First-Generation College Students: Persistence and Adaptability in Post-Secondary Institutions

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FIRST-GENERATION COLLEGE STUDENTS: PERSISTENCE AND ADAPTABILITY IN POST-SECONDARY INSTITUTIONS

A Dissertation

Submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfillment of the requirements for the degree of Doctor of Philosophy

in

The School of Education

by

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August 2022
This dissertation is dedicated to the Angel of C. O. P., and my family. May we continue to live our purpose with steadiest faith, peace, and joy.
ACKNOWLEDGMENTS

I want to give God all the Glory for this victory. I am humbled and grateful that the Lord brought me through all the trials and tribulations to achieve this milestone. To my family who has kept me going with unwavering support and love during this Ph.D. journey. The appreciation I feel is because of your prayers, encouragement, and love you all have allowed me to complete this goal.
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ABSTRACT

In post-secondary education, degree attainment for first-generation college students (FGCS) is essential. The purpose of this explanatory sequential mixed-methods study is to explore the first-generation college student's persistence from their first year to the second year at a private or public post-secondary institution. The second purpose is to investigate whether the GEAR UP Services program impacted FGCS persistence at these institutions. Social capital theory and self-determination theory served as a foundation of the study. These theories are linked to the social interaction and behavior that leads to motivation, commitment, and relationships. Previous research suggests that college persistence correlates with utilizing social networks, resources, and relationships.

Post-secondary education is one of the growing trends in first-generation students attending college despite their family background. With the right motivation and external drives, first-generation students are pulled towards the end goal of obtaining a post-secondary degree. By increasing on-campus services and awareness of access, support, and motivation, first-generation college students can succeed in their post-secondary endeavors.

Student support service programs, GEAR UP Services program, provide college preparatory courses, financial aid information, and academic/social support to help facilitate the adjustments FGCS needs for college persistence. This research study investigated the impact that GEAR UP Services, an intervention grant, had on FGCS college persistence.

The findings of this mixed-method research study revealed statistically significant persistence factors, participant experiences, shared trends, and challenges FGCS encountered in their post-secondary journey. The statistical findings investigated the relationship between college persistence, demographic, and academic variables of 2018 graduates who participated in
the GEAR UP Services program. Logistical regression statistical findings revealed that students who were females with higher GPAs were more likely to achieve college persistence. The Point Biserial Correlation findings indicated that GPA, level of participation, and college retention rates were correlated with college persistence. The open-ended interview questions were analyzed using a basic interpretive and descriptive qualitative research method. Additionally, the findings of this analysis complemented the logistical regression and the Point Biserial Correlation results of FGCS persistence experience.
CHAPTER 1. INTRODUCTION

In the United States of America, degree attainment for first-generation college students (FGCS) is essential to workforce demands, national economic growth, prosperity, and global strength being a competitive force (Lopez, 2006; White House, 2009). In the United States, more than 80% of the first-generation college students that initially enrolled in college reported not graduating within six years after admission (Demetriou, Meece, Eaker-Rich, & Powell, 2017, p. 19). Many researchers (Choy, 2001; Lohfink & Paulsen, 2005; Hurtado et al., 2011) examined the struggles of FGCS, while limited studies have explored successful student experiences. The experiences of FGCS persistence and retention have been a growing topic of discussion in research (Demetriou, Meece, Eaker-Rich, & Powell, 2017).

Background

Degree Attainment

Colleges and universities in our nation continue to focus on improving college attainment rates for low-socioeconomic students (Baum, Ma, & Payea, 2013). Although higher education institutions have improved, college completion and persistence interventions are needed for low socioeconomic and FGC students (Petty, 2014; Claybrook & Taylor, 2016). In overcoming the odds of college enrollment, first-generation college students often have substantial college attrition rates and are more likely to withdraw before obtaining a college degree (Schwartz et al., 2018). In post-secondary institutions, 32% of the students come from families where neither parent/guardian received a bachelor's or associate's degree (Schwartz et al., 2018). Higher education access increased over the years, notably for FGCS. This increase is attributed to a reduction in disparities in persistence, retention, and degree completion among first-generation college students and continuing-generation peers (Schwartz et al., 2018). According to Whitley,
Benson, and Wesaw (2018), post-secondary institutions shifted the focus to preparing students to become college-ready rather than focusing on becoming student-ready.

**Persistence and Retention Rates**

Increased rates are higher for traditionally marginalized groups in higher education when considering the persistence and retention rates. The long-established marginalized groups are students of low-socioeconomic backgrounds, working-class, and FGCS. Higher education has witnessed an increase in these marginalized groups in the United States. However, the gaps in completing a four-year degree remain between FGCS and their peers of privilege (Horn & Berger, 2004, p. 24). Engle (2007) noted that first-generation college students encounter challenges during their primary years in education, separated into 1) enrolling into college and 2) degree completion. Therefore, being a first-generation college student who continually remains at a disadvantage has been related to their academic success (Afeli et al., 2018).

**Influential Relationships**

Academic success, retention, and professional readiness are multifactorial for students and do not rely on institutional involvement, staff, or faculty strength. Additional factors that influence students are being academically prepared, family support, financial constraints, and cultural identity (Afeli et al., 2018). Wilkins (2018) indicated the distinct diversity of first-generation college students from other students due to their family lineage not offering college navigation support and expectations.

Paterson (2019) asserted that assisting first-generation students in exploring colleges and applying can help them in their college quest. The support should start early, including families, essential information, mentoring, and support offering (Paterson, 2019). Due to this occurrence, FGCS, without the proper intervention at the institution level, experience lower levels of
inclusion, emotional distress, self-efficacy, and perceived threats. These behaviors can hinder FGCS's academic success and adjustment to college. To reduce social inequality and the gap among this group, college institutions must pay close attention to FGCS when making pertinent decisions. Finally, these decisions can impact colleges and aspire to assist FGCS educational progression (Kim et al., 2018).

**College Adjustment Barriers**

Engle (2007) noted that FGCS encounters educational, social, financial, and cultural barriers once enrolled in college. *Inside the Gates*, Stuber (2011) argues that cultural differences in college expectations influence social integration for FGCS at four-year universities that are primarily upper-middle-class students. Upon enrollment, the goal for FGCS is to gain a college degree. FGCS can experience low self-efficacy, motivation, belonging, and emotional distress without excellent student support services due to these barriers. Such behavior characteristics can hinder FGCS adjustments to college and academic success (Kim et al., 2018).

First-generation students wear many hats while attending and completing college (Petty, 2014). Mehta et al. (2011) suggest that many students in specific regions are likely to be first-generation students because schools in these regions are doing an inadequate job of preparing these students for college. College success may be more troublesome when students are not prepared for college by their parents, siblings, mentors, or teachers at their schools.

**Problem Statement**

Across the nation, undergraduate retention and graduation are critical issues that require attention from public universities (Bowen et al., 2009). According to Melguizo (2011), a central focus in research has been low college completion rates, college persistence, and attainment among FGCS. In 2003, Carter addressed FGCS, students of color, and low socioeconomic youth,
who have limited access to academic college preparation. During their time in high school, first-generation college students have limited access to college readiness programs and initiatives regarding the first year of college. Before ever leaving home, FGCS encounters many obstacles. FGCS struggle socially and academically during their college experience and educational pursuits (Davis, 2010).

Higher education access has become available to a greater extent in the United States, yet many students drop out of college before completing their post-secondary educational pursuits. As a result, post-secondary institutions responded to this problem; colleges have developed intervention programs, campus resources, and services to retain students to graduation. However, many post-secondary institutions still struggle to maintain students (Knapp et al., 2011; Knapp et al., 2006).

For FGCS, degree attainment in the United States is critical in fulfilling the workforce's future demands and meeting the goals for national economic prosperity and global competitiveness (Demetriou, Meece, Eaker-Rich, & Powell, 2017). Arch and Gillman (2019) identified obstacles that many FGCS encounter in traditional academic culture and structures, limiting their campus engagement and academic success. Even though some FGCS encounter obstacles, they are front runners in taking additional strides to apply for acceptance into college despite not having a family role model (Garrison & Gardner, 2012). Some FGCS persist in college due to participating in early college programs during high school.

**Significance of the Study**

According to Azmitia et al. (2018), FGCS commonly possess variations in cultural values, practices, and goal attainment than those from families with a college background. A
vital component affecting human behavior and performance is the belief in motivation (Özen, 2017).

This mixed-method research study was created to contribute to the literature on the lived experience and impressions of FGCS who participated in the GEAR UP Services program. The researcher sought to add how FGCS persevered from year one to year two of persistence at public or private colleges/universities in the United States. The researcher also utilized the FGCS lived experiences to learn about the GEAR UP Services program they engaged with and the capabilities lending to enhancing FGCS persistence in college. This mixed-method research sought to provide opportunities for FGCS to discover their abilities, motivate, and assess their strengths and weaknesses to obtain college completion, thus furthering assurance of quality.

As Tinto (2012) expressed, "it is too easy to see the deficiency of student's attainment as solely the accountability of students or exterior forces beyond the institutional control" (p. 254). The research study focused on the GEAR UP Services program initiatives that could help FGCS enter and achieve success in educational attainment and persistence. These components include allowing FGCS to persist while navigating through challenges during their first year of college and how FGCS use the GEAR UP Services program, support networks, and relationships while in college. Additionally, this research study aims to provide strategies and interventions that foster student accomplishments in matriculation, retention, and persistence (Skipper, 2017).

**Research Purpose**

The purpose of this research study was two-fold. First, this explanatory sequential mixed-methods study explored first-generation college students' persistence from their first year to the second year at a private or public post-secondary institution. The dual-purpose will investigate if the GEAR UP Services program impacted FGCS persistence to the second year at a private or
public post-secondary institution. This mixed-method research study was based on participant challenges, shared trends, and experiences of the FGCS post-secondary journey they may have encountered.

**Research Questions**

This study's research questions were created to understand the FGCS's persistence to their second year of college at a private or public post-secondary institution. The overarching research questions that guided this study are:

1. What academic and GEAR UP variables contributed to the first year to the second year of college persistence?

2. In what ways did participation in the GEAR UP program contribute to the persistence rate of first-generation college students?

**Definition of Terms**

In this research study, multiple terms were used to provide contextual information and describe the participants. The following terms were defined:

*College-Going Culture* – develops post-secondary education's expectation(s) for all students (College Board, 2006).

*Continuing college student* - a college student with at least one parent has earned a baccalaureate degree or higher (Kim et al., 2018).

*Explanatory sequential mixed methods* - correlational research design consists of the quantitative and the qualitative phases. In the qualitative (text) phase, data is collected and
analyzed to help explain the quantitative results obtained in the first phase (Creswell, 2014a, p. 243).

**First-generation college student (FGCS)** - a college student, whose parent(s) did not finish a baccalaureate degree (Engle & Tinto, 2008).

**Persistence** – a student's ability to remain enrolled or continued enrollment at a post-secondary institution (Stewart et al., 2015).

**Retention** – enrollment rate or percentage of the student(s) returning to the same higher education institution from one semester to the next. (Pratt, Harwood, Cavazos, & Ditzfeld, 2019).

**Self-Determination Theory** - intrinsic and extrinsic sources of motivation dealing with cognitive and social implications of both intrinsic and extrinsic sources of motivation (Ackerman, 2018).

**Social Capital Theory** - implies one's ability to access human and material resources (Carter, 2003, p.136).

**Chapter Summary**

Chapter one introduces the problem statement and explores the purpose of the study. This chapter also provides critical terms and the significance of this research. Arch and Gilman (2019) stated that many first-generation college students, traditional academic culture, and structures have barriers that limit their engagement on campus and academic success. As FGCS encounter barriers, many are trailblazers due to taking the additional steps to enroll in college despite not having a family role model (Garrison & Gardner, 2012). Sometimes FGCSs must differentiate themselves from their parents, even causing alienation, with many challenges. Even with these barriers, first-generation students enroll in college, and many persist (Checkoway, 2018).
CHAPTER 2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Theoretical Framework

Social Capital Theory

Social capital theory is people's personal and social interactions for interpersonal assistance. Students at home formulate these interactions while in a school or university setting (Coleman, 1990). Social capital theory is the "actual or potential resources linked to possession of a durable network, relationship, or mutual acquaintance" (Bourdieu, 1986, p. 248). Portes (1998) argued that the existing challenges of low socioeconomic youth not having the "inherited" social capital and low economic capital limit them from establishing effective networks.

Social capital is a positive indicator for first-generation students involving their comfort level on campus and their grade point average (Schwartz et al., 2018). According to past research, Wittner et al. (2020) affirmed that the level of university integration is a vital factor in a first-generation college student's success. Even with mixed results, researchers implied that social capital theory helps students gain valuable assistance such as institutional resources, vital pieces of information, and support through their social networks to achieve higher educational success pursuit (Almeida et al., 2019).

Social capital theory is relevant to college access programs, such as GEAR UP, post-secondary outcomes. Social capital comprises resources within a social structure (Bowman et al., 2018). Social capital is productive within the social system and makes possible specific actions and outcomes, "social capital is inherent in the structure of relationships between actors and among actors" (Coleman, 1988, p. S98). Although the social capital theory is supported in
educational research, it is pervasive as it describes the array of "resources students need to be successful in school" (Bowman et al., 2018).

**Self-Determination Theory**

Self-determination theory (SDT) is an "empirically based theory of human motivation, development, and wellness" (Deci & Ryan, 2008, p. 182). SDT focuses on different forms of motivation, paying specific attention to controlled motivation, autonomous motivation, and amotivation, which predict performance, well-being, and relational outcomes. The theory also focuses on intrinsic and extrinsic motivation, which are highly influential determinants of our behavior. This behavior leads us to three basic needs in the SDT model: autonomy, competence, and relatedness (connection) (Deci & Ryan, 2008). Autonomy occurs when a student chooses to learn when the activities and subject are closely aligned with their values and interests. Competence is the need to challenge and test one's ability. Relatedness occurs when there is a need to establish, secure, and close relationships with others. Although relatedness posed itself to be a distinct need, relationships sometimes provide context for the other two conditions to be satisfied (Guiffrida et al., 2013).

Tinto's (1993) theory centering around student persistence is widely used in higher education. Stage (1989) argued that Tinto's theory emphasized student commitment but failed to describe the motivation orientations that lead to academic commitment. Reason (2009), in a review of college retention, highlighted the need to understand better relationships between student motivation and educational outcomes to increase our understanding of the college persistence puzzle. According to Guiffrida et al. (2013), SDT provided an opportunity to advance Tinto's (1993) theory by recognizing the relationships between motivation orientation, college student academic achievement, and persistence.
SDT, a macro theory of human motivation, addresses fundamental issues of personality development, life goals, aspiration, self-regulation, and the impact of social environments on motivation, behavior, and well-being. Furthermore, SDT has been applied to various life domains such as education, sports, and healthcare (Deci & Ryan, 2008).

The primary behavior that supports persistence is learning opportunities provided through social relationships with post-secondary institution faculty and staff (Pascarella & Terenzini, 2005). These social relationships include working with professional teams by identifying them as mentors and working with advisors and joining student academic clubs, groups, and communities. These are vital components of social capital theory and self-determination theory. When students (first-generation) lack social and cultural capital in their college preparation, they are less likely to access capital when they enroll in college. Many studies have assessed key SDT constructs in the classroom and lab-based settings. These studies have led SDT to become one of the most empirically validated theories for understanding academic motivation (Reeve, Deci, & Rayn, 2004). The GEAR UP program recognizes many of these social deficits, which allows this program to take advantage of and develop social and cultural capital within FGCS (Sanchez et al., 2018). Social capital, cultural capital, and self-determination theory opportunities are family and culture events, campus field trips, financial literacy workshops/seminars, and mentorship initiatives. These opportunities can minimize the perceptual barriers that may not exist for more affluent students (Cabrera et al., 2006; Cates & Schaefle, 2011).

**Literature Review**

This explanatory sequential mixed method will explore the perspectives of first-generation college students who have participated in GEAR UP Services initiatives. Gaps affecting FGCSs are exploring their backgrounds and understanding what they encounter, which
are 1) college readiness, 2) student support services, 3) motivation, and 4) first-year support. The literature review defines background information and summaries scholarly findings on first-generation college students' persistence and post-secondary institution retention. This chapter also explores the salient economic, sociological, and educational underpinnings that cause barriers and affect student persistence among low-income students. This chapter concludes with the overall findings and how the literature supports the expansion to discuss persistence and retention among low-income FGCSs.

