N
Minority	1	Yes	34
	2	No	38
Gender	1	Male	30
	2	Female	42

Table 54

Descriptive Statistics – Success_Library

Descriptive Statistics

Dependent Variable: Success Library

Minority	Gender	Mean	Std. Deviation	N
Yes	Male	1.89	.761	12
	Female	2.03	.772	22
	Total	1.98	.760	34
No	Male	1.90	.860	18
	Female	1.80	.583	20
	Total	1.85	.719	38
Total	Male	1.90	.808	30
	Female	1.92	.691	42
	Total	1.91	.736	72

The Levene's test of equality of Error Variances for Success_Library (see Table 55) does not reject the assumption of homogeneity (F-value=0.169, p-value=0.633). This assumption can then be validated.

Table 55

Levene's Test of Equality of Error Variances – Success_Library

Levene's Test of Equality of Error Variances[a]

Dependent Variable: Success Library

F	df1	df2	Sig.
.576	3	68	.633

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + AABlack + Minority + Gender + Minority * Gender

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no statistically significant difference in Success Library score between both minorities because the 95% confidence intervals below overlap (See Table 56).

Table 56

Estimate Marginal Means – Success_Library – Minority

1. Minority

Dependent Variable: Success Library

			95% Confidence Interval	
Minority	Mean	Std. Error	Lower Bound	Upper Bound
Yes	2.006[a]	.157	1.693	2.320
No	1.810[a]	.145	1.520	2.100

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no statistically significant difference in Success Library score between both genders because the 95% confidence intervals below overlap (See Table 57).

Table 57

Estimate Marginal Means – Success_Library – Gender

2. Gender

Dependent Variable: Success Library

Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Male	1.893[a]	.140	1.613	2.173
Female	1.923[a]	.117	1.690	2.156

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

When removing the effect of AA Black (i.e. adjusting for AA Black = the covariate), there is no statistically significant interaction between gender and minority for the Success_Library score due again to the overlapping of the confidence intervals (See Table 60).

Table 58

*Estimate Marginal Means – Success_Library – Minority * Gender*

*3. Minority * Gender*

Dependent Variable: Success Library

Minority	Gender	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Yes	Male	1.923[a]	.224	1.476	2.370
	Female	2.089[a]	.191	1.707	2.471
No	Male	1.862[a]	.194	1.476	2.249
	Female	1.758[a]	.185	1.388	2.128

a. Covariates appearing in the model are evaluated at the following values: AA/Black = 1.71.

The Cronbach's alpha is high (0.840) among the Library items collectively and individually as noted in Table 59. Therefore, a variable Library Score based on the mean of the Library items can be constructed and used for further analysis.

Table 59

Cronbach's alpha – Success_Library

Reliability Statistics

Cronbach's Alpha	N of Items
.840	7

Table 59 (Continued)

Cronbach's alpha – Success_Library

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Library1	11.51	17.595	.698	.801
Library2	11.84	19.475	.621	.815
Library3	11.97	19.736	.631	.814
Library4	11.18	18.677	.565	.824
Library5	10.88	19.999	.449	.842
Library6	12.00	20.053	.558	.824
Library7	11.96	18.748	.665	.807

Validating the Assumption of Residual Distribution Normality

In order to validate the factorial ANCOVA for each score, the residuals of each model need to be roughly normally distributed, and if not, at least that they are not too skewed to be able to use a parametric test for this factorial ANCOVA. The Kolmogrov-Smirnov test as well as the graphical representation of the distribution of those residuals (histogram or QQ plot) was used to verify the assumption of normally distributed data. The output table of the normality tests for the seven columns of residuals. Since the number of participants is 72 in the study, the Kolmogorov-Smirnov test (see Table 60) was used because the number of participants was greater than 50 (Field, 2018; Mishra et al., 2019). All the p-values are above 0.05 except for ER_Counseling (.043) and Success_Faculty (.042). However, these two variables have a p-value that are just under 0.05 so the assumption will be validated as well. By looking at the histograms for these variables in Appendix F, they are not highly skewed so for that reason parametric tests (such as the ANCOVA) can be conducted. The variables can be taken as alright to do parametric tests (such as the ANCOVA). The other five variable results were .200 meaning their p-values are larger than 0.20 so they are normally distributed.

Table 60

Kolmogorov-Smirnov Test

	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.
Studentized Residual for Int_Retention_Career	.092	72	.200*
Studentized Residual for Int_Retention_Computer	.074	72	.200*
Studentized Residual for Ext_Retention_Counseling	.106	72	.043
Studentized Residual for Success_Courses	.054	72	.200*
Studentized Residual for Success_Writing	.086	72	.200*
Studentized Residual for Success_Faculty	.106	72	.042
Studentized Residual for Success_Library	.091	72	.200*

Normality: Normality is evaluated using a Q-Q scatterplot (Bates et. al., 2014; DeCarlo, 1997; Field, 2013). The Q-Q scatterplot compares the distribution of the residuals with a normal distribution (a theoretical distribution, which follows a bell curve). The solid line in each variable Q-Q scatterplot in Appendix F (Appendix Tables F1 – F7) represents the theoretical quantiles of a normal distribution. Normality can be assumed if the points form a relatively straight line. Any residual in these plots is shown in the histograms and Q-Q plot variable scores in Appendix F as well. The only histograms and Q-Q plots revealing a skewed distribution significance are (1) ER_Counseling, (2) Success_Faculty and (3) Success_Library scores. But these distributions are not so skewed to prevent conducting a parametric test, thus the factorial ANCOVA was ran for all the scores.

Conclusion

The independent Minority variable has a statistically significant effect on the Success_Writing score (F-value = 9.169, p-value=0.003) and a slightly statistical significant effect on IR_Career (Internal Retention Career) score (F-value = 3.765, p-value=0.057) after adjusting for the covariate AABlack "being an African American student". Gender has a slightly statistical significant effect on the Success_Courses score (F-value = 3.080, p-value = 0.084) and

the Success_Writing score (F-value=2.939, p-value=0.091) after adjusting for the variable AABlack "being an African American student". No statistically significant interaction between Minority and Gender has been found due to a large variance in each cross category, however, it is worth mentioning interactions observed in mean plots:

- The External Retention Counseling score (ER_Counseling) is higher for minority students in general, but decreases from male participants (Mean = 2.57) to female participants (Mean = 2.24). The participants who are not in the minority group preserve the same score whether they are men (Mean = 2.28) or women (2.32).
- In the minority group, the Success_Library score is greater for women (Mean = 2.03) than men (Mean = 1.89). In the non-minority group, the Success_Library score is greater for men (Mean = 1.90) than women (Mean = 1.80).

Chapter 5 - Recommendation

Introduction

This chapter presents a discussion of the findings in chapter 4 and links these findings to existing literature. This study was grounded in the theoretical framework of Tinto's (1975, 1993) models of retention. Tinto determined there are four general factors contributing to retention and success. In this study these four factors were measured by seven Likert scaled variables. The purpose of the study was to determine if African American students' perceived efforts in retention and success activities differ from those of other minorities, non-minority, gender, and specifically African American students.

This dissertation examined African American community college students' perceptions benefit derived from the quality of their efforts in their interactions with collegiate faculty and staff, the utilization of resources such as technology, participation in the class, and research on career development. Further, the study addressed the strength of relation between student gender and race based on the previously noted seven dependent variables. Gender and minority were identified as the independent variables. The African American student (AABlack variable identifier) was identified as the covariate.

Summary of Study

This study was initiated to find out if there were differences or similarities in characteristics exhibited by African American students that contribute to their long-term success in the community college environment. To support this inquiry, the research question asked if by using the Community College Student Experience Questionnaire (CCSEQ) to measure students' efforts in seven self-reported scores, if there were any differences in retention and success based on socio-economic characteristics. The two characteristics measured were minorities and gender controlling for African American students. This study went through

several iterations to finally focus on a streamlined set of variables that addressed all four of Tinto's characteristics model, which included (1) background characteristics, (2) expectations and motivational attributes, (3) institutional manifestations, and (4) individual educational expectations. My desire became to determine if the results of previous studies were applicable when considering opposing demographic parameters, such as students' race and gender. Such demographic changes could possibly present a juxtaposition to existing literature on minority student retention.

Seven two-way ANCOVA derived from the CCSEQ were assigned one of Tinto's four characteristics previously mentioned. This study looked at the effect the two independent variables (minority and gender) had on the seven scaled variables taken from the CCSEQ while controlling for the covariate AABlack (African American students). The four Tinto characteristics represented either an internal retention (coded "IR"), external retention (coded "ER"), or success (coded "Success") factor. Finally, the seven scaled dependent variables were assigned one of the three factors: (1) IR_Career, (2) IR_Computer), (3) ER_Counseling, (4) Success_Courses, (5) Success Writing, (6) Success_Faculty, and (7) Success_Library (see Figure 2). There was no analysis on the effect of each dependent score on each other as this would have been a Spearman's Rho test to measure the strength of association between variables.

Summary of Findings

The study analyzed the effect of the gender and minority variables on each of the seven scores and studied the interaction effect of independent variables (*gender* x *minority*). In addition, this study provides an analysis about the effect of being African American (defined as covariate AA Black) on each score. Overall, independent variable *minority* had an effect on two

scores [IR_Career] and [Success_Writing]. However, the covariate AA Black did not have any extra effect compared with the other minorities. AABlack had basically the same effect as the other non-white minorities (as coded minority = 1) on these two scores. Likewise, independent variable *gender* also had an effect on two other scores ([Success_Writing] and [Success_Courses]). Some interaction effect between variables *gender* and *minority* was observed on the mean plots, but the variance in each group was too large to detect a statistically significant interaction. Covariate AA Black had no significant effect on any of the seven scores compared to other minorities. Therefore, the *minority* independent variable can have an effect on some of the seven scores, but in those cases, it is all the minorities, black (African American) included. In summary, for cases where the independent variable *minority* had an effect on the score, the fact of being black having an effect was because AABlack counts as part of the minority population, but not as a stand-alone covariate. Based on this study, there were differences found in one retention score and two success factors based on gender or whether the student was from a specific minority. In alignment with Tinto's model, this study showed relevance to specific components of this theoretical framework in the internal retention realm which included expectations and motivational attributes. That particular internal retention factor was careers [IR_Careers]; as many community college students are non-traditional working students, college serves as a motivator to advance on the job or secure a job through the achievement of a degree or certification.

Tinto's student integration model explains the student integration process as mostly a function of academic and social experiences in college. It measured successful academic integration by grade point average (Rovai, 2003). This study measured success considering Tinto's (1993) individual educational expectations using the CCSEQ variables course, faculty,

library, and writing activities. Student success as relating to the study hypothesis was discovered in the statistically significant results from the writing [Success-Writing] and course [Success_Courses] factors as noted in Dependent Variable Analysis Matrix in Table 61. These areas are described as self-reported e*ffort* begging the question do students' efforts based on race (minority or not) and/or gender influence perceived college experiences and outcomes. These findings demonstrate that effort in academic activities, utilization of resources, and developing relationships within the institution, contribute to both gender and minority success and retention.

This study aligns with Tinto's model because it addressed gender and race as two of its independent variables. The characteristics that Tinto highlighted in his theory as being important in influencing the individual's goal and institutional commitment are their individual attributes, precollege experiences, and family background. Individual attributes covers variables such as race, gender and academic ability (McCubbin, 2003).

Overall, the results suggest that Tinto's (1993) Student Integration Theory was useful in analyzing student retention at the community college that was involved in this study. However, not at its maximum potential, as the variables in the model accounted for only a modest amount of variance in retention. In addition, only three variables had a direct effect on retention. The largest direct effect on retention was accounted for by individual educational expectations (Tinto, 1993) demonstrated by efforts in writing activities and course participation an engagement. While Tinto's model does not specifically highlight African American students, the study did not show any significant difference in these student's progress from other students.

Research Question

The research question asks what factors contribute to student success and retention expressed in three key realms of Tinto's retention model: college environment and interaction

(external retention), application, study, and academic activities (success), and the utilization of resources (internal retention). This study had interest in minority students and sought to highlight African American students as many times literature presents these students as challenged in their college completion more so than other groups. The study also assessed the role gender played in self-evaluation of retention and success.

The research question specially asks: Is there a difference between CCSEQ scores using Tinto's retention and engagement theory to examine factors that contribute to adult student community college retention and success based on socio-economic characteristics while controlling for whether the participants are African American students or not? To summarize, this factorial ANCOVA sought to show if results are significant, it means that whether you are African American or not, minority (race) or gender will have an effect on the measurement. If the results are not significant, then minority or gender will have no effect whether African American or not. Three areas showed statistical significance related to this question and supporting hypotheses.

H_0: There are no differences in students' CCSEQ scores based on minority status as they relate to Tinto's internal and external retention factors compared to other students after controlling/adjusting for the covariate African American students. The null H_0 is rejected because statistical significance was found in internal retention factor [IR_Career] for independent variable *minority*.

(1) Minority retention continuity in the community college is impacted by developing a strategy to a career path; this strategy includes exploring career opportunities, consulting with faculty, engaging in work related scenarios, exploring occupations, and conducting research. These efforts serve as impetus to seek a career after college completion. There are implications

that differences in retention in minority male and female students where minority female students' scores will decrease more so than minority male students. African American students showed no effect based on solely on being African American. Non-minority female students showed a score increase.

***H*$_0$:** There are no differences in students' CCSEQ scores based on gender as they relate to Tinto's success factors compared to other students after controlling/adjusting for the covariate African American students. The null H_0 is rejected because statistical significance was found in success factor [Success_Writing] for independent variable *gender*.

***H*$_0$:** There are no differences in students' CCSEQ scores based on minority as they relate to Tinto's success factors compared to other students after controlling/adjusting for the covariate African American students. The null H_0 is rejected because statistical significance was found in success factor [Success_Writing] for independent variable *minority*.

(2) Both minority and gender show statistical significance when it came to the benefit of efforts in writing activities such as seeking feedback from instructors on writing skills, reading, organizing writing activities, and while there was no significance found in the dependent variable IR_Computer based on gender or minority, it is important to note the use of technology and computers in enhancing writing skills was shown to make a difference contributing to the minority students' overall success at the community college. Controlling for the African American students specifically, there was no significance revealed. Gender and minority significance is based on their scores individually and not based on their interaction. Female students (whether minority or not) trended toward higher scores.

***H*$_0$:** There are no differences in students' CCSEQ scores based on gender as they relate to Tinto's success factors compared to other students after controlling/adjusting for the covariate African

American students. The null H_0 is rejected because statistical significance was found in success factor [Success_Courses] for independent variable *gender*.

(3) Gender has statistically significant effect based on the Success_Courses score. Course success centers on efforts in classroom participation and engagement, developing good study habits, asking questions during or after class, and applying learning in real life scenarios. Again, female students' scores were higher than males regardless if the student was in a minority group or not. There was no statistically significant effect for African American students.

Table 61 is a dependent variable analysis matrix of the findings for the seven dependent variables (1) IR_Careers, (2) IR_Computer, (3) ER_Counseling, (4) Success_Courses, (5) Success_Writing, (6) Success_Faculty, and (7) Success_Library. In cases where significance was found (internal retention factor IR_Career for minorities, success factor Success_Writing for both minorities and gender, and success factor Success_Coureses for gender), it means that whether the students are African American (AA) or not, the minority status or gender will have an effect on the measurement. In results that were not significant, then being a minority or controlling for gender had no effect, whether the student was African American (AA) or not. While no significance interaction was found for minority/gender interaction (column four in Table 25), the graphical mean plot interaction (see Appendix F) represented in column five of Table 25 showed otherwise. However, the 95% confidence bars (or variance) are big, which means there is too much heterogeneity in each group (Male Minority, Female Minority, Male Non-minority, Female Non-minority) to conclude that there is a statistically significant effect. Heterogeneity is the opposite of homogeneity and means members of a population or sample have a different value from the dependent variable of interest.

Table 61

Dependent Variable Analysis Matrix

Dependent Variable	Independent Variables (Minority-Gender) significance	African American	Minority/Gender Interaction Effect	Observation from the interaction plot (Mean plot)	Summary
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
IR_Careers[1]	**Yes: minority** No: gender	No significance	No significance	Yes	Minority group score decreased if woman. Non-minority group scores increase if woman.
IR_Computers[2]	No: minority No: gender	No significance	No significance	Yes	Minority group scores differ between men and women. If minority, scores will be the same for men and women.
ER_Counseling[3]	No: minority No: gender	No significance	No significance	Yes	Non-minority group scores indicate lower for women. Non-minority group scores show stability for men.
Success_Courses[4]	No: minority **Yes: gender**	No significance	No significance	Yes	Whether the participants are in the minority group or not, the scores will be higher for the female participants than the male ones.
Success_Writing[5]	**Yes: minority** **Yes: gender**	No significance	No significance	Yes	Female scores increase whether in a minority or non-minority group.
Success_Faculty[6]	No: minority No: gender	No significance	No significance	Yes	Whether minority or not, female scores higher than men.

Table 61 (Continued)

Dependent Variable Analysis Matrix

Dependent Variable	Independent Variables (Minority-Gender) significance	African American	Minority/Gender Interaction Effect	Observation from the interaction plot (Mean plot)	Summary
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Success_Library[7]	No: minority No: gender	No significance	No significance	Yes	Participants in a minority group will have a score tending to be higher if the participant is a female. If the participant is not in a minority group, the score will tend to be higher if you are a male.

1 = Internal Retention Factor – Careers
2 = Internal Retention Factor – Computers
3 = External Retention Factor – Counseling
4 = Success Factor – Courses
5 = Success Factor – Writing
6 = Success Factor – Faculty
7 = Success Factor – Library

Implications

Theoretical Implications

Tinto's model has been an integral source of student retention research, but literature indicates there is need for cultural advancement (Guiffrida, 2006). Aside from the four characteristics (1) background, (2) expectations and motivational attributes, (3) intuitional manifestations, and (4) individual educational expectations that make up the retention and success factors outlined in this study taken from the Tinto model (see Figure 2), there is a need for minority students to remain connected to supportive members of their personal communities even those within the community college environment such as family or socio-economic groups. Tinto's theory does recognize the impact of family, but rather emphasizes the significance of the student / institution interaction (Young-Jones et al., 2013), however, family was not explored in this study as a factor of pre-college commitment. This theoretical framework would benefit by recognizing the social system influences of family and friends in supporting and encouraging student retention upon arrival at college. This assertion is based on studies that minority students

benefit from the support of their circle of influence including friends and family (Cabrera et al., 1999; Nora & Cabrera, 1996). Tinto's model suggests students integrate into the institution's culture as represented by the institutional manifestation component of the model used in this study, but according to Kuh and Love (2000) integration implies a student becomes socialized in the dominant culture of the institution, while abandoning their own. Thus, the institutional manifestation phase of the external retention component of this model might be better served if focused on *connection* with the institution rather than integration. *Connection* is more of a supportive posture allowing the student to maintain his or her identity, support, and social systems, while making the association with the college. Adding a distinct category highlighting the importance of maintaining cultural connections at college would be a modification in moving Tinto's theory away from an integration perspective to one that values diversity and encourages colleges and universities to affirm and honor diverse student cultures. Relating this statement to the literature, Aragon et al. (2017) notes institutions must be sensitive to differences including women of color as two of the four significant findings in this study were relevant to gender and minority gender. This current study attempted to put emphasis on both gender and ethnicity utilizing Tinto's model of engagement. While Tinto (1993) highlights gender and race as background factors contributing to retention, the model does not pay specific attention to the African American student. This study gave focus to this demographic.

Practical Implications

In addition to testing hypotheses and theories, this quantitative research sought to contribute to the academic success of diverse, underrepresented populations in higher education. However, generalizability must also be considered in this research approach as it might be difficult to accept *an average finding* (Carter & Hurtado, 2007) when considering a diverse

student body. It is prudent to provide evidence that a finding is applicable in other contexts and student populations. As an increasingly diverse population is entering community colleges, there is a need to recognize differing academic needs (Castillo, 2013). It will therefore be the job of the college to find ways for students of diverse backgrounds and genders to have access to high-quality and forward-thinking education. This study did show differences based on both gender and race, but it did not address student age as literature in this study highlighted the trend in older students attending community colleges (Acrobatiq, 2017; Castillo, 2013; Hunnicutt, 2014; Kasworm, 2003. Five of the seven scale variables in this study focused on the integral role technology plays in the support of student retention, success, and career development. If used properly, online technologies can help community colleges meet the changing needs and expectations of today's tech savvy students in conjunction with bringing efficiencies and economies of scale to the college. Comparing this reality to the literature (Salvo et al., 2017), there is a growing need for colleges to address technological and online resources for students and particularly students of color who may have limited access to adequate electronic and technology resources. This study did show that access to and use of technology in coursework and writing activities did show significance as related to student success and retention based on gender and race. This is even more relevant in the midst of the 2020 coronavirus pandemic that has resulted in educational institutions (K-12, community college, four-year) to offer most of their curriculum online for the foreseeable future.

The Impact of COVID-19 on Student Success and Retention. Students are at various stages in their academic programs—some are completing their coursework, and some are in the final stages of completing their degree. Each student brings a unique professional and personal perspective of coronavirus (AKA COVID-19) and their abrupt shift to remote working

and learning in 2020 (Bal et al., 2020). It is important to understand student challenges during the pandemic and capture strategies for success. The coronavirus has caused death and infection throughout the world and has deeply affected the global economy. This tragedy has also disrupted the education sector as the impact resonates globally (Dhawan, 2020). The outbreak of this virus in 2020 has forced may schools and colleges to remain closed temporarily or having to switch to a totally online format, discontinuing in-person teaching (Dwahan, 2020). Several areas are affected worldwide and there is a fear of losing academic year 2020 or even more in the coming future (Dhawan, 2020). As social distancing is preeminent at this stage, this will have negative effects on learning opportunities. Thus, educational units are struggling to find options to deal with this challenging situation and this scenario is creating a need for academic institutions to plan contingencies in an urgent manner.

