

A QUANTITATIVE EXPLORATION OF THE EDUCATIONAL PATHS TO
COMPLETION TAKEN BY FIRST GENERATION COLLEGE STUDENTS AND
STUDENTS WHO HAVE A PARENT WITH A FOUR-YEAR COLLEGE DEGREE

A DISSERTATION IN
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Presented to the Faculty of the University
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DOCTOR OF EDUCATION

by
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Kansas City, Missouri
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ABSTRACT

This quantitative study examines students' survey responses as they begin the transition from high school into and through their initial year of college then to completion of a four-year college degree, to explore differences for both first generation college students and students whose parents have a four-year college degree. The research design uses data from four points in time to analyze and report the characteristics of a sample population of more than 16,000 students spread across 750 public and private secondary institutions in the United States (Gall, Gall & Borg, 2007). The data are derived from the Education Longitudinal Study of 2002, specifically the Student Questionnaires and phases that include the Base Year (2002), the First Follow Up (2004), the Second Follow Up (2006), and the Third Follow Up (2012), which offers the opportunity to see the data through different lenses. Students who responded to the survey were separated into two groups for the purposes of analysis: first generation college students (FGCS) and students who have a parent with a 4-year college degree (SPCD). This data disaggregation and the use of Binary Logistic Regression allowed the researcher to analyze and discuss the factors involved in both groups' progression to

completion of a four-year college degree. Results of the study showed that FGCS were 1.5 times less likely to persist to a four-year college degree than SPCD. Further, in conducting the regression models when all of the variables selected for this study are considered together, only school motivation, familial involvement and a student's confidence significantly predict FGCS' persistence to completion of a four-year college degree.

APPROVAL PAGE

The faculty listed below, appointed by the Dean of the School of Education, will examine a dissertation titled “A Quantitative Exploration of the Educational Paths to Completion Taken by First Generation College Students and Students Who Have a Parent with A Four-Year College Degree,” presented by Daniel I. Stroud, candidate for the Doctor of Education degree, and certify that in their opinion it is worthy of acceptance.

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CHAPTER 1

INTRODUCTION

A college degree can be one of the most valuable commodities in an individual's life. Increasingly, the road to economic mobility moves through postsecondary education (Kelly, 2015). The members of today's society value opportunities for greater economic freedom and the ability to work and perform as one chooses. In order to meet these expectations, high school graduates must endure a steep climb through higher education to reach the expected peak of empowered and affluent adulthood.

Though the cost of attaining a college degree has increased by greater than 40 percent since the earliest years of the twenty-first century, there is still a significant wage premium that can be realized (Abel & Deitz, 2014). Further, the economic advantages of workers with less than a four-year degree has continued to decline over time (Pew Research Center, 2014). Many students and their families may not have a clear idea of what it actually costs to attend college. There is national evidence that proposes that almost 70 percent of parents are unable to estimate the costs that will be incurred during their child's postsecondary experience. What is more, many low-income families were found in a study performed during the early 2000s, to overestimate college costs. For many, this led to the conclusion that postsecondary education was not worth the time or effort (Grotsky & Jones, 2007).

Further doubt is cast on higher education's value as the price of admission keeps rising. The question that looms for young adults who have yet to attain a college degree remains whether or not a postsecondary degree is the best path to a better economic future (Betts, 2006)? Another question is whether one student has an advantage over

another based on the educational experiences of a prior generation, namely parents who have already attained that seemingly elusive four-year degree? Do such individuals have a psychological and academic advantage over peers who do not have parents that have achieved the same educational status?

This quantitative exploratory study analyzed students' responses to a longitudinal questionnaire as they make the transition from high school and on into their postsecondary lives. The research study examined and reports differences between first generation college students and those students who have a parent that has completed a four-year degree. The intent of this study is not to make inferences or to determine causal relationships, but to explore similarities and differences among two groups of students as they respond to questions about their post-secondary plans, and to determine who among them persist beyond their first year in higher education.

Statement of the Problem

Research has shown that one in six students who enter four-year American colleges and universities are first generation college students (FGCS) (Greenwald, 2012). This is a significant number, one that has led to a great deal of study over the years. A National Center for Education Statistics (NCES) study offered many differences between FGCS and students who had parents that attained a college degree (SPCD) (Warburton, Bugarin, & Nunez, 2001). These differences included age (7% of FGCS are older than 30 vs. 1% SPCD), the likelihood of coming from lower-income families (29% FGCS vs. 9% SPCD), and the likelihood that they are from Hispanic ethnic backgrounds (18% FGCS vs. 7% SPCD) (Warburton, Bugarin, & Nunez, 2001). Further, the study determined that FGCS were less likely than their SPCD peers to persist to complete a four-year degree

(see Table 1). In this research study, it is hoped that the analysis of students' responses to survey questions will offer a more focused understanding of these statistics.

Table 1.1

Differences between First Generation College Students (FGCS) and Students who had parents that attained a college degree (SPCD) enrolled in 1995-96 and those who persisted to spring 1998

	FGCS	SPCD
Age (Older than 30)	7%	1%
Lower Income Families	29%	9%
Hispanic Backgrounds	18%	7%
Persisted to Spring 1998	73.1%	88.3%

Note: SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995–96 Beginning Postsecondary Students Longitudinal Study, First Follow-up (BPS: 96/98). Report Titled *Bridging the Gap: Academic Preparation and Postsecondary Success Of First-Generation Students* (2001).

Terenzini, Springer, Yeager, Pascarella, and Nora (1996) supported the notion that FGCS not only had a tendency to come from lower-income households, but also held lesser expectations of educational attainment at the post-secondary level. Though others have disagreed with this general sentiment (Bilson & Terry, 1982), there has been general consensus that FGCS lack the familial support that may be necessary in preparing and eventually planning for postsecondary education while still in high school (Nunez & Cuccaro-Alamin, 1998; Pascarella, Pierson, Wolniak, & Terenzini, 2004).

Further, it is necessary to cast a more critical lens on the inequities within society and surrounding higher education biases such as institutional racism, a concept that successfully cloaks individual racist tendencies through the use of policy, practice, and even the legal process in unfairly subordinating people of color and individuals from underrepresented groups based on categories such as gender (Blair 2008; Klinker & Smith, 1999; Sue, 2006). Institutional racism is a concept that may be misunderstood by some higher education administrators and faculty with regard to conscious and unconscious biases. An example of this occurred in the fall of 2015, when University of Missouri System President Tim Wolfe was asked the definition of systemic oppression and offered the following, “I will give you an answer, and I’m sure it will be a wrong answer. Systematic oppression is because you don’t believe that you have the equal opportunity for success.” This curt answer led a student to scream back, “Did you just blame us for systematic oppression ...?” (Prohov & Knott, 2015, p. 1).

In viewing the data in this study, the societal context and the climate that exists in educational institutions will be important considerations. There will be the opportunity to not only look at the educational plans and higher education attainment of the FGCS community, but to also examine who makes up this group. How do characteristics such as race, ethnicity, and gender relate to the higher education experiences of the members of these differing groups? This analysis should offer important information with regard to such differences in factors related to educational attainment based upon sorting the data according to demographics within the FGCS student responses.

Purpose of Study

Why are these issues regarding FGCS and SPCD students important to contemplate? The *College Completion Study* (U. S. GAO, 2003) offered results that showed 43% of FGCS, while 59% of their SPCD peers, enrolled and eventually graduated from their postsecondary institutions with a four-year degree. Further, Ishitani (2003) points to the departure risk for FGCS during their first year in college being 71%. These are gaps that should cause concern to those working in the halls of higher education. In my roles as a doctoral student and an Assessment Specialist at different institutions, there are educational and professional experiences that bring me to this research. In addition to my professional roles, there are deeper personal connections that drive my passion for increasing FGCS educational attainment. As the child of a FGCS, I witnessed firsthand, the challenges that were faced after making the decision to attend an institution of higher learning. There are factors here that are at the root of this struggle and this study will examine the effects they may have on completion of a four-year degree.

Exploring Factors Leading to Educational Attainment

There are many factors that contribute to completion of a four-year college degree. These include students' experiences before entry into higher education, such as the time spent learning and growing and decisions made by students during and after high school (Warburton, Bugarin, & Nunez, 2001; Choy, 2000; Pascarella, E., Pierson, Wolniak, G. & Terenzini, P., 2004) . Career counseling and choices are important to consider as well (Gibbons & Shoffner, 2004). There are others that were not part of this research study, which include, home and community life (Cherry, Lloyd, and Prida,

2015), work performed while in high school (Dimaria, 2006), and beliefs and values learned both before and after entry into higher education (Hodsdon, 2012; Burns, 2013). Socioeconomic status is another factor that has a strong bearing on FGCS as many come from low-income families which only adds to the pressure on them to succeed in a world they are not yet familiar (Bui & Rush, 2016; Hudley, et al., 2009).

All of these factors are important to understand.

The purpose of this study is to gain a greater understanding of the process that FGCS and SPCD students work through as they pass from high school into college and/or adulthood. Why do they start college? Why do they stop? There is a desire in this study to explore information that might help FGCS and even SPCD communities in the future.

With each new study, re-examination of gaps in educational attainment among students from diverse backgrounds contributes to new knowledge. The purpose of this study is not to prove a causal relationship between students' characteristics and their educational attainment, but to contribute to better understanding relationships that are demonstrated through one particular survey instrument. Exploration of the aforementioned factors can lay the groundwork for further and more finely-tuned research in this area.

