First Generation College Students in the Alabama Community College System: Outcomes and Implications for School Counselors and Educators

by

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Abstract

Enrolling in and completing college can be especially challenging for first generation in college (FGC) students. The purpose of the present quantitative study was to investigate the demographic and academic characteristics of FGC students and non-FGC students in Alabama. The study also included identifying the factors that mediate FGC students' success outcomes in the community college setting. Logistic regression analysis were used to examine the demographics among a sample of 85,544 students enrolled in the Alabama Community College System (ACCS) as first-time freshman during each fall semester from 2012 to 2016. Results indicated that FGC students attending community colleges in Alabama are more likely to be female, of low socio-economic status determined via Pell Grant eligibility, and required to take remedial mathematics and English courses in comparison to their non-FGC students counterparts. Additionally, this study found as FGC students age increases the odds of completing a community college degree or certificate and of transferring to a four-year college decrease. Other variables that decreased FGC students odds of completing a community college degree or certificate included being members of the following categories: male, minority race, or remedial mathematics or remedial English required. Lastly, FGC students of low socioeconomic status who attended high schools with a free/reduced lunch percentage of 51% or higher and were required to take remedial mathematics or English exhibited a decreased likelihood for transferring to a four-year institution. Implications for school counselors, college counselors, and educators to better understand and potentially improve FGC students' success outcomes are discussed following the presentation of the results.

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"*Success is not final; failure is not fatal: It is the courage to continue that counts." Winston S. Churchill.*

This dissertation is dedicated to all the first generation college students and students from low-income backgrounds trying to achieve a college degree. May you always have the courage to continue. It is my hope that society will continue to work towards solutions to the barriers first generation and low-income students encounter. Your success matters.

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Chapter 1

Introduction to the Problem

First generation in college (FGC) students experience numerous challenges to successful college degree completion and are less likely to persist past their first few years of college than students whose parents have achieved a college degree (Chen & Carroll, 2005; Engle & Tinto, 2008; Lauff & Ingels, 2013; Lonfink & Paulsin, 2005; Stebleton & Soria, 2012). In fact, Pratt, Harwood, Cavazos, & Ditzfeld (2017), found FGC students are 71% more likely to leave college after their first year of enrollment than non-FGC students. In 2013, Lauff and Ingels' published the results of a longitudinal study focused on the educational attainment of a 2002 cohort of high school sophomores. By 2012, only 17% of FGC students from that cohort had achieved a bachelor's degree or higher; however, 46% of students whose parents had achieved a bachelor's degree and 59% of students whose parents had achieved a master's degree or higher had attained a bachelor's degree or higher (Lauff & Ingels, 2013). Using National Educational Longitudinal Study (NELS) data, Chen and Carroll (2005) focused on a subset of 1992 high school seniors and found that 43% of FGC students who entered a postsecondary institution left college by 2000 without achieving a degree. FGC students who enroll in postsecondary institutions need additional support services from school counselors, college counselors and educators in higher education settings for a successful transition from high school to college. However, there is limited research on FGC students' transitions to postsecondary education, particularly to community colleges. In fact, Banning (2014) examined 133 doctoral dissertation abstracts on first-generation college students in higher education settings and found a significant lack of

conversation regarding FGC students' transitions from high school to community college. Only a few of the 133 of dissertations addressed coordination efforts between the high school and higher educational environments and none specifically addressed FGC students' transitions to the community college setting. Therefore, it was critical to conduct additional research on FGC students' transitions to community colleges. It was imperative that the school and college counselors who work with FGC students understand what variables may influence or lead to success among these students.

FGC Students and Community Colleges

Nunez, Curraco-Alamin, and Carroll (1998) defined FGC students as "those whose parents' highest level of education is a high school diploma or less" (p. 7). Non-FGC students are defined as students who had at least one parent who either attended some college or completed a bachelor's or higher degree (Connolly, 2019; Nunez et al., 1998). Research indicates students whose parents did not attend college may be at a significant disadvantage compared to students whose parents have college degrees. This can relate to a lack of understanding of the college environment or college expectations required to be successful in college (Choy, 2001; Ishitani, 2006; Stephens, Hamedani, & Destin, 2012; Woosley & Shepler, 2011). In addition, these students are also more likely to have other barriers that may impede their success in college, this may include economic stressors, a lack of academic preparedness and limited access to assistance in applying for college (Choy, 2001; Balemian & Feng, 2013; Berz & Shuetz, 2014; Gamez-Vargas & Oliva, 2013).

As noted, FGC students often experience numerous challenges related to their status as the first generation in their families to go to college. These students may have more difficulty with the enrollment process, needing more remedial courses, difficulty choosing a major, earning

fewer credits than non-FGC students, and increased likelihood of withdrawing from or repeating courses (Chen & Carroll, 2005). Researchers posit that FGC students are not as academically prepared as non-FGC students (Davis, 2010; Pascarella, Pierson, Wolniak, & Terenzini, 2004); thus, FGC students can be at an academic disadvantage before they begin their first college courses. Academic preparedness or college readiness includes academic preparation and cultural knowledge that leads to successfully navigating higher education settings (Pitre & Pitre, 2009).

Hudley, Moschetti, Su-je, Barry, and Kelly (2009) found FGC students were more likely to attend low performing public high schools that operated with less funding and less qualified teachers. Additionally, a study conducted by the National Center for Educational Statistics found FGC students were more likely than continuing generation students to have lower grade point averages (GPA) and to demonstrate less preparation and consideration for completing the ACT (Redford, Hoyer, NCES, & American Institutes for Research, 2017). First generation students were also found to be less likely to have taken advanced courses in high school, like calculus (7% vs. 22%) or trigonometry/statistics (27% vs. 44%) or to enroll in Advanced Placement (AP) or International Baccalaureate (IB) courses than continuing generation students (18% vs. 44%; Cataldi, Bennett, Chen, National Center for Educational Statistics, & RTI International, 2018).

FGC students are more likely to have lower socioeconomic status and more economic stressors than their non-FGC peers (Mehta, Newbold, & O'Rourke, 2011). These financial stressors increase the necessity for FGC students to work in part- or full-time paid jobs during their college experience (Ishitani, 2006; Lohfink & Paulsen, 2005). Numerous researchers found that first-generation students work more hours at both on and off campus jobs than non-FGC students (Engle & Tinto, 2008; Pascarella et al., 2008; Saenz, Hurtado, Barrera, Wolf, & Yeung, 2007), which can present time management challenges such as work-school-life balance, having

time to attend social gatherings on campus, joining school clubs or organizations, or attending to homework assignments. These challenges can directly impact FGC student performance in courses and with their efforts to socialize and develop relationships on campus (Bergerson, 2007).

Relationships in college are important, as Freeman, Anderman, and Jensen (2007) indicated in their research, peer and faculty relationships are essential to developing a perceived sense of belonging that facilitates academic motivation. Komarraju, Musulkin, and Bhattacharya (2010) found student-faculty interactions played an important role in student success, and that students who had a least one positive relationship with a faculty member were more likely to experience wellbeing and satisfaction with the college experience. Positive engagement in the campus environment can increase retention among college students, but FGC students often lack social capital, which can lead to difficulty assimilating and feelings of isolation (Mathew et al., 2016; Stephens, Hamedani, & Destin, 2014). A perceived sense of belonging is related to college students having higher levels of academic motivation (Freeman, Anderman, & Jenson, 2007). Research indicates there are unfavorable outcomes associated with a failure to develop healthy interpersonal relations during college such as college freshman attrition, anxiety, suicidality, criminality and depression (Hoyle & Crawford, 1994; Freeman, Anderman, & Jenson, 2007). Most college students find the transition from high school to college challenging and isolating at times. However, FGC students could experience additional challenges when transitioning to college and forming new relationships.

Tinto's Theory of Departure in Relation to FGC Students

Tinto's Theory of Departure (1975) theorized that social and academic integration are the two main contributing factors to student success in post-secondary institutions, and a student's

perception of social and academic integration greatly contributes to educational obtainment of a degree. Tinto's Theory, which was influenced by Van Gennep's "Rites of Passages" model (Metz, 2002), focuses on three phases of a students' integration into the college setting: separation, transition, and incorporation. In the separation phase, individuals are preparing to move from one status to another. FGC students experience a transition of moving from identifying with a nuclear and potentially extended family system in which there are no college graduates to a college campus potentially filled with non-FGC students college students. During the second phase, transition, individuals have left one place but have not quite become part of the new setting. According to Stebleton and Soria (2012), it can be difficult for FGC students to develop a sense of belonging when in between two cultures. A sense of isolation not only leads to increased likelihood of departure, it can also lead to feelings of depression (Stebleton & Soria, 2012). During the third phase, incorporation, the individual completes the ritual, in this case college, and forms a new identify and new status. It could be helpful for school counselors and educators to understand and acknowledge these phases of transition to better understand FGC students' experiences and provide support.

FGC Students and Classism

Another unfortunate challenge FGC students may face in college is classism. As researchers have found FGC students are more likely to experience classism (Allan, Garriott, & Keene, 2016; Garriott & Nisle, 2017). Housel and Harvey (2010) found classism to be an environmental barrier to FGC students success in higher education settings. These perceptions can be attributed to the fact that FGC students are more likely to be from lower socioeconomic status and have fewer resources such as financial support and social capital than non-FGC students (Cho, Hudley, Lee, Barry, & Kelly, 2008; Ellis, 2001; Mompremier, 2009). Classism is

the manifestation of social class privilege and power by which individuals from higher socioeconomic classes may disregard individuals of lower socioeconomic classes (Lott, 2002). Classism may be experienced by FGC students in various forms such as citational classism, interpersonal classism, and institutionalized classism (Allan et al., 2016; Langhout, Rosselli, & Feinstein, 2007).

According to Langhout, Rosselli, and Feinstein (2007) citational classism occurs when ascribing stereotypes to individuals from a low socioeconomic background. For example, citational classism is when an individual applies the stereotype that people who are poor are unintelligent or wasteful spenders. Interpersonal classism refers to behaviors which devalue or exclude individuals from lower socioeconomic backgrounds (Langhout et al., 2007). Emphasis on paid social group membership in sororities and fraternities or on housing events requiring students to pay to participate that students from a lower social class cannot easily afford causes FGC students to experience isolation. Lastly, institutionalized classism happens when the institution itself, through its organizational structures and processes, excludes participation by students from lower socioeconomic backgrounds (Langhout et al., 2007). Universities with highly valued study abroad programs that do not provide financial support to students of lower socioeconomic background generate trips filled only with students with financial means (Langhout et al., 2007).

Therefore, it is important school counselors and college counselors working with FGC students acknowledge the burdens associated with the lower socioeconomic classes and awareness of the issues that impact their ability to be successful in higher education environments (Liu et al., 2004). As part of this process, school counselors and college counselors should consider their own social class positions and potential biases. By doing so, educational

professionals can advocate for equal opportunities and help FGC students be successful in degree obtainment.

Community College Environments

Many FGC students focus on entering higher education through the nation's community college systems. Community colleges are two-year institutions that provide affordable post-secondary education to students (AACC, 2018). Community colleges serve many purposes that involve offering workforce training, general equivalency diploma (GED) preparation and testing, short-term specialized trade skill training, an affordable pathway for college degree attainment, and opportunities for college students to transfer to four-year postsecondary institutions (Shapiro et al., 2017). The NCES (2017) found FGC students are more likely to enroll in two-year colleges than non-FGC students (58% vs. 28%), but FGC students who enroll in two-year colleges are less likely to attain a college degree than FGC students who enroll in a four-year post-secondary institution. The First-Generation Foundation (2013) noted that status as a FGC is one of the most cited predictors of failure in higher education, and FGC students who enroll in two-year colleges are at an even higher risk of failure.

According to the American Association of Community Colleges (AACC, 2018), 1,103 community colleges in America enrolled approximately 4.5 million students (63%) part-time and 2.6-million students (37%) full-time in 2016. Community colleges are known for their affordability and accessibility by offering low-tuition costs and open enrollment (Davis, 2009; U.S. Department of Education, 2017). Additionally, community colleges offer flexible hours, which students benefit from by enrolling part-time for online, evening, and weekend classes. Lastly, community colleges often maintain transfer partnerships with area universities, so

students can complete bachelor's degrees (Davis, 2009). FGC students represent as much as 63% of part-time community college students.

Due to economic and admissions variables, community colleges attract a diverse body of students who hail from all backgrounds, including low socioeconomic status backgrounds. The economic draw of community colleges plays heavily into FGC students attending these institutions. In 2018, the national average for annual tuition at a public, in-district community college was $3,570, and for a public, in-state four-year university, annual tuition averaged $9,970 (AACC, 2018). With community colleges' annual tuition cost totaling 36% of the annual tuition of public, in-state four-year universities, FGC students and students with limited financial resources tend to attend community colleges (AACC, 2018). In fact, FGC students are more likely to have lower household median incomes than non-FGC students, which support their presence at community colleges (Mehta et al., 2011; National Center for Education Statistics [NCES], 2018).