COVID-19 and Online Technology. While there are a number of technologies available for online education, they sometimes create difficulties ranging from downloading errors, software installation, login problems, audio and video glitches, poor internet connection, excessive broadband traffic slowing down connections, resulting in buffering or frozen screens (Aboagye, 2020). These issues represent technical/mechanical problems, however, there are others that impact learning and ultimately student retention and success.

COVID-19 and Pedagogy. Sometimes student find online teaching to be boring and unengaging. Some students are not disciplined to handle an online learning environment because of the time and flexibility that come with this format, that many students never find time to do their work because they do not allot time for study or engagement. Students want two-way interaction (Dhawan, 2020) and sometimes it can be difficult to create in an online environment. Additionally, many students and especially adulty learners, learn by practice, doing, and making

relevant connection with abstract concepts. These conditions can conceivably lessen a student opportunity to reach his or her full potential. Mediocre course content is also a major issue. Students feel that lack of community, technical problems, and difficulties in understanding instructional goals are the major barriers for online learning (Song et al., 2004).

COVID-19 and Its Emotional and Psychological Effects on Learning. Aside from the technical/mechanical and pedagogical problems associated with online learning, these challenges are exacerbated by the COVID-19 pandemic. Situations of crisis and conflicts are also impediments in the path of education as many students and teachers face psychological problems during crisis including stress, fear, anxiety, depression, and insomnia that lead to a lack of focus and concentration (Di Pietro, 2017).

COVID-19 and Its effect on Learning Resources. There is another area that the pandemic will dramatically impact in terms of technology and access to resources including the internet and computers and that is many of the minority communities. “Lack of access to fast, affordable and reliable internet connections hinders the process of online learning especially for those who are living in rural as well as marginalized communities” (Adnan, & Anwar, 2020, p. 46). Many times, students of color access the internet through smartphones and are unable to take advantage of online learning because a significant amount of online content is not accessible via smartphones (Adnan & Anwar, 2020). A few recent research studies have explored the challenges and opportunities associated with e-learning during pandemics (Almanthari et al., 2020) from the perspective of the stakeholder. The study conducted by Almanthari et al., (2020), suggested that students’ voices (as well as the teacher’s) are important on this issue. Thus, institutions could gain from future research investigating students’ opinions

regarding online learning to examine the challenges faced by students, thus hindering their ability to achieve learning goals.

COVID-19 and Its Impact on Socio-Economic Resources. Bacher-Hicks, et al. (2020) show the pandemic substantially widens the socioeconomic gaps in searches for online learning resources, which are critical for research and contribute to student success. During this pandemic year found search intensity for school-related resources "increased by 15 percent for each additional $10,000 in mean household income and by roughly 50 percent for each 10 percentage point increase in the fraction of households with broadband internet and a computer" (p. 2). Areas with more rural schools and African American students saw lower increases in search intensity. In many cases, however, many students are trying to management how to get basic necessities and not for academics.

Recommendations

Tinto's (1993) Student Integration Theory explained only a portion of variance in student retention and success. This suggest that more important predictors were not identified or properly evaluated in this theory. Therefore, a more in-depth research study would be recommended in order to identify and specify any additional predictors. Such an effort would need a larger sample from multiple institutions rather than the one profiled in this study. The retention issue can also be better understood when investigated from a longitudinal period of several years. This would certainly allow for taking a "before and after" look at retention and factors contributing to or limiting success as measured be completion. In addition, this study was based solely on Tinto's model. Further research could consider additional factors such as alternative learning, variation in teaching styles and modalities, as well as new technologies that could be employed to assist with these teaching approaches. These suggestions could improve the understanding of the

variance in retention and completion. The approach used within this study of combining questionnaire responses with enrolment and completion data provides a pathway to looking at new ways of detailing various segments of the student population including first year and whole study student behavior patterns and their links to retention, progression and attainment.

Recommendations for Future Research

Qualitative and Quantitative Study. While this is a quantitative study, which allows for collecting and analyzing numerical data, qualitative studies provide breadth and depth of analysis often missed by quantitative studies (Palmer et al., 2011). Future studies on student involvement need to examine both qualitative and quantitative data by other socio-economic characteristics that were not explored in this study to analyze what factors contribute most to gains in general education at the community college as well as employing a phenomenological methodology. Another approach could be a longitudinal study of a cohort group to identify which activities contribute most to student involvement in the community college and the university. A study measuring before and after results of students enrolled in general education courses could compare the gains in given subject areas and earned grades of students in the community college.

Defining Success. The community college presents unique achievement objectives based on the characteristics of much of the study body (non-traditional, working, family responsibilities). As a result, success might mean community college serves as a vehicle to career advancement or job placement rather than the immediate degree, however, results vary depending on how broadly the pool of potential completers is defined and how success is measured. Acquiring a degree is certainly a measurement of *success* and a notable goal and accomplishment, but success can be measured in different ways; success can be achieving a certain GPA (this is probably the most common measurement of success) (York et al., 2015), a

career advancement, a degree or certificate designation (although a certificate could be seen as a alterative award for students promoted by institutional advising in lieu of an associate degree or transfer programs), transfer to a 4-year institution, or a personal non-academic related achievement (intrinsic). A future study might look at how these measurements compete against each other based on definition.

Kuh et al. (2006) recognized that students do not come to their college experiences without preprogramed characteristics and expectations and therefore some are better prepared to succeed academically than others. However, their external experiences, pedagogies, and contexts can, and do, have measurable effects on students' academic success (York et. al., 2015). Kuh et al. (2006) defined student success as "academic achievement, engagement in educationally purposeful activities, satisfaction, acquisition of desired knowledge, skills and competencies, persistence, attainment of educational outcomes, and post-college performance." (p. 5).

In measuring success, future studies may consider how community colleges frame success not only based on completion rather than enrollment (Goldrick-Rab, 2010), but on the individual's definition of what long-term success looks and feels like (Rennie Center, 2020). Future studies must take a comprehensive, holistic, and equitable approach in evaluating student process. Schools must be better equipped to understand students' goals and intention via multiple pathways to success such as career planning and self-exploration skills, coupled with evaluating whether they have the needed competencies needed to advance in college or a career. Upon defining success, measurement can include two- and four-year graduation rates, time to degree completion, next term persistence, number of related degree credits, and employment to graduate ratios (Venit, 2019).

First Generation Students. First generation status has an effect on student retention rates as evident in Soria and Stebleton's (2012) study, finding statically significant ($p > 0.05$) differences between first generation and non-first generation students in academic measures. Young-Jones et al. (2013) found first generation college students need additional support to succeed within the academic setting in comparison to peers who have spent more time in college. A subgroup of first generation students are first generation students of color. Despite recent gains in access to higher education, first generation students of color are at risk of note completing their college degree (Ramos, 2019). Students of color face academic and non-academic challenges including financial, educational, and economic barriers. Future research must focus not only on the first generation student, but diverse subgroups in order to help these students recognize and develop their full potential. Research should consider the complexity of the experiences of these student of color subgroups and how they intersect with the institution, success, and retention (Santa-Ramirez et al., 2020). Intersectionality describes the interconnectedness of individuals and groups (Ramirez, 2017) and how they draw from multiple group experiences from socially constructed identities (Manuel, 2006) within society including race, gender, religion, sexual orientation that "do not function independently, but rather act in tandem as interlocking or intersectional phenomena" (Manuel, 2006, p. 175). Community colleges draw students from diverse backgrounds (Chen, 2019). The American Association of Community Colleges reported, approximately 36 percent of first-generation students are members of minorities including half of all Hispanic college students are first-generation, while 43 percent of Native Americans and 41 percent are African Americans (Chen, 2019). In contrast, the percentages of white and Asian students that are first-generation are typically much lower (Wilbur & Roscigno, 2016). These statistics lend themselves to exploring another subset of

student inequality. Given the impact first generation diversity plays on enrollment and subsequent completion, studies of this group are important because of the implications they hold for long-term labor market opportunities, life course outcomes, and more traditional sociological concerns regarding mobility and the status attainment process. A study of first generation patterns from other general effects of socio-economic status could further highlight inequalities this group faces including completion, the transition from the community college to a four-year institution, and identifying patterns that serve as predictors of success. Future themed studies could explore first generation students' confidence in their academic abilities as measured through their efforts in stepping forward and participating in college activities and/or seeking academic assistance when needed.

Despite the obstacles that first generation students face, 23 percent obtain an associate degree or certificate, and 24 percent achieve a bachelor's degree or higher (Falcon, 2015). Multiple elements contribute to the success of these students and are the subject of discussion in literature (Bers & Schuetz, 2014; Sandoval-Lucero et al., 2014; Stephens, et al., 2014). Future studies could explore high school and college readiness programs, academic and social integration, personal characteristics, and family support.

Minority Groups. While some researchers focused on specific ethnic groups, opportunities still exist for further exploration of the basic theoretical concepts of Tinto's model (Metz, 2002) as related to other minority groups including the physically challenged, gay and lesbian students, and subgroups of nontraditional students. Further research could explore the existence of gaps in the research as evidenced by the movement from the four-year perspective to the two-year level and inclusion of groups not included in previous research studies. Tinto's (1993) model of institutional departure explains student success for White students relatively

well, however, its relevance to students of color has been called into question (Lundberg, 2010). This model may underestimate the cost of social and academic integration for students of color, as the model focuses on integration into an environment that can feel foreign and alienating to students who are different from the dominant culture.

Tinto's model and the variables he described are important for evaluating retention, yet due to the variety of possible goals that a diverse student body presents, individual differences in goal commitment play a prominent part in understanding dropout rates (Henderikx et al., 2017). Understanding minority students' college relations contributes to engagement, which Tinto's models center on in the form of engagement. Therefore, failing to consider essential sociological elements of students' decision-making processes that are a result of their relationships external to their institutions can have impact on engagement and retention (Stuart et al., 2014). Understanding the student's perceptions on opportunities and risks in the job market and the student's socio-economic and academic exchanges in and outside of the institution are relevant in evaluating perceptions and actions to stay in school, transfer, drop out, get a job, and the value these students place on credentials and how they perceive their chances of getting a job.

Relevant to minorities who attend two-year institutions, Tinto's model focused on residential four-year, predominately White institutions where students ranged in age from 18 to 23 years old rather than non-residential, non-traditional aged community college students (Lundberg, 2010; Stuart et al., 2014), thus Tinto's model works differently among community college students than it does among other institutions (Deil-Amen, 2011). There is a need for an alternate model of student persistence to fill in gaps not addressed by Tinto's framework given the non-residential, two-year colleges that are in existence today. Tinto's (1993) theory of student retention does offer examination of how mentoring can serve as an effective strategy to

assist African American students with the social adjustment in the institution when the institution makes a conscious effort to make *connection* with the student (Sinanan, 2016). Previously in this study, it was noted that institutions should make *connections* rather than *integration.* Styron, 2010) notes an important factor that affects college students' persistence is that of being socially integrated and connected with others, especially other students. Tinto's (1993) model of institutional departure explains student success for White students relatively well, however, its relevance to students of color has been called into question (Lundberg, 2010). This model may underestimate the cost of social and academic integration for students of color, as the model focuses on integration into an environment that can feel foreign and alienating to students who are different from the dominant culture.

Recommendations for Future Practice

Updated Surveys. The CCSEQ used in this study is a validated instrument with proven validity and reliability in surveying community college students on retention and success related factors (Ethington & Polizzi, 1996; Strayhorn & Johnson, 2014). However, the survey needs updating to meet many of the changes in the college environment such as a growing international student population, the technological explosion that has occurred since the creation of the CCSEQ, certainly the growing online learning platform, the growing disparity in income, which impacts quality of life, and the number of jobs a student may hold at one time. Researchers at North Carolina State University designed and encouraged students to participate in the Revealing Institutional Strengths and Challenges (RICS) survey (Smith, 2017).

Revealing Institutional Strengths and Challenges Survey (RICS). This RISC survey asks students about the challenges they faced during the current semester in five broad areas: academic support services, campus environment, finances and financial aid, succeeding in their

courses, and work and personal issues (Porter & Umbach, 2019). Like the CCSEQ, the RISC has multiple sections with unique challenges to address, but has focus on root causes such as errors in paperwork, not being advised properly, difficulty using course technology in an online course, and the student's overall perceptions of the college. The RICS survey uses a branching approach that leads students down pathways to survey completion, thus reducing the overall completion time (Porter & Umbach, 2019). More granular topics in the survey include work, paying college expenses, family and friends, online classes, parking on campus, developmental classes, faculty, health and disability, doing college level work, and registering for class/courses.

College Persistence Questionnaire (CPQ). Understanding the unique composition of the student population attending college. Tinto (2006-2007) recognized the need to tailor assessments to a changing world, specifically when it came to differentiating types of institutions students attended stating "We have come to understand how the process of student retention differs in different institutional settings, residential and non-residential, two- and four-year" (p. 4). Metz (2004-2005) made a similar assessment after reviewing years of retention research and urged that schools develop an understanding of predictors that operate specifically within their institutions. Davidson et al. (2009) joined Tinto and Metz in arguing against a "one size fits all" approach to retention (p. 2). Instead, Davidson et al. (2009) advocated for individualization, both at the level of the student and the institution stating "An effective system for reducing attrition must not only target at-risk students; it must also *facilitate* the design of effective interventions" (p. 2). Thus, they created the College Persistence Questionnaire (CPQ).

The purpose of this questionnaire (CPQ) is more *predictive and preventative* in nature enabling the users to: (a) identify students at risk of dropping out, (b) discover why an individual student is likely to discontinue his or her education, and (c) determine the variables

that best distinguish undergraduates who will persist from those who will not persist at their institutions (Davidson et al., 2009).

The CPQ is a self-reported instrument that integrates 34 items evaluating six dimensions: (1) academic integration, (2) social integration, (3) supportive services satisfaction, (4) institutional commitment, (5) degree commitment, and (6) academic conscientiousness (the student's interest in academic work and the effort he or she applies to that work). The items are answered on a 5-point Likert-type scale ranging from *1 = "very dissatisfied", to 5 = "very satisfied"* (García-Ros et al., 2019).

The questionnaire assists in identifying at-risk students and allowing college support personnel to concentrate their energies on those most in need of their services. From a root cause perspective, the CPQ allows for the examination of factors scores and single items that often reveal the circumstances prompting a particular student's departure (Davidson et al., 2009). In this study, the importance of evaluating the first year student was stressed. The CPQ can be administered to this group of students and using scale scores, predict whether these students return for their second consecutive year. Using the CPQ as a screening tool to identify students at academic and social risk is a new concept (Betts et al., 2017). As a screening tool, the CPQ has been used successfully in liberal arts colleges for new students in their first semester to try and determine persistence and attrition rates (Betts, 2017). Identifying differences bases on demographic variables coupled with the scaled CPQ questions, could allow academic coaches and faculty member to distinguishing At Risk (AR) and Non at Risk (NAR) students.

Identify Vulnerable Populations and Intrinsic Retention Factors. Retention of college students is a critical issue in Higher Education (Tinto, 1993). Universities continue to work to get a grasp on this issue as persistence has generally been seen as a problem in completing college

(Graham et al., 2013; Tinto, 1993) as wells as attribution rates, which are of fundamental importance to these academic institutions. Of importance is the ability of the institution to identify early in their academic program and accurately when and why they considered dropping out or withdrawing from school. The ability to identify the population at greater risk can increase the ability to retain a student population. Likewise, identifying retention factors such as, resiliency, self-efficacy, and persisting characteristics of successful students and first-generation students can benefit college administrators in developing recruitment and retention programs to facilitate student success (Garza et al., 2014). "As enrollment continues to rise and the funding for programs continues to shrink, the significance of identifying factors that assist in student success and retention plays an integral part in the overall success of institutions of higher learning (Garza et al., 2014, p.3).

Social Inequalities Affecting Community College Success. Future research could impact college practices by the further exploration of root causes of low rates of completion among community college students based on social inequalities. Social inequality is linked to variables such as race, gender, language, income, and wealth (Ford, 2014). This persistence of social inequalities in higher education, seriously compromises the potential of higher education to serve as a vehicle for social mobility (Boliver, 2017). These inequalities could be bases on institutional policies, procedures, and practices that are biased and discriminatory like designated cutoff scores, weighted matrices, sibling preferences, the time of year when students are tested, the age/grade level when students are evaluated that tend to give specific groups advantage over others (Ford, 2014).

Future research on social inequalities gathering socio-economic data could identify, describe, and analyze the substantial barriers community college students face and therefore the

challenges that institutions must overcome to help students succeed in earning degrees. Some community college practitioners argue that insufficient attention is given to the wide variation in students' preparation and educational expectations that can lead to inaccurate assessment of success and consequently, focus on factors outside of colleges' control (Bailey et al., 2005). Therefore, community colleges can develop policies that address social inequalities based on student characteristics. Relative to other undergraduates, students attending the nation's two-year public/ community colleges come from a wider range of family backgrounds (Goldrick-Rab, 2010). These wider strata of family backgrounds are often identified as social and economic characteristics of community college students and are often termed demographic (implying that they are hereditary rather than reflecting a position in a stratification system). Greater racial, socioeconomic, and gender diversity among community college students is often treated as an *explanation* for institutional outcomes. Moving beyond simple explanations of diversity and identifying root causes might serve to identify social inequalities in the community college system. There is a correlation between students' characteristics and college outcomes, but this correlation does not identify mechanisms through which those relationships operate. The college and its policies play a role in managing institution and student relationships. Beyond the analysis of socioeconomic backgrounds and related statistics on completion, there needs to be policies and institutional practices that instead discuss the underlying reasons why such a relationship exists. Doing so increases the potential for acting on underlying inequalities.

One way to stimulate a shift in policy reform is to reorient the measurement of student success to account for structural and institutional constraints. An example might be a shift from measuring institutional graduation rates based solely on the financial needs of the student and adjust the measurements for relative state support or institutional expenditures. This type of shift

to performance-based funding and greater institutional accountability could work in tandem with shifts in the measurement of success.

Conclusion

There are limitations in this study to consider for future research. Most of the data for the study, including all the predictor variables, were based on self-report measures. While it is important to understand the students' own perceptions of their efforts toward degree completion, future research would benefit from a more ecological approach that would include measures of the social environment including feedback from family members and peers, evaluating the influence of work and first generation student status. While data was initially gathered on first generation status for this study, it was not used due to unequal sample sizes. Although main effects of ethnicity were included as a control, ethnic differences in the relations between variables was not examined. This study was also conducted at one urban community school where a large number of the minority students were from one ethnic background (African American). The ethnic minority participants in this study are likely to be typical of many students who attend minority-serving community colleges, rather than minority students attending mainly white community colleges where research has typically been conducted.

African American students still maintain the stigma of lower graduation rates. A study with a larger population would possibly yield more statistical power for analysis, however, 10 – 15 participants per predictor continuous variable, or per category of any categorical variable should be sufficient (Field, 2013). As is true with any study, the findings of this study must be interpreted based on the specific population that was sampled. Generalizations to other ethnic minority college student populations must be made with caution. Finally, this study was not longitudinal having covered only one graduating semester. It would be beneficial to determine

the length of time the students are enrolled in the community college from their initial enrollment to graduation and if there were any breaks in their attendance. This would be interesting to know given many community college students are non-traditional, have families, and many times work one or more jobs. These factors could serve as predictors of outcomes later in college, including persistence in finishing a degree.

References

Aboagye, E., Yawson, J. A., & Appiah, K. N. (2020). COVID-19 and E-learning: The challenges of students in tertiary institutions. *Social Education Research*, 1-8.

Acevedo-Gil, N., & Zerquera, D. D. (2016). Community college first-year experience programs: Examining student access, experience, and success from the student perspective. *New Directions for Community Colleges*, 2016(175), 71-82.

Acrobatiq. (2017). The changing face of today's student: More diverse, older and requiring more personalized learning. *Acrobatiq* - Carnegie Mellon. http://acrobatiq.com/the-changing-face-of-todays-student-more-diverse-older-and-requiring-more-personalized-learning/.

ACT. (2013). *The condition of college and career readiness 2013: African American students.* https://www.act.org/content/dam/act/unsecured/documents/CCCR13-NationalReadinessRpt.pdf.

Adelman, C. (2006). *The toolbox revisited. Paths to degree completion from high school through college.* U.S. Dept. of Education. https://files.eric.ed.gov/fulltext/ED490195.pdf.

Adnan, M., & Anwar, K. (2020). Online learning amid the COVID-19 pandemic: Students' perspectives. *Online Submission*, 2(1), 45-51.

Allen, W. (1992). The Color of Success: Black student outcomes at predominantly White and historically black public colleges and universities. *Harvard Educational Review*, 62 (1), 26-44.

Aljohani, O. (2016). A Comprehensive review of the major studies and theoretical models of student retention in higher education. *Higher Education Studies*, 6(2), 1-18.

American Association of Community Colleges. (2013a). *American Association of Community Colleges—Community college fact sheet—2013*. AACC. http://www.aacc.nche.edu/AboutCC/Documents/FactsPrint.pdf.

American Association of Community Colleges. (2016). Data Points. *On-campus Housing*. 4(23). https://www.aacc.nche.edu/wp-content/uploads/2017/09/DataPoints_No23.pdf.