Exploring FGCS with a holistic approach exposes a gap to the vast population of interest (Garrison & Gardner, 2012). For many years in higher education research, the focus has been on first-generation college students (Toutkoushian, Stollberg, & Slaton, 2018). After six years of being enrolled in post-secondary, 56% of first-generation college students had not earned any post-secondary credential (RTI International, 2019, p. 1). One significant hurdle to post-secondary education for students from low-economic families is found to be inadequately prepared for structured college work (Haskins & Rouse, 2013). In aiding disadvantaged students, the federal policymakers allocate revenue to support assistance programs for their success (Haskins & Rouse, 2013).

**Overview of GEAR UP Services**

GEAR UP (Gaining Early Awareness and Readiness for Undergraduate Programs) is a federal college preparation grant program funded by the United States Department of Education, based on the 1995 Higher Education Amendments requirements. The signed amendment went into public law by President Bill Clinton on September 29, 1998 (NCES, n.d.). The program was designed as an alternative to TRIO to increase the percentage of low-income students prepared to enter and achieve success in post-secondary education institutions (Bausmith & France, 2012).
This grant provides funding for participants beginning their sixth-grade year and culminating when they graduate from high school. As an early intervention grant program, GEAR UP seeks to promote: 1) appropriate information on college preparatory courses and financial expenses, 2) individualized academic and social support to students, 3) parental participation in education, 4) school reform and educational excellence, and 5) student participation in rigorous courses (Bausmith & France, 2012). Although GEAR UP is one of the many college-going culture programs providing college readiness, other strategies can help students navigate the path of college, like TRIO and Upward Bound. Venezia and Jaeger (2013) suggest,

To improve college readiness interventions, provide diversified services that include academic preparation, information about colleges and universities, financial aid (federal and state), and psychosocial/behavioral supports to the development of habits of mind including organizational skills, anticipation, persistence, and resiliency. (p.117)

GEAR UP Services program provides student support services to prepare students for college. The student support services include professional development for students, college/career access support, college/career counseling advice, comprehensive mentoring, and TOPS/FAFSA/financial literacy workshops.

**Persistence and Retention**

Howard and Crayne (2019) stated that persistence is a person's tendency to sustain through difficulties to accomplish goals. Generation status results vary with student persistence through college and forming relationships (Redford et al., 2017). According to previous researchers, Pascarella and Terenzini (2005), first-generation students participate in genuine campus and faculty interactions. Furthermore, applying constant external study habits beyond the classroom increases persistence and degree completion.
In a quantitative study, Rubio et al. (2017) explored the relationships and social support networks. This study attributed notable themes to first-generation students and post-secondary degree completion. The 200 first-generation students surveyed indicated that participants faced many barriers in their post-secondary experience and the importance of utilizing support networks and resources. When managing financial assistance and academic preparation areas, first-generation students are not utilizing the available resources allocated to them. Rubio et al. (2017) suggested identifying institutional resources, programs, and intervention strategies as essential for the program's crucial components. These key components are vital in assisting first-generation college students when navigating through challenges and barriers.

Walsh and Kurpius (2015) explored variables that impacted college students' decisions on academic persistence. The participants were 433 students that enrolled in several sections of a lower 100 level course. Based on the study population's diversity, the findings included the promotion of inclusivity in an accessible campus environment, along with a background of positive self-beliefs that served as an aid in impactful optimistic persistence decisions (Walsh & Kurpius, 2015).

Liversage et al. (2018) addressed first-generation students' experiences and explored the growth of their first year at a post-secondary institution. The research study used purposive sampling. The researcher's results were concluded in a focus group through the themes and vectors revealed through the participant interviews. The interviews opened discussions regarding the challenges and obstacles first-generation students encountered during their transition to earning post-secondary education (Liversage et al., 2018).

This qualitative study examined the sources of graduate student resilience and perseverance and expanded the study to explore a sense of belonging for undergraduate students.
According to Longwell-Grice et al. (2016), this study results reveal that developing a student's identity creates unique barriers and challenges when transitioning into a post-secondary institution as a multicultural person.

"Student persistence through college and borrowing also varies by generation status. First-generation college students were less likely than their continuing-generation peers to persist through the first couple of college years" (Redford et al., 2017, p. 1). Checkoway (2018) suggested that first-generation students' enrollment in college displayed degrees of strength because they have acknowledged the significance of obtaining a higher level of education. These students have achieved factors of economic disparity, diversity issues, and social status concerns. FGCS encouraged themselves to gather up their strength that enabled enrollment, ability to adapt, persistence, and perseverance towards succeeding (Checkoway, 2018).

Besides persistence, another concern regarding FGCS is the retention rate. Retention is closely related to students' persistence, attrition, and academic success (Sciarra et al., 2016). Upon entering college, FGCS may overcome obstacles entering a college environment. College administration is employing research to address interventions to assist with issues regarding FGCS in persisting and not departing from college (Pratt et al., 2019). Retention is "the continuous enrollment of students from one fall semester to the following fall semester" (Swecker et al., 2013, p. 46).

In the United States, out of the millions of students enrolled in private or public post-secondary institutions, approximately 20% are first-generation college students. FGCS are 71% more likely to drop out of college during their first year than non-first-generation college students (Pratt et al., 2019, p. 106). Considering these disadvantages causes post-secondary institutions to look for strategies to implement intervention programs targeted at FGCS. Wyatt et
al. (2012) suggests that academic intensity or rigor in high school students' curricula is positively associated with college outcomes. Some college outcomes are the lack or need for remedial coursework in college and persistence to graduation. According to Aterton (2014), there are three research tracks on retention for FGCS:

- Demographic characteristics (family size and income)
- Added challenges encountered in the high school to college stage
- Persistence and motivation towards degree completion

Demetriou et al. (2017) conducted a qualitative study of 100 student cases. During the interviews of these cases, the responses examined the connections, the extra-curricular involvement, and the relationships between successful integrations and academic success. Out of the 100 student cases, 27 of them were FGCS. In this study, four variables for predicting academic success and retention are 1) secondary educational performance, 2) demographic and socioeconomic characteristics, 3) post-secondary campus integration, and 4) institutional support, financial assistance aid provisions, and overall quality of instruction. The research findings indicated that as students participated in collegiate activities, it helped them create original ideas, better understand the role of research, and boost their self-confidence and self-efficacy (Demetriou et al., 2017). Student motivations caused students to be interconnected with academic success and college persistence (Slanger et al., 2015).

High dropout rates are a problem because these support programs isolate FGCS, developing protective groups which cannot fully embody themselves with the campus culture. Sometimes, at colleges, programs for FGCS are often not publicized or accessible to these students (Lowery-Hart & Pacheco, 2011). Garrison and Gardner (2012) reported scholarly works indicating other approaches to integrating these programs; subsequently, a more holistic
approach should integrate student retention into the program. The participants lived experiences provided insight to aid the pursuit of their higher education journey. Three qualitative interviews were completed by female FGCSs who participated in the study. The study findings revealed FGCS characteristics such as goal orientation, positive outlook, and self-awareness (Garrison & Gardner, 2012). Pratt et al. (2019) report that retention of FGCS broadly speaks of the individual rather than the university's culture. FGCS can choose to continue their college career or succumb to the socioeconomic position they navigated to avoid most of their upbringing (Pratt et al., 2019).

**First-Generation College Students Background**

FGCSs enroll in college without knowing vital information about what to expect academically and socially. Research studies indicated that when parents of FGCS have no previous post-secondary knowledge or experience, the student can encounter challenges obtaining a post-secondary education (Cataldi et al., 2018).

Additionally, first-generation students often have different perceptions of why people go to college than most middle-class students (Wilkins, 2018). A barrier related to FGCS is their ability to adjust to college due to college readiness deficiency. They encounter more significant challenges than continuing-generation college students (CGCS). FGCS is defined as a college student whose parent(s) has not completed a baccalaureate degree, while CGCS has, in some measure, one parent with a bachelor's degree or higher (Kim et al., 2018).

First-generation college students (FGCS) and continuing-generation college students (CGCS) have one parent with a college degree and encounter challenges connected to individual and structural factors. Some of the challenges for FGCS are personal knowledge, abilities, skills, and motives in attending college. Some structural elements are financial aid resources, parental
support, and mentors' access (Stephens et al., 2015). Stephens et al. (2015) further suggest that these psychological barriers are influential due to FGCS being underrepresented, isolated, stigmatized, and marginalized (Apfelbaum et al., 2016; Jehangir et al., 2012; Jury et al., 2017).

Moreover, DeAngelo and Franke (2016) examined college readiness and retention for first-generation college students' first year. A representative data set was used to discuss college social and economic factors differently, based on preparedness impacting the students (DeAngelo & Franke, 2016). The researchers coupled two primary sources of the Freshman Survey and National Student Clearinghouse by conducting this study. In the descriptive results, 38% of the participants were placed in a college-ready group, and 62% of the participants were placed in a less-ready group for not meeting the criteria in one or two of the necessary components of college readiness (DeAngelo & Franke, 2016, p. 1601). The findings suggested that many first-generation students and lower economic status students are similarly in jeopardy of retention when in college. In examining the relationship and variations between college readiness and college retention, DeAngelo and Franke (2016) concluded a relationship between retention and generation status.

Stephens et al. (2014) suggest racial underrepresentation, low academic self-esteem, and struggles adjusting to college are additional obstacles to FGCS. A convenience sampling method was used in this quantitative study with a randomized control of 168 participants, with 147 of them completing the full research study examining incoming first-year students of how diverse backgrounds affected incoming students compared to senior college students. In contrast, 66 of the participants were first-generation students. The study's conclusion showed that even students with diverse backgrounds could be successful or challenged with similar obstacles at post-secondary institutions (Stephens et al., 2014). Moreover, the parents of FGCS are found not to
have as much assistance for their children in the college choice selection and financial aid as those of non-first-generation parents (Chen, 2005; Forbus et al., 2011; Gibson & Slate, 2010; Thayer, 2000).

Additionally, FGCS whose parents did not have a college degree consist of 58% of college enrollment (Redford et al., 2017, p. 9). Students who have a low-income background with a Pell Grant make up 33% of the American higher education population (Baum et al., 2016, p. 4). About 24% of these college students are first-generation and low-income (Mead, 2018, p. 25).

Schwartz et al., (2018) mixed-methods study investigated 164 first-generation college students on the innovative intervention through the skills and attitudes toward on-campus transitions and social capital. The explanatory research design site in a northeast public, diverse urban culture showed that the intervention improved the participants' behavior and attitudes.

Azmitia, Sumabat-Estrada, Cheong, and Covarrubias (2018) conducted a 6-year longitudinal and cross-sectional study exploring a northern California public state university. The sample from the 6-year longitudinal study involved a diversified participant pool involving 214 students collecting data from individual interviews and surveys. For the cross-sectional data analysis, 361 online surveys were collected and explored student's lived experiences. Using quantitative surveys and qualitative stories, this showed a lens of educational resilience, characteristics, and the persistence first-generation college students represent in academic and personal relationships (Azmitia et al., 2018).

Walsh and Kurpius (2015) noted Tinto's model in a quantitative study to explore the academic persistence of personal factors and background impact on college freshman decisions. The seven areas studied in this research study were: 1) parental educational attainment, 2) value
of education by parents, 3) high school grade point average, 4) housing status (on or off-campus living), 5) self-worth of education, 6) observation of academic preparation and 7) academic self-expectation and regard (Walsh & Kurpius, 2015). The sample in this study consisted of 378 first-year students who were either 18 or 19 years old. The first-year students were 243 females and 135 males. A hierarchical regression analysis was used to report conclusive evidence on academic persistence decisions. These decisions were based on the first-year students' residential placement of residing on campus, belief in self, educational value, self-esteem, and self-efficacy. The findings concluded that researchers, counselors, and political decision-makers considered residence on campus and the student's self-efficacy (belief in oneself) when deciding factors regarding the advancement of first-year college students (Walsh & Kurpius, 2015).

Ishitani (2015) studied FGCS college persistence characteristics and the effects of social integration and academic success. This quantitative study utilized a survival analysis to investigate the time-varying conditions of first-generation college students' educational and communal integration and persistence. The results indicated that the null hypothesis attrition rates were the same for the four groups of students based on equality testing outcomes. Furthermore, the Kaplan-Meier method (product limit estimation) results presented evidence that first-generation students are more likely to withdraw from college than their counterparts, students with college-educated parents (Ishitani, 2015).

Blackwell and Pinder (2014) reported factors that motivate FGCS and help them pursue a post-secondary education degree completion. The use of two different three participants per group was interviewed as data options with partially structured audiotape recordings and follow-up phone conversations. Both groups were African American females, and the second group was called the "comparison group." The "third-generation college students" in this study revealed that
first-generation college students were not motivated by family pursuit or college completion. Lastly, the student's inner desire was to attend college, achieve a better life, and be the first graduate in their family to earn a college degree (Blackwell & Pinder, 2014).

**College Readiness**

Many high school students inspire to aspire to a level of post-secondary education. "College readiness is commonly defined as a level of preparation a student needs to enroll and succeed in a college program (certificate, associate degree, or baccalaureate) without requiring remediation" (Venezia & Jaeger, 2013, p. 118). Like GEAR UP Services, the effectiveness of college readiness programs among high school students can help them in college (Venezia & Jaeger, 2013). The ability of students to obtain post-secondary education and be equipped to take advantage of this opportunity is critical to their academic and social development. This preparation is even more critical and relevant for low-income students, members of minorities, and the disabled (Tierney et al., 2009).

Conley (2014) suggests why new college and career readiness measures are needed and how better readiness steps are necessary and imperative for students who attend and complete a post-secondary program of study. Offering college readiness programs can help FGCS prepare at the high school level. In the preparation process, students must participate in college culture programs and strategies that assist them in steering the academic tunnel from high school to post-secondary institutions (Lombardi et al., 2018). Although various college readiness programs focus on this maneuvering skill, one, in particular, GEAR UP, provides this technique to individuals from low-income, minority, and disabled backgrounds (Edmunds et al., 2017).

In a quasi-experiment study, Bowman et al. (2018) investigated a federal college and career readiness program that implied college enrollment and persistence. Predictions about
participation in a GEAR UP program showed higher levels of impact in academic performance areas. They used a propensity score analysis to investigate federal college and career readiness program implications, resulting in the positive effects of promoting college outcomes for low socioeconomic students to improve their college outcomes (Bowman et al., 2018). The results explored how participating in a GEAR UP program revealed positive outcomes in improving college enrollment and persistence.

**Student Support Services**

Many high school students aspire to acquire a post-secondary degree. However, most of them are underprepared for college courses or lack knowledge of navigating the complex financial aid process (Venezia & Jaeger, 2013). Most of them enter college without basic content knowledge, habits, and skills that they need to succeed. Many post-secondary institutions are not structured to support students like FGCS. When FGCSs are encountered many challenges, they are discouraged from seeking help. According to Stephens et al. (2012), American post-secondary institutions are structured for middle and upper-class norms. These norms put the FGCS at a disadvantage due to coming out of a lower income social status. Compared to later generation students, FGCS has an increased risk of dropping out of college after their first semester and impacting the retention, persistence, and completion rates after the first semester. Thus, failing to address cultures and systems that dissuade students from seeking help, post-secondary institutions risk alienating a marginalized student population, FGCS (Huynh, 2019). Student support services effectiveness can help FGCS succeed, including knowledge, academic preparation, financial aid information, 1st-year support programs, behavioral and psychosocial support in developing persistence, resiliency, and organizational skills (Venezia & Jaeger, 2013). FGCS need GEAR UP support services while in high school to help them succeed and persist in
college by participating in persistence predictor factors/activities 1) college readiness indicators, 2) college knowledge indicators, 3) life experience indicators, 4) financial literacy/aid indicators (Barbera et al., 2020; Berkeley, 2017; Conley, 2014; D'Amico & Fruht, 2018; Lin et al., 2020; Mendez & Bauman, 2018; Ross et al., 2012; Stewart et al., 2015)

**College Readiness Indicators**

College readiness indicators emphasize each student’s level of college preparation academically (Berkeley, 2017). The construct of students enrolling in academic courses to ensure they are ready for college. A strong predictor of college readiness is for students to take more rigorous/advanced courses (Le et al., 2016). Researchers have proven that high school students' pre-college characteristics, academic perceptions, environmental factors, and student services are associated with FGCS academic outcomes (Mendez & Bauman, 2018). High school grades are recognized as the most reliable predictors of academic achievement and college persistence (Stewart et al., 2015). Other academic readiness factors that help students' persistence are standardized tests (ACT), dual enrollment, and advanced placement.