This interrelationship between FCG students and attendance at community colleges is highlighted by Mangan's research (2017). Mangan (2017) found that the high enrollment of FGC students in community colleges is directly related to economics. Specifically, Mangan noted, FGC freshman students come from households of a median income that is $37,565, while non-FGC freshman student's median household income is $99,635. During the 2011-2012 academic year in the United States, nearly 50% of all FGC students enrolled in two-year institutions (AACC, 2018). Conversely, 68% of non-FGC students enrolled in four-year institutions, and only 25% of FGC students enrolled in four-year institutions. These numbers are concerning as research suggests FGC students who begin college at a four-year institution are seven times more likely to complete a bachelors degree than FGC students who begin college at

a two-year institution (Engle & Tinto, 2008). However, whether enrolled in a community college or four-year institution, FGC students are 70% more likely to experience college attrition than non-FGC students (Jean, 2010).

These statistics further highlight the need for research to identify the specific characteristics of FGC students that affect the dynamics of their attendance and attrition at community colleges. These issues are of significant concern for the counseling professionals who work with FGC students, as researchers' findings have established the beneficial economic and social outcomes associated with completing a college degree (Taylor et al., 2014; NCES, 2018; Kurtzleben, 2014). As many FGC students strive to achieve social mobility through post-secondary institution, colleges can play a role in addressing some of these inequalities (Haveman & Smeeding, 2006). Although there has been a great deal of research looking at the characteristics of FGC students there is less research on understanding the specific dynamics and characteristics of FGC students outcomes in the community colleges setting (Banning, 2014). Understanding the variables which influence FGC students outcomes in the community college setting can provide a foundation for the development of interventions that could provide more effective support for FGC students. Garriott, Hudyma, Keene, & Santiago (2015) noted that peer and institutional supports can have a positive impact on FGC students academic success and life satisfaction.

The need for intervention programs and supports is founded in the economic and social outcomes linked to higher education attainment which has been shown to lead to job stability and higher pay (Taylor et al., 2014; NCES, 2018; Kurtzleben, 2014). For students who do not attain a college degree, the results can impact their quality of living, starting with annual income. As reported by the NCES (2018), young adults who were considered full time employees (working

at least 35 hours per week) but did not attain a college degree made, on average $19,000 to $23,000 less annually than those who had achieved a bachelor's degree or higher. Full time employees under the age of 35 with at least a bachelor's degree made an average annual income of $55,000, and individuals who had achieved a master's degree or higher had an average annual income of $64,000 (NCES, 2018). Unfortunately, individuals with a high school diploma only had a median income of $32,000 (NCES, 2018).

Taylor et al. (2014) and Kurtzleben (2014) found that the income gap between college graduates and high school graduates has increased with each generation. The wage difference between college graduates and non-college graduates in 1979 was $9,690, but by 2013, the wage difference between the college and non-college degreed was $17,500 (Taylor et al., 2014). These statistics further emphasize the need to understand the barriers FGC students may experience and better prepare school and college counselors to help these students successfully transition to the college environment.

Impact of School Counselors on FGC Students' College Experiences

According to the American School Counselor Association (ASCA, 2017), school counselors are responsible for assisting students in academic, personal, and college and career readiness by implementing comprehensive school counseling programs. Comprehensive school counseling programs require school counselors to provide direct and indirect services to students and their families. Direct services include school counseling core curriculum lessons, individual student planning, individual and small group counseling services, and crisis interventions. Indirect services include consultation and collaboration with stakeholders, faculty, and family members of students, as well as making referrals when necessary for out-of-school counseling

services or resources involving food or clothing assistance. Overall, school counselors greatly contribute to the social, emotional, and academic wellbeing of students (ASCA, 2017).

High school counselors also play a pivotal role in assisting high school students enroll in post-secondary institutions (ASCA, 2017). School counselors can serve as advocates for all students, especially for students of disadvantage, families without college backgrounds, and low socioeconomic backgrounds who are less likely to enroll in and complete college (NCES, 2018; Robinson & Roksa, 2016). FGC students are a group of students who can significantly benefit from this level of support from school counselors (Mehta et al., 2011). Students with at least one parent with a college degree can draw upon their parent's experiences and are more likely to have help for completing the college application process at home. FGC students who do not receive assistance from a school counselor may have to navigate the college enrollment process alone (Robinson & Roksa, 2016). This disparity might explain why FGC students enrollment in postsecondary education fell between 1999 and 2011 from 37% to 33% of all higher education enrollments (Skomsvold, 2015). It is critical that school counselors encourage family participation in the decision-making process of FGC students (Bryan et al., 2011). The American School Counseling Association Ethical Standards (2016) supports the concept of family involvement and support for FGC students, stating students from all backgrounds have the right to a school counselor provides support and acts as a social-justice advocate.

Poynton and Lapan (2017) found adolescents who aspire to attend college are more likely to acquire the cognitive skills and assistance they need for reaching their educational goals. Moreover, the more students meet with their school counselors regarding their college and career goals, the more likely they are to enroll and succeed in postsecondary institutions. Specifically, school counselors help low-income students gain social capital and networks and the academic

skills required for successful transitions to college (Poynton & Lapan, 2017). Bryan, Moore-Thomas, Day-Vines, and Holcomb-McCoy (2011) found students from low socioeconomic backgrounds, who had meaningful interactions with their school counselors during their early high school years, were more likely to reach their college completion goals. Lastly, Poynton and Lapan (2017) concluded students with school counselors who took time to know them on a personal basis were more likely to persist to graduation at the same college in which they enrolled as a freshman and more likely to graduate even if they transferred to another college after the first year. Comprehensive school counseling programs run by school counselors can provide FGC students and low-income students the support they need to enroll and succeed in community colleges and four-year universities (Bryan et al., 2011).

McDonough (2005) determined high school counselors are key institutional agents with valuable information, institutional resources, and opportunities about college that needed to be shared with their students. However, there is limited research available to help school counselors transitioning FGC students to community colleges (Banning, 2014). If school counselors have access to the variables which impact FGC student's two-year college outcomes, they may be better equipped to provide students with the tools and interventions needed for being successful in both community colleges and four-year universities.

Research indicates high school counselors can positively impact FGC student's enrollment and persistence in college by providing support to FGC students and their families (Tello and Lonn, 2017; ASCA, 2017; Avery, 2010; Bishop, 2010). Tello and Lonn (2017) suggest school counselors host community events on topics such as expectations for campus life, academia and course rigor, college admission, financial aid, career interests, and potential stressors to expect when starting college. Tello and Lonn (2017) encourage school counselors to

host these events in community centers instead of school buildings to promote participant comfort and attendance. School counselors can also contribute to FGC students college success outcomes by providing opportunities for FGC students participation in college readiness, academic readiness, and social integration program (Falcon, 2015). Hudley, et al. (2010) found a significant link between high school preparation programs and success outcomes of FGC students. FGC students who participate in college-readiness programs are able to develop supportive relationships with peers who may have similar aspirations, and the connections FGC students establish with like-minded peers and school professionals are connected with persistence towards academic goals (Hudley, et.al, 2010). School counselors are key players in assisting FGC students in the transition from high school to college, and by implementing some of the afore mentioned strategies they can potentially reduce disparities in students' opportunities for college degree attainment.

Statement of the Problem

FGC students face more challenges enrolling in college, achieving academic success in college, and attaining a college degree than students who have at least one parent who has attained a college degree (Choy, 2001; Ishitani, 2006; Pascarella et al., 2004; Stephens et al., 2012; Woosley and Shepler, 2011). According to the Postsecondary National Policy Institute (2018), FGC students are more likely to enroll in a two-year college than non-FGC students. However, the National Center for Education Statistics found FGC students who started at a four-year college were seven times more likely to complete a college degree than FGC students who started at a two-year college (2012). This discrepancy in degree attainment is critical and there is limited research on the variables that may influence this outcome among FGC students.

Furthermore, this is a paucity of research on the specific variables and indicators of success at the two-year college level among FGC students (Banning, 2014).

Significance of the Study

FGC students continue to encounter numerous barriers to college degree attainment (Tinto & Engle, 2008). School and college counselors can be a significant component of a student's success in college. Therefore, it is critical school counselors and college counselors gain a better understanding of how to assist FGC students to persist toward successful community college outcomes. Specifically, the current research can contribute to the literature on FGC students that may influence the practices found at both higher education institutions and high school settings. This quantitative study's results also provided empirical evidence for the demographic and academic variables that mediate FGC students' outcomes. From these findings, educators and counselors can design interventions to facilitate college readiness and success among FGC students and other populations at risk for dropping out of community college. The findings lead to implications for school counselors, college counselors, educators, and stakeholders of community college settings.

According to the First Generation Foundation (2013) being a first generation college student is one of the most cited predictors of failure in higher education, and FGC students who enroll in two-years colleges are at an even higher risk of failure (NCES, 2017). The National Education Center for Statistics (2017) found first generation students are more likely to enroll in two-year colleges than non-FGC students (58% vs. 28%), but FGC students who enroll in two-year colleges are less likely to attain a college degree than FGC students who enroll at a four-year college. Without addressing the achievement gap between FGC students and non-FGC students in degree attainment, especially in two-year colleges, society will only continue to

perpetuate the challenges associated with achieving social mobility for individuals coming from families without college education. Research on this topic could assist in empowering FGC students and increase graduation rates (Banning, 2014). Furthermore, this research could provide a foundation of information for school and college counselors to help prepare and assist FGC students in college degree attainment.

Purpose of the Study

The purpose of the present study was to investigate the demographic and academic characteristics of FGC students and non-FGC students in Alabama. The study also included identifying the factors that mediate FGC students' success outcomes in the community college setting. The study was designed to contribute to the existing literature on FGC students by focusing on FGC students' outcomes in two-year college settings. The current quantitative study was intended to assist school counselors, college counselors and educators working with first generation college students with the goals of providing the following:

- An understanding of the characteristics of FGC students and non-FGC students in the community college setting.
- An understanding of the factors that mediate FGC students success in transferring to a four-year college or completing a degree or certificate at the two-year institution.

Finally, the current study provided valuable information to the Alabama Community College System (ACCS) about the cohorts of postsecondary students who enrolled as first-time freshman in Alabama's community colleges during the fall semesters from 2012, 2013,2014, 2015, and 2016.

Research Questions

The current investigation was designed to answer the following four quantitative research questions:

1. How do FGC and non-FGC students at two-year colleges compare on demographic variables (age, race, gender, socioeconomic status via Pell Grant eligibility, and high school attended free/reduced lunch status)?
2. How do FGC and non-FGC students at two-year colleges compare on academic variables (whether students were required to enroll in remedial mathematics or remedial English)?
3. What demographic and academic variables are associated with successful completion of a community college degree/certificate for FGC students in the community college setting?
4. What demographic variables and academic variables are associated with successful transfer to a four-year college for FGC students in the community college setting?

Summary

School counselors play an important role in assisting all students with the college enrollment process (ASCA, 2017). However, school counselors working with FGC students may be the only support FGC students receive when attempting to enroll in college (NCES, 2018; Robinson & Roksa, 2016). Although FGC students are more likely to attain the bachelors degree if enrolling in a four-year college than if enrolling in a two-year college, FGC students are more likely to enroll in a two-year college (NCES, 2017). Two-year colleges offer affordability and flexibility that some four-year colleges do not offer (Davis, 2009). These factors are beneficial for FGC students, as they are more likely than non-FGC students to be at a financial

disadvantage, needing to work a part or full-time job while in college (Mehta et al., 2011; NCES, 2018). In general, FGC students are less likely to graduate college with a degree than students who have at least one parent who has attained a college degree, but the odds of FGC students attaining a degree are extremely low in the two-year setting (Choy 2001; Ishitani 2006; NCES, 2018; Pascarella et al. 2004; Stephens et al. 2012; Woosley & Shepler, 2011). Without attaining a college degree, FGC students are more likely to work in low-paying jobs and less likely to achieve upward social mobility (Taylor et al., 2014, NCES, 2018). For these reasons, it is critical to conduct more research on FGC students outcomes within the two-year college setting to help school counselors, college counselors, and educators understand the characteristics of FGC students associated with postsecondary success, to meet the needs of this student population, and to address the alarming achievement gap between FGC students and non-FGC students.

Chapter 2

Methodology

The intent of this quantitative study was to address gaps in the existing literature (Banning, 2014) that pertain to the outcomes of FGC students in the community college setting. The purpose of the present study was to investigate the demographic and academic characteristics of FGC students and non-FGC students in Alabama. The study also included identifying the factors that mediate FGC students' success outcomes in the community college setting. Research on this topic could assist in empowering FGC students and increase graduation rates (Banning, 2014). Furthermore, this research could provide an educational foundation for school and college counselors to develop interventions that better prepare and assist FGC students in college degree attainment.