Aragón, O. R., Dovidio, J. F., & Graham, M. J. (2017). Colorblind and multicultural ideologies are associated with faculty adoption of inclusive teaching practices. *Journal of Diversity in Higher Education,* 10(3), 201.

Aragon, S., & Johnson, E. (2008). Factors influencing completion ad non-completion of community college online courses. *The American Journal of Distance Education*, 22, 146-158. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.461.8118&rep=rep1&type=pdf . 10.1080/0892364080223996.

Aries, E., & Seider, M. (2005). The interactive relationship between class identity and the college experience: The case of lower income students. *Qualitative Sociology*, 28(4), 419-443.

Ashong, C. Y. & Commander, N. E. (2012). Ethnicity, gender, and perceptions of online learning in higher education. *MERLOT Journal of Online Learning and Teaching*, 8(2).

Astin, A.W. (1985). Involvement: The cornerstone of excellence. Change, 17(4), 34–39.

Astin, A.W. (1993). *What matters in college? Four critical years revisited*. Jossey-Bass.

Astin, A.W. (1999). Student involvement: A developmental theory for higher education. *Journal of College Student Development*, 40(5), 518–529. http://www.middlesex.mass.edu/tutoringservices/downloads/astininv.pdf.

Attinasi, L. C., Jr. & Nora, A. (1992). *Diverse students and complex issues: A case for multiple methods in college student research*. In F. K. Stage (Ed.), Diverse methods for research and assessment (pp. 13-28). American College Personnel Association.

Bacher-Hicks, A., Goodman, J., & Mulhern, C. (2020). *Inequality in household adaptation to schooling shocks: Covid-induced online learning engagement in real time* (No. w27555). National Bureau of Economic Research.

Bailey, T., Jenkins, D., & Leinbach, T. (2005). *What We Know about Community College Low-Income and Minority Student Outcomes:* Descriptive Statistics from National Surveys. Community College Research Center.

Bal, I. A., Arslan, O., Budhrani, K., Mao, Z., Novak, K., & Muljana, P. S. (2020). The Balance of Roles: Graduate Student Perspectives during the COVID-19 Pandemic. *Tech Trends*, 1-3.

Balest, M.A. (2001). *An analysis of activities, work, and achievement among community college students* (Doctoral Dissertation). Retrieved from: The University of Memphis, ProQuest Dissertations Publishing, 3017948.

Barbatis, P. (2010). Underprepared, Ethnically Diverse Community College Students: Factors Contributing to Persistence. *Journal of Developmental Education*, 33(3), 16.

Barbour, M., & Plough, C. (2009). Helping to make online learning less isolating. *Tech Trends*, 53(4), 57.

Barnett, M. (2004). A Qualitative Analysis of Family Support and Interaction among Black College Students at an Ivy League University. *Journal of Negro Education*, 73(1), 53-68.

Barnett, E, A. (2010). Validation experiences and persistence among community college students. *The Review of Higher Education*, 34(2), 193-23.

Bates, D., Mächler, M., Bolker, B., & Walker, S. (2014). Fitting linear mixed-effects models using lme4. arXiv preprint arXiv:1406.5823. *Journal of Statistical Software*. https://arxiv.org/pdf/1406.5823.pdf.

Bean, J. P. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education*, 12(2), 155-187.

Bean, J. P. (1982). Conceptual models of student attrition: How theory can help the institutional researcher. *New Directions for Institutional Research*, 1982(36), 17-33.

Bean, J. P., & Eaton, S. B. (2000). A psychological model of college student retention. *Reworking the Student Departure Puzzle*, 1, 48-61.

Bean, J. P., & Metzner, B. S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research*, 55(4), 485-540.

Berge, Z. L., & Huang, Y. P. (2004). 13: 5 *A model for sustainable student retention: A holistic perspective on the student dropout problem with special attention to e-Learning.* DEOSNEWS [Online] www. researchgate. net/profile/Zane_Berge/publication/237429805.

Berger, J. B., Ramirez, G. B., & Lyon, S. (2012). *Past to present: A historical look at retention. In A. Seidman (Ed.)*, College Student Retention: Formula for Student Success (pp. 8-9). Rowman & Littlefield.

Berkner, L., & Hunt-White, T. (2008). *Descriptive Summary of 2003-04 Beginning Postsecondary Students: Three Years Later*. NCES 2008-174. National Center for Education Statistics. https://files.eric.ed.gov/fulltext/ED502174.pdf.

Bers, T., & Schuetz, P. (2014). Nearbies: A missing piece of the college completion conundrum. *Community College Review*, 42(3), 167-183.

Bers, T. H., & Smith, K. E. (1991). Persistence of community college students: The influence of student intent and academic and social integration. *Research in Higher Education,* 32(5), 539-556.

Betts, K. J., Shirley, J. A., & Kennedy, R. (2017). Identifying Academic & Social Risk Factors of Baccalaureate Nursing Students Using the College Persistence Questionnaire. *Journal of Education and Practice,* 8(12), 159-167.

Boliver, V. (2017). Misplaced optimism: How higher education reproduces rather than reduces social inequality. *British Journal of Sociology of Education*, 38(3), 423-432.

Bourne, J., Harris, D., & Mayadas, F. (2005). Online engineering education: Learning anywhere, anytime. *Journal of Engineering Education,* 94(1), 131-146.

Bowman, N. A. (2010). Can 1st-year college students accurately report their learning and development? *American Educational Research Journal,* 47(2), 466-496.

Bowman, N. A. (2011). Validity of college self-reported gains at diverse institutions. *Educational Researcher,* 40(1), 22-24.

Boyd, D. (2004). The characteristics of successful online students. *New Horizons in Adult Education and Human Resource Development,* 18(2), 31-39.

Boykin, W. (1985). *The triple quandary and the schooling of AfroAmerican children*. In U. Neisser (Ed.), The school achievement of minority children: New perspectives (pp. 57–91). Lawrence Erlbaum.

Boykin, W. (1994). *Afrocultural expression and its implications for schooling*. In E.R Hollins, J. E. King, & W.C. Hyman (Eds.), Teaching diverse populations: Formulating a knowledge base (pp. 243–273). State University of New York Press.

Braxton, J. M., Hirschy, A. S., & McClendon, S. A. (2004). *Understanding and reducing college student departure*. San Francisco: Jossey-Bass.

Braxton, J. M., Milem, J. F., & Sullivan, A. S. (2000). The influence of active learning on the college student departure process: Toward a revision of Tinto's theory. *The Journal of Higher Education,* 71(5), 569-590.

Braxton, J.M., Sullivan, A. S. & Johnson, R. M. (1997). Appraising Tinto's theory of college student departure. In J.C. Smart (Ed.), *Higher education: Handbook of theory and research*, (Vol. 12. pp. 107-164). Agathon.

Braxton, J. M., Vesper, N. and Hossler, D. (1995). Expectations for college and student persistence, *Research in Higher Education*, 36(5), 595-612.

Bronfenbrenner, U., & Morris, P. A. (1998). *The ecology of developmental processes*. In W. Damon & R. E. Lerner (Eds.), Handbook of Child Psychology, Vol. 1, Theoretical Models of Human Development (5th ed.). Wiley.

Bronfenbrenner, U. (2004). *Appendix B: Bronfenbrenner's ecological model of child development*. http://www3.uakron.edu/schulze/401/readings/BronfenbrennersEcologicalModel.pdf.

Brooks, M., & Steen, S. (2010). "Brother Where Art Thou?" African American Male Instructors' Perceptions of the Counselor Education Profession. *Journal of Multicultural Counseling and Development,* 38(3), 142-153.

Brooks, M., Jones, C., & Burt, I. (2013). Are African-American male undergraduate retention programs successful? An evaluation of an undergraduate African-American male retention program. *Journal of African American Studies*, 17(2), 206-221.

Burt, D. R. (2009). *African American student retention: A study of the effects of an intrusive advising intervention at a career college*. Western Michigan University. https://search.proquest.com/openview/2c84489049d3c6d5f6dbd2450dda382c/1?pq-origsite=gscholar&cbl=18750&diss=y.

Bush, E. C., & Bush, L. V. (2010). Calling Out the Elephant: An Examination of African American Male Achievement in Community Colleges. *Journal of African American Males in Education,* 1(1), 40-62.

Cabrera, A. F., Castaneda, M. B., Nora, A., & Hengler, D. (1992). The convergence between two theories of college persistence. *Journal of Higher Education*, 63(2), 143-164.

Cabrera, A. F., Nora, A., Terenzini, P. T., Pascarella, E., & Hagedorn, L. S. (1999). Campus racial climate and the adjustment of students to college. *Journal of Higher Education*, 70(2), 134-160.

Carifio, J., & Perla, R. (2008). Resolving the 50-year debate around using and misusing Likert scales. *Medical Education*, 42(12), 1150-1152.

Carter, D. F. (1999). The impact of institutional choice and environments of African-American and white students' degree expectations. *Research in Higher Education*, 40(1), 17-41.

Carter, D. F., & Hurtado, S. (2007). Bridging key research dilemmas: Quantitative research using a critical eye. *New Directions for Institutional Research*, 133, 25-35.

Castillo, M. (2013). At issue: Online education and the new community college student. *The Community College Enterprise*, 19(2), 35-46.

Chen, G. (2019). Special Challenges and Support for First-Generation Community College Students. *Community College Review*.

https://www.communitycollegereview.com/blog/special-challenges-and-support-for-first-generation-community-college-students.

Choy, S. (2002). *Access and persistence: Findings from 10 years of longitudinal research on students* (Item #309375). American Council on Education.

Clagget, C. (1992). Enrollment Management, In Whitney, M.A., Porter, J.D. and Fenske, R.H. (Eds.), *The Primer for Institutional Research.* Resources for Institutional Research. Tallahassee: Association for Institutional Research, 12-24.

Clauss-Ehlers, C. S., & Parham, W. D. (2014). Landscape of diversity in higher education: Linking demographic shifts to contemporary university and college counseling center practices. *Journal of Multicultural Counseling and Development*, 42(2), 69-76.

Cochran, J. D., Campbell, S. M., Baker, H. M., & Leeds, E. M. (2014). The role of student characteristics in predicting retention in online courses. *Research in Higher Education*, 55, 27-48.

Cohen, A. M., & Brawer, F. B. (2003). *The American community college*. John Wiley & Sons.

Cokley, K. (2000). An investigation of academic self-concept and its relationship to academic achievement in African American college students. *Journal of Black Psychology*, 26(2), 148-164.

Cokley, K., Cody, B., Smith, L., Beasley, S., Miller, I. K., Hurst, A., Stone, S., & Jackson, S. (2014). Bridge over troubled waters: Meeting the mental health needs of black students. *Phi Delta Kappan*, 96(4), 40-45.

Colby, S. L., & Ortman, J. M. (2017). *Projections of the size and composition of the US population: 2014 to 2060: Population estimates and projections*.

https://www.census.gov/content/dam/Census/library/publications/2015/demo/p25-1143.pdf.

Cole, M. T., Shelley, D. J., & Swartz, L. B. (2014). Online instruction, e-learning, and student satisfaction: A three year study. *The International Review of Research in Open and Distributed Learning,* 15(6), 111-131.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology,* 94, 95-120.

Coley, R. J. (2000). *The American Community College Turns 100: A Look at Its Students, Programs, and Prospects*. Policy Information Report. Retrieved 03/25/18: https://files.eric.ed.gov/fulltext/ED441533.pdf.

Collins, S. Y. (2014). *Racial identity theory and its perceived impact for African American students in an online distance learning program* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3682202).

Complete College America. (2011). *Time is the enemy*. https://www.luminafoundation.org/files/resources/time-is-the-enemy.pdf.

Connolly, C. (2016*). Student retention literature - Tinto's model. Discussions on Higher Education, Learning & Life*. https://corneliathinks.wordpress.com/2016/09/20/tintos-model/.

Cooper, R., & Thornton, T. (1999). Preparing students for the new millennium. *Journal of Negro Education*, 68(1), 1-4.

Cox, J. C. (2012). *Building the bridges to opportunity: Understanding the persistence and departure of African Americans who integrated a Southern urban university*. (Doctoral

Dissertation). The University of Memphis Electronic Thesis & Dissertation (ETD). Repository 505).

Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches.* Sage publications.

Crisp, G., & Nora, A. (2010). Hispanic student success: Factors influencing the persistence and transfer decisions of Latino community college students enrolled in developmental education. *Research in Higher Education*, 51(2), 175-194.

Cuyjet, M. J. (1997). Helping African American men succeed in college: Their needs and their perceptions. *New Directions for Student Services*, 1-16. http://web.a.ebscohost.com.ezproxy.memphis.edu/ehost/pdfviewer/pdfviewer?vid=3&sid=4f0d6303-15ec-4871-b566-28e5d18e680f%40sessionmgr4008.

Davis, J. E., & Jordan, W. (1994). The effects of school context, structure, and experiences on African American males and high school. *The Journal of Negro Education*, 63(4), 570-587.

Davidson, W. B., Beck, H. P., & Milligan, M. (2009). The college persistence questionnaire: Development and validation of an instrument that predicts student attrition. *Journal of College Student Development*, 50(4), 373-390.

Davidson, C., & Wilson, K. (2013). Reassessing Tinto's concepts of social and academic integration in student retention. *Journal of College Student Retention: Research, Theory & Practice*, 15(3), 329-346.

Dare, L. A., Zapata, L., & Thomas, A. G. (2005). Assessing the needs of distance learners: A student affairs perspective. *New Directions for Student Services*, 112, 39-53.

DeCarlo, L. T. (1997). On the meaning and use of kurtosis. *Psychological Methods*, 2(3), 292.

Deil-Amen, R. (2011). Socio-academic integrative moments: Rethinking academic and social integration among two-year college students in career-related programs. *The Journal of Higher Education*, 82(1), 54-91.

Dennis, J. M., Phinney, J. S., & Chuateco, L. I. (2005). The role of motivation, parental support, and peer support in the academic success of ethnic minority first-generation college students. *Journal of College Student Development*, 46(3), 223-236.

Derby, D. C., & Watson, L. W. (2006). African-American retention within a community college: Differences in orientation course enrollment. *Journal of College Student Retention: Research, Theory & Practice*, 8(3), 377-390.

DeSousa, J. (2001). *Reexamining the educational pipeline for African-American students. In Jones, L. Retaining African Americans in higher education: Challenging paradigms for retaining students, faculty, and administrators*, 21-44. Sterling VA: Stylus Publishing, LLC. https://books.google.com/books?hl=en&lr=&id=Jb6no7WE_1cC&oi=fnd&pg=PA21&dq=non+traditional+students+DeSousa,+2001&ots=JrCeXAayEd&sig=wLZaxKXgeFgyifgb9g4DAjxOoPY#v=onepage&q&f=false.

Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, 49(1), 5-22.

Di Pietro, G. (2017). The academic impact of natural disasters: Evidence from the L'Aquila earthquake. *Education Economics*,26(1), 62–77. https://doi.org/10.1080/09645292.2017.1394984.

Donne, J. (1624). *Devotions upon emergent occasions and several steps in my sickness.* Meditation XVII.

Donnor, J. K., & Shockley, K. G. (2010). Leaving Us behind: A Political Economic Interpretation of NCLB and the Miseducation of African American Males. *Educational Foundations*, 24, 43-54.

Dougherty, K. J., & Kienzl, G. S. (2006). It's not enough to get through the open door: Inequalities by social background in transfer from community colleges to four-year colleges. *Teachers College Record*, 108(3), 452–487.

Douzenis, C. (1994). The community college student experiences questionnaire: Introduction and application. *Community College Journal of Research and Practice*, 18(3), 261-268.

Dowd, A. C., Sawatzky, M., & Korn, R. (2011). Theoretical foundations and a research agenda to validate measures of intercultural effort. *The Review of Higher Education*, 35(1), 17-44.

Dupin-Bryant, P. (2004). Pre-entry variables related to retention in online distance education. *American Journal of Distance Education*, 18(4), 1999. https://www.tandfonline.com/doi/abs/10.1207/s15389286ajde1804_2. DOI: 10.1207/s15389286ajde1804_2.

Durkheim, E. *Suicide* (J. Spaulding & G. Simpson, trans). Glencoe: The Free Press, 1961.

El Mansour, B., & Mupinga, D. M. (2007). Students' positive and negative experiences in hybrid and online classes. *College Student Journal*, 41(1), 242.

Epps, E. G. (1995). Race, class, and educational opportunity: Trends in the sociology of education. *Sociological Forum,* 10(4), 593-608.

Ethington, C. A. (2000). Influences of the normative environment of peer groups on community college students' perceptions of growth and development. *Research in Higher Education,* 41(6), 703-722.

Ethington, C. A., & Horn, R. A. (2007). An examination of Pace's model of student development and college impress. *Community College Journal of Research and Practice,* 31(3), 183-198.

Ethington, C. A., & Polizzi, T. B. (1996). An assessment of the construct validity of the CCSEQ quality of effort scales. *Research in Higher Education,* 37(6), 711-730.

Falcon, L. (2015). Breaking down barriers: First-generation college students and college success. *Innovation Showcase*, 10(6).

Faculty Focus Company News (2015). Faculty Focus. *Babson Study: Distance education enrollment growth continues, but at slower rate ever*. https://www.facultyfocus.com/articles/online-education/babson-study-distance-education-enrollment-growth-continues-slowest-rate-ever/.

Fain, P. (2019). *College enrollment decline continues*. Inside Higher Ed. https://www.insidehighered.com/quicktakes/2019/05/30/college-enrollment-declines-continue.

Farley, J. E. (2002). Contesting our everyday work lives: The retention of minority and working-class sociology undergraduates. *The Sociological Quarterly,* 43(1), 1-25.

Farley, R., & Frey, W. H. (1994). Changes in the segregation of whites from blacks during the 1980s: Small steps toward a more integrated society. *American Sociological Review*, 23-45.

Farmer, E. D., & Hope, W. C. (2015). Factors that influence African American male retention and graduation: The case of Gateway University, a historically black college and university. *Journal of College Student Retention: Research, Theory & Practice*, 17(1), 2-17.

Feagin, J. R., Vera, H., & Imani, N. (1996). *The agony of education: Black students at White colleges and universities.* Routledge.

Feagin, J. R., Vera, H., & Imani, N. (2014). *The agony of education: Black students at a White university*, 1-20. Routledge.

Feliciano, C. (2006). Beyond the family: The influence of premigration group status on the educational expectations of immigrants' children. *Sociology of Education*, 79(4), 281-303.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. Sage.

Field, A. (2018). *Discovering statistics using IBM SPSS statistics: North American Edition (5th ed.).* Sage.

Fleming, W. B., Howard, K., Perkins, E., & Pesta, M. (2005). The college environment: Factors influencing student transition and their impact on academic advising. *The Mentor: Innovative Scholarship on Academic Advising*, 7.

Flowers, L. A. (2004). Retaining African-American students in higher education: An integrative review. *Journal of College Student Retention: Research, Theory & Practice*, 6(1), 23-35.

Flowers, L. A., Milner, H. R., & Moore, J. I. (2003). Effects of Locus of Control on African American High School Seniors' Educational Aspirations: Implications for Preservice and Inservice High School Teachers and Counselors. *High School Journal,* 87(1), 39-50.

Fontaine, S. J., & Cook, S. M. (2014). Co-curricular engagement for non-traditional online learners. *Online Journal of Distance Learning Administration,* 17(3), 1-10, n3.

Ford, D. Y. (2014). Segregation and the underrepresentation of Blacks and Hispanics in gifted education: Social inequality and deficit paradigms. *Roeper Review,* 36(3), 143-154.

Ford, D. Y., Harris III, J. J., Tyson, C. A., & Trotman, M. F. (2001). Beyond deficit thinking: Providing access for gifted African American students. *Roeper Review,* 24(2), 52-58.

Ford, D. Y., Moore, J. L., & Trotman-Scott, M. (2011). Key theories and frameworks for improving the recruitment and retention of African American student in gifted education. *The Journal of Negro Education,* 80 (3), 239-253.

Fox, J. (2015). *Applied regression analysis and generalized linear models (3rd. ed.).* Sage Publications.

Frakes, J. T. (2005). *Relationship among grade point average, self-reported quality of effort, estimate of gains and successful completion of orientation to college*. (Doctoral Dissertation). Retrieved from The University of Memphis, ProQuest Dissertations Publishing, 3167493.

Friedlander, J., & MacDougall, P. R. (1992). Achieving student success through student involvement. *Community College Review,* 20(1), 20-28.

Friedlander, J., Pace, C. R., & Lehman, P. W. (1991). *CCSEQ*. Center for the Study of Higher Education, University of Memphis.

Friedlander, J., Pace, C. R., Murrell, P. H., & Lehman, P. H. (1990, 1999, revised 2011). *The community college student experiences questionnaire*. Center for the Study of Higher Education, University of Memphis, Memphis, TN.

Fries-Britt, S., & Turner, B. (2002). Uneven stories: Successful Black collegians at a Black and a White campus. *The Review of Higher Education*, 25(3), 315-330.

Fry, R. (2002). *Latinos in higher education: Many enroll, too few graduate*. Washington, DC: Pew Hispanic Center.

García-Ros, R., Pérez-Gónzalez, F., Castillo Fuentes, M., & Cavas-Martínez, F. (2019). Predicting first-year college student retention: Validation of the college persistence questionnaire in a Spanish sample. *Sustainability*, 11(16), 4425.

Garza, K. K., Bain, S. F., & Kupczynski, L. (2014). Resiliency, self-efficacy, and persistence of college seniors in higher education. *Research in Higher Education*, 26, 1-19.

Gay, G. (2010). Acting on Beliefs in Teacher Education for Cultural Diversity. *Journal of Teacher Education*, 61(1/2), 143-152.