Theoretical Framework

First generation college students and SPCD communities, it is surmised in this study, vary in the ways that they engage and interact on a college campus. Students at the post-secondary level have generally come from differing backgrounds especially with regard to extracurricular activities and group involvement. Many high school students

may work at local eating and retail establishments after the mandatory school day is complete. Others may attend club sponsored functions, band rehearsals, and/or sporting practices and events of one type or another.

All of these behaviors involve some form of interaction. However, they do not all display a form of engagement that might prepare them for post-secondary experiences. Much of the groundwork that is laid as a student chooses experiences at the post-secondary level can be traced back to their high school years.

There are reasons that some students relate more strongly to expectations in institutions of higher education than do others. The amount of time taken to study could be a reflection of the time put in prior to their arrival on the college or university campus (Ivey, 1986; Long, 2012). There is a great deal of work that has been done in student development, especially in the area of personal interaction and environment. Two theories in particular come to mind, and have been chosen for discussion in this study. The theories that will frame this focus are derived from two of the leading scholars in higher education, Vincent Tinto and Alexander Astin.

Tinto's Theory

Tinto's Theory of Interaction has also been termed the Theory of Integration or the Theory of Student Departure. The theory is posited on retention and more importantly the tenets of persistence in higher education. The ideas that Tinto proposes take three positions including a student's academic issues or problems, a student's inability to integrate on a social or intellectual level within a college or university's culture, and the actual devotion or commitment that a student brings to the college or university campus

(Long, 2012). His general premise has been that colleges and universities must improve in all three areas if they wish to improve student persistence. Generally, the theory is well received, but over the years, many scholars have taken issue with pieces of the theory (Braxton & Lien, 2009; Braxton, Hirschy, & McClendon, 2004; Pascarella, Pierson, Wolniak, & Terenzini, 2004). Tinto, himself agrees with many of these arguments and has been open to flexibility within his positions.

Pascarella, Salisbury, and Blaich (2011) conducted a survey to measure the effectiveness of classroom instruction at nineteen institutions across the country that connected with Tinto's theory of persistence. Their data sample included 4,501 students from an initial survey (2006) that incorporated data pulled from the National Survey of Student Engagement and the WNSLAE precollege and the WNSLAE Student Experiences Survey (WSES). The same surveys were administered one year later (2007) to 3,081 of the original students involved in the sample. They concluded that effective teaching and classroom instruction were a strong factor in students persisting to the second year. The other constructs of Tinto's theory were not included in the study. Their questions were directly related to teacher effectiveness, class effectiveness, and clear explanations by teachers, etc.

Their ultimate assertion was that effective classroom instruction was in fact a standalone factor in regard to persistence to the second year, whether the setting was a research university, community college or liberal arts college. This assertion however, was limited in its generalizability, as the breakdown of the nineteen institutions studied included three research universities, three regional universities, two community colleges,

and eleven liberal arts colleges. There was not a large representative sample of residential and non-residential commuter institutions.

Astin's Theory

Astin's Theory of Involvement is different than Tinto's offering as it seeks to dig deeper and seek out even more pointed knowledge (Astin, 1984). He proposes that the more involved students become in academic and social environments, the more proficient they will in turn become in these areas. Involved students, in the scholar's estimation would include spending a great deal of time on the college or university campus, taking additional time to interact with their faculty before and after class, and offering a substantial amount of time to study both in and out of the classroom (Astin, 1984).

In turn, Astin felt that if students were challenged by higher quality programming at their chosen institutions of higher learning, they would be more apt excel in the stated areas.

Astin pointed out the fact that students who are not challenged, and who do not participate in extracurricular activities, will be less likely to stay involved in the overall functions of the college or university campus. He challenges student affairs administrators and faculty on college and university campuses to encourage students to participate at a greater level, and to include accommodation of family and outside work responsibilities that might already be in place (Astin, 1984).

Both of these theories seek to cast a wide net over students in higher education. This study will explore the ways the two theories are interwoven. In connecting these theories to the data that was analyzed, it is hoped that this expanded insight will help move higher education forward in supporting college students from diverse backgrounds as they work toward completion of their degrees.

Research Questions

The research questions for this exploratory study include the following:

1. How do school motivation, plans for the future, familial involvement, confidence, sports participation, race, gender, and parental education, differ between First Generation College Students (FGCS) and students whose parents have a bachelor's degree (SPCD), in persistence to completion of their four-year college degree?
2. Are there significant differences between first generation college students (FGCS) and students whose parents have a bachelor's degree (SPCD) as they persist to completion of their four year college degree?

Question One will explore differences in the way the FGCS and SPCD groups make specific decisions as they begin life after high school. Based on survey responses, the researcher will examine different experiences and activities that might affect postsecondary decision-making up to and including completion of a four-year college degree. Question Two looks more specifically at those students who are persistent and complete a four-year college degree. This question will examine differences in FGCS and SPCD groups using quantitative analysis. These questions will not seek a definitive solution to the issues visited in this study. However, it is hoped that findings would provide greater clarity on the differences that are found among survey responses.

Research Hypotheses

In attempting to answer the aforementioned research questions, there are two hypotheses that will be tested. Included here are the following:

1. There is a significant difference when one controls for school motivation, plans for the future, familial involvement, confidence, sports participation, race, gender, and a parent's level of education, for both FGCS and SPCD students in completion of a four-year college degree.
2. There are significant differences in persistence to completion of college between FGCS and SPCD students.

This study will seek to understand the differences between FGCS and SPCD students as they begin post-secondary work, and more importantly how the groups compare as they persist to completion of a four-year college degree.

Definition of Terms

Education Longitudinal Study of 2002 (ELS) – The ELS is a longitudinal study that spans ten years, from 2002 thru 2012. It obtained data from students, parents, teachers, librarians, and administrators over four periods of time. For the purpose of the study only the Base Year (2002) Student Survey and the Second Follow Up (2006) Student Survey data is being analyzed.

First Generation College Students (FGCS) – For the purpose of this study, these students are the children of both parents who may have no or some post-secondary education, but have not attained a 4-year degree.

First Follow Up Phase (2004) - During this phase, a few cases were added for students that were seniors at the same institutions who had not taken the base year survey.

Further, transcript and financial aid data was collected in this phase.

Second Follow Up Phase (2006) – This instrument was administered to the original and First Follow Up students of the original survey and covered questions involving completion of high school, as well as whether or not they began a postsecondary track.

Student Questionnaire Base Year (2002) – A survey of 10th grade students from 750 high schools across the United States that measures important information regarding education standards among other issues.

Students Whose Parents have a College Degree (SPCD) – For the purpose of this study, these students are children of at least one parent who has attained a 4-year degree.

Third Follow Up Phase (2012) – In this phase, a survey was given that asked about the status of students, four years after first students came out of college. From this phase, persistence to graduation can be determined.

Overview of Methodology

This study's research methodology explored the differences in factors related to educational attainment between first generation college students (FGCS) and students with parent(s) who have a college degree (SPCD) as they plan for post-secondary experiences and within a period of one year's experience after high school. This study attempts to pull together student expectations, attitudes, and the aspirations that students may or may not follow on their path toward post-secondary education or other plans.

Factors that can be related to whether a student will seek a post-secondary education as well as whether that student persists to a four-year degree are associated with this study. A better understanding of the ways that these factors are perceived by

students whose parents have achieved a four-year degree, and the ways such factors are perceived by students whose parents have not reached such levels is what this study seeks to explore.

This study utilized quantitative methods to draw conclusions related to the research questions and hypotheses. Quantitative research is used to perform tests on objective theories through examination of relationships among variables. Analysis of these variables can then be performed using number data derived from one statistical procedure or another (Creswell, 2009). The dissertation offers an introduction, a literature review, the design of a research methodology, results of the study, and finally a discussion of those results.

Data from the Education Longitudinal Study of 2002 (ELS 2002) were retrieved to complete the analysis for this study. The survey was sponsored by the U. S. Department of Education National Center for Education Statistics (NCES). RTI International, one of the world's leading research institutes and located in North Carolina's Research Triangle Business district, was contracted by NCES to conduct the study and its multiple surveys.

Instrumentation and Sample

The Education Longitudinal Study of 2002 (ELS 2002) is the instrument from which the two measures for this study were derived. The full study, which spanned ten years from 2002 to 2012, was developed to observe a sample of more than 16,000 students at 750 public and private secondary institutions across the United States as they transitioned from their sophomore year of high school to eventual entry into working society (NCES, 2016).

While the students were followed throughout their secondary and postsecondary years, several instruments, administered at different times, that included questions for parents, teachers, and administrators were part of the vast study. There were also student assessments in math and English that were conducted at different points. In addition, high school transcripts were made available for researchers to observe student plans of study during their secondary years (NCES, 2016).

All four phases of ELS (2002) study, amassed over a ten year period (2002-2012) will be utilized. These include the Base Year (2002) Student Questionnaire phase, the First Follow Up (2004) phase, which added student cases that were not included in the Base Year, the Second Follow Up (2006) that identified students who proceeded to college, and the Third Follow Up (2012) that was used to identify students who persisted to complete at least a four-year college degree.

Variables

The variables that were analyzed in this study were first separated by student characteristics (FGCS, SPCD) and then by question. The dependent variable in this study is determined by the fact that students persist to complete a four year college degree or they do not. The independent variables include school motivation, sports participation, future plans, familial involvement and students' confidence, race, gender, and parental education. The data within FGCS and SPCD groups were also viewed with a dedicated observation that offers alignments according to race, ethnicity, and gender to determine whether there are significant differences based upon these characteristics.