**Academics.** Academics is one of the critical predictors of persistence (Mendez & Bauman, 2018). Galla et al. (2019) studied predictors of self-regulation and cognitive ability in a national study involving over 47,000 high school seniors and a convenience sample of 1,622 students in the class of 2013. Galla et al. (2019) argue that college success requires students to have the cognitive ability and self-regulatory competencies. Self-regulatory competencies are indexed better by high school student grades (Jackson, 2018). Study one confirmed high school senior grades "out-predicted" test scores of a college degree attainment. The high school students of the second study found that high school GPAs are more significant indicators of graduation promptly. The researchers concluded that high school grades hold information regarding self-
regulation and established that those grades are better than admissions test scores (Galla et al., 2019). First-year students with a GPA from high school and their freshman college GPA represent a significant factor in persistence in 26% of the variations (Stewart et al., 2015). Persistence has been linked most likely to happen with a high first-semester GPA (Barbera et al., 2020).

**American College Testing (ACT).** Many studies have revealed a positive correlation between standardized test scores, such as the ACT and SAT, and persistence (Stewart et al., 2015). In 2018, students who participated in American College Testing (ACT) testing were 1,914,817 in the United States (ACT, 2018). As reported, ACT (2018) states that increased accessibility provides more students the option to decide on degree attainment.

Barbera et al. (2020) explored how the *College Choice Report* studied the class of 2012 (ACT, 2013a, 2013b, 2014). In this study, secondary students in the class of 2012 were participants who took the Scholastic Aptitude Test or American College Testing (ACT) to prepare for post-secondary education. Annual reports provided the class of 2012 college selection and individualized persistence and retention patterns (Barbera et al., 2020). These findings offered valuable information on 2012 graduation class SAT and ACT accomplishments that interacted with other essential qualities impacting post-secondary persistence (Barbera et al., 2020).

**Dual Enrollment & Advanced Placement.** Over a few decades, education has witnessed significant adaptations in financing post-secondary institutions internationally and the United States (Johnston & Marcucci, 2010). College-level course availability has substantially increased in mitigating financial aid's pivotal role, especially for students with low economic
status, like FGCSs. The post-secondary classwork is dual enrollment (DE) and advanced placement (AP), which is concurrent enrollment (Lin et al., 2020).

Lin et al. (2020) employed a 4-year mixed-method study of first-year undergraduate students in the fall of 2012. The researcher used the St. John's model as the basic framework to study the relationship between the types of persistence and financial support related to degree fulfillment for students who had taken AP and DE courses. These students were enrolled at a major US Midwestern university. The findings suggest that college success included housing status, social-economic status, and first-generation status. Additionally, the participation in AP, DE, high school performance, and SAT or ACT scores. Federal and Pell grants played a role in the findings (Lin et al., 2020). Additionally, Radunzel et al. (2014) indicated that students not having dual credits entering college anticipated more success than those with dual credits.

Radunzel et al. (2014) conducted a quantitative study involving four participating post-secondary institutions, with the enrollment identified being over 36,000 students during the fall semesters of 2005 or 2006. The analysis highlighted that those students enrolling in college with dual credit hours were more likely to succeed than students without dual credits. Students entering with dual credits had fewer hours towards their degree completion than students without dual credits, ultimately lessening the educational costs. Finally, the findings revealed how dual credits aligned to a greater degree and college degree attainment (Radunzel et al., 2014).

**College Knowledge Indicators**

College knowledge indicators understand the college process that gives students a positive college mindset while navigating college applications and access systems (Conley, 2014). Providing college knowledge activities/interventions to first-generation students can help
them have a positive attitude about their college careers. These activities/interventions can help them attend the right college fit and navigate the complex college system.

**College Match.** College access information role is vital in future post-secondary enrollment by developing relevant information for students to ultimately help them with college persistence (Berkeley, 2017). A *National Student Clearinghouse Research Center* report, one-year results from 2013 to 2014, a national percentage persistence rate of first to second-year college students is "59% return to the same institution and 69% return to any US institution" (National Student Clearinghouse Research Center, 2015, p. 1). Improving the relevant knowledge of students includes the potential benefits and costs of post-secondary education. Students are likely to enroll and persist when they obtain additional knowledge about higher education institutes and receive assistance in searching for colleges and college applications. They are more likely to enroll and persist (Bowman et al., 2018; National Student Clearinghouse Research Center, 2015).

Attending a college based on their services, cultivating relationships, and overcoming educational disadvantages help students select a college (Nelson, 2016). With the uneven distribution of selected colleges in the population, students may choose an "undermatch" college selection due to the distance of a "match" college resulting in limiting their chance of potentially attending another college (Ovink et al., 2018). The college selection is why students need to be matched with the post-secondary institution that fits them. According to Nelson (2016), college matches allow students to incorporate their family, school, and community social capital when enrolling in the college of their choice.

**College Applications.** Oreopoulos and Ford (2019) employed randomized data to explore the Life After High School in-class program involving schools in areas across the
province of Ontario, Canada. The program was designed to assist students with personalized interventions in their financial and college applications. The data suggests the program saw a 14% increase in the two-year college application process and the participating student enrollment rates. The program design allowed the application process to be more manageable and appealing to the student by providing a hands-on approach due to a more specific context. Students willing to seek assistance can successfully navigate alternative sources in the college search and the college application process (Nelson, 2016). In-class college application assistance shows signs of highly effective intervention in bridging the gaps in higher education (Oreopoulos & Ford, 2019).

Robinson and Roksa (2016) conducted a study on the college application process inequalities using the Educational longitudinal study. The data set in this study included a sample of 10th-grade students nationally. The ELS assessment was selected because it captured the student's academic and background characteristics, information applied to college, and the number of counselor visits. Moreover, the study provided insight into how policy and practice could benefit low-economic FG students and underrepresented, marginalized groups of students in planning and engagement in the future college application process (Robinson & Roksa, 2016).

**Life Experience Indicators**

Summer bridge programs and college visits are life experience indicators that directly affect students' engagement and focus on college (Berkeley, 2017). College visits and summer bridge programs help students decide what colleges to submit admission applications to, and their Free Application for Federal Student Aid (FAFSA) determines their financial aid eligibility (Berkeley, 2017; Edmunds et al., 2017).
Campus Field Trips. Campus field trips are essential for institutions because it is one way to "seal the deal" with a potential student. Secore (2018) conducted a study on students attending a post-secondary campus visit playing a significant part in students enrolling on a higher education campus. Having a campus visit looks into what campus life might entail at a particular institution (Secore, 2018). Okerson (2016) suggests that campus visitations give students a potential lens on how to view their possible future and the interactions with the campus community in allowing the experience to become "real" (p.48). In simpler terms, "the tour is the blind date of the admissions process." "Looks matter a lot to the beholder, and first impressions do much to shape future actions (Hoover, 2010, p. 37)." Essentially, university field trips can provide influential factors that give potential students information, insights, and culture to influence their college selection (Secore, 2018).

Summer Bridge Programs. Providing students with social and academic skills for successful college persistence and retention is their involvement in a summer bridge program. Although summer bridge programs can vary by institution, the components could involve a comprehensive orientation to campus life, resources, study skills, and advising (Grace-Odeleye & Santiago, 2019).

Wachen et al. (2018) performed a quasi-experimental research study of students participating in a summer bridge program. Persistence and completion were significant factors that were examined due to numerous students enrolling in college lacking the skills to succeed in college-level work. Using the theoretical framework of academic momentum, student involvement, and retention, the researcher's results from the five-summer bridge program showed a positive association between persistence and summer bridge programs. Wachen et al. (2018) showed that students who participated in the program graduated in 4 years. After these
students participated in this program, it caused more students to participate, thus increasing their participation numbers. "The value of higher education is generally linked to its narrow definition of private economic gains, such as higher earnings and better career opportunities" (Ishitani, 2015, p. 861). The results provide more robust support for the participation of bridge program initiatives that engage students in persistence and completion.

**Financial Literacy/Aid Indicators**

Financial literacy and aid indicators are related to college affordability, including knowing the several types of financial aid available to students, especially FGCSs. Some are employed while pursuing their college degree (Berkeley, 2017). In modern society, financial literacy and economics are critical needs to succeed. *The States* survey report shows that Americans lack a basic understanding of financial aid and economic concepts (Council for Economic, 2020). According to the 2016 *Survey of the States* report completed by the Council for Economic Education's, "only 20 states require students to take a high school economics course to graduate, and only 17 states require a course in financial literacy" (Council for Economic, 2020, p. 1). For students with low socioeconomic backgrounds (first-generation), emphasizing the importance of financial aid is related to student success. According to St. John's model, financial assistance sufficiency correlates with the company's college persistence (Lin et al., 2020).

**Financial Literacy.** According to Lusardi (2021), "to fully participate in society today, financial literacy is critical" (p. 1). Having an economic foundation allows students to make informed decisions regarding finances, starting with a fundamental understanding of financial literacy. Gill and Bhattacharya (2019) employed a quantitative study of 11th and 12th-grade economic students on the effectiveness of financial literacy instruction at various high schools.
The financial concepts and topics taught in the economic classes were money management (MM) and financial investment (FI). The findings of their financial literacy eight class period instruction had increased students' financial knowledge.

Moreover, this outcome validates the implementation of teaching financial literacy in schools. Many states have a personal finance course curriculum. The states implementing these requirements with student results have an increased understanding of college costs and budgeting (Gill & Bhattacharya, 2019).

**Financial Aid & FAFSA Completion.** Bettinger et al. (2012), in a joined partnership with H&R Block, conveyed the increasing concerns of navigating the complicated financial assistance for students in the United States college system. In unsystematic field experiments, low-socioeconomic students received tax assistance and gained rapid aid in finishing the Free Application for Federal Student Aid application for their parents and themselves. Specifically, graduating seniors involved in the study found that their parents were eight points more likely to finish a two-year post-secondary degree. The results showed an increase from twenty-eight percent to thirty-six percent during the start of the study. The study participants combined assistance and information resulted in higher federal aid completions and prospects of receiving financial aid, persistence, and college attendance.

There was an increase in FAFSA submissions and the likelihood of college attendance, persistence, and receipt of financial aid. In particular, high school seniors whose parents participated in the treatment were 8% points more likely to have completed two years of college, going from 28% to 36% during the first three years after the experiment (Bettinger et al., 2012, p. 1205).

Consequently, receiving financial aid information to families without support with the FAFSA improvement was not likely. The results showed eligible prospects for individual
assistance to build up involvement in programs that finish the paperwork to be qualified (Bettinger et al., 2012).

Furquim et al. (2017) conducted a quantitative study on first-generation and non-first-generation students navigating post-secondary financial aid. They identified the various levels of processing financial behaviors of the generational background of FG students. In drawing upon the general tenets of demand theory, this was utilized to discuss borrowing selections of students. Due to tuition increases and additional students depending on the intricate financial aid system, decision-makers should understand students' economic preferences (Furquim et al., 2017). For education, students and families explore financial backings resulting from acquiring several state, federal, and private aid resources in funding a college education (Schmeiser et al., 2015).

Motivation

"Student motivation leads to persistence" (Tinto, 2016, para. 4). Motivation is revered as an external and internal instinct that drives or gears up a person to gain a particular outcome (Petty, 2014; Sansone & Harackiewicz, 2012). Since education plays a role in influencing our daily lives, the quality of life and human survival depends on educated citizens. Educated citizens must have the ability to make crucial decisions, mobilize their efforts, and be persistent with tasks inside and outside the classroom (Augustyniak et al., 2016). Motivation is a word used to refer to reasons for engaging in a particular behavior, such as learning, which is a fundamental component of our survival as human beings. It is the natural individual process of directing zeal to achieve a goal (Wlodkowski, 2008). Motivation can be viewed as an external and internal factor relating to how an FGS survives college surroundings (Hottinger & Rose, 2006). Intrinsic and extrinsic factors play a role in FGCS motivation to stay in college (Petty, 2014). Extrinsic factors are external characteristics of FGCS, such as personal advancement, economic gain,
family support, and intrinsic factors that support academic achievement and mental health. Lai (2011) suggests that motivation revolves closely around actions, interests, one's beliefs, perceptions, and values.

In a qualitative grounded theory study, Petty (2014) discusses how motivation plays a role in understanding first-generation students' intrinsic and extrinsic factors, thus causing them to achieve academic success and college completion. Higher education organizations should provide a scope of programs to assist these students with encountering their challenges and weaknesses while in college. Further, Petty (2014) explained that institutions play a vital role in motivating students to know intrinsic and extrinsic functions.

Blackwell and Pinder (2014) summarize how first-generation students are motivated to conquer their family backgrounds to achieve a post-secondary education. In this study, the researchers conducted two different groupings using semi-structured interviews to examine how FGS were motivated to continue in their post-secondary education while overcoming their family background. Moreover, research suggests that teachers become mentors in encouraging minorities and FGS to enroll in college. In the first group, three FGCSs were in the leading focus group, and the second was the comparison group. This study's findings revealed that the student's "inner drive" was to attend college and graduate from a post-secondary institution was the main factor (Blackwell & Pinder, 2014, p. 45). College-going culture, motivation, limitations, and barriers are essential factors in understanding a first-generation student's quest or lack thereof for post-secondary education (Blackwell & Pinder, 2014).

Garrison and Garden (2012) conducted a qualitative study investigating FGCS exploration by providing a holistic method of exposing a gap in this population of interest. This research examined the personal attributes of students involving first-generation female college
students. The findings revealed the "proactivity, goal direction, optimism, and reflexivity" of the FGCS who participated in the study (Garrison & Garden, 2012, p. 2). According to the research, "the participants described extensive and selected use of their assets." The additional findings "suggest higher education institutions could provide faculty development and extend student support services to recognize first-generation student's assets" (Garrison & Garden, 2012, p. 2).

Social support could be assessed by distinguishing the first-generation student's support base, which is role-dependent, and supports that are most likely to change at some point (Awang et al., 2014; Evans et al., 2010). In discussing external and internal factors of survival, one of the critical features in transition theory is support, which comprises personal inner circle relationships, relatives, friendship networks, and institutions and communities (Evans et al., 2010).

In determining FGS motives, Mehta et al. (2011) suggest, "students today have a variety of demands on their time and energy attending class, out of class academic work, family, jobs, hobbies, friends, and etcetera" (p. 20). These researchers mention that these demands are the overwhelming factor that FGSs tend to encounter, leading to failing post-secondary grades. The writers tried to comprehend the differences, what causes the differences, and what could help them overcome these differences by creating a hypothesis and testing them by the questionnaire method. After receiving the test results, they were analyzed to investigate whether the beginning hypothesis was valid. If the hypothesis is true, research states that offerings of different programs could help the students, or the methods can be used to assist teachers in implementing specific techniques in the class where first-generation students were attending (Mehta et al., 2011).

Ultimately, developing successful tools and mechanisms that could motivate first-generation students is necessary for post-secondary institutions to retain them (Petty, 2014). By
providing the right motivation and external drivers, this strategy should pull a first-generation student towards the end goal of gaining a post-secondary degree. The growing numbers of FGCS entering higher education offer factors that shape the marketplace and financial growth in universities and colleges.

Sometimes FGS encounters motivation problems because of American universities' reality in academic dismissal of FGSs whose educational achievement is low. Post-secondary institutions generally establish academic standards regarding the dismissal process, ensuring students' progress towards graduation. However, when a student's grades fall below the passing letter grade of "C" at most institutions, the student is placed on academic probation, which leads to dismissal (Brost & Payne, 2011).