Research Questions

The current investigation was guided by the following research questions:

1. How do FGC students and non-FGC students at two-year colleges compare on demographic variables (age, race, gender, socioeconomic status via Pell Grant eligibility, and high school attended free/reduced lunch status)?
2. How do FGC students and non-FGC students at two-year colleges compare on academic variables (remediation needs: remedial math, remedial English)?
3. What demographic and academic variables are associated with successful completion of a community college degree/certificate for FGC students in the community college setting?

4. What demographic variables and academic variables are associated with successful transfer to a four-year college for FGC students in the community college setting?

The variables addressed in the first two research questions included demographic variables of age, race, gender, socioeconomic status via Pell Grant eligibility, and high schools' free/reduced lunch percentages, and the academic variables of remedial mathematics status and remedial English status. In the first two research questions, FGC students and non-FGC students were compared on these variables to discern if they displayed contrasting characteristics via Chi Square and Cramer's *V*.

For the third and fourth research questions, only FGC students were included as the target sample. The demographic and academic variables were applied in logistics regression modeling. There were two separate logistic regression models because of the two distinct success-related dependent variables that were identified as completion of a community college degree or certificate and transfer to a four-year institution. The two logistic regression models allowed for testing whether the seven independent variables mediated the two unique success outcomes among the FGC-student sample.

Participants

Previously collected data were used for generating the sample. The deidentified data were provided by the ACCS and included demographic, academic, and program success data of cohorts of self-identified FGC students and non-FGC students who enrolled as first-time freshman in the ACCS during the fall semesters of 2012, 2013, 2014, 2015, and 2016. The ACCS tracked outcomes for all students in the sample to record evidence of either degree or certificate completion as well as transfer to a four-year institution. Data only included students

who started from fall 2012 to fall 2016 and completed their degrees, transferred, or left the institution prior to fall 2019 according to the 150% time rule for two-year degree completion.

Demographic data for this study included age, race, gender, high school attended free/reduced lunch status, and socioeconomic status via Pell Grant eligibility. All participants were 18 years of age or older. The academic program data for this study included students identified as needing to complete remedial mathematics and remedial English. Program success criteria data included the two separate variables as follows: (a) completion of degree or certificate at the community college level and (b) transfer to a four-year institution. The cases provided by ACCS of self-identified FGC students and non-identified FGC students totaled 85,544 community college students. Power was calculated utilizing the G*Power application for the seven independent variables operationalized with the sample of 85,544 community college students. The study's power was determined to be .99, even with low effect sizes due to the large sample.

Procedures

After approval from the Auburn University IRB (see Appendix A), the previously collected data were extracted from the ACCS's Data and Exchange (DAX) system by the ACCS Director of Organizational Effectiveness and Research. There was no recruitment of human subjects. Informed consent was not needed because the project used retrospective existing data owned by ACCS.

The data set was provided to the researcher after all identifying data had been removed. The data set provided by ACCS included demographic, academic, and program success data for self-identified FGC students and non-FGC students who enrolled as first time college students in the ACCS in the fall semesters of 2012, 2013, 2014, 2015, and 2016. Data were analyzed across

the research variables outlined in the research questions. Specifically, demographic data (age, gender, race, high school attended free/reduced lunch percentages, and socioeconomic status via Pell Grant eligibility) were used to address the first research question. Academic data were represented by students' remediation needs for mathematics and English for answering the second research question. Students' demographic, academic, program success data (transfer and degree completion status) were used to address the third and fourth research questions.

Data Analysis

The previously collected data provided by the ACCS included demographic (e.g., age, gender, race, high school attended free/reduced lunch status, and socioeconomic status via Pell grant eligibility), academic (e.g. remedial mathematics and remedial English), program success data (e.g. completion of community college degree/certificate or transfer to four-year institution). The demographic, academic, and program success data were the independent variables, and the dependent variable was defined as the student obtaining a degree or transferring to a four-year institution.

The data were analyzed using SPSS software. The dependent variable is dichotomous as a success (1) versus no success (0) in the two-year college; logistic regression modeling was used for each research question. Logistic regression analysis is appropriate to use when a researcher is attempting to predict the probability of an event occurring in one of two categories of a dichotomous dependent variable based on one or more continuous or categorical independent variables (Laerd Statistics, 2017). The descriptive statistics represent the frequencies for categorical variables and the measures of central tendency and dispersion for continuous variables.

Definition of Terms

The terms in this section are defined according to how they will be operationalized in the statistical analysis.

FGC student. Individuals enrolled in college for the first time whose parents' highest level of education was high school or less (Nunez et al., 1998).

Graduation rate. The term refers to the "percentage of a school's first-time, first-year undergraduate students who complete their program within 150% of the published time for the program. For example, for a four-year degree program, entering students who complete within six years are counted as graduates" (U.S. Department of Education, n.d., para. 1).

High School Free/Reduced Lunch status. These percentages refer to students who qualify for free/reduced lunch by meeting the following criteria, "must be a resident of the state of Alabama and a parent or primary caregiver responsible for a child(ren) who attends school (high school or under). (Benefits.gov, n.d., para. 2)" To qualify household income (before taxes) must be less than or equal to the amounts listed in **Table 1**.

Table 1. Income by Household Size Requirements for Students to Achieve Free/Reduced Lunch Status

Household Size	Maximum Income Level (Per Year)
1	$23,107
2	$31,284
3	$39,461
4	$47,638
5	$55,815
6	$63,992
7	$72,169

8	$80,346

Pell Grant. "The Federal Pell Grant Program provides need-based grants to low-income undergraduate and certain post-baccalaureate students to promote access to postsecondary education" (U.S. Department of Education, 2015, para.1).

Transfer. The term refers to the first-time, first-year undergraduate student transferring from any college within 150% of the published time for the program to a four-year institution, such as a community college student transferring to a four-year university within 3 years of first community college enrollment (U.S. Department of Education, n.d.).

Associate in Arts (AA) Degree. An undergraduate award signifying successful completion of a prescribed course of study (60 to 64 semester credit hours) designed for students planning to transfer to a senior institution to pursue a baccalaureate degree in the liberal arts. Only colleges accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) are authorized to award this degree.

Associate in Applied Science (AAS) Degree. An undergraduate award signifying successful completion of a prescribed course of study (60 to 76 semester credit hours) that offers specialization in a technical, business, or semi-professional field qualifying the student for employment upon graduation while providing the possibility for transfer of some credit to a senior institution. Only colleges accredited by SACSCOC are authorized to award this degree.

Associate in Science (AS) Degree. An undergraduate award signifying successful completion of a prescribed course of study (60 to 64 semester credit hours) designed for students planning to transfer to a senior institution to pursue a baccalaureate degree in the sciences or a

specialized professional field. Only colleges accredited by SACSCOC are authorized to award this degree.

Associate in Applied Technology (AAT) Degree. An undergraduate award signifying successful completion of a prescribed course of study (60 to 76 semester credit hours) that provides specialization in a technical, business, or semi-professional field qualifying the student for employment upon graduation. This degree is offered only by technical colleges accredited by the Council on Occupational Education (COE) and is not designed for students seeking to transfer credit to a senior institution.

Associate in Occupational Technology (AOT) Degree. An undergraduate award signifying successful completion of a prescribed course of study (60 to 76 semester credit hours) designed for students seeking to become multi-skilled technicians. Students must complete at least 28 semester hours in a primary technical specialty (the major) and at least 12 semester hours in a closely related secondary technical specialty (the minor). The AOT is not designed for transfer to a senior institution. All colleges are authorized to award this degree.

Chapter 3

Results

The purpose of the present study was to investigate the demographic and academic characteristics of FGC students and non-FGC students in Alabama. The study also included examining what factors mediate FGC students' success outcomes in the community college setting. The researcher for this study utilized previously collected data from the ACCS. A bivariate analysis was used to determine how FGC students and non-FGC students attending Alabama community colleges compared on demographic variables and academic variables.

Research Questions

The current investigation was guided by the following research questions:

1. How do FGC students and non-FGC students at two-year colleges compare on demographic variables (age, race, gender, socioeconomic status via Pell Grant eligibility, and high school attended free/reduced lunch status)?
2. How do FGC students and non-FGC students at two-year colleges compare on academic variables (remediation needs: remedial math, remedial English)?
3. What demographic and academic variables are associated with successful completion of a community college degree/certificate for FGC students in the community college setting?
4. What demographic variables and academic variables are associated with successful transfer to a four-year college for FGC students in the community college setting?

Sample Demographics

As reported in **Table 2**, the data set contained demographic, academic, and program success information for 85,544 students in the ACCS. Out of the 85,544 participants, 85,475 participants reported their genders as: 48,251 (56.4%) female and 37,224 (43.5%) as male and 69 (0.1%) participants did not identify as male or female. Additionally, 23,390 (27.3%) students identified as Black, 54,548 (63.5%) identified as White, and 7,770 (9.1%) of students identified as Other (American Indian (*n* = 944, 1.1%), Asian (*n* = 1,098, 1.3%), Latino (*n* = 0, 0%), Native Hawaiian (*n* = 130, 0.2%), Pacific Islander (*n* =0, 0%), two or more races (*n* =1,1.9%), and unreported (*n* = 3,933, 4.6%).)The sample's racial composition mirrors the racial composition of the state of Alabama (United States Census Bureau, 2018).

Table 2. Demographic Information for the Sample of 85,544 ACCS Students

Characteristic		Total *n* (%)	FGC *n* (%)	non-FGC *n* (%)
Gender	Female	48,251 (56.4)	9576 (62.5)	38,675 (55.1)
	Male	37,224 (43.5)	5744 (37.5)	31,480 (44.8)
	Other/Unknown	69 (0.1)	9 (0.1)	60 (0.1)
Race/Ethnicity	White	54,480 (63.5)	10,052(65.6)	44,332 (63.1)
	Black	23,390 (27.3)	4,022 (26.2)	19,369 (27.6)
	Other	7,770 (9.1)	1,255 (8.2)	6,515 (9.3)
FGC Status	Yes	15,329 (17.9)		
	No	70,215 (82.1)		
Pell Eligibility	Yes	56,047 (65.5)	10,929 (71.3)	45,118 (64.3)
	No	29,497 (34.5)	4,400(28.7)	25,097(35.7)

The data included the two independent variable categories of FGC students and non-FCGS. There were 15,329 students self-identified as FGC students, representing 17.91% of the population, and 82.1% of the sample, 70,215 students, did not self-identify as being FGC students. Thirty-nine students were not classified in one of those two categories.

The data for the 85,544 students showed 56,047 (65.5%) of students attending Alabama community colleges were Pell Grant eligible and 29,497 (34.5%) of the students did not qualify to receive a Pell grant.

As shown in **Table 3**, success data for this study revealed of the 85,544 students in the data, 24,596 (28.7%) students successfully transferred to a four-year college, and 60,948 (71.2%) did not transfer to a four-year college. The data showed 20,426 (23.9%) students successfully completed a degree at the community college attended. Of these 20,426 students, 16,831 achieved an associate's degree (such as Associate in Arts, Applied Science, Science, Applied Technology, or Applied Occupational Technology), and 1,122 students achieved a certificate signifying the successful completion of a prescribed course of study (lasting 30 to 60 semester hours) that provided the students with specialized sets of skills for employment or professional advancement. The remaining 2,472 students achieved the CTE Short-Term Certificate (STC) signifying the successful completion of a prescribed course of study (9 to 29 semester credit hours) equipping students with a focused set of skills for an entry-level position in business and industry. Of the total data set, 65,157 (76.1%) students did not achieve a degree.

Table 3. Success Variables for the ACCS Sample

Characteristic		Sample *n*	%
Transferred to a four-year institution	Yes	24,596	28.7
	No	60,948	71.2
Type of Degree or Certificate Earned	Associates	16,831	19.7
	CER	1,122	1.3
	STC	2,472	2.9
	No Degree	65,157	76.2

Research Question 1 Findings

This research question addressed how FGC students and non-FGC students at two-year colleges compare on demographic variables. The demographic variables were age, gender, race, socioeconomic status via Pell Grant eligibility, and percentage of free/reduced lunch of high school attended. The chi-square (χ^2) statistic, Cramer's *V* coefficient, and the independent samples *t* test were used for answering the question.

Age

As indicated in **Table 4**, the average age of the 15,329 FGC students in the data set was 20.4 years old, which was close to the same average age (20.0) of the 70,215 non-FGC students in the date set. Levene's Test for Equality of Variances indicated that the variances were not equal, so the degrees of freedom (*df*) were adjusted for the *t* test. **Table 5** shows the independent means *t* test result as $t\ (1614.18) = 6.813$ with $p < .0001$. Therefore, the mean age of FGC students and Non-FGC students were not significantly different.