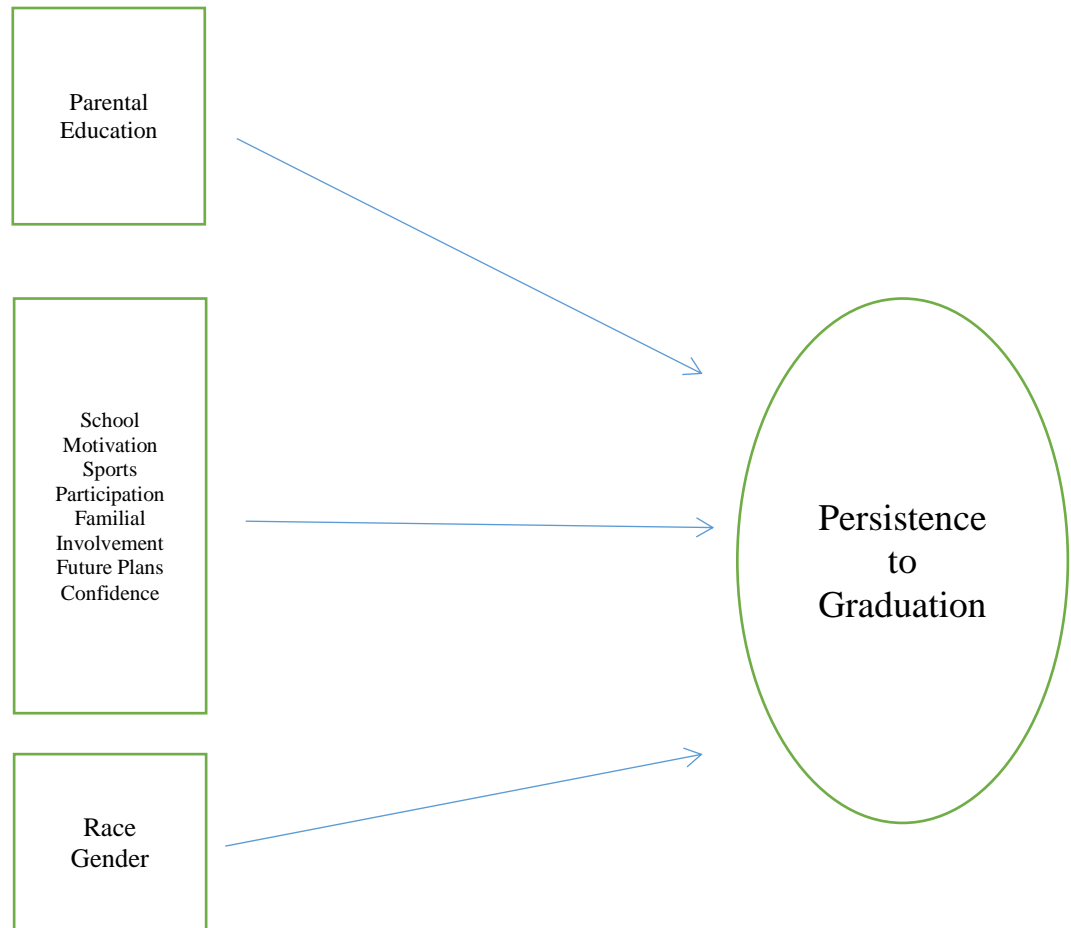


Figure 1.1
Model Summary of Variables that guide college students (FGCS & SPCD) as they persist to completion of a four-year degree

Considering the Variables

The variables that have been chosen for this study were selected because of their general standing within cognitive aspects of a student's desire, whether FGCS or SPCD, to attend institutions of higher learning, and then to persist to completion of a four-year degree. There is an intention to look at what the literature already says and compare it to the cognitive reasoning as it holds for the present day.

Parental Education. – This is one of the main premises of the study. A majority of lesser educated parents are part of communities with lower incomes. Traditionally many of these communities have been racially/ethnically divided (Engle & Tinto, 2008; Lohfink & Paulson, 2005). There is an assumption that students who emerge from these communities and more specifically from families whose parents do not necessarily value education, will be less likely to be motivated to participate in higher education (Horn & Nunez, 2000; Pascarella et. al., 2004; Tate, et. al., 2015).

School Motivation. In looking at this variable, it is of interest here to look closely at how students view their education both mentally and physically. The questions to be considered here include a student's understanding of educational attainment. Is there a bonafide interest in education? Do social implications matter as a student accumulates knowledge? There is also the consideration of a student's desire to please parents, instructors, or other mentors (ELS, 2002).

Sports Participation. With this variable, the intention is to continue in consideration of student interests and its effect on educational attainment in the future. Theory will be introduced in the literature review that suggests such interaction (Tinto,

1993). How is a student's educational intention affected by participation in these extracurricular activities? Further, could this affect their cognitive reasoning when considering post-secondary educational attainment?

Future Plans. Taking a look at this variable will hopefully offer the temperature of students with regard to their preparation for and intention to continue their education or not. Several factors can be viewed to determine where students fall on this notion. Is it important to students to live close to parents, build strong friendships, and/or build up the neighborhood and community in which one lives? Further, what are the perceptions students and their families have about their future education and/or career (ELS, 2002)?

Familial Involvement. This variable will be explored to observe the home environment and the family's commitments regarding education. The question of whether this factors into a student's thought process is an important issue for examination. This is asked both directly and indirectly as the environment the student lives in is observed through both cognitive and behavioral factors (ELS, 2002).

Confidence. – Is confidence in oneself a key to understanding persistence in higher education? Cognitive links here are purveyed as questions of understanding, commitment and intent are examined. What are things that students may or may not base their life habits upon? Do such habits embolden or inhibit growth (ELS, 2002)?

Race. - Students of color that aspire to have a postsecondary education face far greater challenges in achieving such ambitions than do their white counterparts (Hurtado et al., 1997). Many students of color, who have come of age at lower socioeconomic levels, do not see selection of a particular college or university as a priority. It is the

educational attainment itself that becomes the priority. A further concern here is that many underrepresented minorities have attended lesser academically challenging high schools, which, coupled with first generation status, can prove to be hard barriers to break through (Hurtado et al., 1997).

Gender. – It has been observed that female students seem to seek and receive more access to higher education than their male counterparts (Sutherland, 1988; Charles & Bradley, 2002; Pelco, Ball, & Lockeman, 2014). One study in particular, that focused on FGCS students and SPCD students with regard to service learning, found that females accounted for 76 percent of the FGCS sample (Pelco, Ball, & Lockeman, 2014). Whether this is still true will be viewed here as well.

Data Analysis

The IBM SPSS Statistical Analysis program (IBM Corp., 2013) was used to complete the comprehensive data analysis as part of this quantitative study. The use of descriptive statistics was also important to this research. The data sample pulled from the ELS (2002) was first separated into two sets. First, to the researcher identified all students whose parents had not achieved a four-year degree at the time the survey instrument was rendered. The second step was to identify the students who had at least one parent who attained at least a four-year degree. This is the variable of primary interest in this study, that of the parent or parents' attainment of a four-year degree or higher. Coding for this variable was dichotomous (0 = no degree, 1 = degree).

Race and gender of students in the instrument also was used in the disaggregation of the data during this phase of the analysis. After these data were successfully separated, a factor analysis was performed on the independent variables in the study. It is

important to perform the factor analysis as it should verify that the grouped questions utilized from the base year (2002) survey correlate with each variable in the proposed construct that is being presented and researched in the study. This factor analysis takes the form of a linear model (Field, 2013; Warner, 2008). Analyses were performed for all latent variables in the study's factorial design. As the results were completed in this phase of the research design, a Binary Logistic Regression model was constructed.

The outcome variables used in this type of regression must be categorical (Warner, 2008), and the categories that variables fall into must be distinct. The question to answer is quite direct: Do the variables being analyzed belong in the group or don't they? Either a positive or negative impact is shown by the factors after they have been plugged into the regression model. It should be noted that there were two such analyses conducted, one for FGCS students and the other for SPCD students. Based upon the results found in these two logit tables, a comparative analysis between that of the FGCS model and the SPCD model can be initiated.

Testing to compare the FGCS and SPCD models is included in the research design. In order to test for the probability of a Type I error's occurrence in conducting the hypothesis tests, the alpha level for significance was $p < .05$. (Warner, 2008; Field, 2013). This is "the probability value that is used to define the concept of very unlikely in a hypothesis test" (Gravetter & Wallnau, 2013, p. 238), though the size of the sample and the prescribed significance level makes such an error unlikely (Warner, 2008).

Limitations

In a research design such as the one performed in this study, it is important to be cautious in suggestions of any inference that might be made which could be connected to

causality in any way (Gall et al, 2007). Another point that should be noted here is that the instrument (ELS 2002), being a self-reporting survey, uses students' projected perceptions and feelings which may or may not weaken the study's validity. There is no absolute way to determine if students were completely forthright and honest as they participated in the survey components. In an attempt to alleviate concerns regarding reliability, Cronbach's Alpha will be conducted on the aforementioned constructs.

Conclusion

In choosing the ELS (2002) data used in this study it should be clear that there are many variables that can be considered in determining student intent and persistence in higher education. This study examined relationships involving parents' educational attainment and its motivating force in their children's future as scholars in the post-secondary education.