1st Year Support

When FGCS enroll in post-secondary institutions, they typically leave behind one culture to join another one. Glaessgen et al. (2018) examined 35 FGCS in a mixed-method case study. The researchers wanted to explore the challenges and experiences of FGS undecided students on a university campus, an unfamiliar academic environment. In this study, an acculturation process was applied to see how the students reacted to it. Reacculturation is defined as "switching membership from one culture to another" (Bruffee, 1999, p. 298). The findings revealed that FGCS experienced these factors: increased stress, became more comfortable with the campus environment, and relied more on continuing-generation friends. The first-year seminar course was helpful to them and had uncertainty regarding the advisors' roles (Glaessgen et al., 2018).

Creating an education program from scratch for first-generation and minority students is an opportunity and challenge. Bordelon et al. (2019) led a study regarding the First-Year Seminar (FYS) course at Governors State University. Faculty from the university participated in
this study for best practices and research outcomes. The faculty designed a four-year general education curriculum for a First-Year Seminar (FYS). The three-hour interdisciplinary humanities core curriculum was created to embrace the understanding of what it means to be human, understanding oneself concerning the natural world and others. The course provided qualitative and quantitative data regarding the course design effectiveness, faculty role, and the application of High Impact Practices (HIPs). Pedagogical strategies were expanded to engage first-year college students in the course data analysis and assessment process. The results positively influenced the faculty teaching in other courses (Bordelon et al., 2019).

Chapter Summary

In summary, first-generation students would have to become very diligent in their pursuits for a higher education degree with having access to Postsecondary Outreach Initiatives (POI), like what GEAR UP Services provide. At the beginning of their journey, first-generation students may have little guidance. However, by increasing on-campus support and awareness of access, support, and motivation, first-generation college students could be successful in their post-secondary endeavors (Hottinger & Rose, 2006). Although they are unpredictable and dynamic, college campuses exhibit many features of adaptive systems for FGS. Unfortunately, these transition theory systems are nonlinear organizations that operate in unpredictable and ever-changing external environments. Moreover, colleges continually evolve and adapt to societal changes by organizing and shaping their communities to thrive where all parties (student and college) develop together (Checkoway, 2018).
CHAPTER 3. METHODOLOGY

The methodology of this study is presented in chapter three. Using archival data and semi-structured interview questions, this study used a mixed-method research design. According to Tashakkori and Teddie (2003), mixed methods research involves vital components through the collection of quantitative and qualitative responses of data by analyzing and uniting both types of data to provide a more robust understanding of the research problem (Creswell, 2014a). This methodological approach was selected after considering the topic of study, research questions, and validity. In using triangulation, these methods, along with the student’s participation data from GEAR UP Services, demographics, archival data, and semi-structured interview question responses, this study provided trustworthy findings. A description of the data collection process and the interview questions are included in this chapter. The two research questions addressed the chosen methods and guided this study:

1. What academic and GEAR UP variables contributed to the first year to the second year of college persistence?

2. In what ways did participation in the GEAR UP program contribute to the persistence rate of first-generation college students?

Research Design

The quantitative portion of this study analyzed whether GEAR UP services contributed to college persistence while controlling for ACT composite score, high school GPA, ethnicity, gender, parental education level, Pell grant status, college retention rates, major types, and level of participation in GEAR UP services. This study's qualitative component encompassed semi-structured interview questions to capture the FGCS’s perceptions and impressions about their
experience in the GEAR UP Services program and its impact on their college persistence. This two-fold investigation provided an opportunity to examine the quantitative results related to persistence and qualitatively gather the FGCS impressions that explain the quantitative findings, thus adding context to the data by validating or nullifying the study hypothesis (Creswell & Plano Clark, 2011).

This research design was selected to 1) analyze the academic, demographic, and parental data of the 2018 graduates who did and did not persist to their second year of college at small, large, public, or private post-secondary institutions in the United States and 2) identify themes of student impressions and perceptions of their experience of the GEAR UP Services and the impact it had on FGCS college persistence (Creswell & Plano Clark, 2011).

Before starting a research study, the researcher must have a clear understanding of the research process, create an outline of the study, and understand the pertinent considerations in undertaking and designing a basic interpretive and descriptive qualitative study are essential. Figure 3.1 is a research design that summarizes the stages for the qualitative phase of this research study. Moreover, basic interpretive and descriptive qualitative studies apply specific methods and processes (Tie, Birks, & Francis, 2019).
Figure 3.1. Research Plan

**Context**

This study examined FGCS that persisted to college from a parish that has seven schools located in a small, rural, northern Louisiana district. The GEAR UP Services program activities were available to all students enrolled in the seven high schools. This federally funded initiative program provides college and career readiness initiatives geared to enhance study skills, GPA, college knowledge, and career aspirations. Throughout the school year, the students were able to participate in activities like dual enrollment, ACT prep boot camps, FAFSA completion workshops, TOPS workshops, match and fit sessions, complete college applications, text messaging, and campus visits. The area strives to achieve academic enrichment by providing programs like GEAR UP within the school district's high schools to increase the number of low-income students prepared to enroll and succeed in post-secondary education. As part of GEAR UP, this district provided services to high-poverty middle and high schools.
This parish was selected because I served as a Regional Coordinator/Regional Evaluator in that district.

In 2019, the economy in this parish employed about 8.11 thousand people. The largest industries are Retail Trade (1,172 people), Health Care and Social Assistance (892 people), and Mining, Quarrying, Oil, and Gas Extraction (868 people). About 18.6% (4.38k out of 23.6k people) of the population in this parish live below the poverty line, which is higher than the nation average of 12.3%. The most common racial group living below the poverty line are White (44.9%, 2,055 people), Black (32.8%, 1,501 people), and two or more (9.57%, 438 people) (Economy, 2019).

Sampling, Procedures, and Data

The dataset used in this study consisted of 2018 graduates that matriculated to college from one of the seven traditional public high schools in one northern Louisiana district. The 2018 graduate class was selected due to this group having the opportunity for college persistence in fall 2019.

Table 3.1 presents a frequency table of demographics for the participants in the study. A total of 269 students participated in the study. Of this number, although 50% of the students are White (134), there is a high population (22%) of American Indian or Alaskan Native (60) students in this study. Most of the students are FGS 88% (236) and 51% (137) are males.
Table 3.1. Sample Overview by Demographics

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<th>Ethnicity</th>
<th>Frequency</th>
<th>Percent</th>
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<td>American Indian or Alaskan Native</td>
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<tr>
<td>Black or African American</td>
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<td>20.4</td>
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<tr>
<td>Other (Multiple &amp; Hispanic)</td>
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<tr>
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<th>Frequency</th>
<th>Percent</th>
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<td>Not FGS</td>
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</tr>
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<th>Frequency</th>
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<td>Female</td>
<td>132</td>
<td>49.1</td>
</tr>
<tr>
<td>Male</td>
<td>137</td>
<td>50.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>269</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

**Sampling**

A purposeful sampling approach was used for the qualitative component of this study. Intentional sampling and judgment sampling are other terms for purposeful sampling. Typical case sampling is a type of purposeful sampling that was used in this research study when the researcher studied the phenomenon (college persistence) as it was related to the “typical” or “average” members (students) of the affected population in the sample (Crossman, 2020). In this study, the researcher was interested in gaining greater insight into the relationship between college persistence and whether first-generation 2018 graduates achieved college persistence as a result of participating in GEAR UP Services. Purposeful sampling entails selecting and recognizing groups of proficient people experiencing this phenomenon (Creswell & Plano Clark, 2011). The sampling consists of information related to FGCS who graduated in 2018 and participated in the GEAR UP program services. This 2018 graduating class are first-generation students that attended public or private institutions in the United States. The original sample size is N=269 (2018 graduates that participated in GEAR UP Services). From the original sample size, N=236 (first-generation college student) and N=33 (non-first-generation college student). In the sample, 101 students achieved college persistence, and 168 did not achieve college
persistence out of the 269 graduates from the original sample size. Table 3.2 provides an overview of the GEAR UP Services program participants.

Table 3.2. Overview of GEAR UP Services Program Participants

<table>
<thead>
<tr>
<th>Status</th>
<th># of Students</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Graduates</td>
<td>269</td>
<td></td>
</tr>
<tr>
<td>Enrolled in College</td>
<td>142</td>
<td>53%</td>
</tr>
<tr>
<td>Persisted/Retained</td>
<td>101</td>
<td>71%</td>
</tr>
</tbody>
</table>

The twelve semi-structured interviews were conducted virtually via Zoom with first-generation college students in this research study's qualitative phase, an integral component to the research question 2, which complimented the quantitative findings. Out of the 101 students that persisted, 12 of those students volunteered to participate in the interview. These students had to meet the participant selection criteria of being a FGCS, achieved college persistence, participated in the GEAR UP Services program, and graduated from one of the high schools in a district from the northern region of Louisiana.

Procedures

The data collection procedures for this mixed-method research study were done in two segments. For research question one, the collection process for the quantitative data was done with an official request for the participant data, ACT composite score data, persistence data, initiative data, and high school transcript data from the state agency database. Upon approval, the data files were securely delivered to protect the student information. Research study approval was obtained from Louisiana State University Institutional Review Board (Appendix A).
The second phase of the qualitative data collection began with requesting the 2018 graduates' email addresses and phone numbers for FGCS. Upon approval, the files were securely delivered to protect the student information. The interview email is in appendix F. The qualitative data collection was used for research question 2 analysis. To answer this research question, the semi-structured interview questions consisted of 9 opened-ended descriptive interview questions to capture the 2018 graduates' perceptions of how their participation in GEAR UP Services impacted their college persistence. Approval for this research study was obtained from the Louisiana State University Institutional Review Board.

Data

The quantitative data used in this research study consist of archival data. The 2018 graduates from one (1) district in the northern region of a southern state in the United States were included in the quantitative dataset, N=269 students. From this group of students, an email was sent to 101 students that persisted to the second year of college to complete the participant criteria selection and request an interview. The archival data was obtained from the state agency secure files: participant data, ACT composite score data, FAFSA data, persistence data, and high school transcript data.

**Participant Data:** This data was securely obtained from the student database, consisting of demographic information, the high school’s name, and the number of initiatives students attended in GEAR UP Services.

**ACT Composite Score Data:** This data was official test scores retrieved securely from the ACT organization.
**FAFSA Data:** This data was securely obtained from the Federal Student Aid data management system. The FAFSA financial aid information consists of answers to parental education level from questions 24 and 25. These questions provided the answers to which students meet the criteria of first-generation students. The first-generation student criteria were captured in the form of a yes/no (Y/N) flag. The FAFSA determines the eligibility for federal and state aid programs, such as Pell Grants. A yes/no (Y/N) flag indicated whether the Pell Grant was awarded.

**Persistence Data:** A database of the National Student Clearinghouse, StudentTracker, provided this information. StudentTracker consists of college enrollment, persistence data, and degree data for more than 3,600 colleges and universities in the United States at public and private institutions.

**High School Transcript Data:** This data was obtained securely by a file transfer to the state agency IT department's database and the state's Department of Education (DoE). This file consists of detailed information regarding high school records of courses, course type, course hours, course grades, and student demographics. Table 3.3 is a brief overview of the quantitative data considered in this research study.
Table 3.3. Graduate Year and Data Source

<table>
<thead>
<tr>
<th>Graduate Year &amp; Source (Fall Terms)</th>
<th>2018 Graduates</th>
<th>Students who participated in GEAR UP Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant Data</td>
<td>Student data</td>
<td>Comprehensive Demographic student data and participation in GEAR UP Services initiatives</td>
</tr>
<tr>
<td>FAFSA Data</td>
<td>First-generation student status</td>
<td>Parental education level information as submitted on the FAFSA for first-generation student criteria</td>
</tr>
<tr>
<td>National Student Clearinghouse Data</td>
<td>College Persistence</td>
<td>Student information related to aspects of college persistence</td>
</tr>
</tbody>
</table>

Variables

The variables selected for the quantitative analysis fall into five categories. The five categories are participant data, ACT composite score, FAFSA data, persistence data, and high school transcript data with the variable type:

- Participant data
- ACT composite score data
- FAFSA data
- Persistence data
- High School Transcript data

**Participant Data.** The participant data used in this research study are student ethnicity (categorical variable, 0=White, 1=Black/African American, 3=Hispanics, 4=American Indian/Alaskan Native, 5=Other (Multiracial, and Native Hawaiian/Other Pacific Islander/Asian), gender (categorical variable, 0=male and 1=female), and GEAR UP Services participation level (ordinal variable with a range of 1-5, participated in 1 or
more of the following persistence predictor initiatives: ACT Prep/Bootcamp, Dual Enrollment/Advanced Placement, College Application Completion/College Match, FAFSA Completion/Financial Literacy, and Campus Field Trips/Summer Camp).

**ACT Composite Score Data.** The ACT data used in this research is standardized test (ACT) scores comparable to the post-secondary institution enrollment requirements (continuous variables, 1-36).

**FAFSA Data.** The FAFSA data was used in this research study consisted of parental education level for the first-generation college student criteria (continuous variable, 0=First-generation college student (student having one or more parent(s) completing some college but did not earn higher than a high school diploma) and 1=Non-first-generation college student (student who parent(s) holds a bachelor’s degree or higher)). The Pell grant determines whether a student is enrolled in college and is flagged for financial need (categorical, Y/N).

**Persistence Data.** Persistence data measured whether the students achieved college persistence by fall 2019 (categorical, Y/N) that participated in GEAR UP Services.

**High School Transcript data.** High School transcript data consists of the high school core GPA (continuous variable, scale 0-4.0).

Each case represented the first-generation 2018 graduates that either achieved or did not achieve college persistence. The first-generation 2018 graduates that had to meet the criteria: participated in GEAR UP Services and college enrollment. Engle and Tinto (2008) define the first-generation college students, complete FAFSA questions 24 and 25.
The functional definition of each variable used in the quantitative analysis is in Table 3.4.

A complete list of each variable, measurement, and statistical method is found in Appendix B.

Table 3.4. Functional Definition of Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence Status</td>
<td>Whether the student enrolled in the second year of college</td>
</tr>
<tr>
<td>Level of Participation in GEAR UP Services</td>
<td>Determines the number of GEAR UP Services initiatives that students participated</td>
</tr>
<tr>
<td>High School GPA</td>
<td>Overall high school grade point average the student received</td>
</tr>
<tr>
<td>ACT Composite Score</td>
<td>Highest level of composite score the student received</td>
</tr>
<tr>
<td>Gender</td>
<td>Determines whether the student is a female or male</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Determines the ethnicity of the student</td>
</tr>
<tr>
<td>Mother &amp; Father Education Level</td>
<td>Determines whether the participant is a first-generation student</td>
</tr>
<tr>
<td>Pell Grant Status</td>
<td>Determines whether the participant received free federal aid, the Pell Grant</td>
</tr>
</tbody>
</table>

Logistical Regression

Logistical regression analyzed the predictive ability of multiple independent variables (Brecht & Burnett, 2019). The logistical regression model for this study predicted if FGCS achieved college persistence that participated in GEAR UP Services. This analysis also investigated if there is any significance between the independent variables \((x)\) on the binary dependent variable \((y)\). The objective of using logistical regression is to see the effect of persistence factors that determine the students’ decision to achieve college persistence (Hong, Ch’ng, & Rosian, 2022).

The regression coefficient defines the size and orientation of the relation between the predictors and the dependent variables. The regression coefficient determines the impact of one unit change in the predictor variable on the dependent variable (Hong, Ch’ng, & Rosian, 2022). A positive coefficient indicates that the predictor positively affects the dependent variable, while
the negative coefficient causes the event less likely to occur. Logistical regression is achieved by taking the log odds of $P_i / (1 - P_i)$, where $P$ is the probability of achieving persistence. $P$ is a dichotomous value of 0 to 1. (Jain, Khunteta, & Srivastava 2020). The formula for the logit function is displayed as:

$$\ln \left( \frac{P_i}{1 - P_i} \right) = \beta_0 + \beta_1 X_1 + \ldots + \beta_n X_n$$

Wald statistics, degrees of freedom, $p$ values, and exponential coefficient $\text{Exp}(B)$ values. $\text{Exp}(B)$ values are used to interpret the coefficients in the logistic regression model. $\text{Exp}(B)$ values indicate a change in likelihood due to a change in the relevant variable. $\text{Exp}(B)$ values are interpreted for statistically significant variables at a 0.05 level of significance (Brecht & Burnett, 2019).