George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference.* 11.0 update (4th ed.). Allyn & Bacon.

Ginder, S. A., Kelly-Reid, J. E., & Mann, F. B. (2014). *Graduation Rates for Selected Cohorts, 2005-10; and Student Financial Aid in Postsecondary Institutions, Academic Year 2012-13. First Look* (Provisional Data). NCES 2014-105. National Center for Education Statistics.

Glen, S. (n.d.). *Covariate Definition in Statistics. Elementary Statistics for the rest of us!* StatisticsHowTo.com. https://www.statisticshowto.com/covariate/.

Glenn, F. S. (2003). The retention of Black male students in Texas public community colleges. *Journal of College Student Retention: Research, Theory & Practice*, 5(2), 115-133.

Gliem, J. A., & Gliem, R. R. (2003). *Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales*. Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education.

Goldrick-Rab, S. (2010). Challenges and opportunities for improving community college student success. *Review of Educational Research*, 80(3), 437-469.

Gordon, D. M., Iwamoto, D., Ward, N., Potts, R., & Boyd, E. (2009). Mentoring urban Black middle-school male students: Implications for academic achievement. *The Journal of Negro Education*, 78(3), 277.

Gusa, D. L. (2010). White institutional presence: The impact of Whiteness on campus climate. *Harvard Educational Review*, 80(4), 464-490.

Gordon-Nembhard, J. (2005). On the road to democratic economic participation: Educating African American youth in the postindustrial global economy. In J. E. King (Ed.), *Black education: A transformative research and action agenda for the new century* (pp. 225-239). Washington, DC: American Educational Research Association.

Gould, S. J. (1996). *The Mismeasure of Man*. WW Norton & Company.

Graff, M. (2003). Cognitive style and attitudes towards using online learning and assessment methods. *Electronic Journal of e-Learning*, 1, 21-28. https://files.eric.ed.gov/fulltext/EJ1099141.pdf.

Graham, M. J., Frederick, J., Byars-Winston, A., Hunter, A. B., & Handelsman, J. (2013). Increasing persistence of college students in STEM. *Science*, 341(6153), 1455-1456.

Greene, T. G., Marti, C. N., & McClenney, K. (2008). The effort—outcome gap: Differences for African American and Hispanic community college students in student engagement and academic achievement. *The Journal of Higher Education*, 79(5), 513-539.

Guiffrida, D. A. (2003). African American student organizations as agents of social integration. *Journal of College Student Development*, 44(3), 304-319.

Guiffrida, D. (2005). Other mothering as a framework for understanding African American students' definitions of student-centered faculty. *The Journal of Higher Education*, 76(6), 701-723.

Guiffrida, D. A. (2006). Towards a cultural advancement of Tinto's theory. *The Review of Higher Education*, 29(4), 451-472.

Hagedorn, L. S. (2102). *How to define retention: a new look at an old problem*. In A. Seidman (Ed.), College Student Retention: Formula for Student Success (pp. 81-100). Rowman & Littlefield. https://books.google.com/books?hl=en&lr=&id=RGCI36TwZh0C&oi=fnd&pg=PA81&dq=Hagedorn+2005+staying+in+school+until+completion+of+a+degree&ots=9lyt5c6o53&sig=qsvUFIyWzbjXNMbsJW4nGhah0yc#v=onepage&q=Hagedorn%202005%20staying%20in%20school%20until%20completion%20of%20a%20degree&f=false.

Hagedorn, L. S., Maxwell, W., & Hampton, P. (2001). Correlates of retention for African-American males in community colleges. *Journal of College Student Retention: Research, Theory & Practice*, 3(3), 243-263.

Haller, A. O., & Portes, A. (1973). Status attainment processes. *Sociology of Education*, 51-91.

Halpin, R. L. (1990). An application of the Tinto model to the analysis of freshmen persistence in a community college. *Community College Review*, 17(4), 22-32.

Hannay, M., & Newvine, T. (2006). Perceptions of distance learning: A comparison of online and traditional learning. *Journal of Online Learning and Teaching*, 2(1), 1-11.

Harper, S. R. (2010). An anti-deficit achievement framework for research on students of color in STEM. *New Directions for Institutional Research*, 2010(148), 63-74.

Harper, S. R., & Hurtado, S. (2007). Nine themes in campus racial climates and implications for institutional transformation. *New Directions for Student Services*, 120, 7-24.

Harper, S. R., & Nichols, A. H. (2008). Are they not all the same? Racial heterogeneity among Black male undergraduates. *Journal of College Student Development*, 49, 199-214.

Harris III, F., & Wood, J. L. (2013). Student success for men of color in community colleges: A review of published literature and research, 1998–2012. *Journal of Diversity in Higher Education*, 6(3), 174.

Haynie, D. (2014). U.S. News Data: *Online programs attract fewer minority undergrads. U.S. News & World Report.* https://www.usnews.com/education/online-education/articles/2014/10/29/us-news-data-online-programs-attract-more-minority-undergrads.

Hazari, Z., Sadler, P. M., & Sonnert, G. (2013). The science identity of college students: Exploring the intersection of gender, race, and ethnicity. *Journal of College Science Teaching*, 42(5), 82-91.

Heilbrun, A. B. Jr. (1965). Personality factors in college dropout. *Journal of Applied Psychology*, 49(1), 1.

Henderikx, M. A., Kreijns, K., & Kalz, M. (2017). Refining success and dropout in massive open online courses based on the intention–behavior gap. *Distance Education*, 38(3), 353-368.

Herndon, M. K., & Hirt, J. B. (2004). Black students and their families: What leads to success in college. *Journal of Black Studies*, 34(4), 489-513.

Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods*, 1(1), 104-121.

Hinkle, D. E., Wiersma, W., & Jurs, S. G. (2003). *Applied Statistics for the Behavioral Sciences* (5th Ed.). Houghton Mifflin Company.

Holley, K. A., & Taylor, B. J. (2009). Undergraduate student socialization and learning in an online professional curriculum. *Innovative Higher Education*, 33(4), 257-269.

Horn, L. (1996). *Nontraditional undergraduates, Trends in enrollment from 1986 to 1992 and persistence and attainment among 1989–90 beginning postsecondary students* (NCES 97–578). U.S. Department of Education.

Horn, L., & Carroll, C. (1996). *Nontraditional undergraduates: Trends in enrollment from 1986 to 1992 and persistence and attainment among 1989-90 beginning postsecondary students.* Washington DC: National Center for Education Statistics, U.S. Department of Education. https://files.eric.ed.gov/fulltext/ED402857.pdf.

Horn, R. A., & Ethington, C. A. (2002). Self-reported beliefs of community college students regarding their growth and development: Ethnic and enrollment status differences. *Community College Journal of Research and Practice*, 26(5), 401-413.

Horn, L., Nevill, S., & Griffith, J. (2006). *Profiles of undergraduates in U.S. postsecondary education institutions, 2003–04: With a special analysis of community college students*. (Statistical Analysis Report.). National Center for Education Statistics.

Houze, S. K. (2014). *"Knowing When to Do It, When Not to Do It, and Who to Do It around": Experiences of Racial Identity Negotiation in College.* (Doctoral Dissertation). The University of Memphis Electronic Thesis & Dissertation (ETD). Repository 1276).

Huck, S. W. (2012). *Reading Statistics and Research*. Pearson.

Hunn, V. (2014). African American Students, Retention, and team-based learning: A review of the literature and recommendations for retention at predominately white institutions. *Journal of Black Studies*. 45(4), 301-314.

Hunnicutt, J. A. (2014). *Online Course Attrition in Arkansas' Two-Year Colleges*. (Doctoral Dissertation). The University of Memphis Electronic Thesis & Dissertation (ETD). Repository 1204).

Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino college students' sense of belonging. *Sociology of Education*, 324-345.

Hussar, W. J., & Bailey, T. M. (2018). *Projections of Education Statistics to 2026*. NCES 2018-019. National Center for Education Statistics.

IRP (Institutional Research and Planning). (2003). *Annotated bibliography on student retention research*. file:///C:/Users/Allison/Downloads/A_Model_for_Sustainable_Student_Retention_A_Holist%20(1).pdf.

JBHE. (2014). Tracking black student graduation rates at HBCUs. *The Journal of Blacks in Higher Education.* https://www.jbhe.com/2014/11/tracking-black-student-graduation-rates-at-hbcus/.

Jackson, J. F., & Moore, J. L. (2006). African American males in education: Endangered or ignored? *Teachers College Record*, 108(2), 201.

Johnson, T. L. (2009). *The impact of student involvement on gains in technology and general education of community college students* (Doctoral Dissertation). Retrieved from The University of Memphis, ProQuest Dissertations Publishing, 3370285.

Johnson, W. M. Sr. (2014). *An examination of traditional and non-traditional African American male students' perceptions of the community college environment, their quality of effort, gains, and inclination to persist.* (Doctoral Dissertation). ID: 1179. University of Memphis, Memphis, TN.

Jones, S., & Meyer, K. (2012). The "virtual face" of distance learning at public colleges and universities: What do websites reveal about administrative student support services? *Online Journal of Distance Learning Administration*, 15(3).

Jones, D. J., & Watson, B. C. (1990). *High-Risk Students and Higher Education: Future Trends*. ASHE-ERIC Higher Education Report No. 3. ASHE/ERIC Higher Education Reports, The George Washington University, One Dupont Circle, Suite 630, Washington, DC 20036-1183.

Kasworm, C. E. (2003). Setting the stage: adults in higher education. *New Directions in Student Services*, 2003 (102), 3-10.

Kazis, R. (2002). *Community Colleges and Low Income Populations: A Background Paper*. https://files.eric.ed.gov/fulltext/ED466268.pdf.

Kember, D. (1995). *Open Learning Courses for Adults: A Model of Student Progress*, Educational Technology Publications.

Keteian, S. (2015). Ethical considerations in research. Focus on vulnerable groups. *Investigacion & Educacion En Enfermeria*, 33(1), 164–172. https://doi-org.ezproxy.memphis.edu/10.1590/S0120-53072015000100019.

Kerby, M. (2015). Toward a New Predictive Model of Student Retention in Higher Education: An Application of Classical Sociological Theory. *Journal of College Student Retention: Research, Theory & Practice*, 17(2), 138-161.

Kerka, S. (1988). *Strategies for retaining adult students: The educationally disadvantaged*, ERIC Digest #76. ED 299 455, https://www.ericdigests.org/pre-929/adult.htm.

Kershaw, T. (1992). Afrocentrism and the Afrocentric method. *The Western Journal of Black Studies*, 16(3), 160–168.

Kuh, G. D. (2009a). What student affairs professionals need to know about student engagement. *Journal of College Student Development*, 50(6), 683-706.

Kuh, G. D. (2009). The national survey of student engagement: Conceptual and empirical foundations. *New Directions for Institutional Research*, 2009(141), 5-20.

Kuh, G. D., Cruce, T. M., Shoup, R., & Kinzie, J. (2008). Unmasking the effects of student engagement on first-year college grades and persistence. *Journal of Higher Education,* 79(5), 540–563.

Kuh, G. D., Kinzie, J. L., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2006). What matters to student success: A review of the literature (Vol. 8). National Postsecondary Education Cooperative.

Kuh, G. D., Kinzie, J., Schuh, J. H., & Whitt, E. J. (2010). *Student success in college: Creating conditions that matter.* Jossey-Bass.

Kuh, G. D., & Love, P. G. (2000). *A cultural perspective on student departure*. In J. M. Braxton (Ed.), Reworking the student departure puzzle (pp. 196–212). Vanderbilt University Press.

Kuh, G. D., Vesper, N., Connolly, M. R., & Pace, C. R. (1997*). College Student Experiences Questionnaire*: Revised norms for the third edition. Center for Postsecondary Research and Planning, Indiana University.

Laerd Statistics, (n.d.). *Cronbach's alpha using SPSS statistics*. https://statistics.laerd.com/spss-tutorials/cronbachs-alpha-using-spss-statistics.php#interpreting.

Laerd Statistics (2018). *Two-way ANCOVA in SPSS statistics.* https://statistics.laerd.com/spss-tutorials/two-way-ancova-using-spss-statistics.php.

Lee, C., & Slaughter-Defoe, D. (1995). *Historical and sociocultural influences on African American education*. In J. A. Banks & C. M. Banks (Eds.), Handbook of research on multicultural education (pp. 348–371). Macmillan.

Levin, M. E. & Levin, J. R. (1991) A Critical Examination of Academic Retention Programs for At-Risk Minority College Students. *Journal of College Student Development*, 32, 323-334.

Levy, F., & Murnane, R. J. (2004). *The new division of labor: How computers are creating the next job market.* Russell Sage Foundation.

Liao, H. A., Ferdenzi, A. C., & Edlin, M. (2012). Motivation, self-regulated learning efficacy, and academic achievement among international and domestic students at an urban community college: A comparison. *The Community College Enterprise*, 18(2), 9.

Libassi, C. J. (2018). The neglected college race gap: Racial disparities among college completers. *Center for American Progress*.

https://www.americanprogress.org/issues/education-postsecondary/reports/2018/05/23/451186/neglected-college-race-gap-racial-disparities-among-college-completers/.

Light, R. J. (2001). *Making the most of college: Students speak their minds*. Harvard University Press.

Liu, S. Y., Gomez, J., & Yen, C. J. (2009). Community college online course retention and final grade: Predictability of social presence. *Journal of Interactive Online Learning*, 8(2).

Lokken, F., & Mullins, C. (2014). *Trends in e-learning: Tracking the impact of e-learning at community colleges.* Instructional Technology Council.

Loo, C., & Rolison, G. (1986). Alienation of ethnic minority students at a predominantly White university. *Journal of Higher Education*, 57, 58-76.

Lopez, G. (2001). The value of hard work: Lessons on parent involvement from an (im)migrant household. *Harvard Educational Review*, 71, 416-437.

Losen, D.J. & Orfield, G. (2002). Racial inequity in special education. Harvard Education Publishing Group.

Lotkowski, V. A., Robbins, S. B., & Noeth, R. J. (2004). *The Role of Academic and Non-Academic Factors in Improving College Retention.* ACT Policy Report. American College Testing ACT Inc.

Love, B. J. (1993). Issues and problems in the retention of Black students in predominantly White institutions of higher education. *Equity & Excellence in Education*, 26(1), 27-36.

Love, D. (2008). *Revitalizing retention efforts for African-American college students at predominately white institutions*. In Allied Academies International Conference.

Academy of Educational Leadership. Proceedings (Vol. 13, No. 2, p. 41). Jordan Whitney Enterprises, Inc.

Lucas, P. J., Baird, J., Arai, L., Law, C., & Roberts, H. M. (2007). Worked examples of alternative methods for the synthesis of qualitative and quantitative research in systematic reviews. *BMC Medical Research Methodology*, 7(1), 4.

Lundberg, C. A. (2010). Institutional Commitment to Diversity, College Involvement, and Faculty Relationships as Predictors of Learning for Students of Color. *Journal of the Professoriate*, *3*(2).

Lundberg, C. A. (2014). Peers and faculty as predictors of learning for community college students. *Community College Review*, 42(2), 79-98.

Lundberg, C. A., & Schreiner, L. A. (2004). Quality and frequency of faculty-student interaction as predictors of learning: An analysis by student race/ethnicity. *Journal of College Student Development*, 45(5), 549-565.

Lynch, M. (2014). 5 Reasons HBCUs are Still Relevant. Diverse: *Issues in Higher Education*, 31(14), 38-43.

Mabry, M. (1991). Confronting campus racism. *Black Collegian*, 22(1), 78-82.

Almanthari, A., Maulina, S., & Bruce, S. (2020). Secondary School Mathematics Teachers' Views on E-learning Implementation Barriers during the COVID-19 Pandemic: The Case of Indonesia. Eurasia Journal of Mathematics, Science and Technology Education, 16(7), em1860.

Manuel, T. (2006). Envisioning the possibilities of a good life: Exploring the public policy implications of intersectionality theory. *Journal of Women, Politics & Policy*,28(3–4), 173–203. doi:10.1300/J501v28n03_08.

Matthews, M. L. (2017). *Using constructivist grounded theory to understand how black males graduate from predominantly white four-year institutions*. (Doctoral Dissertation). The University of Memphis Electronic Thesis & Dissertation (ETD). Repository 4947).

McCabe, J. (2009). Racial and gender microaggressions on a predominantly White campus: Experiences of Black, Latina/o and White undergraduates. *Race, Gender & Class*, 133-151.

McCubbin, I. (2003). An examination of criticisms made of Tinto's 1975 student integration model of attrition. https://www.psy.gla.ac.uk/~steve/localed/icubb.pdf.

Mertes, S. (2013). Community college retention: A critical race theory perspective. *Journal of Applied Research in the Community College*, 21(1), 21-26.

Metz, G. W. (2002). *Challenges and Changes to Tinto's Persistence Theory*. Paper presented at the Annual Meeting of the Mid-Western Educational Research Association (Columbus, OH, October 16-19, 2002).

Metz, G. W. (2004-2005). Challenge and changes to Tinto's persistence theory: A historical review. *Journal of College Student Retention: Research, Theory & Practice*, 6(2), 191-207.

Milem, J. F., & Berger, J. B. (1997). A modified model of college student persistence: Exploring the relationship between Astin's theory of involvement and Tinto's theory of student departure. *Journal of College Student Development*, 38(4), 387.

Miller, M., & Lu, M. Y. (2003). Serving non-traditional students in e-learning environments: Building successful communities in the virtual campus. *Educational Media International*, 40(1-2), 163-169.

Miller, D. B., & MacIntosh, R. (1999). Promoting resilience in urban African American adolescents: Racial socialization and identity as protective factors. *Social Work Research*, 23(3), 159-169.

Milner, H. R. IV. (2007). Race, culture, and researcher positionality: Working through dangers seen, unseen, and unforeseen. *Educational researcher*, 36(7), 388-400.

Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of Cardiac Anaesthesia*, 22(1), 67.

Mohammadi, A., Lee, M., & Shaffer, B. (1996). *Perceived Academic and Social Gains: Quality Efforts by Students. A Student Retention Perspective*. https://files.eric.ed.gov/fulltext/ED400878.pdf.

Moore, K., Bartkovich, J., Fetzner, M., & Ison, S. (2004). Success in cyberspace: Student retention in online sources. *Journal of Applied Research in the Community College*, 10(2), 107-118. http://www.editlib.org/p/96627/.

Moore, J. L., Ford, D. Y. & Milner, H. R. (2005). Recruitment is not enough: Retailing African American students in gifted education. *Gifted Child Quarterly*, 49(1). 51-67.

Moore-Thomas, C., & Day-Vines, N. L. (2010). Culturally competent collaboration: School counselor collaboration with African American families and communities. *Professional School Counseling*, 14(1).

Murrell, P. (2004). *The community college student experience questionnaire. [Monograph]. Proving the improving tools and techniques for assessing the first college year*. National

Resources center for the first-year experience and students in transition, University of South Carolina, 2(37), 91-93.

Murrell, P. H., & Glover, J. W. (1996). The community college experience: Assessing process and progress. *Community College Journal of Research and Practice*, 20(2), 199-200.

Morris, L., Wu, S., & Finnegan, C. (2005). Predicting retention in online general education courses. *American Journal of Distance Education*, 19(1), 23. 10.1207/s15389286ajde1901_3.

Moss, R. L., & Young, R. B. (1995). Perceptions about the academic and social integration of underprepared students in an urban community college. *Community College Review*, 22(4), 47-61.

Muse, H. (2003). The web-based community college student: An examination of factors that lead to success and risk. *The Internet and Higher Education*, 6(3), 241-261. 10.1016/S1096-7516(03)00044-7.

Museus, S. D., & Quaye, S. J. (2009). Toward an intercultural perspective of racial and ethnic minority college student persistence. *The Review of Higher Education*, 33(1), 67-94.

Museus, S. D. (2014). *The culturally engaging campus environments (CECE) model: A new theory of success among racially diverse college student populations*. In Higher education: Handbook of theory and research (pp. 189-227). Springer, Dordrecht.

Nassaji, H. (2015). Qualitative and descriptive research: Data type versus data analysis. *Language Teaching Research*, 19(2), 129-132.

Nayak, A. K. & Rao, V. K. (2008). *Educational Psychology*, APH Publishing Corporation, Darya Ganj, New Delhi, India.

National Center for Education Statistics. (2002). *Nontraditional undergraduates*. http://nces.ed.gov/programs/coe/2002/analyses/nontraditional/sa01.asp.

National Center for Education Statistics. (2005). U. S. Department of Education. (2005). *Youth indicators. 2005: Trends in the well-being of American youth*. http://cewarchive.miami.edu/438/1/youthIndicators2005.pdf.

National Center for Education Statistics. (2011). *The condition of education*, 2011. (NCES 2011-033), Indicator 43. https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011033.

National Center for Education Statistics. (2016). *Digest of Education Statistics*. https://nces.ed.gov/programs/digest/d15/tables/dt15_303.40.asp?current=yes.

National Center for Education Statistics. (2017). *Graduation rates for selected cohorts, 2003-13; Outcome measures for cohort year 2008; Student financial aid, academic year 2015-2016; and admissions in postsecondary institutions, fall 2016*. https://nces.ed.gov/pubs2017/2017150rev.pdf.

National Center for Education Statistics. (2017). *Enrollment and Employees in Postsecondary Institutions Fall 2016; and Financial Statistics and Academic Libraries, Fiscal Year* 2016. U.S. Department of Education. https://nces.ed.gov/pubs2018/2018002.pdf.