There have been other studies conducted using data culled from ELS 2002. Studies of parental involvement and students' academic performance in particular have been explored (Fan & Williams, 2010; Hae & Bonner, 2008; Kushner & Cho, 2007; Park & Bonner, 2008). Race and gender have been studied through this instrument as well (Dee, Ha, & Jacob, 2007; Dumais, 2006, 2009; Feldman & Matjasko, 2005; Mohammad & Dixon, 2008; Seifert, Park, Padgett, & Umbach, 2010; Wells, 2008).

This study is distinguished from previous studies using ELS 2002 data through taking a closer look at parental involvement in conjunction with the cognitive variables listed above. In chapter two, a literature review will be performed that includes important theoretical concepts and discussions, including a description of the findings from previous studies using ELS 2002 data. Many of these theories and concepts have been

explored in the past and likely will carry forward into the future as problems and issues related to student retention and persistence in higher education continue. Finally, it is the intention of this study to contribute to the understanding of students' educational outcomes regarding persistence, as it pertains to parental and familial attainment of similar educational outcomes.

CHAPTER 2

LITERATURE REVIEW

Introduction

There is a great deal that is asked of the members of the First Generation College Student (FGCS) community. They are expected to understand what works for them and what does not in order to be successful as an undergraduate student in higher education. How can coursework be selected to optimize progress toward degree completion? Which student loans, how many, or how much should be borrowed? Where can a flexible job be found that will not conflict with a student's class schedule? How much time can be spared to work, while still having enough time to properly study the coursework assigned? How should credit cards be handled? These issues must be addressed by students who don't have the parental financial safety nets their SPCD peers usually have (Chen & Volpe, 1998; Inman & Mayes, 1999; Joo, Grable, & Bagwell, 2003; King, 2003).

Former President Obama, among others, stated that the United States is lagging behind in college participation and educational attainment when compared to other industrialized nations around the world (Tierney, 2014). Further, success is far from a forgone conclusion for these students (Ishitani, 2006, Sandefur, Meier, & Campbell, 2006; Terrenzini, Springer, Yaeger, Pascarella, & Nora, 1996). Table 2.1 offers the ranking for the U. S. higher education outcomes for 2009-2010 (OECD, 2009; 2010).

Table 2.1

United States Tertiary Education Performance and Ranking, 2009-2010

<u>Indicator</u>	<u>Percentage</u>	<u>Ranking</u>
Attainment rate, Age 25-64	39.5	3 rd
Entry rate, first-time entrants as % of population	64.0	9 th
Graduation rate, as % of graduates to population at <u>Typical age of graduation</u>	35.5	14 th

Note: Source: OECD 2009, 2010.

This quantitative study explored the relationship between parental educational experience and constructs related to the completion of a four-year college degree. Survey data from the National Center for Education Statistics (NCES) and within the Education Longitudinal Study of 2002 (ELS) were used to explore differences among FGCS and students whose parent(s) completed a four-year degree.

This instrument has been used to study a wide ranging area of higher education and how its tenets impact students as they seek a post-secondary education or they do not. Dee, Ha, & Jacob (2007) use data from the Base Year (2002) survey to look at the effects of school size on parental involvement. The question that was being researched was whether parents were more involved with their child at large school districts, or did they engage more often at smaller institutions. The later was found to be true in this study. More to the point, these scholars found that smaller high schools increased parental involvement in programs like Parent Teacher Associations. The social capital in smaller institutions also seemed to emerge in this study. Benner, Boyle, & Sadler (2016) look more specifically at parental involvement with regard to education involvement, both at school and at home, expectations of a students' education, and their academic performance, more succinctly, their grades on transcripts.

Another study performed using ELS (2002) data, looked at the way that student engagement through extracurricular activities and teacher interaction affected a student's persistence to college. It was a study designed not only to study the students, but also the affect that a community might have on its student population. The study spent a great deal of time looking at the hours that a student was engaged in extracurricular activities (Sciarra, Seirup, & Sposato, 2016).

Still another study dealt with the persistence of students with learning disabilities and/or behavioral disorders. The logistic regression model used proved significant differences between disabled students, and those of their peer who had no such problems or issues. (Lee, Rojewski, Gregg, & Jeong, 2014). This is just a small sample of data that has been extracted from this important longitudinal study.

The research questions examined in this particular study included:

1. How do school motivation, plans for the future, familial involvement, confidence, sports participation, race, gender, and parental education, differ for both First Generation College Students (FGCS) and students whose parents have a bachelor's degree (SPCD), in persistence to completion of their four-year college degree?
2. Are there significant differences between first generation college students (FGCS) and students whose parents have a bachelor's degree (SPCD) as they persist to completion of their four year college degree?

In working through this chapter, a review of the framing of the theoretical perspective of the study will be provided. A path through the literature will seek to offer primary and secondary discussion of the theories that are presented. Stepping further into the

literature, persistence and educational attainment will be examined, along with an overview of the variables that will be analyzed in the study.

Theoretical Framework

This study builds from the framework of Tinto's Theory of Interaction and Astin's Theory of Involvement. Both theories include important constructs regarding educational experience, social dynamics and communication, socioeconomic stability, and family support. Vincent Tinto wrote what would be considered the seminal work for retention and persistence in post-secondary education. His book, *Leaving College: Rethinking the Causes and Cures in Student Attrition*, was first published in 1987 and later revised as a second edition in 1993. His work in this book is quite detailed and offers a great deal of background and insight for any researchers interested in studying the field of higher education. Alexander Astin wrote what has been suggested to be the most heavily cited book in higher education literature (Budd, 1990), *Four Critical Years*, an exploration of the change and eventual development of students in college. The popularity of the work, written in 1974, offers a glimpse into the world of inquisitive higher education scholars with regard to the concepts they feel are worth studying. The theories that undergird the work of Tinto and Astin will be explored in this section.

Theory of Interaction

Tinto's views regarding interaction on the college campus covered a wide range of possibilities with regard to a student's reasons for staying as well as for leaving a college or university. His most common assertion was that community was the key to all such decisions and to how that community of individuals interacted while on a college or university campus (Tinto, 1993). His belief is that students begin their college or

university careers with many individual characteristics and traits that, depending on how they matched up with their college or university of choice, determined whether they completed their education in that place, or departed early without finishing (Tinto, 1993).

He further determined in his own mind and through his research that social integration, which included membership in student groups and steady interaction with peers, had a great deal to do with a student's decision to persist or not at a given institution (Tinto, 1993). This perceived understanding of the student experience led him to conclude that institutions of higher learning had more responsibility to their students than merely academic instruction. In his view, student affairs groups within an institution had as great or an even greater responsibility to insure student engagement. This was to him as much a part of education as the work done from cover to cover within classroom textbooks. In his estimation through the majority of his research, it was academic and social integration, working together that would eventually offer solutions for the problem of early student departure (Tinto, 1993).

This theory cuts in many directions when one considers age, gender, racial or ethnic origins, and socioeconomic status. There are different factors one could explore research while developing a better understanding of student development in higher education. Tinto's work is quite detailed and offers a great deal of background and insight for researchers interested in becoming part of this field of study. It is interesting to note that there have been and continue to be challenges and proposed improvements upon his Theory of Interaction, but the work that he started remains predominately set in place. Just as this author hopes to add to this body of knowledge related to this theory in some small way, countless others have studied and prepared research that contributes to the

groundwork Tinto started. Interestingly enough, he has welcomed these challenges to his work and has come to agree with many of the suggestions offered in seeking improvement and strength for the theory (Braxton & Lien, 2000).

Goals, Intentions, and Commitment

In discussing and defining Tinto (1993) and his constructs, there are distinctions the theorist lays out that are important to consider. In discussing the goals that students who enter a two-year or four-year institution hold, there are two attributes that are generally discussed. These two attributes include “intention” and commitment.” Both suggest some orientation with regard to setting an important goal in an individual’s life.

Participatory intention can be as important to the likelihood of college completion as any predictor in higher education (Astin, 1975; Bean, 1982). The higher the goal or intention is, the greater chance that a student will complete their degree. Such elevated goals include becoming a doctor or lawyer, or other professional occupations which require a college degree that can serve a student in need of motivation. All college students must determine the gap between their realistic and imaginary expectations with regard to their post-secondary performance. The time that it takes for students to process and close this gap, can largely determine success or failure at the post-secondary level (Ward, Siegel, & Davenport, 2012). In the same way, FGCS must reconcile what they expect from their lives as students and the expectations that their parents and family place upon them. This ‘acculturation’ process is one that at times is extremely difficult for an FGCS to master (Pascarella, Pierson, Wolniak, & Terenzini, 2004).

However, it is important to note that all students do not enter college with the intention of completing a degree program. Some, especially those who attend community

colleges, may seek merely to complete one or more courses that will enhance their job skills. Others may simply attend with the intention of gaining additional knowledge, never seeking to attain an associate or bachelor degree (Tinto, 1993).

Commitment falls on the other side of what one could call the ‘goals’ continuum. These are the students who have the intent to attend college, but fail to demonstrate the effort necessary to complete a degree. Tinto (1993) points out, rather succinctly here that there is no way around the ideal that completing college is going to be a challenge. The individual who fails in this category many times does not and never has had the desire to do the work necessary to complete a degree of any kind.

Tinto (1993) also points out that there are two types of commitment that can be ascertained here. One suggests individual and personal occupational and educational goals. The other includes the commitments as prescribed by the institution itself. These two forms of commitment can be quite different in regard to the way a student might perceive their importance.