Fitting the model data is examined by using the Hosmer and Lemeshow chi-square test for goodness of fit, which evaluates the fit of the logistic regression model as a whole. If this test’s result is insignificant, the model-data fit is good. Suppose the p-value (significant value) of the logistical regression model obtained in the Hosmer and Lemeshow Test is insignificant because it is larger than 0.05. This indicates a good model to fit the data (Brecht & Burnett, 2019).

There are two main assumptions underlying the use of logistical regression. The first assumption deals with the nature of the distribution associated with the binary outcome. The second assumption deals with the nature of the relationship between the outcome variable (e.g., college persistence) and the independent variable(s) (e.g., gender, GPA).


**Sampling for the Interview Phase**

Using typical case sampling in mixed-method studies leads to a greater depth of information from a smaller number of carefully selected cases (Crossman, 2020; Teddlie & Yu, 2007). Creswell (2014) suggests that the sample size for a qualitative study should be “up to 10 people.” Patton (2002) states observational and analytical capabilities of the researcher are more essential than the sample size. Sample sizes are sometimes narrowed down for specific qualitative projects, but eventually, the sample size may be any number ranging up to 25 but could also be as small as one. The research determines what is sufficient for the research project (Boddy, 2016). Because of the qualitative methodological approach used for this research study, “separate interviews with a minimum of 10 participants” were used to gather “sufficient data to assess the participants’ variability” (Saldana & Omasta, 2018, p. 150). The point of saturation ultimately dictates how many participants the study will have. According to Merriam (1998), the sample size should end after saturation.

Purposeful sampling comprises the selection of participants who are strategically selected, representing the larger population. The participants who meet the predetermined criteria of significance are effective when each participant has experienced this phenomenon (Creswell, 1998). For this study, participants are required to meet the following criteria (1) participants that participated in a federally funded college and career access grant, (2) self-identified as first-generation college students, and (3) achieved college persistence.

**Semi-Structured Interview Questions**

The semi-structured interview questions gathered the first-generation 2018 graduates’ demographics, perceptions, and impressions about their experience of the GEAR UP Services
program and its impact on their college persistence. The nine open-ended semi-structured interview questions complemented the quantitative findings of the study. The purpose of the open-ended questions was created to capture the emotions and perceptions of the first-generation 2018 graduates' experiences of the GEAR UP Services program and their journey to college persistence. The open-ended interview questions were analyzed using a basic interpretive and descriptive qualitative research method.

Before the semi-structured interview, students had to complete the participant selection criteria questionnaire through Qualtrics. The purpose of the questionnaire was to ensure students met the interview criteria of being a FGCS, achieved college persistence, participated in the GEAR UP Services program, and graduated from one of the high schools in a district from the northern region of Louisiana.

The interviews consisted of the following open-ended questions, deemed central to answering the research question about why the participants persisted to the second year of college. Additionally, after examining the quantitative results, additional interview questions were indicated. These are the open-ended interview questions asked of the FGCS that achieved college persistence:

**Interview Questions**

1. How did the GEAR UP program impact your college experience?
2. Describe your participation in GEAR UP Services while in your senior year of the 2017-18 academic year?
3. How did your experience(s) impact or affect your college persistence? What was helpful? Not helpful? Please explain your answer.
4. In what ways did you receive support from family, friends, or acquaintances?

5. How did your near-peer campus interactions impact your personal growth, attitudes, and values toward college persistence?

6. What were the most helpful experiences with the GEAR UP program in giving you the motivation to persist?

7. Describe how frequently you participated (level of participation) in the GEAR UP program while you were in high school, and was it helpful in helping you achieve college persistence?

8. What factors did you take into consideration when you selected your post-secondary institution?

9. **Closing Question**: What was the most impactful experience that you remembered or learned when you were in the GEAR UP program that was affected by your college career?

**Semi-Structured Interviews**

Social interactions based on a conversation can be regarded as an interview (Rubin & Rubin, 2012; Warren & Karner, 2015). The one-on-one virtual semi-structured interviews were done via Zoom for approximately 30 minutes. The interviews were recorded using the Zoom virtual platform. This recording option was confirmed with each participant and was utilized throughout the interviewing process. A definition of first-generation college students was provided to each participant before the interview. During the interview, the participants were given additional information regarding the study and provided an informed consent letter to review. According to the Louisiana State University IRB's guidelines, the original consent form
copies were securely filed and maintained before starting the interview. The implementation of gift cards was utilized as a participation incentive to appeal to inquiries about the study.

As an icebreaker activity at the beginning of the individual interviews, the participants were asked, "if you could give one word to your scholarly (motivation), what word would you use?" After the word was given, the participants received a few minutes to explain their word selection to describe their persistence as first-generation college students. This word choice method provided the self-descriptions of the interview participants for the interpretive component of the basic interpretive and descriptive qualitative research design.

In the interview, questions allowed the participants to express their first-generation college students' college-going experience and the persons, including family members who aided in their persistence. According to Brinkmann and Kvale (2015), interviewing is "knowledge is constructed in the interaction between the interviewer and the interviewee" (p. 4). During the interview, the interaction between the participants and the researcher attempted to understand the participants’ life experiences while unfolding significant meanings (Brinkmann & Kvale, 2015). When the participant's narratives were provided, the researcher learned about various life experiences and motivation steps that participants experienced in their college persistence journey. The semi-structured interviews were appropriate for emphasizing the meaning the participants themselves developed, used, and attached to continuing their post-secondary education as first-generation college students (DeJonckheere & Vaughn, 2019).

**Asking the Questions**

Interviews are illuminating in getting responses to the participants' attitudes and perceptions. Asking the right questions can elicit the rich, thick responses needed to gather
qualitative data is imperative. The interview questions corresponded to research question 2 and included queries about FGCS college persistence decisions.

In asking the right questions, the interview questions were open-ended probes beginning with words such as “describe,” “how,” and “what” rather than asking “why.” Open-ended questions are designed to encourage the respondents to provide their perspectives in a carefree conversation. Sunstein and Schiseri-Strater (2012) recommend open-ended questions that elicit narrative responses.

**Triangulation**

*Triangulation* is a cross-checking method used for checking data sources. Triangulation is utilized when gathering evidence from various sources using different methods (Sandoval-Lucero et al., 2014). The researcher took steps to ensure the mixed-methods research study’s validity, reliability, and confirmability. This mixed-method research study was triangulated through these different data sources: the student’s data from their participation in the GEAR UP Services Program, demographics, semi-structured interview question findings, and member checking. Member checking was done during the interview by asking the participants to comment on the researcher’s interpretation of the data to ensure accuracy and trustworthiness. Triangulation was used from different sources to investigate how FGCS outline their reality regarding college persistence (Forsey, 2010). Triangulation helps with checking the trustworthiness of the data and methods used.
Chapter Summary

In this explanatory sequential mixed research study, the quantitative data utilized a secondary to the post-secondary dataset to investigate whether there is a relationship in first-generation students achieving college persistence predicated on their participation in the GEAR UP Services program. The first-generation 2018 graduates were selected for the analysis. The quantitative data represented secondary participant data, FAFSA data, college persistence data, and high school GPA for each case's comprehensive dataset. Research question 1 investigated the student-level dataset, and the significant predictors of college persistence rate using descriptive statistical analysis and logistical regression.

The FGCS responses to the semi-structured interview questions through Zoom analyzed the qualitative data. The qualitative analysis for research question 2 investigated the participants' responses to 9 open-ended questions to inquire whether there were any differences in the experiences and perceptions of first-generation students who participated in the GEAR UP Services program. Using basic interpretive and descriptive qualitative research methodology served as the basis for developing common emergent themes from the first-generation student responses.
CHAPTER 4. FINDINGS

Analysis

This mixed-method study employed quantitative and qualitative statistical methods.

**Research Question 1:** What academic and GEAR UP Services program participation variables contributed to the first year to the second year of college persistence?

For this research question, descriptive statistics were computed (Appendix C). Logistical regression was used to examine the significance of relationships between college persistence and the following variables: demographics, ACT composite score, FAFSA, college persistence, high school GPA, FGCS status, college retention rates, major types, and level of participation in the GEAR UP Services program.

**Contributions of Participation and Demographic Variables to Persistence**

The researcher utilized the logistical regression model to answer research question one and determine if students’ participation in the GEAR UP Services program contributed to the college persistence rates of first-generation college students. Table 4.1 presented the data results.

The Case Processing Summary illustrated 100% (142) cases that are included in the data. There are no missing cases. The Classification Table illustrates that most of the cases (Y=101) achieved college persistence than those who did not persist (N=41). In this chart, “Yes” to Persist is predicted 71.1% of the time.

In step 0, the Variables in the Equation chart showed the coefficient for the Constant ($B^0$)=.902. The results in this table indicates that the model has predictors with statistically
significant outcomes (p<.001). This indicates that the baseline model has some predictive power since this sample size has enough cases to prove that college persistence is likely due to the sampling size. The odds ratio is the exponentiation of the B coefficient, Exp(B). The odds ratio is provided by default and it is easier to interpret than the coefficient. The coefficient is the log-odds units is $101/41=2.463$. This indicates that students are 2.463 (or 46%) more likely to achieve college persistence.

The Omnibus Tests of the Model Coefficients chart illustrates that this model is statistically significant (<.001). The Model Coefficient Chart is compared with the baseline mode of .500. The Chi-square test indicates weather there is a significance between the new model and the -2Log-likelihoods of the baseline model. If the -2LL (121.820) is reduced compared to the baseline in the new model, this indicates that the new model is explaining the outcome of variance, which is an improvement. Since the chi-square is statistically significant (chi-square=48.868, df=13, p<.001), this indicates that this model is significantly better.

The Model Summary chart (step 1) indicates how much variance is used with the NR²=.416. This model explains about 42% of the variance, and it improves on guessing how frequent the outcome is on the best test of coefficient.

The Hosmer and Lemeshow significance is p=.450, which test the hypothesis of goodness of fit. Due to the statistical significance, this model is a good fit for the data. Compared to the null model of 71.1%, the Classification Model is correctly classifying the outcome for 78.9% of the cases, which is an improvement. The Classification Table illustrated that 90.1% of the time, the Y cases can be predicted or classified as College Persistence, while 51.2% of the time, the N cases can be predicted or classified as did not persist.
The Classification model also explained the variance of 42% (Nagelkerke $R^2$) in students achieving college persistence and correctly classified 78.9% of cases. In reviewing the results for GPA, it had the highest significance overall effect ($Wald=10.481$, $df=1$, $p=.001$). The $b$ coefficient for GPA is positive and statistically significant, which indicates there is an increased influence associated with the increased odds of students achieving college persistence. The $Exp(B)$ column, which is the Odds Ratio, indicates that students with the highest GPA are 13.158 times more likely to attain college persistence.

The effect of gender is also positive and statistically significant, which indicates that female students are more likely to achieve college persistence. The Gender(1) category results suggest that the OR suggests that female students are 3.854 times more likely to attain college persistence. Also, Gender(1) had the second overall effect ($Wald=6.885$, $df=1$, $p=.009$).

Overall, a logistical regression analysis was performed to ascertain the effects regarding GPA, ACT, College Retention Rates, Retention Class, Level of Participation, Ethnicity, Gender, Major Type, FGS Status, and Pell would have on the likelihood of students achieving college persistence. These results illustrated that GPA ($p=.001$), and Gender(1) ($p=.009$) were statistically significant except for the rest of the variables. The $b$ coefficients for GPA and Gender(1) are positive and statistically significant. This indicates that the increasing influence is associated with the increased odds of students achieving college persistence.
### Table 4.1. Logistical Regression Model Results for Demographic Characteristics

<table>
<thead>
<tr>
<th>Variables in the Equation</th>
<th>B</th>
<th>SE.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
<th>95% CI for EXP(B)</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>GPA</td>
<td>2.577</td>
<td>.796</td>
<td>10.481</td>
<td>1</td>
<td>.001</td>
<td>13.158</td>
<td>2.765</td>
<td>62.622</td>
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<td>ACT</td>
<td>-.136</td>
<td>.085</td>
<td>2.537</td>
<td>1</td>
<td>.111</td>
<td>.873</td>
<td>.738</td>
<td>1.032</td>
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<tr>
<td>College Ret Rate</td>
<td>.038</td>
<td>.044</td>
<td>.749</td>
<td>1</td>
<td>.387</td>
<td>1.039</td>
<td>.953</td>
<td>1.132</td>
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<tr>
<td>Retention Class</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Retention Class(1)</td>
<td>-1.151</td>
<td>2.010</td>
<td>.328</td>
<td>1</td>
<td>.567</td>
<td>.316</td>
<td>.006</td>
<td>16.261</td>
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<tr>
<td>Retention Class(2)</td>
<td>-1.608</td>
<td>.869</td>
<td>3.424</td>
<td>1</td>
<td>.064</td>
<td>.200</td>
<td>.036</td>
<td>1.100</td>
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<td>Level of Participation</td>
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<td>2.604</td>
<td>1</td>
<td>.107</td>
<td>.891</td>
<td>.774</td>
<td>1.025</td>
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<td>Ethnicity</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity(1)</td>
<td>.744</td>
<td>.717</td>
<td>1.076</td>
<td>1</td>
<td>.300</td>
<td>2.104</td>
<td>.516</td>
<td>8.582</td>
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</tr>
<tr>
<td>Ethnicity(2)</td>
<td>.041</td>
<td>.713</td>
<td>.003</td>
<td>1</td>
<td>.954</td>
<td>1.042</td>
<td>.258</td>
<td>4.216</td>
<td></td>
</tr>
<tr>
<td>Ethnicity(3)</td>
<td>-.970</td>
<td>.883</td>
<td>1.207</td>
<td>1</td>
<td>.272</td>
<td>.379</td>
<td>.067</td>
<td>2.139</td>
<td></td>
</tr>
<tr>
<td>Gender (1)</td>
<td>1.349</td>
<td>.514</td>
<td>6.885</td>
<td>1</td>
<td>.009</td>
<td>3.854</td>
<td>1.407</td>
<td>10.557</td>
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<tr>
<td>Major Type(1)</td>
<td>.230</td>
<td>.560</td>
<td>.168</td>
<td>1</td>
<td>.682</td>
<td>1.258</td>
<td>.420</td>
<td>3.771</td>
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</tr>
<tr>
<td>FGS Status</td>
<td>-.277</td>
<td>.653</td>
<td>.180</td>
<td>1</td>
<td>.672</td>
<td>.758</td>
<td>.211</td>
<td>2.727</td>
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<tr>
<td>Pell</td>
<td>-.427</td>
<td>.565</td>
<td>.570</td>
<td>1</td>
<td>.450</td>
<td>.653</td>
<td>.216</td>
<td>1.975</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-5.301</td>
<td>4.224</td>
<td>1.575</td>
<td>1</td>
<td>.210</td>
<td>.005</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

a. Variable(s) entered on step 1: GPA, ACT, College Ret Rate, Retention Class, Level of Participation, Ethnicity, Gender, Major Type, FGS Status, Pell.

**Research Question 2.** In what ways did participation in the GEAR UP Services program contribute to the persistence rate of first-generation college students?

The goal of the interview was to determine how the participants identified persistence factors and discussed the use of GEAR UP Services. The basic interpretive qualitative research was used to determine how 1) FGCS interpret their college persistence experience, 2) FGCS
construct their worlds, and 3) what meaning FGCS attribute to their college persistence experiences.

The researcher used three stages to analyze the qualitative findings in this research study. For stage one, the researcher obtained approval from the Louisiana State University Institutional Review Board (IRB) during stage one. Once approved, the researcher analyzed that quantitative dataset. In analyzing the quantitative data through logistical regression, the researcher identified significant FGCS college persistence decision findings. From the significant findings, subsequent to the analysis of the logistical regression findings, the interview questions were developed.

During stage two, the participants were interviewed, quantitative data was analyzed, the interview responses were transcribed, and memo writing was conducted. During stage three, the following steps included: thematic analysis, did initial codes/themes, sort codes into themes, generate themes by drawing mind maps, create final themes, and produce the qualitative report.

**Participant Profiles**

The researcher introduces a descriptive overview of each participant that consented to an interview for this study. To retain anonymity, the participants selected their pseudonyms at the beginning of the interview (Table 4.2). The responses related to each participant captured their experiences of being involved with the GEAR UP Services program in the research findings.