Table 4. Age

First Generation Status	*n*	*M*	*SD*	*SEM*
Yes	15,329	20.39	5.909	.048
No or Unknown	70,215	20.03	5.545	.021

Table 5. Independent Samples *t* Test for Age Between FGC and non-FGC Students

Levene's Test for Equality of Variances		t-test for Equality of Means		
F	*p*	*t*	*df*	*p*
122.285	< .0001	6.813	21614.180	< .0001

Gender

As indicated in **Table 6**, of the 15,329 FCGS in the data set 9,576 (62.5%) identified as female and 5,744 (37.5%) identified as male. Comparatively, of the 70,215 non-FGC students in the data set 38,675 (55.1%) of non-FGC students identified as female and 31,480 (44.8%) of non-FGC students identified as male. Approximately 69 (.01%) students attending community colleges in the states of Alabama did not identify as males or female. Pearson chi-squared (χ^2) indicated there was a difference in the distribution of gender because the genders were not represented as uniform distributions in each cell such as FGC male, FGC female, non-FGC male, and non-FGC female. The Cramer's *V* of .057 served as an effect size for the chi-square statistical test and was small. The small effect size for gender did not indicate that differences in the distribution would affect further analyses.

Table 6. Gender Proportions in the ACCS Sample

Gender	Within FGC *n* (%)	Within Non-FGC *n* (%)	Sample %	χ^2	*p*	Cramer's *V*
Female	9,576 (62.5)	38,675 (55.1)	56.4	279.632	.000	.057
Male	5,744 (37.5)	31,480 (44.8)	43.5			
Other/Unknown	9 (0.1)	60 (0.01)	0.1			

Socioeconomic Status via Pell Eligibility

As indicated in **Table 7**, of the 15,329 FGC students, 10,929 (71.3%) met criteria for Pell eligibility, and 4,400 (28.7%) FGC students did not qualify for a Pell Grant. Comparatively, 45,118 (64.3%) of the non-FGC students met the criteria for Pell eligibility, and 25,097 (35.7%) of non-FGC students did not qualify for a Pell Grant. The Cramer's *V* of .057 served as an effect size for the chi-square statistical test and was small. The small effect size for Pell eligibility did not indicate that differences in the distribution would affect further analyses.

Table 7. Socioeconomic Status via Pell Eligibility

Pell Eligibility	Within FGC *n* (%)	Within Non-FGC *n* (%)	Total Sample %	χ^2	*p*	Cramer's *V*
No	4,400 (28.7)	25,097 (35.7)	34.5	275.971	.000	.057
Yes	10,929 (71.3)	45,118 (64.3)	65.5			

Race

Table 8 reports on the race and ethnicity of the participants. Of the 15,329 FGC students, 10,052 (65%) identified as White with 4,022 (26.2%) identifying as Black and 1,255 (8.2%) identifying as Other, including all students who reported race or ethnicity identification in categories below 3%. Comparatively speaking, the 70,215 non-FGC students, 19,368 (27.6%) identified as Black, 44,332 (63.%) identified as White, and 6,515 (9.3%) identified as Other, including all students who reported race or ethnicity identification in categories below 3%. The Cramer's *V* of .021 served as an effect size for the chi-square statistical test and was small. The small effect size for race did not indicate that differences in the distribution would affect further analyses.

Table 8. Race

Race	Within FGC *n* (%)	Within Non-FGC *n* (%)	Sample %	χ^2	*p*	Cramer's *V*
Black	4,022 (26.2)	19,368 (27.6)	27.3	36.601	.000	.021
White	10,052 (65.6)	44,332 (63.1)	63.6			
Other	1,255 (8.2)	6,515 (9.3)	9.1			

Percentage of Free/Reduced Lunch at High Schools Attended

As indicated in **Table 9**, 3,418 (22.3%) FGC students and 20,267 (28.9%) non-FGC students attend a private or out of state high school that provided no identifying free lunch status;

1,499 (9.8%) FGC students and 7066 (10.1%) of non-FGC students attended a high school with a rate of 0% to 25% free lunch status; 4,906 (32.0%) FGC students and 20,183 (29.4%) non-FGC students attended a high school with a rate of 26% to 50% free lunch status, 4,987 (32.5%) FGC students and 20,634 (29.4%) non-FGC students attended a high school with a rate of 51% to 75% free lunch status; and 519 (3.4%) FGC students and 2,065 (2.9%) non-FGC students attended a high school with a rate of 76% to 100% free lunch status. The majority of students in the data set, both FGC students and Non-FGC students attended a high school with a percentage of anywhere from 26% to 75% free/reduced lunch status. The Cramer's *V* of .058 served as an effect size for the chi-square statistical test and was small. The small effect size for high school free lunch percentage categories did not indicate that differences in the distribution would affect further analyses.

Table 9. High School Free Lunch Percentage Categories

High School Free Lunch Percent Categories	Within FGC *n* (%)	Within Non-FGC *n* (%)	Sample %	χ^2	*p*	Cramer's *V*
NA (Private/Out of State School)	3,418 (22.3)	20,267 (28.9)	27.7	292.39	.000	.058
0% to 25%	1,499 (9.8)	7,066 (10.1)	10.0			
26% to 50%	4,906 (32.0)	20,183 (28.7)	29.3			
51% to 75%	4,987 (32.5)	20,634 (29.4)	30.0			
76% to 100%	519 (3.4)	2,065 (2.9)	3.0			

Research Question 2 Findings

This research question addressed how FGC students and non-FGC students at two-year colleges compare on academic variables. The academic variables involved whether or not the Alabama college students were required to take remedial Mathematics or English courses. The chi-square (χ^2) statistic and Cramer's *V* coefficient were used for answering the question.

As indicated on **Table 10**, 48.7% of FGC students were required to enroll in a remedial mathematics course, whereas 40.8% of non-FGC students were required to enroll in a remedial math, and 29.3% of FGC students and 25.9% of non-FGC students were required to take a remedial English course. The Cramer's *V* of .062 and .030 served as an effect size for the chi-square statistical test and was small. The small effect size for remedial mathematics and English did not indicate that differences in the distribution would affect further analyses.

Table 10. Remediation Math/English Required

Remediation Required	Within FGC %	Within Non-FGC %	Sample %	χ^2	*p*	Cramer's *V*
Mathematics	7,472 (48.7)	28,645 (40.8)	42.2	325.823	.000	.062
English	4,499 (29.3)	18,214 (25.9)	26.6	74.991	.000	.030

Research Question 3 Findings

The third research question addressed what demographic and academic variables are associated with successful completion of a community college degree or certificate for 11,542 FGC students attending community college. A binomial logistic regression was performed to ascertain what demographic variables and academic variables (measured as mathematics and English remediation need) mediate the successful completion of a community college degree or certificate among FGC students attending community colleges in Alabama. The logistic regression model was statistically significant, χ^2 (9) =634.051, $p < .0001$. Hosmer and Lemeshow indicated the model to be a good fit. The model explained eight percent of the variance using Nagelkerke R^2 in successful degree completion outcomes and correctly classified 75.9% of cases.

The predictor variables found statistically significant were as follows: age, race, gender, remedial English, and remedial mathematics (as shown in **Table 11**). FGC students who were over the age of 21 and under age 27, male, minority, required to take remedial English or

mathematics courses had a decreased likelihood of completing a community college degree or certificate compared to the reference group of female, White, and aged 18 to 20 FGC students. Minority FGC students were 24% less likely to complete a community college degree or certificate than white FGC students. Male FGC students were 22% less likely to complete a community college degree or certificate than females. FGC students who were required to take remedial English were approximately 50% less likely to complete a community college degree or certificate, and FGC students who were required to take remedial mathematics were also 50% less likely to achieve a community college degree or certificate.

Table 11. Logistic Regression Predicting Likelihood of FGC Students Producing a Community College Degree or Certificate as Mediated by Demographic and Academic Variables.

							Odds Ratio 95% C.I.	
Variables (Categories)	*B*	*S.E.*	*Wald*	*df*	*p*	*Odds Ratio*	*Lower*	*Upper*
Age 21-23	-.824	.135	37.527	1	.000	.438	.337	.571
Age 24-26	-.593	.171	12.044	1	.001	.552	.395	.772
Age 27 & Up	-.165	.104	2.503	1	.114	.848	.691	1.041
Race Minority	-.281	.052	29.355	1	.000	.755	.682	.836
Gender Male	-.251	.047	28.334	1	.000	.778	.709	.853
Pell Eligible Yes	.004	.050	.008	1	.929	1.004	.911	1.108
High School Free Lunch 51% and Above	.000	.046	.000	1	.998	1.000	.914	1.094
Remedial English Yes	-.671	.059	129.291	1	.000	.511	.455	.574
Remedial Mathematics Yes	-.655	.048	184.672	1	.000	.520	.473	.571
Constant	-.472	.051	86.329	1	.000	.623		

Note. The Age reference group was Age 18-20. The Race reference group was White. The Gender reference group was Female. The Pell Eligible reference group was No. The High School Free Lunch Percentage reference group was 50% and below. Finally, the Remedial English and Mathematics reference groups were No.

Research Question 4 Findings

This question asked what demographic variables and academic variables are associated with successful transfer to a four-year college for 11,542 FGC students attending community college. A binomial logistic regression was performed to ascertain what demographic variables and academic variables (measured as mathematics and English remediation need) mediate successful transfer to a four-year institution among FGC students attending community colleges in Alabama. The logistic regression model was statistically significant, $\chi^2(9) = 341.680$, $p < .0001$. Hosmer and Lemeshow indicated a goodness of fit for the model. The model explained four percent of the variance using Nagelkerke R^2 in successful degree completion outcomes and correctly classified 76.3% of cases. The predictor variables found statistically significant were as follows: age, race, gender, Pell eligibility, high school attended free/reduced lunch percentage, remedial mathematics, and remedial English (as shown in **Table 12**).

Table 12. Logistic Regression Predicting Likelihood of FGC Students Successfully Transferring to a Four-Year College as Mediated by Demographic and Academic Variables

							Odds Ratio 95% C.I.	
Variables (Categories)	*B*	*S.E.*	*Wald*	*df*	*p*	*Odds Ratio*	*Lower*	*Upper*
Age 21-23	-.470	.119	15.468	1	.000	.625	.495	.790
Age 24-26	-.767	.184	17.304	1	.000	.465	.324	.667
Age 27 & Up	-.996	.137	53.063	1	.000	.369	.283	.483
Race Minority	.234	.050	22.123	1	.000	1.264	1.147	1.394
Gender Male	-.098	.046	4.492	1	.034	.906	.828	.993
Pell Eligible Yes	-.386	.049	61.707	1	.000	.680	.617	.784
High School Free Lunch 51% and Above	-.106	.046	5.434	1	.020	.899	.823	.983
Remedial English Yes	-.403	.055	53.253	1	.000	.705	.643	.774
Remedial Mathematics Yes	-.349	.047	54.253	1	.000	.705	.643	.774
Constant	-.565	.050	127.102	1	.000	.568		

Note. The Age reference group was Age 18-20. The Race reference group was White. The Gender reference group was Female. The Pell Eligible reference group was No. The High School Free Lunch Percentage reference group was 50% and below. Finally, the Remedial English and Mathematics reference groups were No.

FGC students who were over the age of 21, White, male, Pell eligible from a high school with a percentage of over 51% free lunch and required to take remedial English or remedial mathematics courses had a decreased likelihood of transferring to a four-year college. As FGC students aged, their likelihoods for transfer to a four year college fell by age group as follows: (a) ages 21 to 23 showed 37% less likely; (b) ages 24 to 26 showed 53% less likely; (c) ages 27 and up showed 60% less likely. Minority FGC students were 1.264 times more likely to transfer to a four-year college than White FGC students. Males were minimally less than likely to transfer to a four-year college (1%) than female FGC students. FGC students who were Pell eligible were 32% less likely to transfer to a four year college. FGC students attending a high school with 51% of the students eligible for free lunches were minimally less likely to transfer to a four-year college (2%). FGC student required to take remedial English were 30% less likely to transfer to a four-year college than FGC students who were not required to take remedial English. Lastly, FGC students who were required to take remedial mathematics were 30% less likely to transfer to a four-year college than FGC students who were not required to take remedial math.

Summary

This study was conducted to gain an understanding of how demographic and academic variables (remedial needs) of FGC students compared to non-FGC students, and the demographic and remedial need variables that are associated with FGC student success outcomes (community college degree competition or transfer to a four-year college). To answer these questions, binary logistic regression analyses were conducted using data from 85,544 students attending the ACCS. Results from the current study indicated that most significant differences

between FGC students and non-FGC students attending community colleges in Alabama are FGC students are more likely to be female (7% difference between FG and non-FGC) with low socio-economic status determined via Pell Grant eligibility (7% difference between FG and non-FGC) and required to take remedial mathematics courses (8% difference between FGC students and non-FGC). Additionally, this study found as FGC students' ages increase, the odds of completing a community college degree or certificate or transferring to a four-year college decrease. Other variables that influenced the decreased odds of completing a community college degree or certificate for FGC students involved FGC students having memberships in the categories of male, minority race, and required to complete remedial English or remedial mathematics. Lastly, FGC students of low socioeconomic status (Pell eligible) who were White male, from a high school with the percent of students eligible for free/reduced lunch as 51% or higher, and required to take remedial English or remedial mathematics had decreased likelihoods of transferring to four-year colleges.