Institutional Experiences

Next on the list of constructs for consideration are an individual’s institutional experiences, both from a social and an academic perspective (Tinto, 1993). Can a student persist without social integration and remain academically sound? As Astin (1984) suggests, there is a need for student engagement for successful integration into any institutional environment. Social integration, it is agreed (Braxton & Lien, 2000; Bean and Eaton, 2000; Baird, 2000), is important for individual persistence at the postsecondary level.

Academic Integration

Academic integration, however, though part of the Tinto (1993) theory, is not held in as high of esteem (Braxton & Lien, 2000). The ideal that the theorist suggests is that the classroom is as important to persistence in a postsecondary institution as each of the other constructs that are part of the theory. But there are many, and Tinto (2000) to some extent agrees, that the so-called theory of interaction requires revision and a de-emphasis on the academic side of this integration spectrum.

Theory of Involvement

Astin (1985) discusses persistence and retention in terms of involvement. In context, he points out that the idea of student involvement is an investment in both physical and psychological energy which can then be devoted to the academic experience. This object can refer to an unlimited number of objects that might include the student's experiential learning within a social setting or an activity that might include a sporting event of one kind or another. In this study, the psychological objects also include parental and familial perceptions with regard to higher education. His theory is a concept with many facets and has been applied by several researchers (Astin, 1985; Mallette & Cabrera, 1991; Nora, 1987, & Pascarella & Terenzini, 1980.)

The work of these researchers demonstrates an understanding of just how important involvement is to a student's integration into the student life realm. Without it, persistence might well be considered futile and of little consequence. It can further be surmised that involvement can have a superlative effect on student learning (Astin, 1984; Ory & Braskamp, 1988; Pascarella & Terenzini, 1991). Given these points of interest, it

becomes important to continue in this direction with the search for additional variables that can offer valuable insight into the persistence dilemma.

After reviewing a survey based experimental design with a sample that originally included more than 2,200 students and had 190 survey participants at its completion, Roberts & McNeese (2010) came to an interesting conclusion. They surveyed students using an instrument that measured their involvement on a four-year campus as an indigenous (local) student, a transfer from a community college, or as a transfer from another four-year institution. The findings showed that community college transfers were the group that showed most involvement on the four-year campus they had transferred to. Four-year student transfers were next on the list, and the indigenous students actually proved to be the least involved of the three groups.

Involvement as Impact

Astin (1993) developed a study that explored and discussed students' "degree of exposure to the college environment." The concepts dealt with in this study focused on two ideas, those of "time of exposure," and "intensity of exposure" (Astin, 1993):

Time of Exposure – This is a relatively simple thing to interpret through student behavioral patterns. The measurement is directly related to just what length of time a student stays in college. Two questions were assessed in general (p. 26):

1. "Are changes in people who stay in college for a short time comparable to changes in people who stay longer?"
2. "Are the effects of particular college characteristics stronger for people who stay longer?"

Astin examined the effect the college or university experience had on students as they persisted. Would students who had more exposure to college tend to enjoy greater success than their less educated peers? Astin also found limitations with regard to this ideal as it was clear that students attending private institutions of higher learning were less likely to drop out than those in other types of institutions (p. 27).

Intensity of Exposure - with this construct, Astin wades into Tinto's realm as he explores "frequency of interaction with other students" and "frequency of interaction with faculty" (p. 27). The comparisons are made based of lesser and greater degrees of interaction. In a case such as this, interaction would be the variable.

Astin's ideas with regard to education attainment of FGCS and SPCD groups date back to the 1960s and research conducted with John L. Holland, a former mentor, as they worked together at the National Merit Scholarship Corporation. In their research, it became clear that students who scored highest on their Merit exams were interested in attending institutions that produced the greatest number of masters and doctoral scholars. This cycle showed that the institutions' ability to recruit highly intelligent students might have more to do with their stronger completion rates, than the perception that these institutions had superior educators (Astin & Antonio, 2012).

Astin and Holland performed experiments that disproved notions that these institutions' educational output was necessarily determined by educational impact or educational effectiveness. Rather, there seemed to be more to the idea of strong inputs contributing to strong outputs. In the tests, they were able to show that the most successful output driven institutions actually produced fewer high-quality students by measure, than lesser institutions that recruited far fewer high-quality students. In spite of

this discovery, however, Astin and Holland suggested even this assumption had its limitation given the further need to consider an institution's environment as well. It was originally through these experiments that Astin's I-E-O (Input-Experience-Output) model of educational assessment first came into play (Astin & Antonio, 2012). The I-E-O model thus, has been developed and could conceivably be shaped to determine if and how outcomes are affected by different educational motivations that might include familial influence, educational policies, and administrative procedures.

Other factors in this study involved students' maturation and tendencies toward social change (Astin & Antonio, 2012). Many issues could come into play with such a factor. For instance, the differences of peacetime and wartime would be an example. The issues that surround diversity, including race and gender issues would be another. Then there is a student's life within a family unit, and life outside the family unit.

Both Tinto and Astin explored factors that contribute to students' desires to persist on to and through higher education. Some of the questions that will be explored in the following sections include whether there are extenuating circumstances in a student's life that push them toward or away from a post-secondary education. The variables that will be examined in this study will be defined, with connections made to relevant research findings and statistics related to higher education attainment.

Persistence

In order to better understand the variables involved in this particular study, there must be a definitive understanding of persistence as it is to be defined throughout the course of the study. For this study's purposes, persistence in higher education will refer to a student's active desire to continue into post-secondary education and beyond. Such a

definition is more important to the literature than one might originally think. For instance, the use of retention prior to the beginning of a post-secondary education can mean that a person is being held back for an extra year of course work. Of course, in post-secondary circles, there is a far different and more positive connotation with regard to retention and continuation through college or university life (Arnold, 1999).

Bui (2002) observed that FGCS groups were very much aware of their lack of preparation for life at the post-secondary level. They struggled with issues regarding financial aid, felt deeper anxiety about their academic endeavors and the possibilities for both success and failure, not to mention their less apt security within the collegial social climate. SPCD students meanwhile tended to have a greater tendency to plan and navigate safely through such embattlements, as their family history helped them better prepare for such things (Bui, 2002). Persistence seemed a different animal entirely for the two groups being observed. Table 2.2 offers information regarding First-Time Postsecondary students who began college in 2011-12, regarding their persistence from 2012-2014.

Table 2.2

All First-Time Postsecondary Students: Persistence at 4-year Institutions: Percentage distribution of 2011-12 first-time postsecondary students' 3-year persistence status at any institution, by selected enrollment and student characteristics: 2012-14

Enrollment and Student Characteristics	<u>Persistence</u>		
	Enrolled at 4-Year institution	Enrolled less than 4-Year institution	Not Enrolled
Total	38.6	15.6	30.0
Control and level of first institution	67.2	5.3	19.8
4-Year			
Public	70.8	5.6	17.7
Private nonprofit	76.6	4.7	12.1
For-profit	24.8	5.5	49.7
Sex			
Male	36.9	15.4	33.4
Female	39.9	15.6	27.3
Age as of December 31, 2011			
18 years or younger	50.1	15.4	21.9
19 years	42.1	15.6	28.1
20-23 years	15.4	17.0	48.1
24-29 years	9.5	15.8	48.5
years or older	12.5	14.4	45.5
Race/ethnicity			
White	43.5	13.5	27.7
Black	30.2	15.3	40.1
Hispanic	26.4	21.3	31.7
Asian	54.7	17.6	19.1
American India	23.2	13.0	39.2
Pacific Islander	43.0	15.0	27.0

Note: Source – National Center for Education Statistics (NCES 2016-401)

The data offered in the table show some interesting demographics regarding just who persists and who does not. In particular, it is interesting to note gaps regarding gender, race, and age at varying points and types of institutions. This study looks even deeper at possible issues that could affect these numbers in positive or negative ways.

Attainment of Higher Education

Persistence and involvement lead to the ultimate postsecondary outcome, that of completion. This is meant to represent the completion of degrees and can be measured at both the two-year and the four-year institution. Tinto (2012) points out that there is indeed a gap in earnings between those who merely start college and those who go on to complete their degree. The gap between those receiving a high school diploma and an associate's degree is approximately \$350,000 in lifetime earnings. From an associate's degree to completion of a bachelor's degree is an additional \$650,000 in earnings.

Further, Tinto (2011) cites (Baum & Payea, 2004) in pointing out that there are detriments to citizens as well as to society when postsecondary degrees are not attained. Our country struggles year by year to remain competitive in the global marketplace. Ethical standards slip considerably as education declines. Finally, even our local, state, and federal elections can be altered without the ability to discern wisdom and knowledge in the midst of moral and ethical considerations.

Socioeconomic Impact

In recent times, the value of a degree in higher education has been challenged by those who would point out that a college degree is not worth what it once was. In light of this seemingly flawed reasoning, studies have been sanctioned by the Bureau of Labor, BLS (2012) to explore the earning power of those citizens with a college degree, and those without. Carlson and McChesney (2015), first point to the increase in the percentage of population who have "some college" or higher education including four-year degrees or greater.

The question then becomes just how much of a gap is there? Table 2.3 describes the unemployment rates and median weekly earnings of persons at the age of 25 and older. It is clear that worker unemployment rises significantly as the education attained decreases. Further, weekly median earnings for workers with a Bachelor’s degree or higher, more than double the median salary of workers with less than a high school diploma. It is important to note that this data does not reflect completion of training programs, internships, apprenticeships, or any other forms of on-the-job training that might have an effect on wage and unemployment statistics.