*Beth.* She demographically described herself as a Multiple Race female. Beth’s high school GPA was reported as 3.4. Beth confirmed she was a first-generation student and was the first to graduate from college in her family. Beth participated in 8 GEAR UP Services program
initiatives during her 2017-2018 academic high school year. She completed her selected non-stem major at a 4-year university college with a retention rate of 76%.

Clark. He demographically described himself as a white male. Clark's high school GPA was reported as 3.1. He confirmed being a first-generation college student that had persisted in college. Clark participated in 9 GEAR UP Services program initiatives during her 2017-2018 academic high school year. He completed his selected non-STEM program at a 2-year technical college with a retention rate of 66%.

Destiny. She demographically described herself as a White female. Destiny's high school GPA was reported as 3.6. She confirmed being a first-generation college student that had persisted in college. Destiny participated in 9 GEAR UP Services program initiatives during her 2017-2018 academic high school year. She completed her STEM program at a 4-year university college with a retention rate of 62%.

Elizabeth. She demographically described herself as a White female. Elizabeth's high school GPA was reported as 3.9. She confirmed being a first-generation college student that had persisted in college. Elizabeth participated in 12 GEAR UP Services program initiatives during her 2017-2018 academic high school year. She completed her STEM program at a 4-year university with a retention rate of 62%.

Faith. She demographically described herself as a White female. Faith's high school GPA was reported as 3.6. She confirmed being a first-generation college student that had persisted in college. Faith participated in 13 GEAR UP Services program initiatives during her 2017-2018 academic high school year. She completed her non-STEM program at a 2-year college with a retention rate of 74%.
Hawk. He demographically described himself as a white male. Hawk's high school GPA was reported as 3.8. He confirmed being a first-generation college student that persisted in college and enrolled in an advanced degree program. Hawk participated in 14 GEAR UP Services program initiatives during his 2017-2018 academic high school year. He completed his first non-STEM program at a 4-year university with a retention rate of 71%.

Heather. She demographically described herself as a Multiple Raced female. Heather high school reported a GPA of 4.0. She confirmed being a first-generation college student that had persisted in college. Heather participated in 10 GEAR UP Services program initiatives during her 2017-2018 academic high school year. She completed her STEM program at a 4-year university with a retention rate of 80.3%.

Michelle. She demographically described herself as a Black/African American female. Michelle's high school GPA was reported as 2.9. She confirmed being a first-generation college student that persisted in college. Michelle participated in 5 GEAR UP Services program initiatives during her 2017-2018 academic high school year. She completed her non-STEM program at a 2-year college with a retention rate of 74%.

Robin. She demographically described herself as a Black/African American female. Robin's high school GPA was reported as 3.9. She confirmed being a first-generation college student that persisted in college. Robin participated in 12 GEAR UP Services program initiatives during her 2017-2018 academic high school year. She completed her non-STEM program at a 4-year college with a retention rate of 76%.

Rose. She demographically described herself as a White female. Rose's high school GPA was reported as 3.1. She confirmed being a first-generation college student that persisted in
college. Rose participated in 10 GEAR UP Services program initiatives during her 2017-2018 academic high school year. She completed her non-STEM program at a 2-year college with a retention rate of 74%.

**Smiley.** She demographically described herself as a Black/African American female. Smiley's high school GPA was reported as 3.6. She confirmed being a first-generation college student that persisted in college. Smiley participated in 15 GEAR UP Services program initiatives during her 2017-2018 academic high school year. She completed for non-STEM program at a 4-year college with a retention rate of 56%.

**Tom.** He demographically described himself as a Black/African American male. Tom's high school GPA was reported as 3.2. He confirmed being a first-generation college student that persisted in college. Tom participated in 10 GEAR UP Services program initiatives during his 2017-2018 academic high school year. He transferred to a non-STEM program at a 4-year college with a retention rate of 76%.
Table 4.2. Semi-Structured Interview Participants Profile

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Persisted</th>
<th>FGCS</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>GPA</th>
<th>Level of Participation</th>
<th>College Retention Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beth</td>
<td>Yes</td>
<td>Yes</td>
<td>Female</td>
<td>Multiple Races</td>
<td>3.4</td>
<td>8</td>
<td>76</td>
</tr>
<tr>
<td>Clark</td>
<td>Yes</td>
<td>Yes</td>
<td>Male</td>
<td>White</td>
<td>3.1</td>
<td>9</td>
<td>66</td>
</tr>
<tr>
<td>Destiny</td>
<td>Yes</td>
<td>Yes</td>
<td>Female</td>
<td>White</td>
<td>3.6</td>
<td>9</td>
<td>62</td>
</tr>
<tr>
<td>Elizabeth</td>
<td>Yes</td>
<td>Yes</td>
<td>Female</td>
<td>White</td>
<td>3.9</td>
<td>12</td>
<td>62</td>
</tr>
<tr>
<td>Faith</td>
<td>Yes</td>
<td>Yes</td>
<td>Female</td>
<td>White</td>
<td>3.6</td>
<td>13</td>
<td>74</td>
</tr>
<tr>
<td>Hawk</td>
<td>Yes</td>
<td>Yes</td>
<td>Male</td>
<td>White</td>
<td>3.8</td>
<td>14</td>
<td>71</td>
</tr>
<tr>
<td>Heather</td>
<td>Yes</td>
<td>Yes</td>
<td>Female</td>
<td>Multiple Races</td>
<td>4.0</td>
<td>10</td>
<td>80.3</td>
</tr>
<tr>
<td>Michelle</td>
<td>Yes</td>
<td>Yes</td>
<td>Female</td>
<td>Black/African American</td>
<td>2.9</td>
<td>5</td>
<td>74</td>
</tr>
<tr>
<td>Robin</td>
<td>Yes</td>
<td>Yes</td>
<td>Female</td>
<td>Black/African American</td>
<td>3.9</td>
<td>12</td>
<td>76</td>
</tr>
<tr>
<td>Rose</td>
<td>Yes</td>
<td>Yes</td>
<td>Female</td>
<td>White</td>
<td>3.1</td>
<td>10</td>
<td>74</td>
</tr>
<tr>
<td>Smiley</td>
<td>Yes</td>
<td>Yes</td>
<td>Female</td>
<td>Black/African American</td>
<td>3.6</td>
<td>15</td>
<td>56</td>
</tr>
<tr>
<td>Tom</td>
<td>Yes</td>
<td>Yes</td>
<td>Male</td>
<td>Black/African American</td>
<td>3.2</td>
<td>10</td>
<td>76</td>
</tr>
</tbody>
</table>

Note. FGCS means first-generation college students.

a Level of Participation means the number of college and career readiness initiatives that students participated in the GEAR UP Services program.

Findings

The transcripts were analyzed to identify themes related to their persistence in college. Five major themes were highlighted from the interviews: 1) personal motivation, 2) ability to navigate challenges, 3) participation in GEAR UP services, 4) support networks, and 5) relationships. As an icebreaker, participants were asked to describe their academic motivation with one word that would provide a snapshot of their persistence as first-generation college students. The visual cloud displays all of the motivation words provided by participants (Figure 4.1). Determined is the biggest word and most frequent word mentioned when the participants described their motivation to persist in their college careers.
Contributions to Persistence

Persistence is a person’s tendency to sustain through difficulties to accomplish goals, form relationships, and get involved in campus and professor interactions (Pascarella & Terenzini, 2005; Redford et al., 2017; Howard & Crayne, 2019). According to the themes from the interview codes, most of the FGCS (33%) suggested they had a positive experience going into the second year of college. Smiley shared how scholarships played a major role in helping her persist to the second year in college:

Having the conversations about scholarships played a major role in helping me to continue on…. along with other factors.

Destiny shared that getting involved is what helped her achieve college persistence:

The idea of involvement within the community provides an increased feeling of support. It affected my college persistence by getting involved; My understanding was able to grow, and I used campus resources. Being a part of GEAR UP started me wanting to get involved. Remember I said dual enrollment. I took electives to figure out what I was interested in and wanted to do. Yes, it was helpful; I had over one semester's worth of credits when I enrolled in college.

Hawk shared how academic preparedness helped him in college:

The academic preparedness was addressed while informing me about what college is like and what college is obtainable. This impacted me because I believed that I could do it and go as far as possible.
Navigating Challenges

Navigating challenges in college can be complex. Challenges in college could be influential relationships, college adjustment barriers, and financial constraints. Beth shared how influential relationships helped her navigate challenges in college:

My family was there to listen and encourage me. I learned to reach out for assistance when I was feeling unsure about something.

Heather discussed how her older friends at college help her with college adjustment barriers:

My older friends that were already on the campus help me navigate the campus, helped me with how to build better relationships with my professors. I was scared at first to talk to them.

Elizabeth shared how completing the FAFSA application with assistance is what helped navigate the financial constraints of paying for college:

If I didn’t have the support from learning about the FAFSA and other scholarships. There wouldn’t be any college persistence. Even after enrolling I got help with my FAFSA from the GEAR UP program.

Student Support Services

Many support services are available to students to help them succeed in colleges, such as the GEAR UP Services program, college support networks, and relationships. Tom comments on how the GEAR UP Services program helped him in college persistence:

The participation came through my classrooms. I got information about TOPS and financial awareness. Yeah, it helped because I had to maintain grades to receive money for college.

Hawk shared how college support networks helped him achieve college persistence:
Being involved in campus activities made a massive difference in my life. My friend groups became more diverse. This allowed me to experience diverse cultures and attitudes. I found myself doing extra studying and having to get out of my comfort zone.

Elizabeth discussed how support came from the relationship she had with her family:

My support came every day. My parents would help me through long study nights. My dad would motivate me even though he was always present.

**Connections to Theory**

Connections to social capital theory (SCT) and self-determination theory (SDT) were made. The researcher reviewed each code and compared the FGCS transcripts to capture each participant's data for expressions of SCT and SDT. These expressions were grouped by the timeline of high school and college. Then the codes were further analyzed by SCT and SDT in how they contributed to the academic and social integration of college persistence. The miscellaneous themes were created but were not necessary to sort themes into codes.

**Social Capital Theory**

Social capital theory focuses on the resources available to students within the social structure (Bourdieu, 1986; Coleman, 1998). The productivity of social capital is evident when specific actions and results are made possible inside the social network. Most of the FGCS shared that they received college preparation support from GEAR UP Services program representatives during high school. Robin shared how the GEAR UP program representatives in high school helped prepare her for college.

With the GEAR UP program, my college persistence was impacted and affected by the assistance of GEAR UP representatives. It was helpful because I was informed about the importance of work-study, TOPS, scholarships were necessary, along with why and how to apply.
Beth shared how the GEAR UP program representatives talked to her about college choices while in high school:

Opened my eyes to different colleges. So, being able to research and talk about the choices, I was able to make my choice. The representative came to the school and was supportive with helping me talk it through.

Faith shared how the GEAR UP representatives in high school helped with preparing for college:

Helped me get ready with understanding how to pick classes, knowledge of campus atmosphere and understanding the steps needed to take. Also, it's a continuous not just a one-time process, how to apply for financial aid.

During the FGCS college career, most of them shared they received social support from their professors, near-peers, college professionals, and support groups. Robin explains how she received social support from friends and professors while in college:

Dealing with my college persistence my campus friends were about giving me guidance with classes. When classes got tough and felt like giving up, I’ve had instructors help me with not being so negative about the course work and try harder.

While in their college career, most of the FGCS shared how academic and social integration helps them persist to the second year of college. Michelle shared how her near-peer interactions while in college helped her integrate academically and socially during her college career to complete her program:

My near-peer campus interactions had good interactions with other students. I became more self-aware of my surroundings, and my circle of friends I narrowed. Finishing my program became especially important to me, and I applied myself.

**Self-Determination Theory**

Self-determination theory (SDT) is human motivation, development, and wellness that predict performance, well-being, and relational outcomes (Deci & Ryan, 2008). SDT focuses on
intrinsic and extrinsic, which are highly influential determinants of behavior. This behavior leads to the three basic needs of the SDT model: autonomy, competence, and relatedness (connection) (Deci & Ryan, 2008). In high school, most of the FGCS suggested self-motivation (intrinsic motivation) and competence are what helped prepare them for college persistence. Competence occurs when a student has the need to challenge or test their ability to accomplish a goal. Tom shared how intrinsic motivation and competence helped him prepare for college during his time in high school.

I remember the importance of maintaining my grades because of TOPS, that made me push to keep my grades up. There were also alerts about due dates, general information, and help via text.

Autonomy occurs when students choose to learn when an activity or subject interests them (Guiffrida et al., 2013). Destiny shared how extrinsic motivation and autonomy helped her prepare for college during her time in high school by taking dual enrollment courses:

Remember I said dual enrollment. I took electives to figure out what I was interested in and wanted to do. Yes, it was helpful. I had over one semester's worth of credit when I enrolled in college.

While FGCS were in college, most of them shared that they were more self-motivated (intrinsic motivation) than when they were in high school. Hawk shared how his self-motivation helped him finish college:

I was able to find the strength to complete my undergraduate degree. I am grateful that I could stay positive while on this roller coaster called college.

Like SCT, some of the FGCS shared how academic and social integration helped them persist to the second year of college. Elizabeth shared how studying in college was more challenging than in high school, and joining study groups helped her in college:
In high school, studying became easy, but I had to put more effort into studying in college. I went to study groups and developed relationships to help me in areas I had problems with. In high school, I did not have to do that.

**Summary of Key Findings**

In an explanatory sequential mixed method research design, data analysis, and integration occur at more than one point in the study. The researcher collected and analyzed the quantitative data (Creswell & Plano Clark, 2018). From the quantitative results, interview questions were created from the significant findings: level of participation, GPA, and college retention rates. Table 4.3 presents the key findings from the interview questions that were created to complement the quantitative significant findings. While only one variable was statistically significant in the logistical regression and in the Point Biserial Correlation there were three.
### Table 4.3. Key Findings for GPA, Level of Participation, and College Retention Rates

<table>
<thead>
<tr>
<th>Persistence Factors</th>
<th>Quantitative Findings</th>
<th>Qualitative Findings</th>
<th>Mixed Methods Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GPA</strong></td>
<td>Point Biserial Correlation</td>
<td>My college experience was impacted by GEAR UP from the consistency of text messages after high school. I would get reminders about deadlines, the importance of grades, and developing campus relations also having someone to help me with questions. (Robin)</td>
<td>The participants shared how grades helped them with maintaining TOPS and college persistence. This is congruent to the statistical findings of GPA.</td>
</tr>
<tr>
<td></td>
<td>Statistical Measurement/ Results</td>
<td>r=.409 n=142 p&lt;.001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Logistical Regression</td>
<td>Helpful because I remember the importance of maintaining my grades because of TOPS. That made me push to keep my grades up. There were also alerts about due dates, general information, and help via text or calling (Tom)</td>
<td>The participants discussed how participation in the program helped them achieve college persistence. The more events they participated in, it helped them be more prepared for college, which is congruent to the level of participation findings.</td>
</tr>
<tr>
<td></td>
<td>r=.389 n=142 p&lt;.001</td>
<td>I participated in several events, yes it was helpful with my persistence. Getting the assistance that FAFSA and applications, along with the text messages were good to me and I persisted to graduation. (Beth)</td>
<td></td>
</tr>
<tr>
<td><strong>Level of Participation</strong></td>
<td>Point Biserial Correlation</td>
<td>Remembering, having the college and career resources and tools at a lot of school events. I took every opportunity provided by GEAR UP, campus visits, tutoring, ACT assistance, FAFSA assistance, and text messages received. (Hawk)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Statistical Measurement/ Results</td>
<td>r=.389 n=142 p&lt;.001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Logistic Regression</td>
<td>I was involved in several events, to me, it was helpful because getting the information about how to be successful in college. The ability to fill out applications was nice because the research gave me insight on how and why to continue to get my degree. (Clark)</td>
<td></td>
</tr>
<tr>
<td><strong>College Retention Rates</strong></td>
<td>Point Biserial Correlation</td>
<td>The size of the campus-I didn't want to attend a large campus like LSU in Baton Rouge, I would feel lost. I choose close enough to home LSU-Shreveport. It's small and personable. I highly recommended that campus. I even meet all my professors which build my relationships on campus. (Elizabeth)</td>
<td>The participants describe how match and fit (size of the campus, course offerings, location) played a role in helping them achieved college persistence, thereby explaining the findings seen in college retention rates.</td>
</tr>
<tr>
<td></td>
<td>Statistical Measurement/ Results</td>
<td>r=.283 n=142 p&lt;.001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Logistic Regression</td>
<td>Course offerings, how and what was available at the school to get their student to succeed. (Faith)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>r=.283 n=142 p&lt;.001</td>
<td>How much exposure to the campus I’d already received played a major role. The size of the campus was also a determining factor. Louisiana Tech is a smaller campus and was a good fit for my learning style. (Smiley)</td>
<td></td>
</tr>
</tbody>
</table>
Mixed Methods Summary

The selected explanatory sequential mixed method design integrated participants' experiences that incorporated the quantitative results. The participants' responses qualitatively highlighted topics to extend areas that could not be expressed statistically.