Chapter 4

Discussion

The purpose of the current study was to develop an understanding of the demographic and academic characteristics of FGC students and non-FGC students and understanding of the variables that are associated with FGC students' success outcomes in the community college setting. Additionally, implications for school counselors, college counselors, and educators to increase FGC students' success outcomes in the community college setting are reviewed in this chapter. Lastly, limitations of the current study and recommendations for future research are discussed in this chapter.

Overview

FGC students experience numerous challenges to successful college degree completion and are less likely to persist past their first few years of college than students whose parents have achieved a college degree (Chen & Carroll, 2005; Engle & Tinto, 2008; Lauff & Ingels, 2013; Lonfink & Paulsin, 2005; Stebleton & Soria, 2012). Researchers posited that FGC students are not as academically prepared as non-FGC students (Davis, 2010; Pascarella, Pierson, Wolniak, & Terenzini, 2004), leaving FGC students at an academic disadvantage before they begin their first college courses. Indeed, the First-Generation Foundation (2013) noted that status as a FGC student is one of the most cited predictors of failure in higher education, and FGC students who enroll in two-year colleges have a high risk of failure, meaning high risk of not obtaining a degree or of transferring to a university.

FGC students who enroll in two-year colleges are less likely to attain a college degree than FGC students who enroll in four-year institutions, yet FGC students are more likely to enroll in two-year colleges than non-FGC students (58% vs. 28%; NCES, 2017). The economic

draw of community colleges plays heavily into FGC students attending these institutions. Community colleges offer lower tuition costs and flexible hours, which students benefit from by enrolling part-time for online, evening, and weekend classes. Lastly, community colleges often maintain transfer partnerships with area universities that facilitate the transfer process so students can complete bachelor's degrees (Davis, 2009).

FGC students who enroll in postsecondary institutions of any type may need additional support services from school counselors, college counselors and educators in higher education settings for a successful transition from high school to college. However, the limited research on FGC students' transitions to postsecondary education, particularly to community colleges led to this investigation. Therefore, the current study was designed for developing an understanding of how demographic and academic (remedial course needs) variables of FGC students and non-FGC students differ as well as identifying what variables mediate success outcomes among FGC students attending community colleges in Alabama. Since high school counselors play a pivotal role in assisting high school students enroll in post-secondary institutions (ASCA, 2017) and serve as advocates for all students, especially for students of disadvantaged and low socioeconomic backgrounds (NCES, 2018; Robinson & Roksa, 2016), the results of this study might influence decision making at the high school and college counselor levels. The findings suggested that demographic and academic variables are associated with FGC student success in the community college setting and support finding ways to better assist FGC students who enter higher education through the community college setting.

Discussion of Results

The National Education Center for Statistics (2017) found first generation students are more likely to enroll in two-year colleges than non-FGC students (58% vs. 28%), but FGC

students who enroll in two-year colleges are less likely to attain a college degree than FGC students who enroll at a four-year college. The present study sought to develop an understanding of FGC students in the community college setting, including demographic and academic (remedial needs) differences among FGC and non-FCG students and the variables associated with FGC students' successes (namely, transfer to four-year college or completion of a community college degree or certificate).

The most notable difference this study found among FGC students and non-FGC students in the ACCS was that FGC students were more likely to be of low socio-economic status (determined via Pell Grant eligibility) as compared to the non- first generation college students. Specifically, 71% FGC students vs. 63% non-FGC students were Pell Grant eligible in the sample. The FGC students were also more are likely to be required to take remedial mathematics courses (49% FGC vs. 41% non-FGC) and remedial English courses (29% FGC vs. 27% non-FGC). This finding adds to the existing literature that FGC students are more likely to be from lower socioeconomic status (Cho et al., 2008; Ellis, 2001; Mompremier, 2009). It also adds to existing literature that posits FGC students are not as academically prepared as non-FGC students (Davis, 2010; Pascarella, Pierson, Wolniak, & Terenzini, 2004), especially in the area of mathematics since FGC students are less likely to take advance mathematics courses in high school (Cataldi, Bennett, Chen, NCES, & RTI International, 2018). This highlights a significant academic difference which may influence FGC students overall success in both two-year and potentially four-year college environments. Lastly, FGC students were more likely to be female (62.5% FCC vs. 55.1% non-FGCS) than non-FGC students.

Regarding race, the sample's racial composition mirrors the racial composition of the state of Alabama (United States Census Bureau, 2018), and no significant racial differences

between FGC students and non-FGC students appeared in the demographic and academic variables. Interestingly, 13% of community college students throughout the US were Hispanic in fall 2014, the ACCS racial data diverged from these statistics nationally (California and Texas have extremely large Hispanic populations relative to the nation- so they were removed from this data). The Hispanic students in the ACCS database were too few to be included as a separate racial category, suggesting Alabama has an unusually small population of Hispanic students compared to all other states. In fact, Alabama reported only 4.1% of the state's residents were Hispanic in 2016 as one of the 15 states with the lowest Hispanic or Latino population in the nation (U.S. Census Bureau, 2018).

The current study also aimed to gain an understanding of which demographic variables and academic variables (i.e., remedial mathematics and English needs) are associated with FGC students' successful outcomes in the community college setting. This study's findings suggest a relationship exists between FGC students' ages and success outcomes. As FGC students' age, their odds for completing a community college degree/certificate or transferring to a four-year college decrease. There is a lack of literature examining the success outcomes of FGC students based on age. However, this studies' findings are consistent with existing literature that suggest FGC students attending community colleges are more likely to be older their peers of other statuses (Ma & Baum, 2016; NCES, National Postsecondary Student Aid Study [NPSAS], 2012). Subsequently, FGC students tend to be older, non-traditional students who are more likely to work a full time job and have dependents to support. In fact, the NCES (2012) found community college students are more likely to work full time jobs than students attending public and private nonprofit four-year universities. These additional responsibilities could certainly contribute to reductions in success among older FGC students.

This study's findings suggest that FGC students tend to represent a lower socioeconomic status (determined via Pell eligibility). The FGC student of low socioeconomic status has decreased odds for transferring to a four-year college. Additionally, FGC students who were required to take remedial English or remedial mathematics courses in community college had decreased odds of completing a community college degree/certificate or transferring to a four-year college. Lastly, FGC students attending a high school with a free/reduced lunch percentage of 51% or higher had decreased odds of successfully transferring to a four-year college. This was not surprising considering, for the higher percentage of students receiving free lunch in high school, there was a greater chance they would also be students of low-socioeconomic status. These findings were consistent with existing literature.

Numerous studies indicate FGC students are more likely to be from low-income families (Cho et al., 2008; Ellis, 2001; Mompremier, 2009; Mehta et al., 2011; National Center for Education Statistics [NCES], 2018) and are more likely to attend low-performing PreK-12 schools (Hudley et al., 2009). Balemain and Feng (2013) found FGC students score lower on ACT and SAT tests due to less academic preparation. In a study involving more than 250,000 students at 57 community colleges, the Community College Research Center (CCRC, 2019) found that 59% of entering students required remedial mathematics and 33% required a developmental reading course. The CCRC's findings were consistent with the finding in this study showing 48.7% of FGC students as required to enroll in a remedial mathematics course and 29.3% of FGC students as required to take a remedial English course. Numerous studies have found mixed results for students who are required to take remedial courses. For example, Bettinger and Long (2005, 2009) found younger students taking remedial mathematics courses to do generate the positive outcome of college completion. Other studies with broader student

samples found students who enrolled in remedial courses did not gain success in attaining outcomes such as degree completion (Calcagno & Long, 2008; CCRC, 2019; Jaggars & Stacey, 2014; Martorell & McFarlin, 2009). Conversely, in 2006, a National Educational Longitudinal Study (NELS:88) found that only 28% of students who took at least one remedial completed a college degree within 8.5 years. Regardless, this lack of academic readiness, which Pitre and Pitre (2009) defined as academic and practical knowledge, contributes to FGC students potential for failure in college success. This insight further highlights the need for school and college to provide college preparatory programs for FGC students to improve students' academic and social readiness.

Additionally, FGC students attending community college are more likely to be female. Fewer FGC males attended Alabama community colleges than females, and these FGC males were less likely than FGC females to attain a degree at community colleges. This was consistent with current literature on the gender gap in college enrollment and completion to benefit women in recent years (Buchmann & DiPrete, 2006; McDaniel et al., 2011; Snyder & Dillon, 2010). Over the last decade, women's attendance and completion of college degrees have steadily increased in both two-year and four-year colleges (Snyder & Dillow, 2010). Specifically, from 1970 to 2007, the number of community colleges increased from 654 to 1,668 along with the number or students attending (2,319,385 to 6,617,930; Snyder & Dillow, 2010). Interestingly, in 1965, 40% of all students attending community colleges who completed an associate's degree were women, but by 2007, 60% of all students attending community college who completed and associated degree were women (Snyder & Dillow, 2010). These statistics clearly demonstrate the enrollments of males in community colleges is on the decline, and the males enrolled in community college have become less likely to complete two-year degrees, just as this study

revealed. In fact, fewer males were enrolled in Alabama community colleges than females for the cohort years included in the sample, and FGC males were less likely to achieve a community college degree or certificate. Attention should be paid to this decline in male enrollment and degree achievement that appears to be leading to a new gender gap in postsecondary education.

Overall, the results from this study indicate that FGC students in the community college setting are more likely to be from low socioeconomic households and less academically prepared than non-FGC students which decreases their odds of success. Although FGC students are more likely to be female, FGC males are less likely to complete a community college degree. One important observation about the sample should be noted: Approximately 66% of the students attending community colleges in the state of Alabama were Pell eligible and representative of low-socioeconomic status. This means the majority of students in ACCS represent low-income families and not only need financial support but also social and emotional support to access social capital and reduce the effects of classism (Allan, Garriott, & Keene, 2016; Garriott & Nisle, 2017).

Implications for School Counselors and Counselor Educators

The results of the present study provide school counselors, college counselors, and educators with valuable information regarding demographic and academic variables that are associated with FGC students' success outcomes in the community college setting. The results indicated that FGC students in the community college setting are more likely to be from low-SES backgrounds and require remedial courses. These findings can be used to help school and college counselors target these groups of students and provide interventions to address these variables and increase FGC students' odds of degree completion or transfer to four-year institutions.

Bryan, Moore-Thomas, Day-Vines, and Holcomb-McCoy (2011) highlighted the importance of school counselors in working with these students. They found that students from low socioeconomic backgrounds, who had meaningful interactions with their school counselors during their early high school years, were more likely to reach their college completion goals. Additionally, Poynton and Lapan (2017) concluded when school counselors take time to know their students on a personal basis, the students are more likely to persist to graduation at the same college in which they enrolled as a freshman and more likely to graduate even if they transferred to another college after the first year. Comprehensive school counseling practices can be used to provide FGC students and low-income students the support they need to succeed in community colleges and four-year universities (Bryan et al., 2011). These practices include school counselors providing psychoeducational counseling to low-income FGC students that is focused on college-readiness. Such counselor-guided psychoeducation may enable FGC students to leave high school better equipped with the skills needed for having success in college. These skills include academic, time-management, work-school-life balance, and goal setting.

Existing literature indicated school counselors help low-income students gain social capital, networks, and the academic skills required for successful transitions to college (Poynton & Lapan, 2017). School counselors are encouraged to provide psychoeducation on college readiness in small groups of low-income high school FGC seniors. These school counselors could coordinate with community college counselors to ensure service alignment between high school and college support FGC students during their first semester of college. Additionally, high school counselors and college counselors can work together to help FGC students build positive relationships with higher education personnel that would empower FGC students to have confidence about asking for support and assistance within their community college settings.

These position relationships cold be crucial to FGC student persistence because positive interactions with college personnel can increase FGC students' confidence when transitioning to college (Bers & Schuetz, 2014). Combinations of these support services might help low-income FGC students experience more successful outcomes. Thus, the results of this study can assist high school counselors and college counselors consider transition programs to better prepare students academically.

As Freeman, Anderman, and Jensen (2007) indicated in their research, peer and faculty relationships are essential to developing a perceived sense of belonging that facilitates academic motivation and providing after work office hours. Weekend social events for FGC students could assist them in forming the sense of belonging that increases persistence. Since low-income FGC students are more likely to have more economic stressors than their non-FGC students peers (Mehta, Newbold, & O'Rourke, 2011), school and college counselors can implement interventions that address these additional financial stressors, such as employment guidance, specifically that FGC students may benefit from working part-time paid jobs during college (Ishitani, 2006). College counselors may also offer tutor services, social events, or workshops/groups on time management skills that address topics such as work-school-life balance (Pitre & Pitre, 2009).