Table 2.3
Earnings and unemployment rates by educational attainment

<u>Education attained</u>	<u>Unemploy rate in 2014 (Percent)</u>	<u>Median Wkly earnings in 2014</u>
Bachelor’s degree	3.5	1,101
Associate’s degree	4.5	792
Some college, no degree	6.0	741
High school diploma	6.0	668
No high school diploma	9.0	488
All workers	5.0	839

Note: Data are for persons age 25 and over. Earnings are for full-time wage and salary workers.

Source: Adapted from Current Population Survey, U.S. Department of Labor, U. S. Bureau of Labor Statistics. Last modified February 12, 2016.

Statistics such as these should be clear indicators that the attainment of higher education is more important to the narrowing of the economic gaps than they have ever been before. These gaps continue to widen each year. The numbers tell the story and

only exacerbate the need to better communicate the necessity of persistence toward at least a four-year degree at the post-secondary educational level.

Race and Ethnicity

Students from underrepresented backgrounds due to racial and ethnic heritage often must face taxing hurdles toward social integration in higher education settings (Aries & Seider, 2005; Lehmann, 2007; Stuber, 2011). Some students from underrepresented racial groups, from lower socio-economic backgrounds, or perhaps both, seem to have the ability to achieve upward mobility by “performing” dominant white, middle class identities; more to the point, they make friends with middle class peers and adopt their cultural attitudes and orientations toward education (Bettie, 2002). Other academically successful students from diverse backgrounds seem to shift and dodge between “street” and “school” identities (Carter, 2005). There is research that suggests masculinity can be difficult to assimilate within an educational orientation as it demands a tougher, more “street” kind of posturing than does femininity (Carter, 2005; Morris, 2012). In suburban schools, however, the cool demeanor associated with black masculinity can lift such pressures to some extent with regard to social integration for young black males (Ispa-Landa, 2013). However, there has been no research with regard to what happens to these students after they complete their secondary education. Still more research, investigates their transition to college, in an effort to show how race and class affect student integration and post-secondary culture (Wilkins, 2014).

Further, at land grant universities and predominately residential college campuses, educational goals and extemporaneous achievement are modelled more generally for Caucasian, class-privileged students (Stuber 2011). Perceived upper class cultural

knowledge and expectations shape social aspects of campus life, allowing class advantaged students to make friends and increase their social and cultural capital, often at the expense of the students from lower economic backgrounds (Armstrong and Hamilton 2013; Stuber, 2011). It has been found by researchers that students who are high achievers and are from economically strong families applied not only at more institutions, but at institutions that were highly selective as well as being quite expensive (McDonough and Antonio 1996; Hurtado et al. 1997).

Not surprisingly, FGCS, underrepresented minorities, and students whose families fell into the lower income bracket, were less selective, and were more apt to forgo four-year institutions for community colleges. This stipulation in their first two years made it far less likely that they would have an opportunity later to attend the aforementioned selective institutions (Hurtado et al. 1997; Reardon et al. 2012). While it is true that many of these same students attended lesser high schools from an academic standpoint and for that reason or others, were not as academically prepared as they needed to be, this was not the only reason such students failed to reach these more selective institutions of higher learning (Hearn 1991; Bowen et al. 2005; Pallais and Turner 2006; Hill and Winston 2010).

Critical Race Theory

Educational researchers have examined Critical Race Theory (CRT) over the past few decades through a looking glass that helped to understand inequities and injustices at the differing levels of education. CRT is an interdisciplinary theory with origins in the field of law. It is a theory that attempts to deconstruct the not-so-neutral social institutions through a more intense focus on the continuing history and continued

presence of racial oppression (Delgado & Stefancic, 2001). Scholars involved with the far reaching theory attempt to challenge a majority paradigm that treats people of color in a clearly disadvantageous manner. Such elitist behavior might include color blindness, the neutralization of race, even to some extent, meritocracy, to name a few (Crenshaw, 1994; Delgado & Stefancic, 2001).

In order to do this, CRT emphasizes the experiences of groups that historically have had their voices silenced, thus turning the focus of the conversation to the margins and supplementing critical thoughts of those who have been forced to deal with social injustice as they listened to the majority driven discussion of their minority history. This scholarship counters lesser rendering with regard to events of a given history with the truthful far more messy realities of actual everyday life.

Through cautious listening, researchers can attempt to uncover this hidden privilege that has marginalized and disadvantaged people of color. According to Solorzano and Yosso (2009), counter-stories tend to fall in the middle of society as realistic contexts are provided, having modified or massaged truths that seemingly are advantageous with regard to social equity. At the same time and perhaps as important, such a critically based stories “build[s] community among those at the margins of society by putting a human and familiar face to educational theory and practice,” which illuminates “possibilities beyond the ones they live and demonstrating that they are not alone in their position” (Solorzano & Yosso, 2009, p. 142). Solórzano (1998) has written about the five elements of CRT that include:

1. An approach that can be viewed with a transdisciplinary lens. In other words, there is preference given to an approach which crosses several disciplines on several different

planes of understanding. Educational research has been opened to a greater theoretical field of understanding as it works alongside ethnic and women's studies in particular (Dillard, 2000).

2. Experiential knowledge can be used to emphasize the depths of knowledge that students of color attain over the course of a life. This allows for the use of interviews, narratives, and testimonials in pursuing thru such information (Dillard, 2000).
3. The ability to challenge dominant ideologies. In using CRT, race and gender dominant epistemologies move the understanding of knowledge from inside the proverbial box, to outside of it. What is considered to be knowledge, now can be transferred from the official learning spaces of the classroom, toward the application of household understanding and knowledge (Delgado Bernal, 2001). 'Official knowledge' no longer necessarily needs to be the rule.
4. Centralized aspects of race, racism, sexism, and classism. It is important to study layered oppression in contrast with the ensuing layers of resistance. This research is a purposeful intersection of the above mentioned factors (Solórzano & Yosso, 2009).
5. Being committed to social justice. Research and practice that is grounded in critical race and gender epistemologies lends itself to continuous and progressive applications of social justice (Delgado Bernard, 2002).

Level of Parents' Education

The definition of FGCS has not always been consistent when looking at the literature (Spiegler & Bednarek, 2013). Definitions have varied between students with parents that have never attended college (Inman & Mayes, 1999; Ishitani, 2006) to those students whose parents have earned at least some credit from a college or university,

though short of a college degree (McCarron & Inklas, 2006; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012). The line of education can be drawn all over the page from minimal to a nearly completed degree. A further divide in such definitions speaks to the understanding that FGCS (students) come mostly from financially strapped families with lower class backgrounds. To add a further generalization to this issue, such students traditionally have been part of non-majority racial or ethnic communities (Engle & Tinto, 2008; Lohfink & Paulsen, 2005). Given the wide spectrum of variables that can be construed within such a diverse population, there is an underlying constant. It is that such students have very little family motivation to pursue a post-secondary education (Horn & Nunez, 2000; Pascarella et. al., 2004; Tate, et. al., 2015).

On the other spectrum, studies have shown that individual values and mores can offer much greater strength within families that have parents with higher degrees of education (Greenfield & Quiroz, 2013; Greenfield, Quiroz, & Raeff, 2000; Raeff et. al., 2000). When one considers obligation to family versus the degree of parental education, especially in immigrant families, responsibility to the family unit trumps education for the FGCS (Guan et. al., 2014). Niu (2014) suggests that students, who are born into higher income family units, are able to afford to attend colleges located outside the state that might have a better academic fit. This experience is more likely to promote greater experiences in post-secondary education that in turn could lead to better job possibilities.

Parents of FGCS lack a main ingredient from the outset that their children will need should they decide to pursue a post-secondary degree. That ingredient is cultural capital. Cultural capital, specifically, relates to knowledge obtained by students and/or

their families with regard to variables needed to get into and once there, achieve in college. These variables include many things such as the ability to find financial resources, develop meaningful friendships, understand the importance of achieving in educational curriculums, and the wherewithal to see the importance of participation in campus activities (Ward, Siegel, & Davenport, 2012).

Choy (2001) points out that SPCD generally move through life with a far better picture of the importance of educational attainment than that of an FGCS. In turn, FGCS are less likely to receive support or encouragement from parents or family members when considering entrance into a post-secondary institution. It is because of these facts that FGCS are less likely to attend college, much less persist once enrolled. Pike and Kuh (2005) point out that “in large part, first generation students’ lower persistence and graduation rates, and their lower scores on standardized assessment measures, are the result of differences in the precollege characteristics of first and second-generation students.” (p. 277)

Academic History

FGCS have a tendency to be less academically prepared than are SPCD (Pascarella et al., 2004). Accordingly, FGCS are not as likely to complete AP courses which could have the effect of earning valuable credits for college. This is in contrast with their SPCD peers who take greater advantage of such potential benefits (Warburton, Bugarin, and Nunez, 2001). This places FGCS at a far greater disadvantage than SPCD as they discern prospects for life beyond the secondary level (Jenkins, Miyazaki, and Janosik, 2009).

Further, research has shown that FGCS graduation rates are lower than SPCD rates (Engle & Tinto, 2008). It is pointed out that “research has shown low-income and first-generation students are less likely to be engaged in the academic and social experiences that foster success in college, such as studying in groups, interacting with faculty and other students, participating in extracurricular activities, and using support services” (Engle & Tinto, 2008,p. 3).