First, quantitatively, this research analysis findings that were statistically significant were GPA, level of participation in GEAR UP program services, and college retention rates. These variables were factors that caused FGCS to persist into their second year of college. The 2017-2018 high school graduates that participated in the GEAR UP program benefited from their interaction with the program initiatives.

Secondly, qualitatively, the individual interview responses vocalized positive interactions and takeaways from participating in the GEAR UP Services program. All the participants in this research study communicated how the interactions with the program representatives were vital, campus visits were helpful, and text messaging benefitted them in transitioning from high school to college, and while in college. The overall expression from the participants was a positive recall of events and communication on the benefits of assisting with gaining knowledge and support that help them prepare for their post-secondary education. This supported the quantitative findings that program participation aided FGCS persistence in college.
CHAPTER 5. DISCUSSION

Chapter five includes the context of this study literature review. Additionally, this chapter also presents the limitations, recommendations for future research, and implications for practice.

Conclusion

This study support previous findings from research in the literature review. The conclusion in this study are key findings in the following areas: 1) high school GPA, 2) level of participation, and 3) college retention rates.

High School GPA

Galla et al. (2019) and Jackson (2018) argue that college success requires students to have the cognitive ability and self-regulatory competencies, which are better indexed by high school student grades. A study confirmed high school senior grades "out-predicted" test scores of a college degree attainment. The high school students of the second study found that high school GPAs are more significant indicators of graduation promptly. The researchers concluded that high school grades hold information regarding self-regulation and established that those grades are better than admissions test scores (Galla et al., 2019). First-year students with a GPA from high school and their freshman college GPA represent a significant factor in persistence in 26% of the variations (Stewart et al., 2015). Persistence has been linked most likely to happen with a high first-semester GPA (Barbera et al., 2020).

Quantitatively, the Point Biserial Correlation provided statistically significant results. The relationship between Persistence and GPA indicated there is a medium positive correlation. The logistical regression analysis revealed that GPA had the highest significance and positive overall
effect in the model. The quantitative findings indicated that students with higher GPAs are more likely to achieve college persistence. Qualitatively, the participants’ shared experiences on the GEAR UP Services program and their persistence revealed their increased knowledge of maintaining their GPA and having that foundation to persist while in college.

Level of Participation

A quasi-experiment study revealed predictions about participation in a GEAR UP program showed higher levels of impact in academic performance areas. Bowman et al. (2018) implemented a propensity score analysis to investigate federal college and career readiness program implications, resulting in the positive effects of promoting college outcomes for low socioeconomic students to improve their college outcomes. The results explored how participating in a GEAR UP program revealed positive outcomes in improving college enrollment and persistence.

Quantitatively, the Point Biserial Correlation provided statistically significant results. The relationship between Persistence and GPA indicated there is a medium positive correlation. The significant relationship between the level of participation in the GEAR UP program and GPA is perhaps indicating that the program is impacting persistence by impacting GPA. Qualitatively, the participants’ revealed that participating in the GEAR UP services initiatives FGCS showed a positive influence on students both academically and non-academically. Taking part in the areas such as dual enrollment, campus visits, ACT bootcamp, but not limited to financial literacy, FGCS were influenced to maintain GPAs, and integrate with the campus culture.

College Retention Rates

According to previous researchers, Pascarella and Terenzini (2005), first-generation students are involved in genuine campus and faculty interactions. Furthermore, applying constant
external study habits beyond the classroom increases persistence and degree completion. In a quantitative study, Rubio et al. (2017) explored the relationships and social support networks. This study attributed notable themes to first-generation students and post-secondary degree completion. Identifying institutional resources, programs, and intervention strategies are essential for post-secondary institutions to continue and enhance their campus experiences for FGCS that encourages and allows integration by their involvement with instructors, fellow students, and support services.

Quantitatively, the Point Biserial Correlation provided statistically significant results. The relationship between Persistence and College Retention Rates indicated there is a small positive correlation. This correlation indicated that students who persisted are associated with higher college retention rates. Qualitatively, the participants expressed how the GEAR UP representative assisted with college selection that suited them and gained practices that they drew upon to adjust to college. Attending post-secondary institutions having a significant retention rate impacted the persistence of FGCS being enrolled for their sophomore year in college.

Limitations

In this study, two limitations were addressed in this section. The first limitation was the interviews were conducted two years after they reached their sophomore year because of the COVID-19 pandemic. The participants in this study were all 2018 high school graduates. The participants in the study had a difficult time recollecting their experiences and participation in the GEAR UP program.

Second limitation is that this is one school district within a state. The program could have reached more 2018 high school graduates in other districts in Louisiana by having a broader
geographic area. The results spoke to a centralized location where students enrolled in localized universities and colleges.

**Recommendations for Future Research**

Several recommendations for future research resulted from this study to understand the outcomes concerning how FGCS participation in GEAR UP Services program impacted their college persistence. Recommendation one is to conduct a comparison study with FGCSs' involvement with college and career readiness programs involving program participants and non-participants' from those enrolled in Historically Black College & Universities and Predominately White Institution participation.

The second recommendation is to do a research study involving a FGCS focus group that are gender specific. Gender was statistically significant in this study. This would allow for a deeper discussion regarding issues, personal growth, and participation interaction. The focus groups can be used for research purposes and help provide ways to get males involved in the program.

In considering the importance of academic readiness, the third recommendation is for post-secondary institutions to design counseling and advising sessions to help FGCS develop an educational plan. The educational plan can help resolve issues related to academic interest and services, create future goals, and select a major. The fourth recommendation is to establish a team of post-secondary professionals to design and organize second-year retention programs. Second-year retention programs are imperative for FGCS to succeed in college completion.
Recommendation five would be to extend the text messaging campaign is an excellent resource for students—the integration of text messages for the FGCSs throughout their post-secondary careers. The goal is to continue to provide overall guidance and support. The text messages maintain regular communications throughout enrollment at institutions. The messages help students navigate the student support resources and achieve their educational goals. The text messaging initiative is ideal for communicating by sending messages, notices, alerts, reminders, and updates, with more confidence that program messages will be received and read by students.

**Implications for Practice**

Preparation in high school for a college career were significant for the participants in this study. Students must gain knowledge regarding the requirements of college campuses, and students can access the campus resources to aid in their persistence on the respective campuses. College and career readiness programs, like GEAR UP, is geared to assist students with access to transitioning to college and universities. GEAR UP Services provided activities that were relevant to students with varying demographic characteristics, only 52.3% that persisted are white, while 47.5% were non-white. For the 101 FGCS that persisted, their average GPA was lower before participating in the program. Prior to the program in 2015-16, there GPA was 3.27, after graduating in 2018, their GPA was 3.41. GEAR UP Services was responsible for increasing the FGCS that achieve college persistence.

To encourage schools that don’t have GEAR UP, they can incorporate programs like this to inspire their students to attend college and programs that provide advanced skill development programs at community colleges, technical schools, and professional training institutions. Schools should develop programs that are inviting students to a variety of post-secondary options.
to help prepare them while they are in high school like dual enrollment, ACT Prep/Bootcamp, text messaging, match and fit, FAFSA completion, complete college applications, and visit college campuses.

Students should select two-year, technical, four-year, public, or private HBCUs and predominately White colleges that fit their career goals and aspirations. Having college and career readiness programs in districts statewide as a priority will allow students to make conscious decisions tailored to their post-secondary goals. Thus, increasing the value of state-driven talent and careers that would enhance the overall market value within the post-secondary persistence of FGCS.

Chapter Summary

The findings demonstrated the importance of engaging in college and career access programs and having an active experience. The participants in this study were exposed to assessment tools, consistent representation of program personnel, program resources, and financial program assistance (dual enrollment, college applications). The participants involved in this study utilized the GEAR UP program initiatives offered in their respective high schools and expressed how those experiences aided in their college persistence and adapting to a college atmosphere/life.
APPENDIX A. LOUISIANA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD APPROVAL

TO:        Susan K MacGregor
FROM:      Alex Cohen
            LSUAM | Col of HSE | Education
            Chairman, Institutional Review Board
DATE:      15-Feb-2022
RE:        IRBAM-22-0114
TITLE:     First-Generation College Students: Persistence and Adaptability in Postsecondary Institutions
SUBMISSION TYPE: Initial Application
Review Type: Expedited Review
Risk Factor: Minimal
Review Date: 14-Feb-2022
Status:     Approved
Approval Date: 14-Feb-2022
Approval Expiration Date: 13-Feb-2023
Expedited Categories: 07
Requesting Waiver of Informed Consent: No
Re-review frequency: Annually
Number of subjects approved: 12
LSU Proposal Number:

By:        Alex Cohen, Chairman

Continuing approval is CONDITIONAL on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU’s Assurance of Compliance with DHHS regulations for the protection of human subjects.*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants, including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
8. SPECIAL NOTE: When emailing more than one recipient, make sure you use bcc. Approvals will automatically be closed by the IRB on the expiration date unless the PI requests a continuation.

*All investigators and support staff have access to copies of the Belmont Report, LSU’s Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at http://www.lsu.edu/research

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P 225-578-5083
http://www.lsu.edu/research

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## APPENDIX B. VARIABLE SUMMARY

<table>
<thead>
<tr>
<th>Level</th>
<th>Types</th>
<th>Measurement</th>
<th>Statistical Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td>Independent</td>
<td>Categorical</td>
<td>Logistical Regression</td>
</tr>
<tr>
<td>Gender</td>
<td>Independent</td>
<td>Categorical</td>
<td>Logistical Regression</td>
</tr>
<tr>
<td>Mother &amp; Father Education Level</td>
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<td>Continuous</td>
<td>Logistical Regression</td>
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<td>Pell Grant Status</td>
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<td>Categorical</td>
<td>Logistical Regression</td>
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<td>ACT Composite Score</td>
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<td>Continuous</td>
<td>Logistical Regression</td>
</tr>
<tr>
<td>High School GPA</td>
<td>Independent</td>
<td>Continuous</td>
<td>Logistical Regression</td>
</tr>
<tr>
<td>Level of Participation in GEAR UP Services</td>
<td>Independent</td>
<td>Continuous</td>
<td>Logistical Regression</td>
</tr>
<tr>
<td>Persistence Status</td>
<td>Dependent</td>
<td>Categorical</td>
<td>Logistical Regression</td>
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</table>
APPENDIX C. DESCRIPTIVE STATISTICS

Descriptive Statistics

According to Lurie et al. (2011), descriptive statistics communicate essential and informative dataset characteristics. It was used to report calculations for various measures and observations during an experimental design's pretest or posttest phase (Creswell, 2014b). In this research study, the researcher used descriptive statistics and logistical regression to summarize and describe the first-generation students being studied without drawing any inference based on probability theory by using statistics tools. The statistic totals used are frequency distribution tables, percentages, other measures of tendency (mean, median, and mode), and logistical regression by using Statistical Package for the Social Sciences (SPSS) software.

Tables C.1 and figures C.1 to C.3 present descriptive statistics and graphs for the academic background of participants. These tables and figures show that the average ACT composite score is 18, with a standard deviation of 4.24. The ACT data appear to be skewed (moderate) to the right, which means that there are a few participants with high scores. The average high school GPA is 3.11, with a standard deviation of .50. These data appear to be fairly symmetric.

Table C.1 also presents data on the level of participation of subjects in services offered by the GEAR UP program. The average level of participation is 7, with a standard deviation of 4.08. As presented in Figure C.3, for the level of participation in the GEAR UP Services program, 10% (26) of the students participated in 7 initiatives, and 10% (26) of the students participated in 5 initiatives. The level of participation determines the number of GEAR UP Services program
initiatives in that students are involved. The more initiatives students participated in, the higher their preparedness and knowledge about college and career readiness are expected.

Table C.1. Descriptive Statistics Overview

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Skew</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>269</td>
<td>18.70</td>
<td>18.00</td>
<td>4.242</td>
<td>12</td>
<td>34</td>
<td>.758</td>
<td>.708 (Leptokurtic)</td>
</tr>
<tr>
<td>GPA</td>
<td>269</td>
<td>3.1152</td>
<td>3.1067</td>
<td>.5040</td>
<td>1.5106</td>
<td>4.00</td>
<td>-.242 (Symmetric)</td>
<td>-.501 (Platykurtic)</td>
</tr>
<tr>
<td>Level of Participation</td>
<td>269</td>
<td>7.18</td>
<td>7.00</td>
<td>4.083</td>
<td>0</td>
<td>16</td>
<td>-.012 (Symmetric)</td>
<td>-.790 (Platykurtic)</td>
</tr>
</tbody>
</table>

Figure C.1. Histogram of ACT Composite Score

Figure C.2. Histogram of High School GPA
Table C.2. Summary for Level of Participation

<table>
<thead>
<tr>
<th>Level of Participation</th>
<th># of Students</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>15</td>
<td>6%</td>
</tr>
<tr>
<td>1</td>
<td>20</td>
<td>7%</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>3%</td>
</tr>
<tr>
<td>3</td>
<td>13</td>
<td>5%</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
<td>4%</td>
</tr>
<tr>
<td>5</td>
<td>26</td>
<td>10%</td>
</tr>
<tr>
<td>6</td>
<td>22</td>
<td>8%</td>
</tr>
<tr>
<td>7</td>
<td>26</td>
<td>10%</td>
</tr>
<tr>
<td>8</td>
<td>24</td>
<td>9%</td>
</tr>
<tr>
<td>9</td>
<td>18</td>
<td>7%</td>
</tr>
<tr>
<td>10</td>
<td>22</td>
<td>8%</td>
</tr>
<tr>
<td>11</td>
<td>20</td>
<td>7%</td>
</tr>
<tr>
<td>12</td>
<td>16</td>
<td>6%</td>
</tr>
<tr>
<td>13</td>
<td>11</td>
<td>4%</td>
</tr>
<tr>
<td>14</td>
<td>7</td>
<td>3%</td>
</tr>
<tr>
<td>15</td>
<td>6</td>
<td>2%</td>
</tr>
<tr>
<td>16</td>
<td>3</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>269</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Figure C.3. Histogram for Level of Participation
Table C.3 presents data related to the outcomes of the project. In Table C.3, the data was broken down by demographics. Of the high school graduate students, 51% (137) are males, and 88% (236) are first-generation students. Of the students that enrolled, 50% (72) of the population is White, and the second-largest population is 23% (33) American Indian or Alaskan Native. 56% (79) of the females matriculated to college. For the students that persisted, 53% (53) of the population is White, while 26% (26) of the population is American Indian or Alaskan Native. 63% (64) of the females persisted in college, and 81% (82) were first-generation students.

Table C.4 presents the retention status by Non-STEM and STEM majors for 142 students that matriculated to college. 49% (69) of the retained students are non-STEM majors, and 23% (32) were in STEM majors. There is 32 STEM major, with most of the students majoring in Biology/Biological Sciences, General (6). There are 69 non-STEM majors, and most of the students (14) are majoring in Registered Nursing/Registered Nurse. Appendix E presents the colleges by STEM and non-STEM significant types for the 101 students that persisted.

The participants who matriculated to a postsecondary institution attended 23 different colleges. These institutions were placed into groups based on their historical retention rates: Low (0-54%), Medium (55-75%), and High (76% and above)(See Appendix D). The college retention rates were grouped according to the average 2019 retention rate of 66.2%. The year 2019 would have been the second-year college students were retained or persisted for 2018 graduates.