Limitations

One limitation of the current research study involved students enrolled in the ACCS who self-identify as FGC students on state forms. Students are not provided a definition or guidance in determining whether or not they are considered to have FGC status. Due to this self-report system, it is possible the data did not contain all students of FGC status due to underreporting. Without prompting and assistance clarifying the term FGC students, this data set may not have

the true number of FGC students accounted for based on the definition "those whose parents' was highest level of education is a high school diploma or less" (Nunez et al., 1998, p. 7).

Another limitation of the present study involved the lack of racial diversity represented within the data provided by the ACCS. The data included a large majority of the participants as White (n = 54,480, 63.5%). The lack of racial variety in the state of Alabama reduced the generalizability of the findings to other states. Additionally, because the race categories in Alabama do not show proportional stratification, the results might be applicable to White and Black FGC community college students but not do FGC community college students of other racial groups.

Future Recommendations for Research

This study explored the variables that mediate the success of FGC students in Alabama community colleges. FGC students' are likely to be different in other states that do not share Alabama's community college population composed of a majority White and low-income students. FGC students included in this study were more likely to be from low-socioeconomic background; the combination of minority status and low socioeconomic status could be more robust in a study with a sample composed of different proportions of students' ethnicities and races. By researching FGC students in community colleges outside the state of Alabama, researchers could provide more comprehensive results. Consequently, future studies on FGC students attending community colleges in states other than Alabama could prove beneficial.

The logistic regression models revealed differences between the success outcomes of FGC students based on gender. FGC males were less likely to earn the two-year degree or certificate. Future studies to understand why these different findings occurred in FGC student success by gender could be beneficial. Additionally, due to the lack of literature examining the

success outcome differences of FGC students based on their age and evidence that age affects success likelihoods, further understanding of age as a predictor of community college success among FGC students may help community colleges develop age appropriate interventions. Since FGC minority students were less likely to achieve a degree at community college, additionally focuses on minority groups within the community college setting could provide beneficial insight for school and college counselors to consider when working with these students.

Furthermore, future research on interventions, such as remedial courses, whose target population FGC students may provide beneficial information to enable college counselors and community college administrators to find more efficient methods for improving FGC students' likelihoods for two-year degree graduation and transferring to four-year universities. Lastly, since this study did not include variables related to FGC students' access to high school counselor services, research into the amount of time FGC students spend with their high school counselors, which as been associated with FGC students' success outcomes in community or four-year colleges, may provide revealing aspects about how students who use school counseling services successfully transition from high school to community college and beyond. Therefore, research directed to these student services areas may provide evidence of the effectiveness of specific interventions or yield counseling recommendations both at the high school and college levels.

Summary

The findings established an understanding of demographic and academic (remedial needs) differences between FGC and non-FGC students. Further, this study established an understanding of the variables which impact FGC students' success (i.e., transfer to four-year college or completion of a community college degree or certificate) in Alabama. These findings

can be used by school counselors, college counselors, and educators to understand FGC students odds of success in the community college setting and to develop interventions that improve this student groups' odds of community college success.

Chapter 5

Manuscript

Introduction to the Study

School counselors play an important role in helping students transition from high school to college or the workforce. In particular, school counselors might provide additional support to vulnerable populations, like first generation in college (FGC) students. FGC students experience numerous challenges to successful college degree completion and are less likely to persist past their first few years of college than students whose parents have achieved a college degree (Chen & Carroll, 2005; Engle & Tinto, 2008; Lauff & Ingels, 2013; Lonfink & Paulsin, 2005; Stebleton & Soria, 2012). In fact, Pratt, Harwood, Cavazos, and Ditzfeld (2017) found FGC students are 71% more likely to leave college after their first year of enrollment over non-FGC students.

FGC students who enroll in postsecondary institutions need additional support services from school counselors, college counselors, and educators in higher education settings for a successful transition from high school to college (Balemian & Feng, 2013; Berz & Shuetz, 2014; Choy, 2001; Gamez-Vargas & Oliva, 2013). It is imperative that the school and college counselors who work with FGC students understand what variables may influence success outcomes among these students. However, available research on FGC students' transitions to postsecondary education, particularly to community colleges is limited. Banning (2014) examined 133 doctoral dissertation abstracts for studies targeting first-generation college students in higher education settings but found a significant lack of conversation regarding FGC students' transitions from high school to community college. Only a few of the hundreds of

dissertations in Banning's study provided evidence about coordination efforts between the high school and higher educational environments and none specifically addressed FGC students' transitions into and beyond community college (Baning, 2014). Therefore, this study was conducted to gain greater understanding about FGC students who attend community colleges and their success outcomes.

FGC Students and Community Colleges

Many FGC students focus on entering higher education by enrolling in a community college. Community colleges are two-year institutions that provide affordable post-secondary education to students (AACC, 2018). Community colleges serve many purposes that involve offering workforce training, general equivalency diploma (GED) preparation and testing, short-term specialized trade skill training, an affordable pathway for college attainment, and opportunities for college students to transfer to four-year postsecondary institutions (Shapiro et al., 2017). The NCES (2017) found FGC students are more likely to enroll in two-year colleges than non-FGC students (58% vs. 28%), but FGC students who enroll in two-year colleges are less likely to attain a college degree than FGC students who enroll in a four-year post-secondary institution.

Although there is some debate regarding the definition of FGC students, Nunez, Curraco-Alamin, and Carroll (1998) defined FGC students as "those whose parents' highest level of education is a high school diploma or less" (p. 7). Non-FGC students are defined as students with at least one parent who either attended some college or completed a bachelor's or higher degree (Connolly, 2019; Nunez et al., 1998). Nonetheless, an interrelationship between FCGS and attendance at community colleges was highlighted by Mangan (2017). Mangan found the high enrollment of FGC students in community colleges to be directly related to economics.

Specifically, Mangan noted, FGC freshman students come from households of a median income that is $37,565, while non-FGC freshman student's median household income is $99,635. During the 2011-2012 academic year in the United States, nearly 50% of all FGC students enrolled in two-year institutions (AACC, 2018).

Students who do not attain any college degree are impacted in their quality of living because their starting with annual incomes appear near the poverty line. As reported by the NCES (2018), young adults who were considered full time employees (working at least 35 hours per week) but did not attain a college degree make, on average, $19,000 to $23,000 less annually than those with a bachelor's degree or higher. Full time employees under the age of 35 with at least a bachelor's degree make an average annual income of $55,000, and individuals with a master's degree or other graduate level degree had an average annual income of $64,000 (NCES, 2018). Unfortunately, individuals with a high school diploma only produce a median income of $32,000 (NCES, 2018).

FGC students are more likely to experience barriers that may impede their success in college, this may include economic stressors, a lack of academic preparedness and limited access to assistance for completing college applications (Balemian & Feng, 2013; Berz & Shuetz, 2014; Choy, 2001; Gamez-Vargas & Oliva, 2013; Lohfink & Paulsen, 2005). Barriers include having more difficulty with the enrollment process, meeting the requirement to complete more remedial courses, to express difficulty choosing a major, to earn fewer credits than non-FGC students, and to show an increased likelihood of withdrawing from or repeating courses (Chen & Carroll, 2005). Researchers posited that FGC students are not as academically prepared as non-FGC students (Davis, 2010; Pascarella, Pierson, Wolniak, & Terenzini, 2004). Thus, FGC students may beat an academic disadvantage before even beginning the first college course.

Hudley, Moschetti, Su-je, Barry, and Kelly (2009) found FGC students to be more likely to have attended low performing public high schools operating with lower budgets and less-qualified teachers. Additionally, FGC students are more likely than non-FGC students to have lower grade point averages (GPA) and not to be adequately prepared for completing college entrance examinations, such as the SAT and ACT (Redford, Hoyer, NCES, & American Institutes for Research, 2017). FGC students are less likely to have taken advanced placement courses in high school (Cataldi et al., 2018).

Therefore, FGC students are more likely to have lower socioeconomic status and more economic stressors than their non-FGC peers (Mehta, Newbold, & O'Rourke, 2011). These financial stressors increase the necessity for FGC students to work in part- or full-time paid jobs during their college experience (Ishitani, 2006). Numerous researchers found that FGC students work many more hours weekly than non-FGC students at both on and off campus jobs (Engle & Tinto, 2008; Pascarella et al., 2008; Saenz, Hurtado, Barrera, Wolf, & Yeung, 2007), which can present time management challenges such as work-school-life balance, having time to attend social gatherings on campus, joining school clubs or organizations, or attending to homework assignments. Financial challenges directly impact FGC students academic performance, school engagement, and efforts to socialize and develop supportive relationships (Bergerson, 2007). Essentially, FGC students who must work more hours have less time available to develop positive relationships with campus peers and faculty. The need for intervention programs and supports for FGC students in the community college setting is founded in the economic and social outcomes linked to higher education attainment which has been shown to lead to job stability and higher pay (Taylor et al., 2014; NCES, 2018;Kurtzleben, 2014).

School Counselors' Impact on FGC Students' College Experiences

According to the American School Counselor Association (ASCA, 2017), school counselors are responsible for assisting students in academic, personal, and college and career readiness by implementing comprehensive school counseling programs. Comprehensive school counseling programs require school counselors to provide direct and indirect services to students and their families. Additionally, high school counselors play a pivotal role in assisting high school students enroll in post-secondary institutions (ASCA, 2017). FGC students often benefit from additional support from school counselors (Mehta et al., 2011). Moreover, faculty at the community college level can serve as informal college counselors. Komarraju, Musulkin, and Bhattacharya (2010) found student-faculty interactions play an important role in student success and concluded that students who had a least one positive relationship with a faculty member were more likely to experience wellbeing and satisfaction with the college experience.

Students with at least one parent with a college degree can draw upon personal experiences when enrolling in and navigating community college. These non-FGC students are more likely to have help for completing the college application and enrollment process at home. FGC students who do not receive assistance from a school counselor may have to navigate the college enrollment process alone because they do not have a parent at home who can help them navigate the various barriers to success they face at their institutions (Robinson & Roksa, 2016).

School counselors can help low-income students gain social capital and networks and the academic skills required for successful transitions to college (Poynton & Lapan, 2017). Bryan, Moore-Thomas, Day-Vines, and Holcomb-McCoy (2011) found students from low socioeconomic backgrounds, who had meaningful interactions with their school counselors during their early high school years, were more likely to reach their college completion goals.

Lastly, Poynton and Lapan (2017) concluded students with school counselors who took time to know them on a personal basis were more likely to persist to graduation at the same college in which they enrolled as a freshman and more likely to graduate even if they transferred to another college after the first year. Comprehensive school counseling programs run by school counselors can provide FGC students and low-income students the support they need to enroll and succeed in community colleges and four-year universities (Bryan et al., 2011).

Statement of Problem

According to the Postsecondary National Policy Institute (2018), FGC students are more likely to enroll in a two-year college than non-FGC students. However, the National Center for Education Statistics (2012) found FGC students who started at a four-year college were seven times more likely to complete a college degree than FGC students who started at a two-year college. This discrepancy has not been thoroughly examined as there is a lack of literature examining the characteristics of FGC students attending two-year colleges (Banning, 2014). FGC students continue to encounter numerous barriers to college degree attainment (Tinto & Engle, 2008). Therefore, it is critical school counselors and college counselors gain a better understanding of how to assist high school students to persist toward successful community college outcomes. The current research contributes new information about FGC students that may affect the practices found at both high school and community college settings. This study specifically focused on FGC students' variables that were thought to be associated with FGC students academic and transfer success.

Purpose and Questions

The aim of the current study was to investigate the demographic and academic characteristics of FGC students and non-FGC students in Alabama and to discern what

demographic and academic variables mediate success among FGC students who attended community colleges in Alabama. Success was measured by the two unique indicators of completion of a degree or certificate at the community college level or transfer to a four-year institution. Both variables were treated as unique outcomes for regression modeling. Therefore, the research questions were posed as follows:

1. How do FGC students and non-FGC students at two-year colleges compare on demographic variables (age, race, gender, socioeconomic status via Pell Grant eligibility, and high school attended free/reduced lunch status) and academic variables (remedial needs)?
2. What demographic and academic variables are associated with successful completion of a community college degree/certificate for FGC students in the community college setting?
3. What demographic variables and academic variables are associated with successful transfer to a four-year college for FGC students in the community college setting?