Instructional Environment

It is within the proper instructional environment that students determine the likelihood of making great strides in their education. The engineering and science literature encourages faculty in the promotion of class experiences that sets expectations for students to spend more time studying the source material, rather than not adhering to any pre-set guidelines (Velegol, Zappe, & Mahoney, 2015). Michael (2007) found that one of the main challenges faculty perceive is, “Active learning takes too much class time and coverage of content will suffer” (p. 43). When a classroom is flipped, traditionally, the activities performed in class and at home are also flipped. Instead of watching the lecture in class, students are asked to complete necessary preparatory work outside of class, often times in the form of an online, virtual lecture that has been prepared by the instructor. This frees up class time to allow the instructor to guide students toward completion of more interactive and constructive, activities during class periods (Lage, Platt & Treglia, 2000).

Skills, Knowledge, Attitudes, Beliefs

Family-of-origin structures and experiences have a profound impact on one's career development process (Fouad et al., 2010; Schultheiss et al., 2001; Whiston & Keller, 2004). This has obvious implications for FGCS, as it seems parents' levels of education would have a direct impact on their career goals and choices, as well as their knowledge of resources and skills to pursue their goals.

Social Cognitive Career Theory (SCCT) suggests that family and other social networks can impact individuals' career choices (Lent et al, 1994), and studies of FGCS have found that the family unit was prominent in such decisions (Fouad et al., 2010; Schultheiss et al, 2001; Whiston & Keller, 2004). Also part of this understanding was the understanding that the influence of an individual's family seemed to be connected to the idea of self. In particular, parents of FGCS offered both direct and indirect messages about self-worth, which seemed to be tied to FGCS' beliefs that they are not entitled to or appreciative of, their more realistic opportunities and career prospects. Such ideals minimize the current millennial generation's increased sense of entitlement as opposed to past generations (Greenberger, Lessard, Chen, & Farruggia, 2008).

FGCS' experiences with their parents' financial struggles could also be connected to their inclination to succeed in college or not. The wish to provide a role model for younger siblings was at times a motivation as well (Greenberger, et al., 2008). Further, though there is not a clear connection in the data, FGCS's parents' lack of knowledge" about higher education and career concerns likely is connected to their adaptability in times of crisis and need as opposed to the understanding of such necessities by their SPCD peers.

An additional and important result of the Greenberger et al. study was the students' self-conception of themselves as FGCS in particular. Reflecting on their experiences in comparison to their SPCD peers, their predominant view of themselves was as the more strongly motivated, more appreciative, and more adaptable individuals of the two groups. This study offers a more confident and self-reliant posture that FGCS perceive for themselves and in turn for their expected college experiences whenever or wherever they may come from or go to (Byrd & MacDonald, 2005). Research has pointed to the idea that, for FGCS, parental involvement is can significantly predict aspirational education (McCarron & Inkelas, 2006). One way to look at this idea would be to point toward lesser parental involvement as a possible detriment for FGCS and that students will need an alternative variable, such as mentorship, that will make up for poor parental support. Another way to view it would be to consider students with lesser parental interest and support as those having the ability of opportunity to adapt and turn career and educational goals toward a more positive direction (Tate, et al, 2015).

Variables Related to Higher Education Attainment

This section will explore some of the variables that will be analyzed from the survey results of the ELS (2002) that are primarily included in the Base Year (2002) questionnaire. The variables that were examined in this study all originate in the initial question and drive much of the analysis that will follow in the ensuing chapters. -The *Base Year (2002) data set*, administered to more than 15,000 high school students in 750 schools across the United States. Tenth-grade high school students were selected randomly within the randomly selected schools. Higher samples were pulled from non-public schools (private, and/or catholic) to ensure a like sized comparison with the public

schools (ELS, 2002). The variables from this survey that pertain to this study include school experiences, future plans after graduation, employment with regard to money and work, family involvement, as well as beliefs and opinions about oneself.

A further description of the variables under investigation in this measure, are found below and include:

Base Year (2002)

School Motivation. There are a number of studies which conclude that teachers are more likely to successfully instruct high achieving students, moving them toward higher learning processes, than they are if faced with low achieving students (Fabbi, 2015; Torff, 2008; Warburton & Torff, 2005; Zohar & Doria, 2003). The research performed suggested that students, who took higher level, even honors courses, generally were more prepared to excel upon arrival at their chosen institution of higher learning. But in these studies, it was also found that other factors that included race, language, gender, among many others, were also strong predictors of whether or not a student was successful in higher education settings.

Sports Participation. Another area that has seen little study in the past with regard to students is extra-curricular activity (ECA). This is an important area of study as ECA can have an effect on students' cultural capital which can weigh heavily on future entry into the workforce (Bourdieu, 1984, 1986; Stevenson & Clegg, 2012). Support for student involvement in such activities in turn, is a necessary value to observe. Such involvement also assumes a positive socioeconomic environment in which students are able to devote significant time to such activities without the interruption of familial responsibilities.

Students from the lower end of the socioeconomic sphere are more likely to live at home with their parents, which can put a strain on their social availability on campus. They may for instance have local, cultural, and/or religious obligations that could be prohibitive to additional campus experiences (Clegg, Stevenson, & Willott, 2010b). Additionally, there could be care-giving responsibilities within their home that could again lead to workplace responsibilities in order to offer the necessary support (Moreau & Leathwood, 2006; Tolley and Rundle, 2006).

Future Plans. Students that attend college for the first time, come with differing attitudes and expectations. Though most of them come with the intention of completing their degree, in truth, only half are likely to reach their intended mark. Nearly 95% of these incoming freshman “express a strong desire to finish a college degree” (Noel-Levitz, 2012). The ELS (2002) Base Year survey offers an even lower percentage. Figure 2.1 shows that approximately seventy percent of these high school sophomores believe they will complete a 4-year degree or greater.

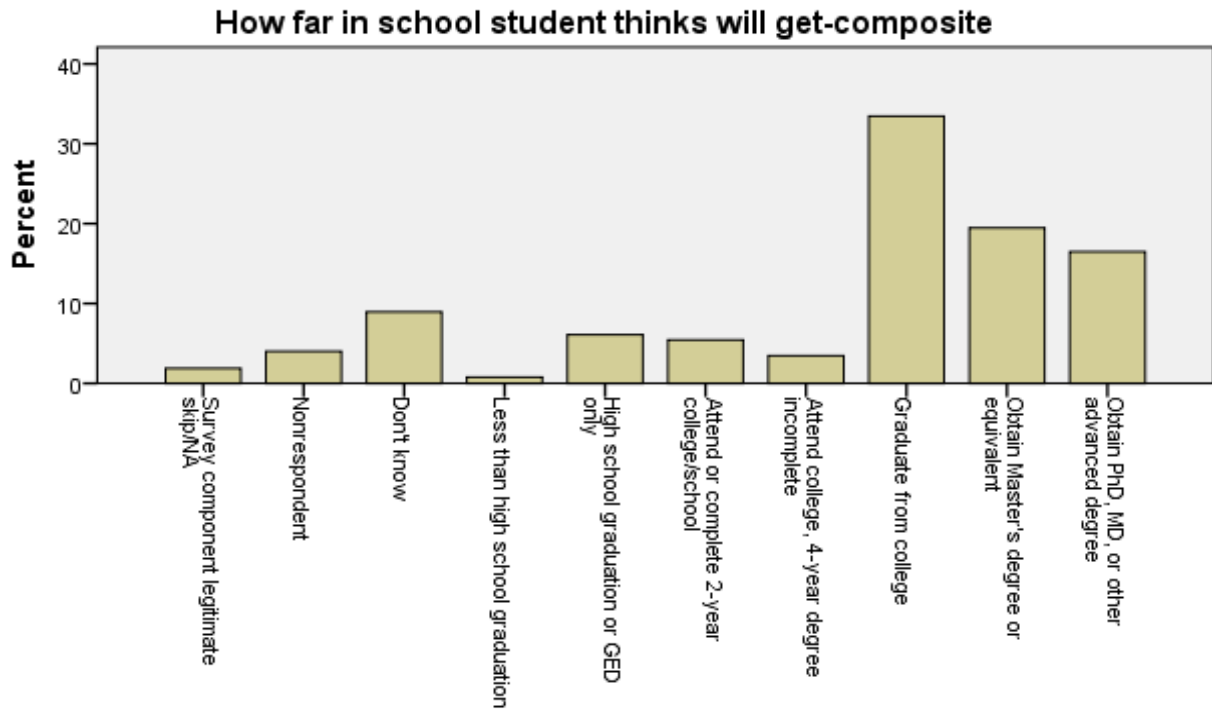


Figure 2.1
Student Expectations for College Degree Attainment
 Note: Data adapted from ELS (2002) Base Year Survey

Familial Involvement. This variable offers a closer look at a student’s home life in general. Research has shown that background knowledge, which could be characterized as a general understanding of civic events and concerns, is important with regard to comprehension of ensuing texts (Hirsch, 2006). This is important as writers have been known to omit information they believe a reader was previously made aware (Willingham, 2015). Much of such subtext is assumed to have been learned in the home.

It is often necessary to have a general understanding of a text’s subject matter prior to the actual reading of it (Schneider, Korkel, & Weinert, 1989). For example, when a sportswriter describes a baseball game, there is generally an understanding that the reader is already aware of the basic intricacies of the sport. Thus, there is a hope that

students will have access to books, newspapers, magazines, even access to computers and the internet.