Characteristics of retained students are presented in Table C.6 and Figure C.4. Table C.6 presents the descriptive statistics for the level of participation for students retained in college. The average (median) level of participation is 9, and the mean is 8.52 (SD=3.75). Figure C.4 states that the histogram data appears to be skewed to the left, which explains why the mean is less than the median and a greater spread in the data.
Table C.4. High School Graduates, Matriculation, & Persistence by Demographics

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>High School Graduates</th>
<th>Matriculated</th>
<th>Persisted</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaskan Native</td>
<td>60 (22.3%)</td>
<td>33 (23.2%)</td>
<td>26 (25.7%)</td>
</tr>
<tr>
<td>Black or African American</td>
<td>55 (20.4%)</td>
<td>24 (16.9%)</td>
<td>14 (13.9%)</td>
</tr>
<tr>
<td>Other (Multiple &amp; Hispanic)</td>
<td>20 (7.4%)</td>
<td>13 (9.2%)</td>
<td>8 (7.9%)</td>
</tr>
<tr>
<td>White</td>
<td>134 (49.8%)</td>
<td>72 (50.7%)</td>
<td>53 (52.5%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>269 (100%)</strong></td>
<td><strong>142 (100%)</strong></td>
<td><strong>101 (100%)</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>First Generation Student Status</th>
<th>FGS</th>
<th>Not FGS</th>
<th><strong>Total</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Retention Status</td>
<td>N</td>
<td>Count</td>
<td>% of Total</td>
</tr>
<tr>
<td>N</td>
<td>236 (87.7%)</td>
<td>117 (82.4%)</td>
<td>82 (81.2%)</td>
</tr>
<tr>
<td>Y</td>
<td>33 (12.3%)</td>
<td>25 (17.6%)</td>
<td>19 (18.8%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>269 (100%)</strong></td>
<td><strong>142 (100%)</strong></td>
<td><strong>101 (100%)</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Female</th>
<th>Count</th>
<th>% of Total</th>
<th>Male</th>
<th>Count</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>132 (49.1%)</td>
<td>79 (55.6%)</td>
<td>64 (63.4%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>137 (50.9%)</td>
<td>63 (44.4%)</td>
<td>37 (36.6%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>269 (100%)</strong></td>
<td><strong>142 (100%)</strong></td>
<td><strong>101 (100%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table C.5. Retention Status by Non-STEM & STEM Majors

<table>
<thead>
<tr>
<th>Retention Status</th>
<th>Non-STEM</th>
<th>STEM</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>28 (19.7%)</td>
<td>13 (9.2%)</td>
<td>41 (28.9%)</td>
</tr>
<tr>
<td>Y</td>
<td>69 (48.6%)</td>
<td>32 (22.5%)</td>
<td>101 (71.1%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>97 (68.3%)</td>
<td>45 (31.7%)</td>
<td>142 (100.0%)</td>
</tr>
</tbody>
</table>
Table C.6. Descriptive Statistics for Level of Participation

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N Valid</td>
<td>101</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td>8.50</td>
</tr>
<tr>
<td>Median</td>
<td>9.00</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>3.749</td>
</tr>
<tr>
<td>Minimum</td>
<td>0</td>
</tr>
<tr>
<td>Maximum</td>
<td>16</td>
</tr>
</tbody>
</table>

Figure C.4. Histogram of Retained/Persisted by Level of Participation

**Measures of Association**

Further analysis of persistence (persisted, did not persist) was conducted to see variables related to whether students persisted to the second year of college. In Table C.8, the Phi coefficient was used to examine the relationship of college persistence with gender. The findings are statistically significant (p = .004) with a Phi Coefficient of -.244. This is a small to moderate association and indicates that females are more likely to persist than males.
Table C.8. Cramer’s V & Phi for Persistence Status and Gender

<table>
<thead>
<tr>
<th>Symmetric Measures</th>
<th>Value</th>
<th>Approximate Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal by Nominal</td>
<td>Phi</td>
<td>-.244</td>
</tr>
<tr>
<td></td>
<td>Cramer’s V</td>
<td>.244</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td></td>
<td>142</td>
</tr>
</tbody>
</table>

For the GEAR UP Services program, the Point Biserial Correlation for a dichotomy (Persistence) and continuous variables (GPA, ACT, College Retention Rates, and Level of Participation) (see Table C. 9). The relationship between Persistence and GPA indicates a medium positive correlation between Persistence and GPA, which is statistically significant (r=.409, n=142, p<.001). This suggests that students who persisted are associated with higher GPAs. There is a small positive correlation between Persistence and College Retention Rates, which is statistically significant (r=.283, n=142, p<.001). This indicates that students who persisted are associated with higher college retention rates. The relationship between ACT and GPA indicates a high positive correlation between ACT and GPA, which is statistically significant (r=.680, n=142, p<.001). This suggests that students who have a higher ACT are associated with higher GPAs.

The relationship between Level of Participation and GPA indicates a medium positive correlation between Level of Participation and GPA, which is statistically significant (r=.389, n=142, p<.001). The significant relationship between the level of participation in the GEAR UP program and GPA may indicate that the program is impacting persistence by impacting GPA. The relationship between College Retention Rates and GPA indicates a medium positive correlation between the Level of Participation and GPA, which is statistically significant (r=.387, n=142, p<.001). For this analysis, with only 29 universities in the sample and most having only 1 student enrolled, the decision was made to sort universities into groups based on their historical
retention rate. This was deemed a more reasonable strategy than attempting a multilevel modeling approach to this data (Moineddin, Matheson & Glazier, 2007; Ali et al, 2019).

The relationship between College Retention Rates and ACT indicates a medium positive correlation between College Retention Rates and ACT, which is statistically significant ($r=.309$, $n=142$, $p<.001$). This suggests that colleges with higher Retention Rates are associated with students that have higher ACTs. The relationship between Level of Participant and ACT indicates a medium positive correlation between Level of Participant and ACT, which is statistically significant ($r=.311$, $n=142$, $p<.001$). This suggests that students with a higher Level of Participation are associated with students that have higher ACTs. The relationship between College Retention Rates and Level of Participation indicates a small positive correlation between College Retention Rates and Level of Participation, which is statistically significant ($r=.289$, $n=142$, $p<.001$). This suggests that students with a higher Level of Participation are associated with colleges that have a higher retention rate.
Table C.9. Point Biserial Correlation for Dichotomy and Continuous Variables

<table>
<thead>
<tr>
<th></th>
<th>Persistence</th>
<th>GPA</th>
<th>ACT</th>
<th>College Ret Rate</th>
<th>Level of Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Correlations</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Persistence</td>
<td>Pearson Correlation 1</td>
<td>.409**</td>
<td>.159</td>
<td>.283**</td>
<td>.072</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed) &lt;.001</td>
<td>.058</td>
<td>&lt;.001</td>
<td>.394</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
<tr>
<td>GPA</td>
<td>Pearson Correlation .409**</td>
<td>1</td>
<td>.680**</td>
<td>.387**</td>
<td>.389**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed) &lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
<tr>
<td>ACT</td>
<td>Pearson Correlation .159</td>
<td>.680**</td>
<td>1</td>
<td>.309**</td>
<td>.311**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed) .058</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
<tr>
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<td>N</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
<tr>
<td>College Ret Rate</td>
<td>Pearson Correlation .283**</td>
<td>.387**</td>
<td>.309**</td>
<td>1</td>
<td>.239**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed) &lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>.004</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
<tr>
<td>Level of Participation</td>
<td>Pearson Correlation .072</td>
<td>.389**</td>
<td>.311**</td>
<td>.239**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed) .394</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>.004</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>142</td>
<td>142</td>
<td>142</td>
<td>142</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
APPENDIX D. COLLEGE RETENTION RATES BY RETENTION CLASS

<table>
<thead>
<tr>
<th>Retention Rates by Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High</strong></td>
</tr>
<tr>
<td>88</td>
</tr>
<tr>
<td>85.8</td>
</tr>
<tr>
<td>84.9</td>
</tr>
<tr>
<td>80.3</td>
</tr>
<tr>
<td>76</td>
</tr>
<tr>
<td><strong>Medium</strong></td>
</tr>
<tr>
<td>75</td>
</tr>
<tr>
<td>74</td>
</tr>
<tr>
<td>74</td>
</tr>
<tr>
<td>74</td>
</tr>
<tr>
<td>74</td>
</tr>
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<td>74</td>
</tr>
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<td>71</td>
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<td>62</td>
</tr>
<tr>
<td>62</td>
</tr>
<tr>
<td>56</td>
</tr>
<tr>
<td><strong>Low</strong></td>
</tr>
<tr>
<td>48</td>
</tr>
<tr>
<td>48</td>
</tr>
<tr>
<td>45.5</td>
</tr>
<tr>
<td>38</td>
</tr>
</tbody>
</table>

Note: School retention rates were grouped according to the average 2019 retention rate of 66.2%.
APPENDIX E. COLLEGES BY MAJOR TYPES (STEM & NON-STEM)

<table>
<thead>
<tr>
<th>Majors - STEM &amp; Non-STEM List</th>
<th>Count of Major</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-STEM</strong></td>
<td>69</td>
</tr>
<tr>
<td>Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Administrative Assistant and Secretarial Science, General</td>
<td>3</td>
</tr>
<tr>
<td>Bachelor of Science in Criminal Justice</td>
<td>1</td>
</tr>
<tr>
<td>Business Administration and Management, General</td>
<td>2</td>
</tr>
<tr>
<td>Business Office Administration</td>
<td>1</td>
</tr>
<tr>
<td>Career and Tech. Certificate</td>
<td>2</td>
</tr>
<tr>
<td>Child Care Provider/Assistant</td>
<td>1</td>
</tr>
<tr>
<td>Communication, General</td>
<td>1</td>
</tr>
<tr>
<td>Cosmetology/Cosmetologist, General</td>
<td>2</td>
</tr>
<tr>
<td>Criminal Justice/Safety Studies</td>
<td>2</td>
</tr>
<tr>
<td>Dental Hygiene/Hygienist</td>
<td>1</td>
</tr>
<tr>
<td>Diesel Mechanics Technology/Technician</td>
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APPENDIX F. INTERVIEW EMAIL

To: clewis@lsu.edu
Bc: 2019 FGCS Persisted Participants
Subject: The GEAR UP Experience

Greetings!

My name is Ms. Charlie Lewis, and I am a doctoral student at Louisiana State University A & M College. I am conducting a research study on first-generation college students who attended a school that participated in the Louisiana GEAR UP program and has persisted to their 2nd of college. I am contacting you to request your participation in this study. The study seeks to learn about the experiences of first-generation college students’ persistence that aided their continuing into their second year at a post-secondary institution.

To confirm that you are eligible for this study, complete a brief questionnaire for participant eligibility: https://lsu.qualtrics.com/jfe/form/SV_3WthtqXbT3ZJ7bo.

If you are eligible for this study, I will ask you to review and complete the consent form in Qualtrics prior to scheduling your Zoom interview. An appointment for the individual interview will then be scheduled. Your participation is voluntary, and your identity will not be disclosed in the study, nor will the name of the institution you attend. Confidentiality will be protected, and no identifiable information will be presented in the final data/report.

The research topic is First-Generation College Students: Persistence and Adaptability in Post-Secondary Institutions. The interview will ask questions about your college persistence and experiences.

Once the consent form and the Zoom interview is complete, your name will be put into a drawing to receive one out of the three $25 gift cards from participating in the study.

- Deadline to complete for this request is Saturday, April 4, 2022.

This research interests me because this is important for education researchers and field professional to have a greater dialogue of first-generation college student experiences to aid and enhance college preparatory programs to help them persist towards college completion. If you have any questions about this study or the participate eligibility questionnaire, please contact me via e-mail at clewis@lsu.edu. The study has been approved by the LSU IRB office. For questions concerning participant rights, please contact the LSU IRB Chair, Alex Cohen, at 225-578-8692, or email irb@lsu.edu. Thank you for your time and I look forward to meeting you!

Sincere thanks,
Ms. Charlie Lewis
Doctoral Student
College of Human Science & Education
Louisiana State University
clewis@lsu.edu
1. **Study Title:** First-Generation College Students: Persistence and Adaptability in Post-Secondary Institutions

2. **Purpose of the Study:** The research purpose of this study is two-fold. The first purpose of this explanatory sequential mixed-methods study is to explore the first-generation college student's persistence from their first year to the second year at a private or public post-secondary institution. The dual-purpose will investigate if the GEAR UP Services program impacted FGCS persistence to the second year at a private or public post-secondary institution. This mixed-method research study will be based on the participant experiences, shared trends, and challenges FGCS encountered in their post-secondary journey. You are being asked to participate in this study by participating in a brief interview regarding your lived experiences as a first-generation college student participant in the project.

3. **Study Procedures:** First-Generation College students’ participants will be asked to participate in the virtual Zoom interview. Those that agree will be asked to participate in a 45 – 60 minute interview with the investigator, Ms. Charlie Lewis. The interview, if applicable, will be conducted via ZOOM video interviews as well as recorded with the participants consent before the interview.

4. **Risks:** This study does not present any risks for participants. Every effort will be made to maintain confidentiality of your study records. Files will be kept in secure cabinets to which only the investigator has access. In case of a suspected data breach, the LSU IRB office will be contacted as soon as possible. Also, if a breach or suspicious activity is suspected on the Cloud, the service provider (MS One Drive) will be contacted as well.

5. **Benefits:** The participants name will be put into a drawing to receive one out of the three $25 gift cards to participate in the study. Ideally, the study may yield valuable information about first-generation college students who have persisted through their first year of college.

6. **Investigator:** The following investigators are available for questions about this study, M-F, 9:00 a.m. – 5:00 p.m., Charlie Lewis 225-615-4930, clewis@lsu.edu or Dr. S. K. MacGregor 225-578-2150 or smacgre@lsu.edu.

7. **Performance Site:** Louisiana State University and Agricultural and Mechanical College

8. **Number of subjects:** 12
9. **Subject Inclusion & Exclusion**: Individuals who participated in the college access program that are enrolled at a post-secondary institution and are between the ages of 18 and 23 who do not report psychological or neurological conditions, this is what will include in the study. Individuals who were not a first-generation college student and does not meet the age requirement and does show psychological or neurological conditions will not be able to participate in the interview, this is what will exclude you from the study. To participate in this study, you must meet the requirements of both the inclusion and exclusion criteria.

10. **Right to Refuse**: Subjects may choose not to participate or to withdraw from the study at any time without penalty or loss of any benefit to which they might otherwise be entitled.

11. **Privacy**: Results of the study may be published, but no names or identifying information will be included in the publication. Subject identity will remain confidential unless disclosure is required by law.

12. **Signatures**: The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigators. If I have questions about subjects' rights or other concerns, I can contact Alex Cohen, Chairman, LSU Institutional Review Board, (225) 578-8692, irb@lsu.edu, or www.lsu.edu/research. I agree to participate in the study described above and acknowledge the researcher’s obligation to provide me with a signed copy of this consent form if signed by me.

Subject Signature: ____________________________ Date: ________________

The study subject has indicated to me that he/she is unable to read. I certify that I have read this consent form to the subject and explained that by completing the signature line above, the subject has agreed to participate.

Signature of Reader: ____________________________ Date: ________________

13. **Your information or bio-specimens collected as part of the research, even if identifiers are removed, may be used, or distributed for future research.**

Yes, I give permission ____________________________________________

Signature

No, I do not give permission ____________________________________________
REFERENCES


Cataldi, E. F., Bennett, C. T., & Chen, X. (2018). First-generation students: College access,


https://www.councilforeconed.org/news-information/research/.


Okerson, J. R. (2016). Beyond the campus tour: College choice and the campus visit. Williamsburg, VA: College of William and Mary. [https://scholarworks.wm.edu/cgi/viewcontent.cgi?article=1004&context=etd](https://scholarworks.wm.edu/cgi/viewcontent.cgi?article=1004&context=etd).


VITA

Charlie E. Lewis began her college education by earning her undergraduate degree from Southern University A & M College. In 2012, Lewis earned her Master of Business Administration from the University of Phoenix, Baton Rouge campus. She started a career in higher education working at Louisiana State University. After serving as a coordinator in the LSU College of Humanities & Social Sciences Psychology department. Lewis gained employment at LOSFA as a Regional Evaluation Coordinator for the GEAR UP program, the position in which she has continued to serve for the past eight years. Her professional interests include assisting, motivating, and supporting students to achieve their graduation goals.