Methods

Participants

Archived data were used in this study. The deidentified data provided by the Alabama Community College System (ACCS, 2018) included demographic, academic, and program success data for 85,544 students (self-identified FGC and non-FGC) who enrolled as first-time freshman in the ACCS in the fall semesters of 2012, 2013, 2014, 2015, and 2016. Demographic data for this study included age, race, gender, high school attended free lunch percent categories, and socioeconomic status via Pell Grant eligibility. The academic program data for this study

included students enrollment(s) in remedial mathematics or English during their program. Success outcome data focused on completion of degree/certificate at the community college level or ability to transition to four-year institution.

Procedures

The previously collected data were extracted from the ACCS Data and Exchange (DAX) system by the ACCS Director of Organizational Effectiveness and Research. There were no human subjects nor need for informed consent procedures because the study data were retrospectively analyzed. The data were collected by ACCS personnel. The data set provided by ACCS included demographic, academic, and program success data for self-identified FGC and non-FGC students who enrolled in the ACCS during the fall semesters of 2012, 2013, 2014, 2015, and 2016, as first-time freshman.

The data were deidentified by the ACCS Director of Organizational Effectiveness and Research. Student identifiers such as student ID numbers, birthdates, social security numbers, and names, were removed before the data set was delivered to the researchers. Independent variables included the following: demographic data, academic data (remedial needs), and success outcomes data. Demographic and academic data (remediation needs) were used to address the first research question. FGC students demographic, academic, and success measured by degree or certificate completion were used to address the second research question. FGC students demographic, academic, and success measured by transfer status were used to address the third research question.

Data Analysis

The previously collected data provided by the ACCS)included demographic (e.g., age, gender, race, high school attended free/reduced lunch status, and socioeconomic status via Pell

grant eligibility), academic (e.g. required remedial mathematics and remedial English), and success outcome data (e.g. completion of degree/certificate or transfer to four-year institution). The demographic and academic served as independent variables. The dependent variable in this study was college success (yes/no).

The data population set in this study included 85,544 students. The self-reported as FGC students total was 15,329, while 70,215 did not identify as FGC students. Power was calculated utilizing a G*Power calculator for the seven predictor variables, a power of 0.80, and a small effect size. Because the sample was larger than 500, the study generated a power of 0.99.

The data were analyzed using SPSS software. The dependent variable was dichotomous as a success (1) versus no success (0) in the two-year college, logistic regression modeling was used for each research question. Logistic regressions are appropriate to use when a researcher is attempting to predict the probability of an event occurring in one of two categories of a dichotomous dependent variable based on one or more continuous or categorical independent variables (Laerd Statistics, 2017).

Results

The present quantitative study sought to investigate the demographic and academic characteristics of FGC and non-FGC students and the factors that mediate FGC student success outcomes in the community college setting. Additionally, the present study was designed to benefit school counselors, college counselors, and educators who provide professional supports for FGC students to increase student success outcomes in the community college setting. The researcher for this study utilized previously collected data from the ACCS. Bivariate analysis was used to determine how FGC and non-FGC students attending Alabama community colleges compared on demographic variables and academic variables.

Logistic regression modeling was used to determine what demographic and academic variables mediate degree completion success for FGC students at two-year colleges.

Demographics

As indicated on **Table 1,** the most notable difference this study found among FGC and non-FGC students in the ACCS was that FGC students were more likely to be of low socioeconomic status as compared to the non-FGC students. Specifically, 71% of the FGC students in contrast to 63% of the non-FGC students were Pell Grant eligible. This finding adds to the existing literature showing that FGC students are more likely to be of lower socioeconomic statuses (Cho, Hudley, Lee, Barry, & Kelly, 2008; Ellis, 2001; Mompremier, 2009). The data included the two independent variable categories of FGC and non-FCGS. There were 15,329 students self-identified as FGC students, representing 17.91% of the population, and 82.1% of the sample, 70,215 students, of did not self-identify as being FGC students. Thirty-nine students were not classified in one of those two categories.

Research Question 1 Findings

Age. The average age of the 15,329 FGC students in the data set was 20.4 years old, which was close to the same average age (20.0) of the 70,215 non-FGC students in the date set. Levene's Test for Equality of Variances indicated that the variances were not equal, so the degrees of freedom (*df*) were adjusted for the *t* test. The independent means *t* test result as $t(1614.18) = 6.813$ with $p < .0001$. Therefore, the mean age of FGC and non-FGC students were not significantly different.

Gender. As indicated in **Table 1**, of the 15,329 FCGS in the data set 9,576 (62.5%) identified as female and 5,744 (37.5%) identified as male. Comparatively, of the 70,215 non-FGC students in the data set 38,675 (55.1%) of non-FGC students identified as female and

31,480 (44.8%) of non-FGC students identified as male. Approximately 69 (.01%) students attending community colleges in the states of Alabama did not identify as males or female. Pearson chi-squared (χ^2) indicated there was a difference in the distribution of gender because the genders were not represented as uniform distributions in each cell such as FGC male, FGC female, non-FGC male, and non-FGC female. The Cramer's *V* of .057 served as an effect size for the chi-square statistical test and was small. The small effect size for gender did not indicate that differences in the distribution would affect further analyses.

Race. As indicated on **Table 1**, of the 15,329 FGC students, 10,052 (65%) identified as White with 4,022 (26.2%) identifying as Black and 1,255 (8.2%) identifying as Other. Comparatively speaking, the 70,215 non-FGC students, 19,368 (27.6%) identified as Black, 44,332 (63.%) identified as White, and 6,515 (9.3%) identified as Other. The Cramer's *V* of .021 served as an effect size for the chi-square statistical test and was small. The small effect size for race did not indicate that differences in the distribution would affect further analyses.

Socioeconomic status via Pell eligibility. As indicated in **Table 5.1**, of the 15,329 FGC students, 10,929 (71.3%) met criteria for Pell eligibility, and 4,400 (28.7%) FGC students did not qualify for a Pell Grant.Comparatively, 45,118 (64.3%) of the non-FGC students met the criteria for Pell eligibility, and 25,097 (35.7%) of non-FGC students did not qualify for a Pell Grant. The Cramer's *V* of .057 served as an effect size for the chi-square statistical test and was small. The small effect size for Pell eligibility did not indicate that differences in the distribution would affect further analyses.

Table 5.1. Demographic Information

Characteristic		Sample *n* (%)	FGC *n* (%)	non-FGC *n* (%)
Gender	Female	48,251 (56.4)	9576 (62.5)	38,675 (55.1)
	Male	37,224 (43.5)	5744 (37.5)	31,480 (44.8)
	Other/Unknown	69 (0.1)	9 (0.1)	60 (0.1)
Race/Ethnicity	White	54,480 (63.5)	10,052(65.6)	44,332 (63.1)
	Black	23,390 (27.3)	4,022 (26.2)	19,369 (27.6)
	Other	7,770 (9.1)	1,255 (8.2)	6,515 (9.3)
FGC Status	Yes	15,329 (17.9)		
	No	70,215 (82.1)		
Pell Eligibility	Yes	56,047 (65.5)	10,929 (71.3)	45,118 (64.3)
	No	29,497 (34.5)	4,400(28.7)	25,097(35.7)

Percentage of free/reduced lunch at high schools attended. Results showed 3,418 (22.3%) FGC students and 20,267 (28.9%) non-FGC students attended a private or out of state high school that provided no identifying free lunch status; 1,499 (9.8%) FGC students and 7066 (10.1%) of non-FGC students attended a high school with a rate of 0% to 25% free lunch status; 4,906 (32.0%) FGC students and 20,183 (29.4%) non-FGC students attended a high school with a rate of 26% to 50% free lunch status, 4,987 (32.5%) FGC students and 20,634 (29.4%) non-FGC students attended a high school with a rate of 51% to 75% free lunch status; and 519 (3.4%) FGC students and 2,065 (2.9%) non-FGC students attended a high school with a rate of 76% to 100% free lunch status. The Cramer's *V* of .058 served as an effect size for the chi-square statistical test and was small. The small effect size for high school free lunch percentage categories did not indicate that differences in the distribution would affect further analyses.

As indicated on **Table 5.2**, 48.7% of FGC students were required to enroll in a remedial mathematics course, whereas 40.8% of non-FGC students were required to enroll in a remedial math, and 29.3% of FGC students and 25.9% of non-FGC students were required to take a

remedial English course. The Cramer's *V* of .062 and .030 served as an effect size for the chi-square statistical test and was small. The small effect size for remedial mathematics and English did not indicate that differences in the distribution would affect further analyses.

Table 5.2. Remediation Math/English Required

Remediation Required	Within FGC%	Within Non-FGC %	Sample %	χ^2	*p*	Cramer's *V*
Mathematics	7,472 (48.7)	28,645 (40.8)	42.2	325.823	.000	.062
English	4,499 (29.3)	18,214 (25.9)	26.6	74.991	.000	.030

Research Question 2 Findings

The second research question addressed what demographic and academic variables are associated with successful completion of a community college degree/certificate for 11,542 FGC students attending community college. A binomial logistic regression was performed to ascertain what demographic variables and academic variables (measured as mathematics and English remediation need) mediate the successful completion of a community college degree or certificate among FGC students attending community colleges in Alabama. The logistic regression model was statistically significant, χ^2 (9) =634.051, $p < .0001$. Hosmer and Lemeshow indicated the model to be a good fit. The model explained 8% of the variance using Nagelkerke R^2 in successful degree completion outcomes and correctly classified 75.9% of cases.

The predictor variables found statistically significant were as follows: age, race, gender, remedial English, and remedial mathematics (as shown in **Table 5.3**). FGC students who were over the age of 21 and under age 27, male, minority, required to take remedial English or mathematics courses had a decreased likelihood of completing a community college degree or certificate compared to the reference group of female, White, and aged 18 to 20 FGC students. Minority FGC students were 24% less likely to complete a community college degree or

certificate than white FGC students. Male FGC students were 22% less likely to complete a community college degree or certificate than females. FGC students who were required to take remedial English were approximately 50% less likely to complete a community college degree or certificate, and FGC students who were required to take remedial mathematics were also 50% less likely to achieve a community college degree or certificate.

Table 5.3 Logistic Regression Predicting Likelihood of FGC Students Producing a Community College Degree or Certificate as Mediated by Demographic and Academic Variables

							Odds Ratio 95% C.I.	
Variables (Categories)	*B*	*S.E.*	*Wald*	*df*	*p*	*Odds Ratio*	*Lower*	*Upper*
Age 21-23	-.824	.135	37.527	1	.000	.438	.337	.571
Age 24-26	-.593	.171	12.044	1	.001	.552	.395	.772
Age 27 & Up	-.165	.104	2.503	1	.114	.848	.691	1.041
Race Minority	-.281	.052	29.355	1	.000	.755	.682	.836
Gender Male	-.251	.047	28.334	1	.000	.778	.709	.853
Pell Eligible Yes	.004	.050	.008	1	.929	1.004	.911	1.108
High School Free Lunch 51% and Above	.000	.046	.000	1	.998	1.000	.914	1.094
Remedial English Yes	-.671	.059	129.291	1	.000	.511	.455	.574
Remedial Mathematics Yes	-.655	.048	184.672	1	.000	.520	.473	.571
Constant	-.472	.051	86.329	1	.000	.623		

Note. The Age reference group was Age 18-20. The Race reference group was White. The Gender reference group was Female. The Pell Eligible reference group was No. The High School Free Lunch Percentage reference group was 50% and below. Finally, the Remedial English and Mathematics reference groups were No.

Research Question 3 Findings

This question asked what demographic variables and academic variables are associated with successful transfer to a four-year college for 11,542 FGC students attending community college. A binomial logistic regression was performed to ascertain what demographic variables and academic variables (measured as mathematics and English remediation need) mediate successful transfer to a four-year institution among FGC students attending community colleges

in Alabama. The logistic regression model was statistically significant, χ^2 (9) = 341.680, p < .0001. Hosmer and Lemeshow indicated a goodness of fit for the model. The model explained 4% of the variance using Nagelkerke R^2 in successful degree completion outcomes and correctly classified 76.3% of cases. The predictor variables found statistically significant were as follows: age, race, gender, Pell eligibility, high school attended free/reduced lunch percentage, remedial mathematics, and remedial English (as shown in **Table 5.4**).

Table 5.4 Logistic Regression Predicting Likelihood of FGC Students Successfully Transferring to a Four-Year College as Mediated by Demographic and Academic Variables

							Odds Ratio 95% C.I.	
Variables (Categories)	*B*	*S.E.*	*Wald*	*df*	*p*	*Odds Ratio*	*Lower*	*Upper*
Age 21-23	-.470	.119	15.468	1	.000	.625	.495	.790
Age 24-26	-.767	.184	17.304	1	.000	.465	.324	.667
Age 27 & Up	-.996	.137	53.063	1	.000	.369	.283	.483
Race Minority	.234	.050	22.123	1	.000	1.264	1.147	1.394
Gender Male	-.098	.046	4.492	1	.034	.906	.828	.993
Pell Eligible Yes	-.386	.049	61.707	1	.000	.680	.617	.784
High School Free Lunch 51% and Above	-.106	.046	5.434	1	.020	.899	.823	.983
Remedial English Yes	-.403	.055	53.253	1	.000	.705	.643	.774
Remedial Mathematics Yes	-.349	.047	54.253	1	.000	.705	.643	.774
Constant	-.565	.050	127.102	1	.000	.568		

Note. The Age reference group was Age 18-20. The Race reference group was White. The Gender reference group was Female. The Pell Eligible reference group was No. The High School Free Lunch Percentage reference group was 50% and below. Finally, the Remedial English and Mathematics reference groups were No.