National Survey of Student Engagement. (2009). *Assessment for improvement: Tracking student engagement over time—Annual results 2009*. Indiana University Center for Postsecondary Research. Retrieved August 24, 2019 from http://nsse.iub.edu/NSSE_2009_Results/pdf/NSSE_AR_2009.pdf.

Nelson-Laird, T. F., Bridges, B. K., Morelon-Quainoo, C. L., Williams, J. M., & Holmes, M. S. (2007). African American and Hispanic student engagement at minority serving and predominantly White institutions. *Journal of College Student Development*, 48(1), 39-56.

Neville, H. A., Awad, G. H., Brooks, J. E., Flores, M. P., & Bluemel, J. (2013). Color-blind racial ideology: Theory, training, and measurement implications in psychology. *American Psychologist*, 68(6), 455.

Neuville, S., Frenay, M., Schmitz, J., Boudrenghien, G., Noël, B., & Wertz, V. (2007). Tinto's theoretical perspective and expectancy-value paradigm: A confrontation to explain freshmen's academic achievement. *Psychologica Belgica*, 47(1).

Newman, C. B., Mmeje, K., & Allen, W. R. (2012). Historical legacy, ongoing reality: African American men at predominantly White institutions of higher education. *Black males in postsecondary education: Examining their experiences in diverse institutional contexts*, 87-104. http://works.bepress.com/christopher_b_newman/5/.

Newman, C. B., Wood, J. L., & Harris, F. III,(2015). Black Men's Perceptions of Sense of Belonging with Faculty Members in Community Colleges. *The Journal of Negro Education*, 84(4), 564-577.

Nora, A. (1990). Campus-based aid programs as determinants of retention among Hispanic community college students. *Journal of Higher Education*, 61(3), 312-330.

Nora, A., Barlow, E., & Crisp, G. (2005). Student persistence and degree attainment beyond the first year in college. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 129-153). American Council on Education and Praeger.

Nora, A., & Cabrera, A. F. (1996). The role of perceptions of prejudice and discrimination on the adjustment of minority students to college. *The Journal of Higher Education*, 67(2), 119-148.

Nunnally J. & Bernstein L. (1994). *Psychological testing and assessment*. McGraw-Hill, Inc.

NSC Research Center. (2019*). Total enrollment estimates spring 2019.* https://nscresearchcenter.org/wp-content/uploads/CurrentTermEnrollmentReport-Spring-2019.pdf.

O'Keefe, P. (2013). A sense of belonging: improving student retention. *College Student Journal*, 47(4), 605-613.

Okwumabua, T. M., Walker, K. M., Hu, X., & Watson, A. (2011). An exploration of African American students' attitudes toward online learning. *Urban Education*, 46(2), 241-250.

Ortagus, J. C. (2017). From the periphery to prominence: An examination of the changing profile of online students in American higher education. *Internet & Higher Education*. 32, 47-57.

Ortman, J. M., & Guarneri, C. E. (2009). United States population projections: 2000 to 2050. *United States Census Bureau, 1-19*.

Ottinger, C. (1991). College going, persistence, and completion patterns in higher education: What do we know? *American Council on Education Research Briefs*, 2(3), 1-12.

Owens, D., Lacey, K., Rawls, G., & Holbert-Quince, J. A. (2010). First-generation African American male college students: Implications for career counselors. *The Career Development Quarterly*, 58(4), 291-300.

Pace, C. R. (1979a). *The College Student Experiences Questionnaire*. Indiana University, School of Business.

Pace, C. R. (1979b). *Measuring Outcomes of College: Fifty Years of Findings and Recommendations for the Future*. Jossey-Bass.

Pace, C. R. (1984). *Measuring the Quality of Student Experiences*. Los Angeles: University of California, Graduate school of Education, Higher Education Research Institute.

Pace, C. R. (1990). *The undergraduates: A report of their activities and college experiences in the 1980s*. Los Angeles: Center for the Study of Evaluation, UCLA Graduate School of Education.

Pace, C. R., Murrell, P.H., Friedlander, J. & Lehman, P.W. (1990). *Community College Student Experiences Questionnaire*. The University of Memphis, Center for the Study of Higher Education.

Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS*. Routledge.

Palmer, R. T., Maramba, D. C., & Dancy, T. E. (2011). A qualitative investigation of factors promoting the retention and persistence of students of color in STEM. *The Journal of Negro Education*, 491-504.

Palmer, R. T., & Young, E. M. (2009). Determined to succeed: Salient factors that foster academic success for academically unprepared Black males at a Black college. *Journal of College Student Retention: Research, Theory & Practice*, 10(4), 465-482.

Panacci, A. G. (2015). Adult students in higher education: Classroom experiences and needs. *College Quarterly*, 18(3), n3.

Pascarella, E. T., & Chapman, D. W. (1983). A multi-institutional, path analytic validation of Tinto's model of college withdrawal. *American Educational Research Journal*, 20(1), 87-102.

Pascarella, E.T., Duby, P. B. and Iverson, B.K. (1983) A Test of Reconceptualization of a Theoretical Model of College Withdrawal in a Commuter Institution Setting, *Sociology of Education*, 56, 88-100.

Pascarella, E. T., & Terenzini, P. T. (1980). Predicting freshman persistence and voluntary dropout decisions from a theoretical model. *The Journal of Higher Education*, 51(1), 60-75.

Pascarella, E. T., & Terenzini, P. T. (2005). *How College: Volume 2: A third decade of research*. Jossey-Bass Publishers.

Pascarella, E., & Terenzini, P. (1991). *How college affects students: Findings and insights from twenty years of research* (Ed.). Jossey-Bass Publishers.

Pearson, F. C., Gould, P. D., Ethington, C. A., & Murrell, P. H. (2009). *Community college student experiences questionnaire: Test manual and comparative data* (4th ed.), Memphis, TN: The University of Memphis, Center for the Study of Higher Education.

Perrakis, A. I. (2008). Factors promoting academic success among African American and White male community college students. *New Directions for Community Colleges*, 2008(142), 15-23.

Phinney, J. S., Dennis, J., & Osorio, S. (2006). Reasons to attend college among ethnically diverse college students. *Cultural Diversity and Ethnic Minority Psychology*, 12(2), 347.

Polson, C. J. (1993). *Teaching Adult Students*. IDEA Paper No. 29. https://files.eric.ed.gov/fulltext/ED395136.pdf.

Pope, M. L. (2002). Community College Mentoring: Minority Student Perception. *Community College Review*, 30(3), 31-45.

Porter, S. R., & Umbach, P. D. (2019). *What challenges to success do community college students face?* Percontor, LLC. https://www.risc.college/sites/default/files/2019-01/RISC_2019_report_natl.pdf.

Preston, D. L. (1993). *Using the CCSEQ in institutional effectiveness: The role of goal commitment and student's perception of gains.* https://files.eric.ed.gov/fulltext/ED360022.pdf.

Ramirez, E. (2017). Unequal socialization: Interrogating the Chicano/Latino (a) doctoral education experience. *Journal of Diversity in Higher Education,*10(1), 25–38. doi:10.1037/dhe0000028.

Ramos, B. N. (2019). Moving from access to success: How first-generation students of color can build resilience in higher education through mentorship. *The Vermont Connection,* 40(1), 9.

Rayfield, W. W. (2012). *Determining the relationship between participation in the arts and the academic, personal, and social growth of community college students*. (Doctoral Dissertation). The University of Memphis Electronic Thesis & Dissertation (ETD). ID 734).

Reason, R. D. (2003). Student variables that predict retention: Recent research and new developments. *NASPA Journal*, 40(4), 172-191.

Rennie Center. (2020). *Condition of education in the Commonwealth: Measuring student success: Innovative approaches to understanding diverse learners.* https://files.eric.ed.gov/fulltext/ED603739.pdf.

Richardson, R. C., & Evans, E. T. (1992). *African American Males: Endangered Species and the Most Paddled.* https://files.eric.ed.gov/fulltext/ED351408.pdf.

Richardson, R., & Skinner, E. (1992). Helping first-generation minority students achieve degrees. *New Directions for Community Colleges*, 80, 29-43.

Roman, M. A. (2007). Community college admission and student retention. *Journal of College Admission*, (194), 18-23.

Rossmann, J.E. and Kirk, B.A. (1970) Factors related to persistence and withdrawal among university students, *Journal of Counselling Psychology*, 17, 55-62.

Rovai, A. P. (2003). In search of higher persistence rates in distance education online programs. *The Internet and Higher Education*, 6(1), 1-16.

Rovai, A. P., & Gallien, L. B. Jr. (2005). Learning and sense of community: A comparative analysis of African American and Caucasian online graduate students. *The Journal of Negro Education*, 53-62.

Saenz, T., Marcoulides, G. A., Junn, E., & Young, R. (1999). The relationship between college experience and academic performance among minority students. *International Journal of Educational Management*, 13(4), 199-207.

Salvo, S., Shelton, K., & Welch, B. (2017). African American Males and Online Education: A Review of the Literature. *Online Journal of Distance Learning Administration*, 20(4). https://www-westga-edu.ezproxy.memphis.edu/~distance/ojdla/winter204/salvo_shelton_welch204.html.

Sandoval-Lucero, E., Maes, J., & Klingsmith, L. (2014). African American and Latina (o) community college students' social capital and student success. *College Student Journal*, 48(3), 522-533. https://69.32.208.13/library/journal/1G1-387058981/african-american-and-latina-o-community-college-students.

Santa-Ramirez, S., Wells, T., Sandoval, J., & Koro, M. (2020). Working through the experiences of first-generation students of color, university mission, intersectionality, and post-subjectivity. *International Journal of Qualitative Studies in Education*, 1-16.

Saunders, J., Davis, L., Williams, T., & Williams, J. H. (2004). Gender differences in self-perceptions and academic outcomes: A study of African American high school students. *Journal of Youth and Adolescence*, 33(1), 81-90.

Schlossberg, N. K., Lynch, A. Q., & Chickering, A. W. (1989). *Improving higher education environments for adults: Responsive programs and services from entry to departure.* Jossey-Bass.

Schoenfeldt, L. F. (1984). Psychometric properties of organizational research instruments. In T. S. Bateman & G. R. Ferris (Eds.), *Method & Analysis in Organizational Research* (pp. 68-80). Reston.

Schriesheim, C. A., Powers, K. J., Scandura, T. A., Gardiner, C. C., & Lankau, M. J. (1993). Improving construct measurement in management research: Comments and a quantitative approach for assessing the theoretical content adequacy of paper-and-pencil survey-type instruments. *Journal of Management*, 79, 385-417.

Seaman, J. E., Allen, I. E., & Seaman, J. (2018). Grade Increase: Tracking Distance Education in the United States. *Babson Survey Research Group*.

Seidman, A. (2005). Minority student retention: Resources for practitioners. *New Directions for Institutional Research*, 2005(125), 7-24.

Sewell, W. H., Haller, A. O., & Portes, A. (1969). The educational and early occupational attainment process. *American Sociological Review*, 82-92.

Shapiro, D., Dundar, A., Yuan, X., Harrell, A., & Wakhungu, P. K. (2014). *Completing college: A national view of student attainment rates—Fall 2008 Cohort (Signature Report No. 8)*. National Student Clearinghouse Research Center.

Shepherd, C. R. (1995). Structural, normative, and communal integration in organizations. *Clinical Sociology Review*, 13(1), 8.

Simmons, L. D. (2013). Factors of persistence for African American Men in a Student Support Organization. *The Journal of Negro Education*, 82(1), 62-74. https://www.memphis.edu/cshe/pdfs/factorsofpersistenceforafricanamericancollegemen.pdf.

Sinanan, A. (2016). The value and necessity of mentoring African American college students at PWI's. *Journal of Pan African Studies*, 9(8), 155-166.

Smith., B. E. Jr . (2017). *Retention of degree-seeking community college students based on age, enrollment, intensity, and academic progress*. (Doctoral Dissertation). file:///C:/Users/ASD2957E/Downloads/Bobby%20Smith%20Dissertation.pdf.

Song, L., Singleton, E. S., Hill, J. R., & Koh, M. H. (2004). Improving online learning: Student perceptions of useful and challenging characteristics. *The Internet and HigherEducation*,7(1), 59–70.

Solorzano, D. G., & Yosso, T. J. (2001). From racial stereotyping and deficit discourse toward a critical race theory in teacher education. *Multicultural Education*, 9(1), 2-8. http://ezproxy.cpcc.edu/login?url=https://search.proquest.com/docview/216501989?accountid=10008.

Soria, K. M., & Stebleton, M. J. (2012). First-generation students' academic engagement and retention. *Teaching in Higher Education*, 17(6), 673-685.

Spady, W. G. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange*, 1(1), 64- 85.

St. John, E. P., Rowley, L. L., & Hu, S. (2009). Diversity and leadership: A study of high-achieving students of color. *The Journal of Negro Education*, 17-28.

Stephens, N. M., Hamedani, M. G., & Destin, M. (2014). Closing the social-class achievement gap: A difference-education intervention improves first-generation students' academic performance and all students' college transition. *Psychological Science*, 25(4), 943-953.

Strayhorn, T. L. (2012). Satisfaction and retention among African American men at two-year community colleges. Community College *Journal of Research and Practice*, 36(5), 358-375.

Strayhorn, T. L., & Johnson, R. M. (2014). Black female community college students' satisfaction: A national regression analysis. *Community College Journal of Research and Practice*, 38(6), 534-550.

Stuart, G. R., Rios-Aguilar, C., & Deil-Amen, R. (2014). "How much economic value does my credential have?" Reformulating Tinto's model to study students' persistence in community colleges. *Community College Review*, 42(4), 327-341.

Styron, R. Jr . (2010). Student satisfaction and persistence: Factors vital to student retention. *Research in Higher Education Journal*, 6, 1.

Sullivan, A. L., & Artiles, A. J. (2011). Theorizing racial inequity in special education: Applying structural inequity theory to disproportionality. *Urban Education*, 46(6), 1526-1552.

Summers, M. D. (2003). ERIC review: Attrition research at community colleges. *Community College Review*, 30(4), 64-84.

Swail, W. S., Redd, K. E., & Perna, L. W. (2003). *Retaining Minority Students in Higher Education: A Framework for Success.* ASHE-ERIC Higher Education Report (Vol. 30, No. 2). Jossey-Bass.

Swanson, D. P., Cunningham, M., & Spencer, M. B. (2003). Black males' structural conditions, achievement patterns, normative needs, and "opportunities". *Urban Education,* 38(5), 608-633.

Sworder, S. (1992). *Analysis of the Survey of Student Experiences at Saddleback College via the Community College Student Experiences Questionnaire (CCSEQ).* Saddleback College Accreditation'92.

Tate, E. (2017). Graduation rates and race. *Inside Higher ED.* https://www.insidehighered.com/news/2017/04/26/college-completion-rates-vary-race-and-ethnicity-report-finds.

Tauber, R. (1997). *Self-fulfilling prophecy: A practical guide to its use in education*. Westport, CN: Praeger.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53.

Terenzini, P. T., Springer, L., Yaeger, P. M., Pascarella, E. T., & Nora, A. (1996). First-generation college students: Characteristics, experiences, and cognitive development. *Research in Higher Education,* 37, 1-22.

Tierney, W. G. (1992). An anthropological analysis of student participation in college. The *Journal of Higher Education,* 63(6), 603-618.

Tierney, W. G. (1999). Models of minority college-going and retention: Cultural integrity versus cultural suicide. *Journal of Negro Education,* 80-91.

Tillman, L. C. (2002). Culturally sensitive research approaches: An African-American perspective. *Educational Researcher,* 31(9), 3-12.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research,* 45, 89-125.

Tinto, V. (1982). Limits of theory and practice in student attrition. *The Journal of Higher Education,* 53(6), 687-700.

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. University of Chicago Press, 5801 S. Ellis Avenue, Chicago, IL 60637.

Tinto, V. (1988). Stages of student departure: Reflection of the longitudinal character of student leaving. *Journal of Higher Education* 59(4): 439-455.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student retention* (2nd ed.). The University of Chicago Press.

Tinto, V. (1999). Taking retention seriously: Rethinking the first year of college. *NACADA Journal,* 19(2), 5-9.

Tinto, V. (2006-2007). Research and practice of student retention: What next? *Journal of College Student Retention: Research, Theory & Practice,* 8(1), 1-19.

Tomar, D. A. (2019). *America's college enrollment slump*. The Quad. https://thebestschools.org/magazine/us-college-enrollment-slump/.

Toynton, R. (2005). Degrees of disciplinarily in equipping mature students in higher education for engagement and success in lifelong learning. *Active Learning in Higher Education,* 6(2), 106-117.

Tseng, V. (2004). Family interdependence and academic adjustment in college: Youths from immigrant and U.S. born families. *Child Development,* 75, 966-983.

Tsoi-A, R., & Bryant, F. (2015). *College preparation for African American students: Gaps in the high school educational experience.*

https://vtechworks.lib.vt.edu/bitstream/handle/10919/83649/CollegePreparationAfricanAmerican.pdf?sequence=1&isAllowed=y.

Tucker, W. G. (2014). *Spaces for success in higher education: Males of color at an online predominantly white community college* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3621155).

Turk, J. M., & González Canché, M. S. (2019). On-Campus Housing's Impact on Degree Completion and Upward Transfer in the Community College Sector: A Comprehensive Quasi-Experimental Analysis. *The Journal of Higher Education*, 90(2), 244-271.

Twale, D., & Sanders, C. S. (1999). Impact of non-classroom experiences on critical thinking ability. *NASPA Journal*, 36(2), 133-146.

United States Department of Education. (2011). *FERPA general guidance to students*. http://www2.ed.gov/policy/gen/guid/fpco/ferpa/students.html.

Urdan, T. (2017). *Statistics in plain English* (4th ed). Routledge.

Vallas, R. (2009). The disproportionality problem: The overrepresentation of black students in special education and recommendations for reform. *Virginia Journal of Social Policy & the Law*, 17, 181.

Van Gennep, A. (1960). *The rites of passage*. Translated by M. B. Vizedom & G. I. Chaffee. University of Chicago Press.

Venit, E. (2019). 7 metrics for measuring student success-that aren't first-year retention. *Equity to Education*. https://eab.com/insights/daily-briefing/student-success/7-metrics-for-measuring-student-success-that-arent-first-year-retention/.

Waks, L. J. (2003). How globalization can cause fundamental curriculum change: An American perspective. *Journal of Educational Change*, 4, 383-418.

Waterman, A. S., & Waterman, C. K. (1972). Relationship between freshman ego identity status and subsequent academic behavior: A test of the predictive validity of Marcia's categorization system for identity status. *Developmental Psychology*, 6(1), 179.

Weaver, R. R., & Qi, J. (2005). Classroom organization and participation: College students' perceptions. *The Journal of Higher Education*, 76(5), 570-601.

Weidman, J., Twale, D., & Stein, E. (2001). *Socialization of graduate and professional students in higher education: A perilous passage?* ASHE-ERIC Higher Education Report, 28. Jossey-Bass.

Wilbur, T. G., & Roscigno, V. J. (2016). First-generation disadvantage and college enrollment/completion. *Socius*, 2, p. 1-11 2378023116664351.

Wimberly, G. L. (2002). *School relationships foster success for African American students: ACT policy report.* American College Testing Program. https://files.eric.ed.gov/fulltext/ED475196.pdf.

Winfield, L. F. (1991). Resilience, schooling, and development in African American youth: A conceptual framework. *Education and Urban Society*, 24, 5-14.

Hussar, W. J. & Bailey, T. M. (2018). Projections of Education Statistics to 2026 (NCES 2018-019), U.S. Department of Education, Washington, D.C.: National Center for Education Statistics, April 12, 2018, https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2018019.

Williams, K. (2015). *The impact that technology and social systems have on African American student enrollment growth in totally online, hybrid/blended online, and face-to-face undergraduate degree programs* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3707786).

Wladis, C., Hachey, A. C., & Conway, K. M. (2015). The representation of minority, female, and non-traditional STEM majors in the online environment at community colleges: A nationally representative study. *Community College Review*, 43(1), 89-114.

Woldoff, R. A., Wiggins, Y. M., & Washington, H. M. (2011). Black Collegians at a Rural Predominantly White Institution: Toward a Place-Based Understanding of Black Students' Adjustment to College. *Journal of Black Studies*, 42(7), 1047-1079.

Wolf-Wendel, L., Ward, K., & Kinzie, J. (2009). A tangled web of terms: The overlap and unique contribution of involvement, engagement, and integration to understanding college student success. *Journal of College Student Development*, 50(4), 407–428.

Wyatt, L. G. (2011). Nontraditional Student Engagement: Increasing Adult Student Success and Retention. *Journal of Continuing Higher Education*, 59(1), 10-20.

Xu, D., & Jaggars, S. (2011). *Online and hybrid course enrollment and performance in Washington State community and technical colleges.* Community College Research Center Teachers College, Columbia University. file:///C:/Users/sdall/AppData/Local/Temp/332_872.pdf.

Yan, W. (1999). Successful African American students: The role of parental involvement. *Journal of Negro Education*, 5-22.

Yearwood, T. L., & Jones, E. A. (2012). Understanding what influences successful black commuter students' engagement in college. *The Journal of General Education*, 61(2), 97-125.

Young-Jones, A. D., Burt, T. D. Dixon, S., & Hawthorne, M. J. (2013). Academic advising: does it really impact student success? *Quality Assurance in Education*, 21(1), pp. 7-19. http://dx.doi.org/10.1108/09684881311293034.

York, T. T., Gibson, C., & Rankin, S. (2015). Defining and measuring academic success. *Practical Assessment, Research, and Evaluation*, 20(1), 5, , Article 5. https://doi.org/10.7275/hz5x-tx03. https://scholarworks.umass.edu/pare/vol20/iss1/5.

Yorke, M., & Longden, B. (2004). *Retention and student success in higher education*. McGraw-Hill Education (UK).

Zhang, L. F., & Sternberg, R. J. (2001). Thinking styles across cultures: Their relationships with student learning. *Perspectives on Thinking, Learning, and Cognitive Styles*, 197-226.

Appendences

Appendix A. Email Solicitation / Consent Statement

Dear CPCC Graduate:
I am a faculty member at _____ Community College and I am in the initial stages of completing my dissertation for a doctorate in adult education from the University of Memphis. My research deals with identifying factors that contribute to community college student success and retention. As a result, you are being asked to participate in a research study. I am the lead investigator of this project and my doctoral advisor is Dr. Wendy Griswold.
The purpose of this research is to understand what factors enhance the student's experiences at school and contribute to academic success. The results of this survey can contribute to the community college's development of academic and social programs, strengthen the academic environment, and allow for the analysis of positive factors that contribute to student life. You are invited to participate because you are or will be graduating from CPCC (fall 2019).
Should you agree to participate you will be asked to complete an online survey. This survey will take 20 to 30 minutes to complete. While this may seem like a long time, the survey flows very quickly and your input is invaluable. Participating in this study is completely voluntary and if you decide to participate now, you may change your mind and stop at any point. You may choose not to answer any survey question or continue with the survey. As a participant in this research study, you will be contributing to your academic legacy and help future graduates in their experiences at the school.
You will not be paid for taking part in this study, however, you do have the opportunity to win one of four $50 gift cards (four cards awarded in the fall 2019). Four names will be drawn from a pool of survey participants from each semester noted.
There are no foreseeable risks involved in participating in this study. You will not be asked to identify yourself by name or school student ID on the survey.
If you have questions about the research you may contact me, Shawn Allison at sdallisn@memphis.edu or 704-502-4624. You may also contact me at my CPCC email at shawn.allison@cpcc.edu. You may also contact my doctoral chair (Dr. Wendy Griswold) at wgrswold@memphis.edu or 901-678-5439. If you have questions about your rights as a research subject, please contact the University of Memphis Institutional Review Board at 901-678-2705.
You may print a copy of this consent document for your records. You will be agreeing that you:

- Have read the above information
- Voluntarily agree to participate
- Are 18 years of age or older

___ I agree
___ I prefer not to respond
We will make every effort to keep the information collected from you private. We will protect the confidentiality of your research records.
Thank you,
Shawn Allison
For entry in the $50 gift card raffle, please indicate your student ID number:
_____
___Prefer not to respond

(Please note in order to be entered in the raffle to receive one of four $50 gift cards (four gift cards per fall 2019 semester), it will be necessary to include your student ID number. Your student ID number will only be used to identify and contact the gift card winners. This information will remain confidential and will only be viewed by the study researcher and his advisor.

Appendix B. University of Memphis IRB Approval

PRO-FY2020-27 - Initial: Approval - Exempt

I irb@memphis.edu
Mon 9/9/2019 3:54 PM
Shawn Allison (sdallisn); Wendy Griswold (wgrswold)

THE UNIVERSITY OF MEMPHIS

Institutional Review Board
Division of Research and Innovation
Office of Research Compliance
University of Memphis
315 Admin Bldg
Memphis, TN 38152-3370

September 9, 2019

PI Name: Shawn Allison
Co-Investigators:
Advisor and/or Co-PI: Wendy Griswold
Submission Type: Initial
Title: African American Adult Student Success and Retention: Many Do Succeed You Know
IRB ID : #PRO-FY2020-27
Exempt Approval: September 9, 2019

The University of Memphis Institutional Review Board, FWA00006815, has reviewed your submission in accordance with all applicable statuses and regulations as well as ethical principles.

Approval of this project is given with the following obligations:

1. When the project is finished a completion submission is required
2. Any changes to the approved protocol requires board approval prior to implementation
3. When necessary submit an incident/adverse events for board review
4. Human subjects training is required to be kept current at citiprogram.org every 2 years

For any additional questions or concerns please contact us at irb@memphis.edu or 901.678.2705

Thank you,
James P. Whelan, Ph.D.
Institutional Review Board Chair
The University of Memphis.

Appendix C: Central Piedmont Community College IRB Approval

RE: IRB approval

Bobbie Frye
Tue 10/22/2019 1:41 PM

To: Shawn Allison;

You replied on 10/22/2019 4:10 PM.

Good afternoon Shawn,
Your study has been approved by the IRB Committee at Central Piedmont. Good luck with your research.
You will need to work closely with our office to coordinate the dissemination of your survey.
Thanks,

Bobbie Frye

Bobbie Frye, Ed.D.
Executive Director Institutional Research, Planning & Research
Central Piedmont Community College
Central Campus, Norman Building
t 704.330.6459

Appendix D: Permission to use the CCSEQ Instrument

WG

Wendy Griswold (wgrswold)
Wed 5/29/2019 3:38 PM
Shawn Allison (sdallisn)

Hi Shawn,

You have the most recent version.

As director of CSHE, I grant you permission to use the instrument for your dissertation research. When the time comes, we can investigate how to administer the survey. We have another center on campus that can manage the process for you.

Wendy
Wendy Griswold
[Wendy.Griswold@memphis.edu]Wendy.Griswold@memphis.edu
This is a calm inbox. It is checked once in the morning and once in the afternoon.

Appendix E: Community College Student Experience Questionnaire

Community College Student Experiences Questionnaire

Survey Name:

Organization:

State:

Today's Date: Apr 23, 2019

The main purpose of asking you to complete this questionnaire is to learn more about how community college students spend their time. The information obtained from you and from other community college students from all over the country will help administrators and faculty members provide programs which will benefit student learning and development within the college experience.

At first glance, you may think it will take a long time to fill out this questionnaire, but you can actually complete it in 20 to 30 minutes. You will find when you have finished it, that your answers provide a kind of self-portrait of what you have been giving and getting in your college experience.

The ultimate benefit from this or any other survey depends on the thoughtful responses and willing participation of those who are asked to help. Your willingness to participate is important and very much appreciated.

We do not ask you to enter your name on the questionnaire. On the last page there is space for a student identification number if it is requested by your college.

DIRECTIONS: Indicate your responses by filling in the appropriate space under each question.

BACKGROUND, WORK, FAMILY

1. Age
   - 18-19 or younger
   - 20-22
   - 23-27
   - 28-39
   - 40-55
   - Over 55
2. Gender

- Male
- Female

3. What is your racial or ethnic identification?
   - American Indian or Alaska Native
   - Asian
   - Black or African American
   - Hispanic or Latino
   - White
   - Other/Multiracial
4. Is English your native language?
   - Yes
   - No
5. During the time college is in session, about how many hours a week do you usually spend working on a job for pay?
   - None, I don't have a job
   - 1-10 hours
   - 11-20 hours
   - 21-30 hours
   - 31-40 hours
   - More than 40 hours
6. If you have a job, how does it affect your college work?
   - I don't have a job
   - My job does not interfere with my college work
   - My job takes some time from my college work
   - My job takes a lot of time from my college work
7. If you have family responsibilities, how does this affect your college work?
   - I don't have family responsibilities
   - Those responsibilities do not interfere with my college work
   - Those responsibilities take some time from my college work
   - Those responsibilities take a lot of time from my college work
8. Are you in a work-study program?
   - Yes
   - No
9. Do you consider yourself a first generation college student (neither parent attended college)?
   - Yes
   - No

COLLEGE PROGRAM

1. How many credits are you taking THIS term?

- Less than 6
- 6 to 8
- 9 to 11
- 12 to 15
- More than 15

2. Including the credits you are now taking, what is the total number of course credits you have taken at this college?
   - 1-15 credits
   - 16-30 credits
   - 31-45 credits
   - 46 or more credits
3. When do the classes you are now taking meet?
   - Day only
   - Evening only
   - Some day and some evening
4. Up to now, what have most of your grades been at this college?
   - A
   - A-, B+
   - B
   - B-, C+
   - C, C-
   - lower than C-
   - No grades, this is my first term
5. About how many hours a week do you usually spend studying or preparing for your classes?
   - 1 to 5 hours
   - 6 to 10 hours
   - 11 to 15 hours
   - 16 to 20 hours
   - more than 20 hours
6. About how many hours a week do you usually spend on the college campus, not counting time attending classes?
   - none
   - 1 to 3 hours
   - 4 to 6 hours
   - 7 to 9 hours
   - 10 to 12 hours
   - more than 12 hours
7. What is the most important reason you are attending THIS COLLEGE at this time? (Mark ONLY ONE answer.)
   - To prepare for transfer to four-year college or university.

- To gain skills necessary to enter a new job or occupation.
- To gain skills necessary to retrain, remain current, or advance in a current job or occupation.
- To satisfy a personal interest(cultural, social).
- To improve my English, reading, or math skills.

8. Including this term, I have taken classes in the following format(s):
   - In-person (face-to-face) only
   - Online only
   - Hybrid (some face-to-face and some online elements) only
   - In-person and online
   - In-person and hybrid
   - Online and hybrid
   - In-person, online, and hybrid

COLLEGE COURSES

DIRECTIONS: Indicate whether you have taken (or are now taking) any courses in the following areas:	More than 1	One	None
1. College Math (not remedial math)			
2. Computer/Technology Literacy			
3. English Class or Classes (to prepare you to take a college level English composition course)			
4. English Composition (not remedial English)			
5. Fine Arts (such as music, theater, dance)			
6. Foreign Languages			
7. Humanities (such as history, literature, philosophy, etc.)			
8. Math Class or Classes (to prepare you to take a college level math course)			
9. Physical or Health Education			
10. Sciences (such as astronomy, biology, physics, chemistry, geology, etc.)			
11. Social Sciences (such as psychology, political science, sociology, economics, ethnic studies, etc.)			
12. Speech, Communications			

DIRECTIONS: Answer each of the following questions:	Yes	No
1. Are you working for an AA degree?		
2. Are you working for an AS degree?		
3. Are you working for a diploma?		
4. Are you working for a certificate?		

5. Do you plan to transfer to a four year college or university?	○	○
6. Are you currently enrolled in an occupational/vocational program?	○	○

DIRECTIONS: Answer the following question:

1. If you are enrolled in a vocational program, which of the following categories best describes your occupational/technical program? (MARK ONE)

- ○ I am not enrolled in an occupational/technical program.
- ○ Agriculture (such as agricultural business, management, mechanics, or production; animal science; horticulture; landscaping; conservation; etc.)
- ○ Business (such as accounting; bookkeeping; data processing; office supervision; personnel and training; secretarial programs; etc.)
- ○ Management and Distribution (such as real estate; fashion merchandising; small business management; financial services marketing; food marketing; marketing management; institutional management; etc.)
- ○ Health (such as dental services; diagnostic and treatment services; medical laboratory technologies; mental health & human services; nursing services; rehabilitation services; etc.)
- ○ Home Economics (such as interior design; clothing and textiles; food and nutrition; food production; child care; etc.)
- ○ Technical and Communications (such as computer programming; educational media technology; radio and television technology; architectural technology; civil technology; electrical and electronic technology; environmental control technology; industrial technology; engineering technology and robotics; etc.)
- ○ Trade and Industrial (such as cosmetology; law enforcement; construction trades; heating and air conditioning; industrial equipment maintenance; aircraft mechanics; auto body repair; automotive mechanics; architectural, civil, or mechanical drafting; commercial art; commercial photography; truck and bus driving; tool and dye making; welding; etc.)
- ○ Other occupational/technical programs not listed above.

LEARNING AND STUDY SKILLS

How much OUT-OF-CLASS instruction have you received at the college in each of the following learning and study skills areas?	A lot	Some	None
1. Memory skills	○	○	○
2. Note taking skills	○	○	○
3. Listening skills	○	○	○
4. Speaking skills	○	○	○
5. Writing skills	○	○	○
6. Reading skills	○	○	○
7. Test taking skills	○	○	○
8. Time management skills	○	○	○
9. Problem solving skills	○	○	○

DIRECTIONS: In your experience at this college DURING THE CURRENT SCHOOL YEAR, about how often have you done each of the following? Indicate your responses by filling in one of the circles to the right of each activity.

COURSE ACTIVITIES	Very Often	Often	Occasionally	Never
1. Participated in class discussions.	○	○	○	○
2. Worked on a paper or project which combined ideas from different sources of information.	○	○	○	○
3. Summarized major points and information from readings or notes.	○	○	○	○
4. Tried to explain the material to another student.	○	○	○	○
5. Did additional readings on topics that were introduced and discussed in class.	○	○	○	○
6. Asked questions about points made in class discussions or readings.	○	○	○	○
7. Studied course materials with other students.	○	○	○	○
8. Applied principles and concepts learned in class to understand other problems or situations.	○	○	○	○
9. Compared and contrasted different points of view presented in a course.	○	○	○	○
10. Considered the accuracy and credibility of information from different sources.	○	○	○	○

LIBRARY ACTIVITIES	Very Often	Often	Occasionally	Never
1. Used the library as a quiet place to read or study material you brought with you.	○	○	○	○
2. Read newspapers, magazines, or journals located in the library or on-line.	○	○	○	○
3. Checked out books and other materials to read at home.	○	○	○	○
4. Used the computer to find materials the library had on a topic.	○	○	○	○
5. Prepared a bibliography or set of references for a term paper or report.	○	○	○	○
6. Asked the librarian for help in finding materials on some topic.	○	○	○	○
7. Found some interesting material to read just by browsing in the stacks.	○	○	○	○

FACULTY	Very Often	Often	Occasionally	Never
1. Asked an instructor for information about grades, make-up work, assignments, etc.	○	○	○	○

2. Talked briefly with an instructor after class about course content.	○	○	○	○
3. Made an appointment to meet with an instructor in his/her office.	○	○	○	○
4. Discussed ideas for a term paper or other class project with an instructor.	○	○	○	○
5. Discussed your career and/or educational plans, interests, and ambitions with an instructor.	○	○	○	○
6. Discussed comments an instructor made on a test or paper you wrote.	○	○	○	○
7. Talked informally with an instructor about current events, campus activities, or other common interests.	○	○	○	○
8. Discussed your school performance, difficulties or personal problems with an instructor.	○	○	○	○
9. Used e-mail to communicate with your instructor.	○	○	○	○

STUDENT ACQUAINTANCES	Very Often	Often	Occasionally	Never
1. Had serious discussions with students who were much older or much younger than you.	○	○	○	○
2. Had serious discussions with students whose ethnic or cultural background was different from yours.	○	○	○	○
3. Had serious discussions with students whose philosophy of life or personal values were very different from yours.	○	○	○	○
4. Had serious discussions with students whose political opinions were very different from yours.	○	○	○	○
5. Had serious discussions with students whose religious beliefs were very different from yours.	○	○	○	○
6. Had serious discussions with students from a country different from yours.	○	○	○	○

COLLEGE ACTIVITIES

DIRECTIONS: In your experience at this college DURING THE CURRENT SCHOOL YEAR, about how often have you done each of the following? Indicate your responses by filling in one of the circles to the right of each activity.

ART, MUSIC, THEATRE ACTIVITIES	Very Often	Often	Occasionally	Never
1. Talked about art (painting, sculpture, architecture, artists, etc.) with other students at the college.	○	○	○	○
2. Talked about music (classical, popular, musicians, etc.) with other students at the college.	○	○	○	○

3. Talked about theatre (plays, musicals, dance, etc.) with other students at the college.				
4. Attended an art exhibit on the campus.				
5. Attended a concert or other musical event at the college.				
6. Attended a play, dance, concert, or other theatre performance at the college.				
7. Participated in an art exhibit, musical event, or theatre performance at the college.				
8. Attended an OFF-CAMPUS art exhibit, musical event, or theatre performance for course credit.				
9. Participated in an OFF-CAMPUS art exhibit, musical event, or theatre performance for course credit.				

WRITING ACTIVITIES	Very Often	Often	Occasionally	Never
1. Used a dictionary [or computer spell-check/thesaurus] to look up the proper meaning, definition, and/or spelling of words.				
2. Prepared an outline to organize the sequence of ideas and points in a paper you were writing.				
3. Thought about grammar, sentence structure, paragraphs and word choice as you were writing.				
4. Wrote a rough draft of a paper or essay and revised it before handing it in.				
5. Used a computer to write a paper.				
6. Asked other people to read something you wrote to see if it was clear to them.				
7. Spent at least 5 hours or more writing a paper.				
8. Asked an instructor for advice and help to improve your writing or about a comment he/she made on a paper you wrote.				

SCIENCE ACTIVITIES	Very Often	Often	Occasionally	Never
1. Memorized formulas, definitions, technical terms.				
2. Practiced to improve your skills in using laboratory equipment.				
3. Showed a classmate how to use a piece of scientific equipment.				
4. Attempted to explain an experimental procedure to a classmate.				
5. Tested your understanding of some scientific principle by seeing if you could explain it to another student.				

6. Completed an experiment/project using scientific methods.				
7. Talked about social and ethical issues related to science and technology such as energy, pollution, chemicals, genetics, etc.				
8. Used information you learned in a science class to understand some aspect of the world around you.				
9. Tried to explain to someone the scientific basis for environmental concerns about pollution, recycling, alternative forms of energy, etc.				
10. Did paid or volunteer work OFF-CAMPUS to help the environment after learning about environmental issues in class.				
11. Applied information or skills you learned in a science class to work (either volunteer or paid) outside of class.				

ATHLETIC ACTIVITIES	Very Often	Often	Occasionally	Never
1. Followed a regular exercise program on campus.				
2. Sought athletic instruction.				
3. Attended an athletic event on campus.				
4. Coached or assisted with youth athletic programs on campus.				
5. Coached or assisted with OFF-CAMPUS youth athletic programs for course credit.				
6. Participated in a sport on campus.				

COLLEGE ACTIVITIES

DIRECTIONS: In your experience at this college DURING THE CURRENT SCHOOL YEAR, about how often have you done each of the following? Indicate your responses by filling in one of the circles to the right of each activity.

CAREER/OCCUPATIONAL SKILLS

DIRECTIONS: If you are enrolled in a career/occupational program or a course in which you learn occupational skills, answer the following items.	Very Often	Often	Occasionally	Never
1. Read about how to perform a procedure (occupational task, vocational skill).				
2. Listened to an instructor explain how to do a procedure.				

3. Watched an instructor demonstrate how to do a procedure.				
4. Practiced a procedure while being monitored by an instructor or other student.				
5. Practiced a procedure without supervision.				
6. Identified that there was a problem and located information from an instructor or other resource about what to do.				
7. Diagnosed a problem and carried out the appropriate procedure without having to consult any resource.				
8. Applied occupational skills learned in class to a job situation outside of class.				
9. Participated in an internship, cooperative, practicum, etc. with a local business, facility, or organization for course credit.				

COMPUTER TECHNOLOGY	Very Often	Often	Occasionally	Never
1. Used E-mail to communicate with an instructor or other students about a course.				
2. Used the Internet (or other computer network) to get information for a class project or paper.				
3. Used a computer tutorial to learn material for a course or remedial program.				
4. Used computers in a group (cooperative) learning situation in class.				
5. Used a computer for some type of database management.				
6. Used a computer to analyze data for a class project.				
7. Used a computer to create graphs or charts for a class paper or project.				
8. Wrote an application using existing software or programming languages.				
9. Used social media (e.g., Facebook) to communicate with other students.				
10. Used computer technology (e.g., Facebook or Wikis) as part of a course.				

CLUBS AND ORGANIZATIONS	Very Often	Often	Occasionally	Never
1. Looked for notices about campus events and student organizations.				
2. Read or asked about a student club or organization.				
3. Attended a meeting of a student club or organization.				

4. Assumed a leadership role (held an office, headed a committee, etc.) in a student organization or club.				
5. Participated in a campus project or event sponsored by a student organization or club.				
6. Participated in a project or event OFF-CAMPUS which was sponsored by a student organization or club.				
7. Participated in a project or event OFF-CAMPUS which was not sponsored by a student organization or club.				

COUNSELING AND CAREER PLANNING	Very Often	Often	Occasionally	Never
1. Talked with a counselor/advisor about courses to take, requirements, educational plans.				
2. Discussed your vocational interests, abilities and ambitions with a counselor/advisor.				
3. Read information about a particular 4-year college or university that you were interested in attending.				
4. Read materials about career opportunities.				
5. Made an appointment with a counselor or an advisor to discuss your plans for transferring to a 4-year college or university.				
6. Identified courses needed to meet the general education requirements of a 4-year college or university you are interested in attending.				
7. Talked with a counselor/advisor about personal matters related to your college performance.				
8. Have taken interest inventories or surveys (e.g., Strong-Campbell Interest Inventory, Kuder Occupational Interest Survey, etc.) to help you direct your career goals.				

ESTIMATE OF GAINS

DIRECTIONS: In thinking over your experiences in this college up to now, to what extent do you think you have gained or made progress in each of the following areas? (Please mark one response for each item.)

I have gained or made progress in:	Very Much	Quite a bit	Some	Very Little
1. Acquiring knowledge and skills applicable to a specific job or type of work.				
2. Gaining information about career opportunities.				
3. Developing clearer career goals.				
4. Becoming acquainted with different fields of knowledge.				