Discussion of Results

The present study contributes to an understanding of the demographic and academic (remedial course needs) differences between FGC students and non-FGC students. Additionally, the present study contributes to an understanding of what demographic and academic variables mediate success among FGC students who attended community colleges in Alabama. Success was measured by the two unique indicators of completion of a degree or certificate at the community college level or transfer to a four-year institution.

FGC students were more likely to be required to take remedial mathematics courses (49% FGC vs. 41% non-FGC) as well as remedial English courses (29% FGC vs. 27% non-FGC). The finding supports the literature in which FGC students are not as academically prepared for college as non-FGC students (Davis, 2010; Pascarella, Pierson, Wolniak, & Terenzini, 2004), especially in mathematics, suggesting Alabama's FGC students are less likely to take advance mathematics courses in high school (Cataldi, Bennett, Chen, NCES, & RTI International, 2018). This significant academic difference between FGC and non-FGC students might explain the proportions of overall success observed in the sample from the ACCS.

Regarding race, the sample's racial composition mirrored the racial composition of the state of Alabama (United States Census Bureau, 2018). However, no significant differences by race were found between FGC and non-FGC students. This study's findings did allude to a relationship between FGC student age and success outcomes. As FGC students age, their odds for completing a community college degree/certificate or transferring to a four-year college decrease. The finding is consistent with existing literature that suggest FGC students attending community colleges are more likely to be older than non-FGC students and less likely to attain success (Ma & Baum, 2016; NCES, National Postsecondary Student Aid Study (NPSAS),

2012.). Subsequently, FGC community college students who are older and non-traditional are more likely to work full time in one or more jobs and to have dependents to support. In fact, the NCES (2012) found community college students are more likely to work full time jobs than public and private nonprofit four-year university students. These additional responsibilities could certainly contribute to lower success outcomes for older FGC students.

The most notable difference this study found among FGC and non-FGC students in the ACCS was that FGC students were more likely to be of low socioeconomic status as compared to the non-FGC students. Specifically, 71% of the FGC students in contrast to 63% of the non-FGC students were Pell Grant eligible. This finding adds to the existing literature showing that FGC students are more likely to be of lower socioeconomic statuses (Cho, Hudley, Lee, Barry, & Kelly, 2008; Ellis, 2001; Mompremier, 2009). Importantly, the study also revealed FGC students of low socioeconomic status had lower odds of transferring to a four-year college.

FGC students who were required to take remedial English or mathematics courses in community college had lower odds of both completing a community college degree/certificate or transferring to a four-year college. FGC minority students had a decreased likelihood of completing a community college degree but had an increased likelihood of transferring to a four-year college than the reference group of White students. These findings were consistent with existing literature. Numerous researchers have indicated that FGC students are more likely to be from low-income families (Cho et al., 2008; Ellis, 2001; Mehta et al., 2011; Mompremier, 2009; National Center for Education Statistics [NCES], 2018) and are more likely to attend low-performing PreK-12 schools (Hudley et al., 2009).

Balemain and Feng (2013) found FGC students score lower on ACT and SAT tests, due to having less academic preparation. In a study involving more than 250,000 students at 57

community colleges, the Community College Research Center (CCRC, 2019) found that 59% of entering students required remedial mathematics and 33% required a developmental reading course.The CCRC's findings were consistent with the finding in this study as 48.7% of FGC students were required to enroll in a remedial mathematics course and 29.3% of FGC students were required to take a remedial English course. Numerous studies have found mixed results for students who are required to take remedial courses. For example, Bettinger and Long (2009) found younger students taking remedial mathematics courses to have positive effects in college completion. Other studies, which used broader student samples found being enrolled in remedial courses had no impact on success outcomes such as degree completion(Calcagno & Long, 2008; CCRC, 2019; Jaggars & Stacey, 2014; Martorell & McFarlin, 2009). Conversely, in 2006, a National Educational Longitudinal Study (NELS:88) found that only 28% of students who took at least one remedial completed a college degree within 8.5 years. Regardless, this lack of academic readiness, which Pitre and Pitre (2009) define as academic and practical knowledge, contributes to FGC students potential for failure in college success. This further highlights the need for school and college to provide college preparatory programs for FGC students, addressing both academic and social readiness.

The present study also revealed FGC fewer FGC males attended Alabama community colleges than females, and these FGC males were less likely than FGC females to attain a degree at community colleges. This was not surprising because much of current literature showed the gender gap in college enrollment and completion to benefit women in recent years (Buchmann & DiPrete, 2006; McDaniel et al., 2011; Snyder & Dillon, 2010). Over the last decade, women's attendance and completion of college degrees have steadily increased in both two-year and four-year colleges (Snyder & Dillow, 2010). Specifically, from 1970 to 2007, the number of

community colleges increased from 654 to 1,668 along with the number or students attending (2,319,385 to 6,617,930; Snyder & Dillow, 2010). Interestingly, in 1965, 40% of all students attending community colleges who completed an associate's degree were women, but by 2007, 60% of all students attending community college who completed and associated degree were women (Snyder & Dillow, 2010). These statistics clearly demonstrate the enrollments of males in community colleges is on the decline, and the males enrolled in community college have become less likely to complete two-year degrees, just as this study revealed. In fact, fewer males were enrolled in Alabama community colleges than females for the cohort years included in the sample, and FGC males were less likely to achieve a community college degree or certificate. Attention should be paid to this decline in male enrollment and degree achievement that appears to be leading to a new gender gap in postsecondary education.

Overall, the results indicate that FGC students in the community college setting are more likely to be of low socioeconomic status and less academically prepared than non-FGC students with decreases their odds of success. Another important finding in this study is that, as FGC students age increases their likelihood of community degree completion or transfer to a four-year college decreased. Although race between FGC and non-FGC student did not differ significantly, minority FGC students had a decreased likelihood of community college degree completion but are slightly more likely than White FGC students to transfer to a four-year college. Interestingly, approximately 66% of students attending community colleges in the state of Alabama were Pell eligible, indicating low-socioeconomic status. This means the majority of students in ACCS are from low-income families, and not only need financial support, but also need social/emotional support, as literature indicates students of low SES status are more likely to perceive they have

restricted access to social capital and to experience classism (Allan, Garriott, & Keene, 2016; Garriott & Nisle, 2017).

Implications for School Counselors and Counselor Educators

The results of the present study provide school counselors, college counselors, and educators with valuable information regarding demographic and academic variables that are associated with FGC students' success outcomes in the community college setting. By contributing to existing literature indicating FGC students in the community college setting are more likely to be from low-SES backgrounds and require remedial courses can help school and college counselors target these groups of students and provide interventions to address these variables which decrease FGC students odds of degree completion or transfer to four-year institutions. To address this issue, school counselors could provide group counseling prepare low-income FGC students with the skills needed to be successful in college. Notably, Bryan, Moore-Thomas, Day-Vines, and Holcomb-McCoy (2011) noted that students of low socioeconomic backgrounds who had meaningful interactions with their school counselors during their early high school years were more likely to reach their college completion goals. Additionally, Poynton and Lapan (2017) concluded students with school counselors who took time to know them on a personal basis were more likely to persist to graduation at the same college in which they enrolled as a freshman and more likely to graduate even if they transferred to another college after the first year. Comprehensive school counseling programs run by school counselors can provide FGC students and low-income students the support they need to enroll and succeed in community colleges and four-year universities (Bryan et al., 2011). Poynton and Lapan (2017) recommended that school counselors must help low-income students gain social capital and networks and the academic skills required for successful transitions to college. The

current findings support encouraging school counselors to conduct small groups designed to focus on college readiness of low-incomes FGC students during their senior year of high school and coordinated with community college counselors to continue similar services for those groups of students during their first semester of college, it might help low- income FGC students experience more successful outcome. Thus, the results of this study can assist high school counselors and college counselors consider transition programs to better prepare students academically, especially in the area of mathematics.

Additionally, since low-income FGC students are more likely to have more economic stressors than their non-FGC peers (Mehta, Newbold, & O'Rourke, 2011), school and college counselors can work towards interventions that address the fact that FGC students have additional financial stressors that may increase FGC students need to work part or full time paid jobs during college (Ishitani, 2006), and provide after work hours tutor services, social events, or workshops/groups on time management skills that address topics such as work-school-life balance. As Freeman, Anderman, and Jensen (2007) indicated in their research, peer and faculty relationships are essential to developing a perceived sense of belonging that facilitates academic motivation, so providing after work hours or weekend social events for FGC students could assist in creating a sense of belonging which is shown to increase persistence.

Limitations

A limitation of the current findings involved the FGC students variable because students enrolled in the ACCS were asked to self-identify as FGC students. Self-reported data can be suspect due to concerns about whether the students understood what criteria would fit with identifying as a first generation in the family college student. Additionally, ACCS reported that students were not provided with definitional guidance for determining whether or not they were

members of the FGC students category; the FGC definition includes postsecondary students with parents whose "highest level of education is a high school diploma or less" (Nunez, Curraco-Alamin, & Carroll's, 1998, p. 7). Due to the self-report system in Alabama, a number of students who were actually members of the first generation of their families to attend college might not have indicated holding FGC status. Therefore, the data might not contain an accurate accounting of the FGC students in the 2012 through 2016 cohorts.

Another limitation of the findings involves the lack of racial diversity represented within the total sample of 85,544 ACCS students. A large majority of the participants identified as White (n = 54,480, 63.5%); only Black held a representation within the minority groups included in sample that was greater than 10%. All other races combined were less than 10% of the large sample contained in the study. Because all other racial and ethnic groups were not represented in this study, the results might not generalize to all racial groups, to community college populations in states with greater diversity of races in their populations, nor to states with minority majority community college enrollments.

Future Recommendations for Research

Future studies on FGC success outcome differences related to gender could be beneficial, as this study found a significant difference between the success outcomes of FGC students based on gender. Additionally, due to the lack of literature examining the success outcome differences of FGC students based on age and evidence that age affects success likelihoods, further understanding of age as a predictor of community college success among FGC students may help community colleges develop age appropriate interventions.

FGC students included in this study were more likely to be from low-socioeconomic background; the combination of minority status and low socioeconomic status could be more

robust in a study with a sample composed of different proportions of students' ethnicities and races. Furthermore, future research on interventions, such as remedial courses, which target low-income FGC students for improving FGC students mathematics or English skills could prove beneficial for school, college counselors, and community colleges. Lastly, since this study did not include what level of access to school counselor services students in Alabama high schools have, it could be beneficial to research if the amount of time FGC students spend with their high school counselors can be associated with FGC community college or four-year university outcomes. More research in these areas may enable higher education administrators to provide specific interventions and make counseling recommendations to benefit FGC students at all educational levels.

Summary

This research study established an understanding of demographic and academic (remedial needs) differences between FGC and non-FGC students. Further, this study established an understanding of the variables which impact FGC student success (transfer to four-year college or community college degree/certificate completion) in the ACCS. These findings can be used by school counselors, college counselors, and educators to understand FGC students odds of success in the community college setting and potentially develop interventions which target groups with low success odds.

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Appendix A

IRB Approval

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Jimmy H. Baker
CHANCELLOR

01/31/19

Institutional Review Board
c/o Office of Research Compliance
115 Ramsay Hall
Auburn University, AL 36849
Dear IRB Members,

Meagan Vick, in her role as a graduate student in the Auburn University department of Educational Foundations, Leadership, and Technology, has permission to conduct research using data related to formerly and currently enrolled students at Alabama Community College System (ACCS) institutions. The data will be extracted from the ACCS data system by myself or a member of my staff and any identifying information will be stripped from the file and replaced with random identifiers prior to delivery to Ms. Vick. No combination of variables will allow anyone to have the ability to learn any student's identification.

The purpose of this study is to answer the following question: What characteristics related to first-time first generation community college students predict success (as determined by completion or transfer).

Ms. Vick has agreed to make available a copy of all Auburn University IRB-approved, stamped documentation to me before the study begins or that is related to any protocol modifications or requests for extension. Additionally, she has agreed to inform my office when the data is destroyed.

If the IRB has any concerns about the permission being granted by this letter, please contact me at the phone number listed below.

Sincerely,

Kelly Birchfield

Kelly Birchfield
Director of Organizational Effectiveness and Research
334-293-4572