5.	Developing an understanding and enjoyment of art , music, and theatre.	○	○	○	○
6.	Developing an understanding and enjoyment of literature (novels, stories, essays, poetry, etc.)	○	○	○	○
7.	Writing clearly and effectively.	○	○	○	○
8.	Presenting ideas and information effectively in speaking to others.	○	○	○	○
9.	Acquiring skills needed to use computers to access information from the library or the Internet.	○	○	○	○
10.	Acquiring skills needed to use computers to produce papers, reports, graphs, charts, tables, or data analysis.	○	○	○	○
11.	Becoming aware of different philosophies, cultures, and ways of life.	○	○	○	○
12.	Becoming clearer about my own values and ethical standards.	○	○	○	○
13.	Understanding myself-my abilities and interests.	○	○	○	○
14.	Understanding mathematical concepts such as probabilities, proportions, etc.	○	○	○	○
15.	Understanding the role of science and technology in society.	○	○	○	○
16.	Putting ideas together to see relationships, similarities, and differences between ideas.	○	○	○	○
17.	Developing the ability to learn on my own, pursue ideas, and find information I need.	○	○	○	○
18.	Developing the ability to speak and understand another language.	○	○	○	○
19.	Interpreting information in graphs and charts I see in newspapers, textbooks, on TV, or on the Internet.	○	○	○	○
20.	Developing an interest in political and economic events.	○	○	○	○
21.	Seeing the importance of history for understanding the present as well as the past.	○	○	○	○
22.	Learning more about other parts of the world and other people (Asia, Africa, South America, etc.).	○	○	○	○
23.	Understanding other people and the ability to get along with different kinds of people.	○	○	○	○
24.	Developing good health habits and physical fitness.	○	○	○	○
25.	Developing the ability to get along with others in different kinds of situations.	○	○	○	○

COLLEGE ENVIRONMENT

1. If you could start over again would you go to this college?
   - ○ Yes
   - ○ Maybe
   - ○ No

2. How many of the students you know are friendly and supportive of one another?
   - all
   - most
   - some
   - few or none
3. How many of your instructors at this college do you feel are approachable, helpful, and supportive?
   - all
   - most
   - some
   - few or none
4. How many of the college counselors, advisors, and department staff you have had contact with would you describe as helpful, considerate, knowledgeable?
   - all
   - most
   - some
   - few or none
5. How many of your courses at this college would you describe as challenging, stimulating, and worthwhile?
   - all
   - most
   - some
   - few or none
6. Do you feel that this college is a stimulating and often exciting place to be?
   - all of the time
   - most of the time
   - some of the time
   - rarely or never
7. Are there places on the campus for you to meet and study with other students?
   - yes, ample places
   - yes, a few places
   - no
8. Are there places on the campus for you to use computers and technology?
   - yes, ample places
   - yes, a few places
   - no

Thank you for your participation in this survey.

Appendix F Histograms and Q-Q Plots for Variable Scores

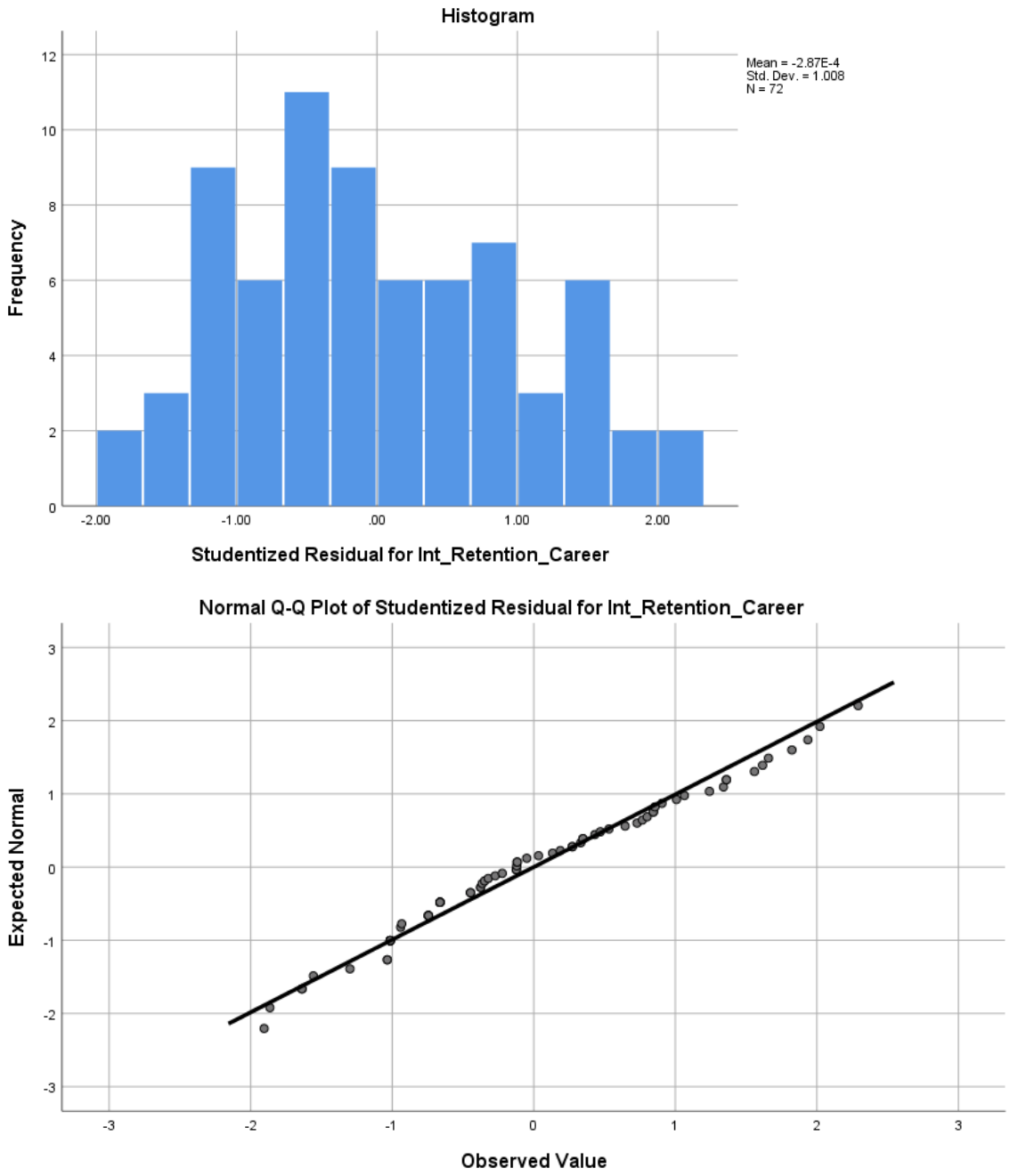


Figure F1: Studentized Residual for Int_Retention_Career

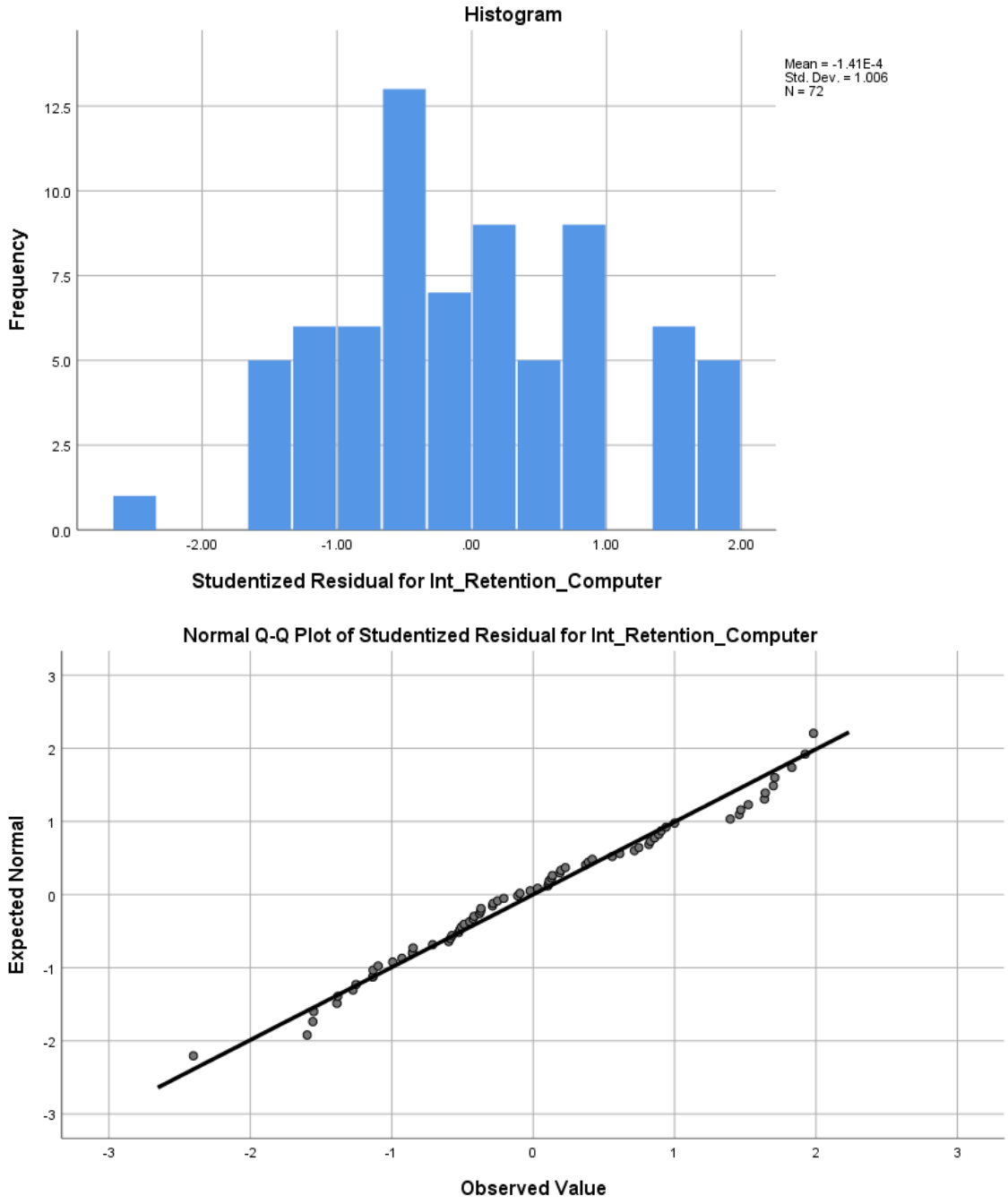


Figure F2: Studentized Residual for Int_Retention_Computer

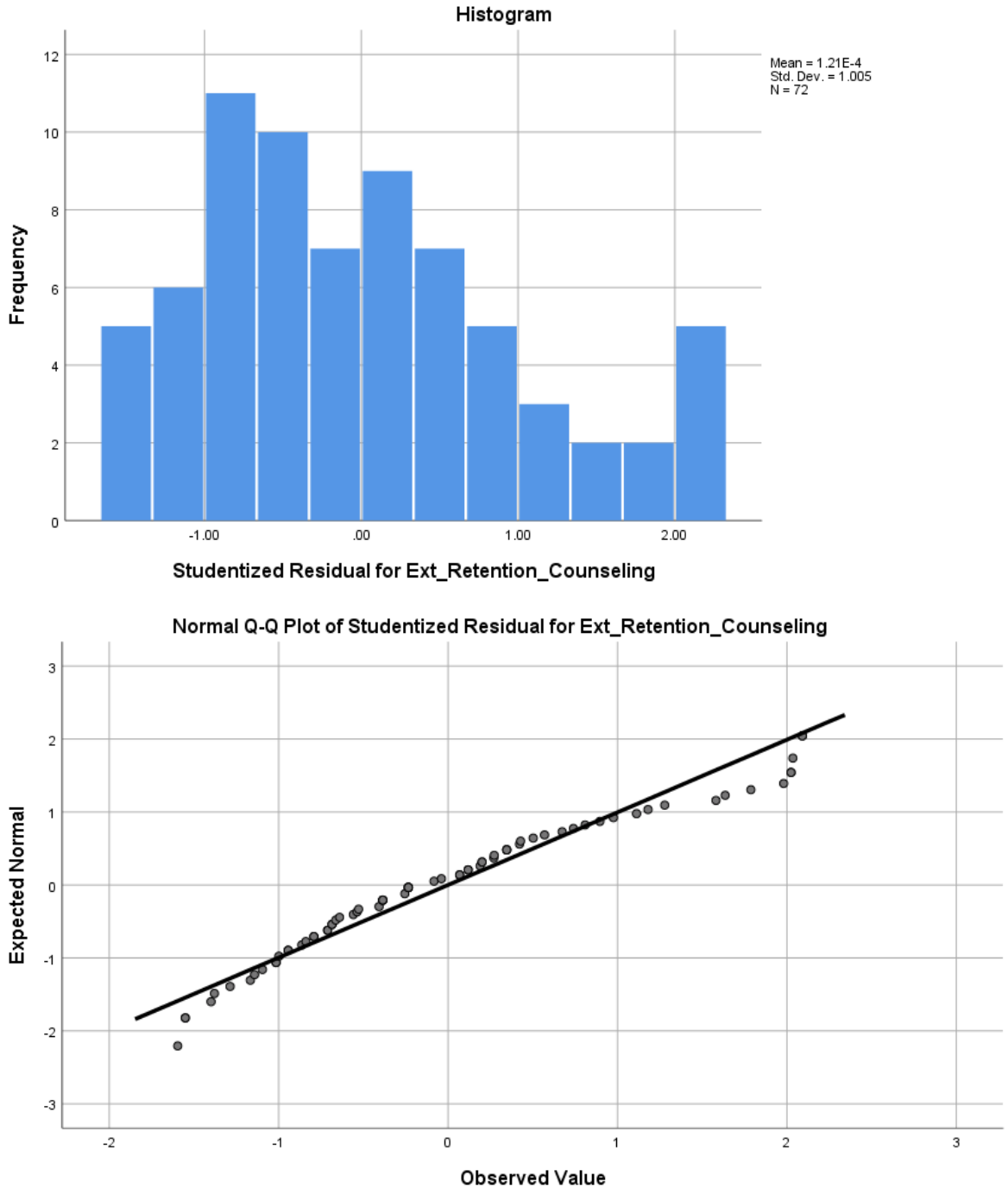


Figure F3: Studentized Residual for Ext_Retention_Counseling

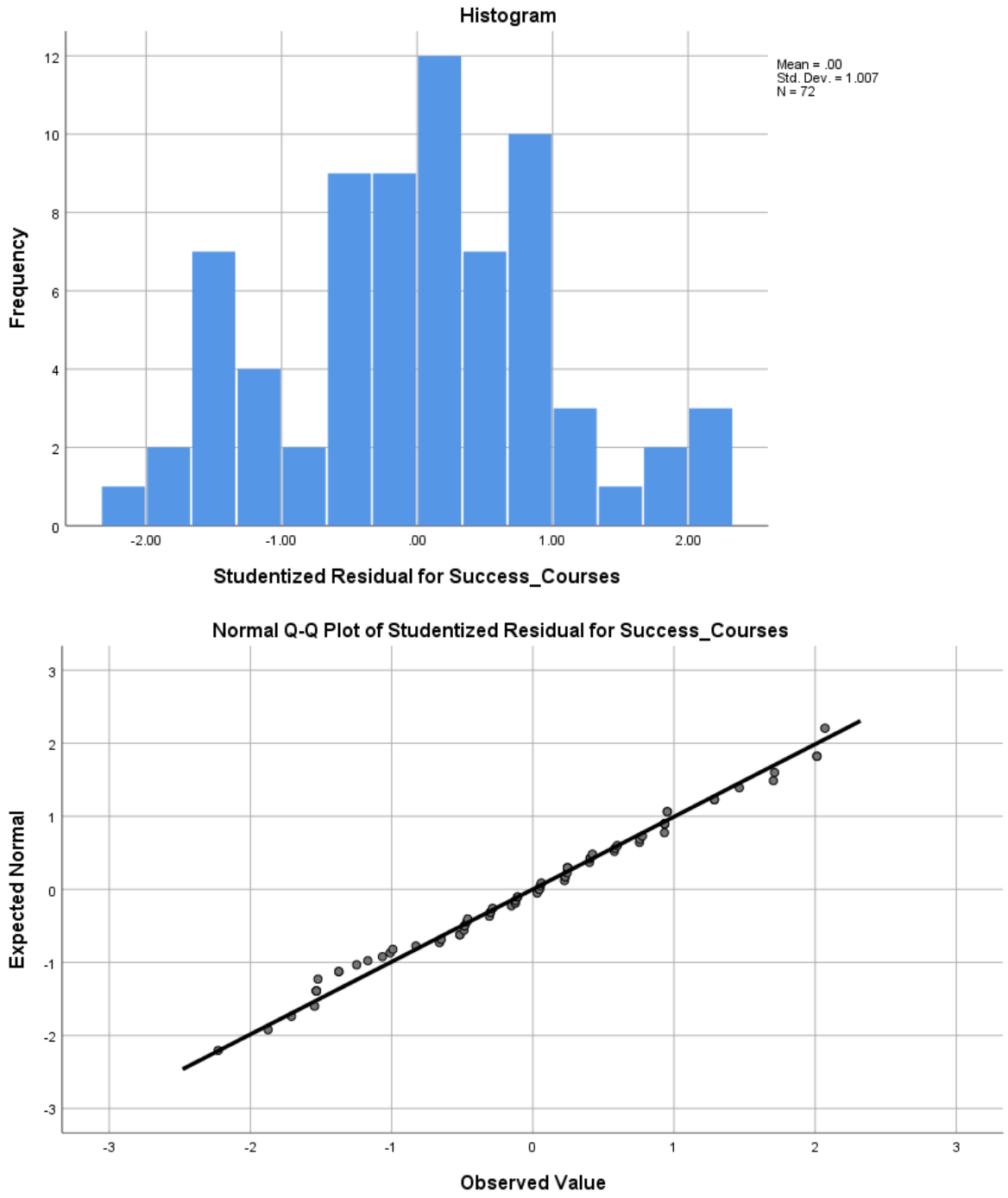


Figure F4: Studentized Residual for Success_Courses

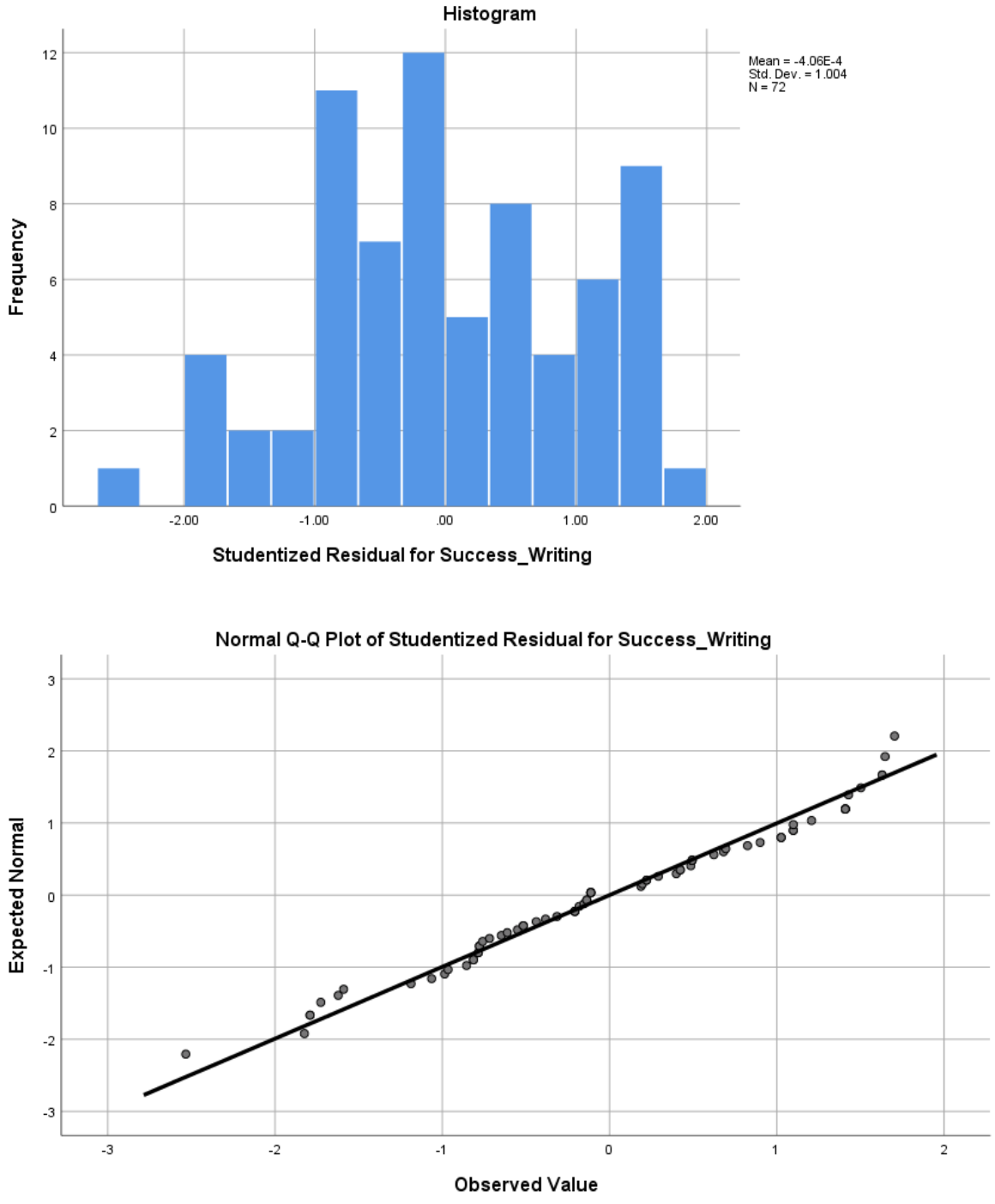


Figure F5: Studentized Residual for Success_Writing

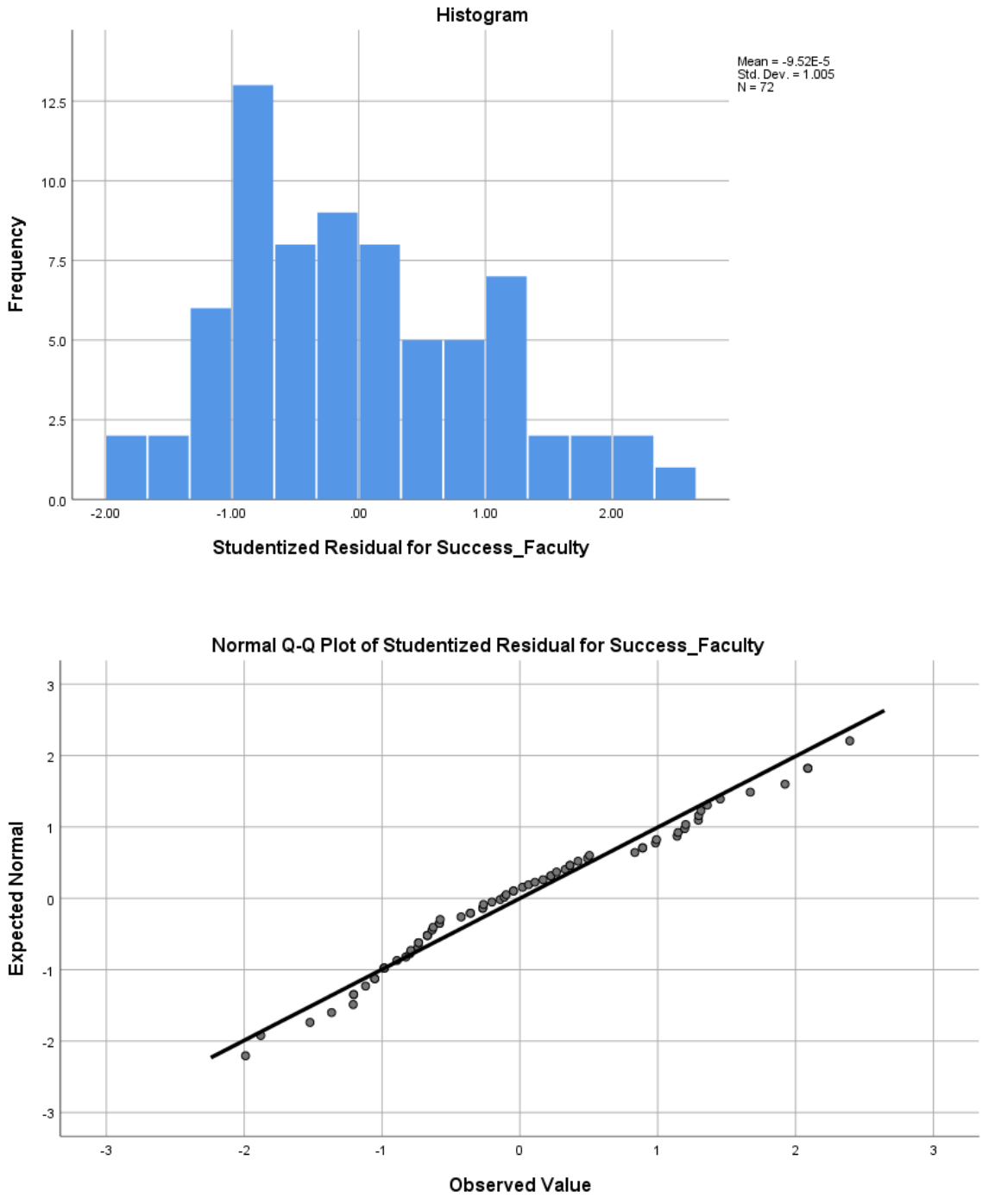
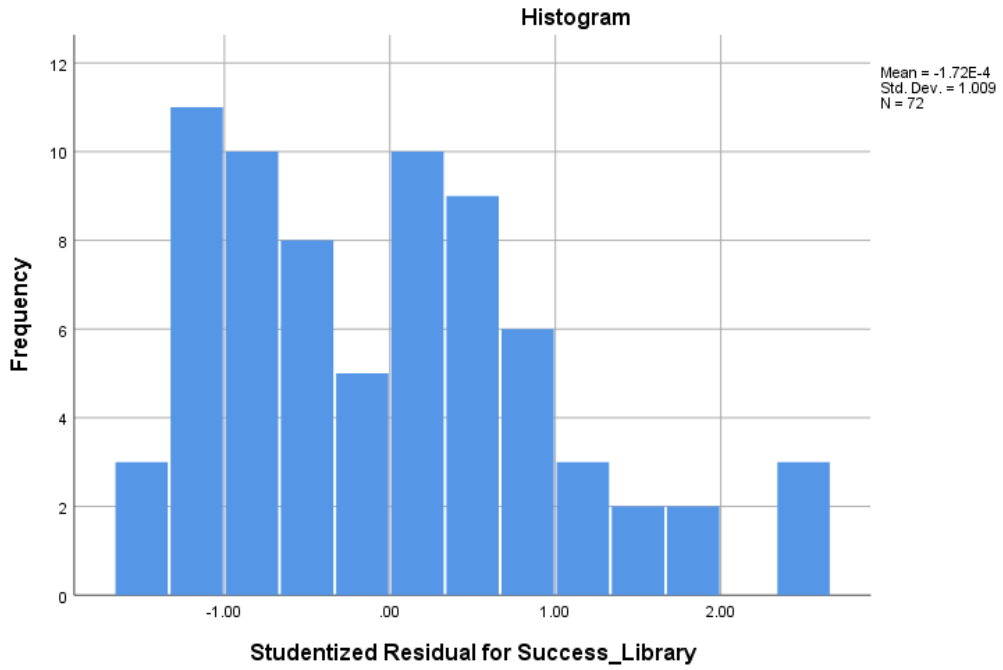


Figure F6: Studentized Residual for Success_Faculty



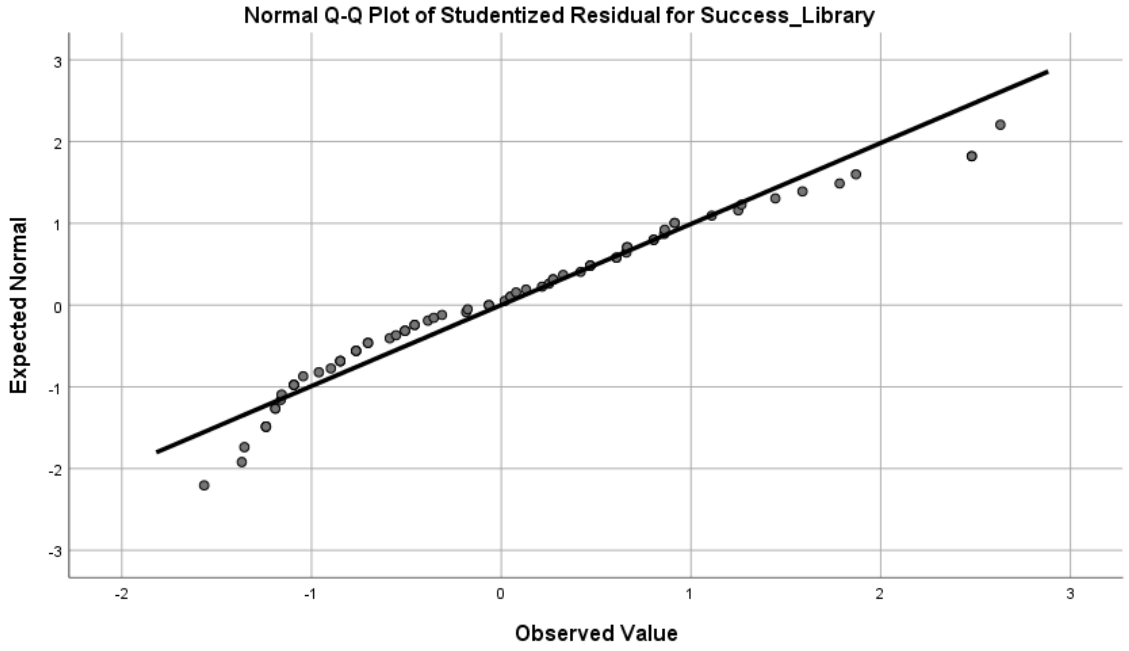


Figure F7: Studentized Residual for Success_Library

Appendix G Profile Plots for Variable Scores

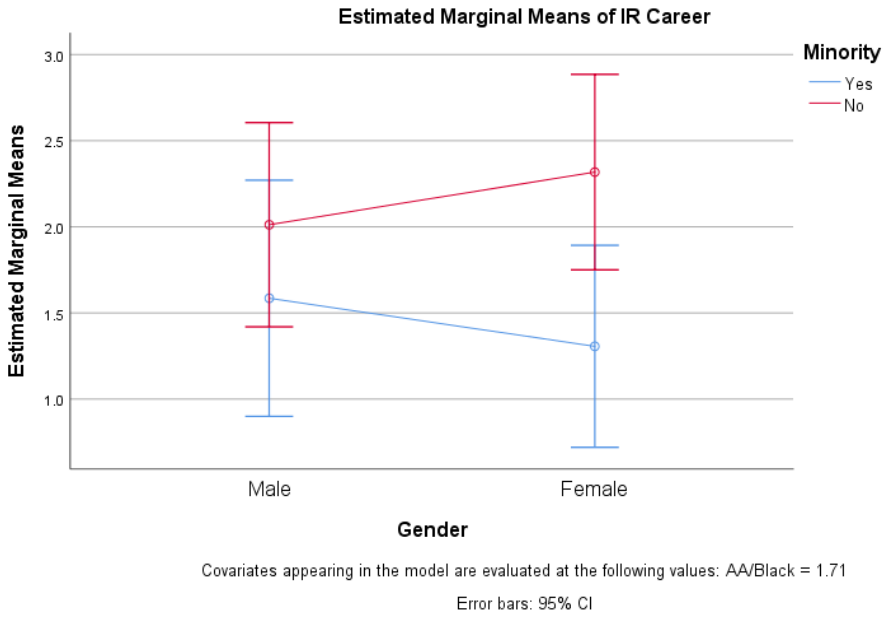


Figure G1: Profile Plot for IR_Career

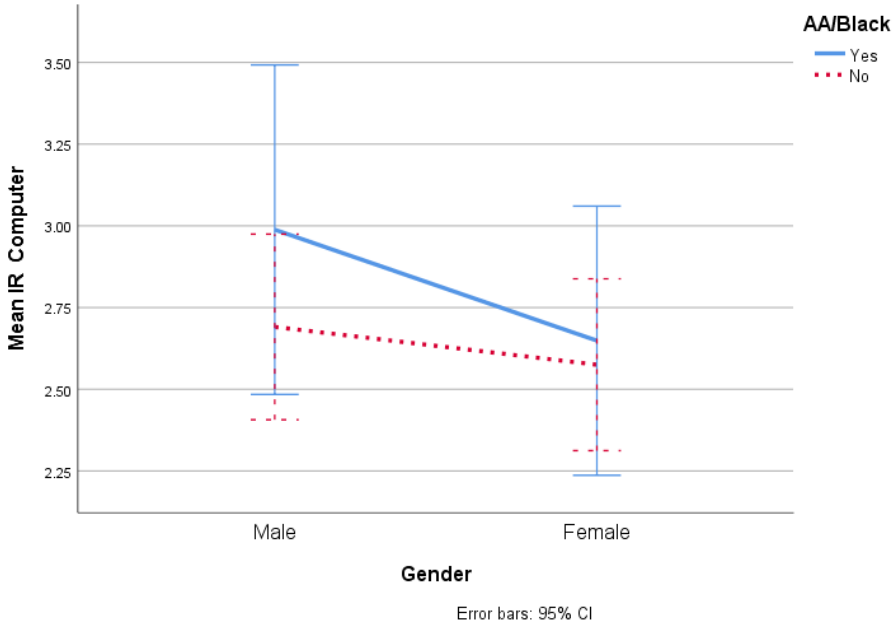


Figure G2: Profile Plot for IR_Computer

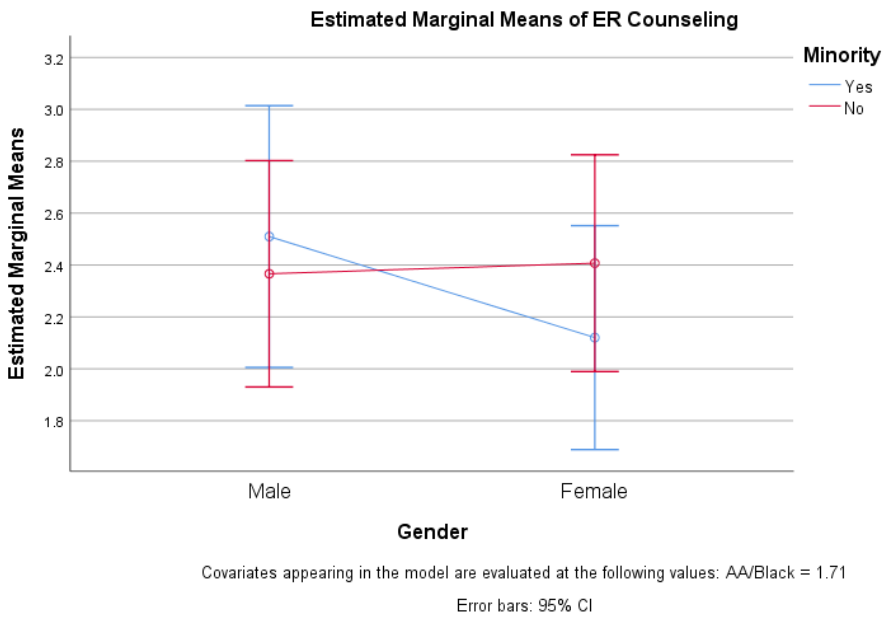


Figure G3: Profile Plot for ER_Counseling

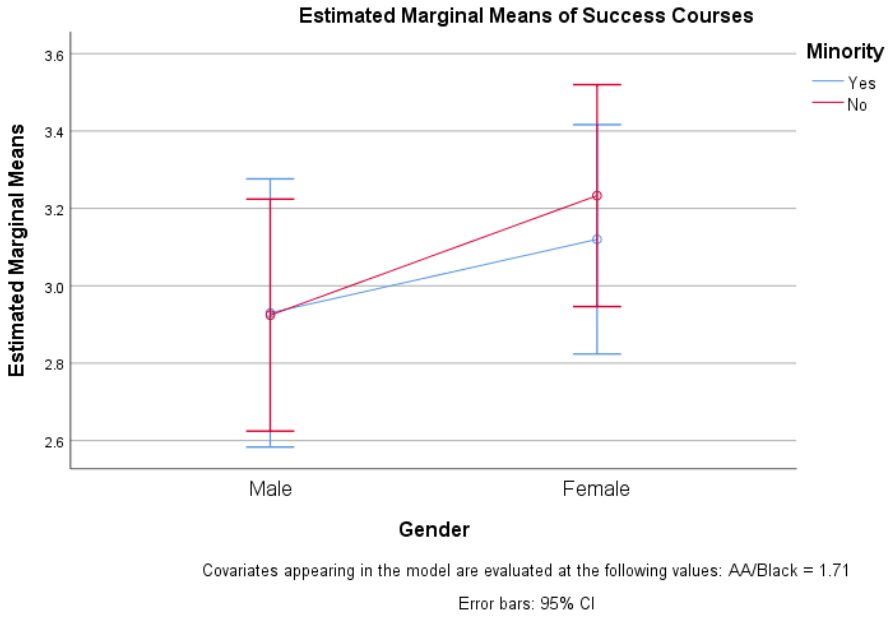


Figure G4: Profile Plot for Success_Courses

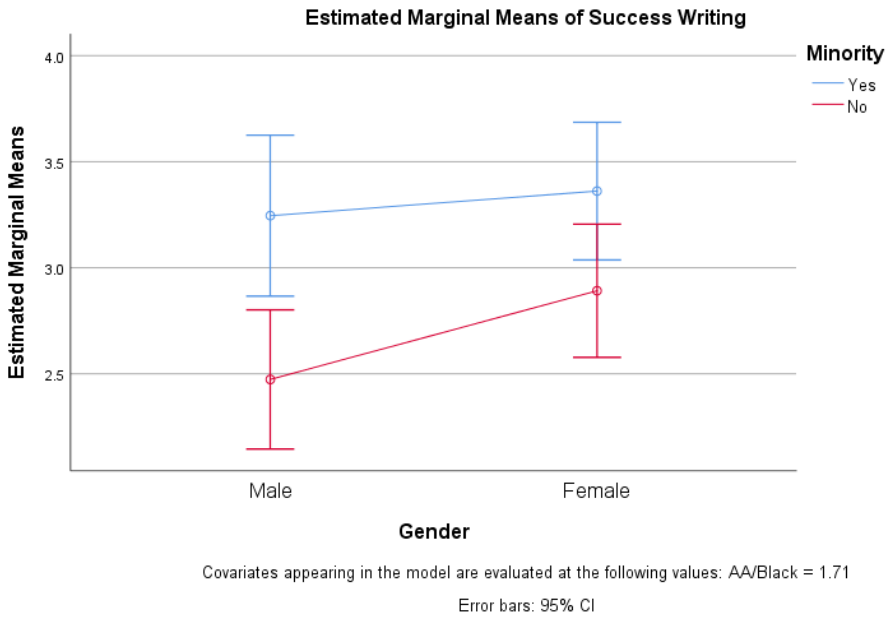


Figure G5: Profile Plot for Success_Writing

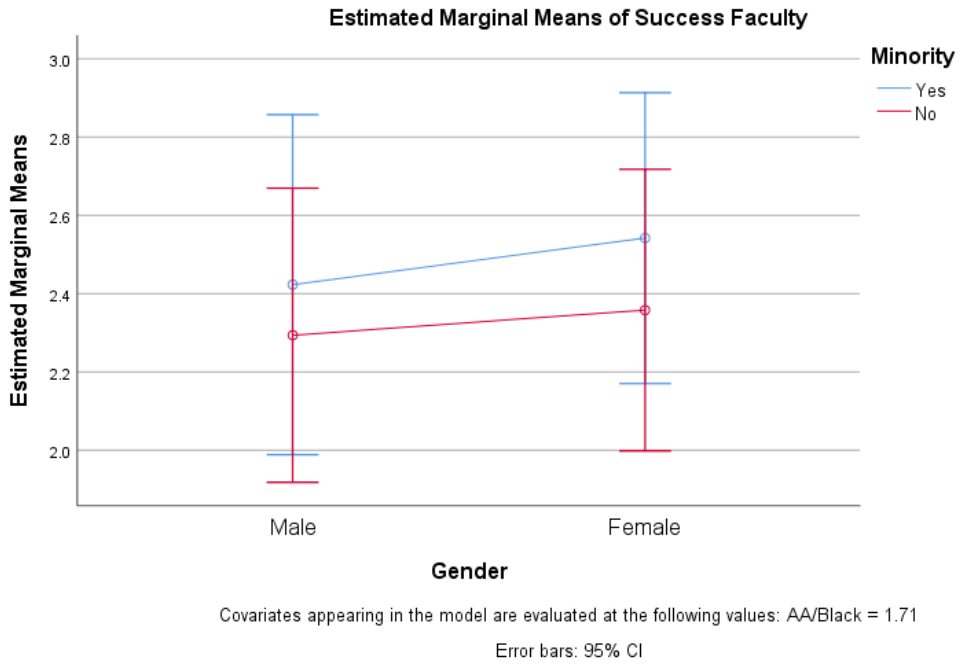


Figure G6**:** Profile Plot for Success_Faculty

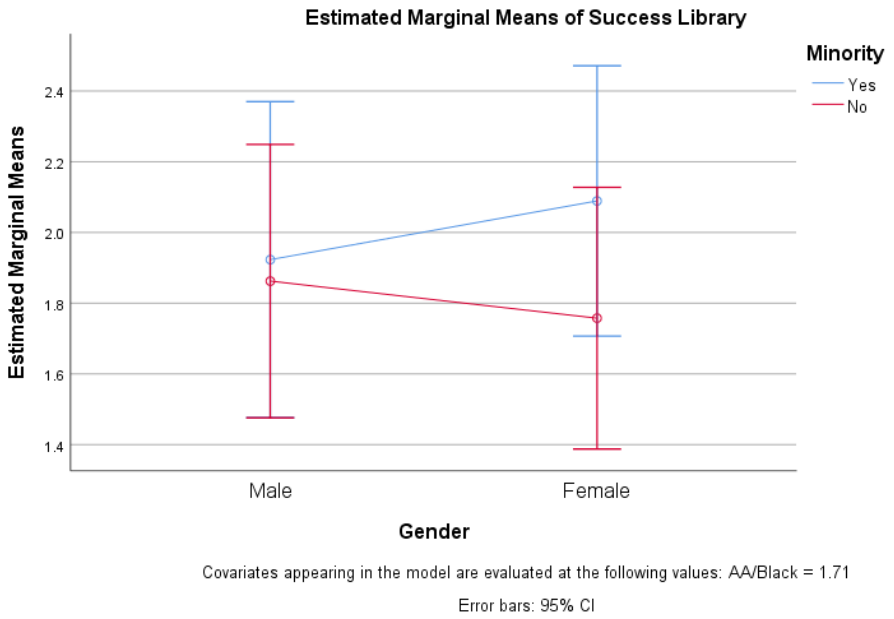


Figure G7: Profile Plot for Success_Library