Further, it has been noted that students' primary agents for socialization are their parents (Simpkins, 2015). These areas include such social functions as parental aid with homework, providing advice for a student's future and helping to create structured study disciplines and habits (Simpkins, Fredricks, & Eccles, 2015). Beliefs in their children's abilities and a concentrated interest in their future can affect those students' self-conceptual beliefs as well as their educational values (Wigfield, Eccles, Fredericks, Simpkins, Roeser, & Schiefele, 2015).

This variable also offers some insight as FGCS, who generally live within a family unit are more likely to work part-time and sometimes even full-time jobs to cover the financial costs of attaining a higher education degree. Astin (1993) suggested in his research that a student who held down a full-time job most often could expect to experience a negative outcome with regard to their collegiate performance. This, he pointed out, was particularly difficult for students as they attempted to complete a four-year degree. However, other studies observed that neither part-time employment nor full-time work off campus had negative effects. In more cases than not, it was surmised that the work had no effect at all. Further this study determined that students who had work study jobs on campus experienced positive cognitive gains from the experience (Terenzini et al, 1996).

Another study determined that a student holding a job either on or off campus enjoyed positive strides forward with regard to both practical and interpersonal competencies (Kuh, 1995). In a study dealing with first-year issues of diversity on

campus, Edison and associates (1996) observed positive results from students' work habits. To this point, there is no evidence that has been found to prove conclusively that student employment is either detrimental or beneficial to the attainment of a post-secondary education.

Research has been done in the past that places a focus on students who enter the job market and those who do not (Kim & Schneider, 2005). However, there is more to this story, namely the students who choose both to work and to study. In statistics released by the NCES in 2007, it was found that 45% of traditional students (undergraduates) maintained jobs while attending college. To further emphasize the point, it is suggested that more than 80% of students worked at least part-time (Planty et al, 2009).

It should not be surprising to find that the secondary and postsecondary life of a student is affected by employment experiences (Lee, Almonte, & Youn, 2013). Stern and Briggs (2001) actually delve into the strengths that can be gleaned from being employed while attending high school. They found insufficient evidence that could point to work while in school as a significant hindrance to their academic success. However, as with many other things studied in higher education, there are those who either partially or wholly disagree.

Confidence. There is some very interesting literature in education that discusses this variable in the context of motivational goals. Dweck and Elliott (1983) identify two types of motivational goals that include: (1) performance goals, and (2) learning goals. It is pointed out that individuals are positioned with one or the other generally determined by where they view themselves on the intelligence continuum (Dweck & Leggett, 1988).

Simply stated, if students believe their intelligence quotient is fixed and that they are unable to elevate to a higher level of cognition, then they are considered to be performance-goal oriented (Dweck & Leggett, 1988). Accordingly, other students, who believe that they can learn and thus improve upon their intellectual standing with added effort, are motivated by learning goals (Dweck & Elliott, 1983).

Students who spend a great deal of time attempting to prove their already (theoretically) superior intellects, open themselves to vulnerability when failure enters the equation (Elliott & Dweck, 1988). In turn, students whose goals are learning oriented, see increased effort as a direct means to gaining greater intelligence (Elliott & Dweck, 1988). What is interesting here, however, is the fact that standardized tests do not reveal differences in competencies between the learning and performance camps (Livengood, 1992).

Questions asked in the ELS (2002) Base Year Survey include that of how confident a student is in taking math and English tests. Another question/statement regards how confident a student is when it comes to learning new and complex material. Still other questions regard the perceived study habits of fellow students in their class.

Conclusion

The methodology that will be used in the chapters that follow will examine experiences of FGCS and SPCD communities as they persist to completion of four-year college degrees. More particularly, students' motivation in school, participation in extra-curricular sports and intramural activities, plans for the future, general confidence in their abilities, and ties to familial conditioning will be extracted from the ELS (2002) data. In

Chapter Three, the methodology, research design, and instrumentation will be discussed in further detail.

CHAPTER 3

METHODOLOGY

Introduction

The methods used in this research study explored the differences that first generation college students (FGCS) and students with parent(s) who have a college degree (SPCD) encounter as they contemplate and eventually actualize (or not) their postsecondary experiences. The items included within this chapter include the research questions, the hypotheses, research design, setting, instrumentation, sample breakdown, and the overall foundation of the quantitative analyses. Issues of reliability will also be addressed.

The reason for this study centers on the attitudes, expectations, and aspirations that students employ as they follow their educational path up to completion of a four-year college degree. There are many factors that can determine whether a student will attend an institution of higher learning and further, whether those students will persist through to completion of the four-year degree. This study seeks a clearer understanding of the ways that these issues are perceived by students whose parents have high levels of educational attainment, and the ways the same issues are perceived by students whose parents have lower levels of educational attainment.

Quantitative methods were used in this study to address the research questions and hypotheses. There were four rounds administered for students within the Education Longitudinal Study of 2002 (ELS) implemented by the U.S. Federal government, and these serve as the instruments for the study (ELS, 2002). These were different phases conducted within the ELS 2002 survey, the first being the Base Year (2002). The First Follow up (2004) was put in place to collect identifying data, including transcript

information, and to solicit new information from students who were administered the original survey. As transcript and other restricted data are not utilized in this study, only a minimal number of cases were added to the base year sample for the purposes of these analyses. The third phase of the ELS involved the Second Follow Up (2006) questionnaire. From this phase, it was learned which students started a post-secondary education. The final phase, known as the Third Follow Up (2012) was utilized in the final analysis to determine which students completed a four-year college degree, and those who did not complete the four-year degree.

The questions that are investigated in this study include:

Research Question 1

How do school motivation, plans for the future, familial involvement, confidence, sports participation, race, gender, and parental education, differ for both First Generation College Students (FGCS) and students whose parents have a bachelor's degree (SPCD), in persistence to completion of their four-year college degree?

Research Question 2

Are there significant differences between first generation college students (FGCS) and students whose parents have a bachelor's degree (SPCD) as they persist to completion of their four year college degree?

Hypotheses

This study will address two hypotheses as follows:

1. There is a significant difference when one controls for school motivation, plans for the future, familial involvement, confidence, sports participation, race, gender,

and a parent's level of education, for both FGCS and SPCD students in completion of a four-year college degree.

2. There are significant differences in persistence to completion of college between FGCS and SPCD students.

The factors used in this study include experiences of students at their secondary institutions, student learning skills with regard to homework, student confidence and motivation both for education and in what the future holds, sports and extracurricular participation, and familial investment in a student's attainment of education. This study seeks to provide a clearer understanding of each factor and how it pertains to students from family backgrounds with different levels of educational attainment. The findings will offer some important descriptions of the general differences between the FGCS and SPCD experience that pertain to the educational spectrum in higher education.

A Principal Component Analysis (PCA) was used to insure that the variables that have been selected sufficiently contribute to the constructs that are part of this study. Once the variables were analyzed for fit, a total of three Binary Logistic Regressions were performed. The precise reason that socioeconomic factors were not addressed in this study concerns the fact that they are part of the Parent Questionnaire, a separate entity which is not being considered within the breadth of this study. The factors investigated here will focus on cognitive aspects of student motivation and persistence. There will be intent to add to the literature that measures parental and familial involvement in a student's successes and failures in higher education. In relation to issues regarding gender and race/ethnicity, the data will be studied more directly as variables that are part of the logistic regression analysis.

Research Design

This study utilized data from the Education Longitudinal Study of 2002 (ELS 2002). The survey was sponsored by the U. S. Department of Education National Center for Education Statistics (NCES). The survey was conducted by RTI International, a research and technical service organization that provides the federal government with education and training resources to include survey and statistical implementations. The study is a nationally representative longitudinal study of 10th grade high school students that began in 2002. The full study was carried through four phases, the final phase concluding in 2012.

The sample was divided into two groups in terms of the variable for parental education and compared in the analyses of the constructs. The first group was first generation college students (FGCS). For the purposes of this study, FGCS is defined as those students whose parents did not attain a four-year degree. The other group used for this comparison included those students (SPCD) who have at least one parent who has attained a bachelor's degree or higher.

This quantitative study employed standards for validity and reliability associated with Binary Logistic Regression. Survey research differs from studies involving testing because the information that is collected using testing processes tends to be more accurate when collected (Gall, et. al., 2007). An example of this survey data might be the number of years an individual spends taking math courses.

Instrumentation

The Education Longitudinal Study of 2002 (ELS 2002) questionnaires from 2002 and 2006 selected for this study offer several advantages. First, they are part of a large

survey data set. The cost of sampling respondents can be expensive. The larger the sample, and the larger the geographic area, the larger the costs can grow. These costs are minimized with use of a large data set pulled from a study collected by the federal government and stored in NCES. The reason that a questionnaire tends to be more commonly used in quantitative research than face to face interviews (focus groups as well as individual interviews) is because such data are more “standardized” and have a “highly structured design that is compatible with quantitative methods” (Gall, et al, 2007, p. 229). The Base Year (2002) questionnaire used in this study included the following variables:

1. School motivation – This variable is addressed in the questionnaire and includes nine questions. Sample Likert questions include:
 - a) I go to school because I think the subjects I’m taking are interesting and challenging.
 - b) I go to school because education is important for getting a job later on.
 - c) I go to school because I have nothing better to do.

Note: Choices include Strongly Agree, Agree, Disagree, and Strongly Disagree.

2. Sports Participation – This variable is addressed in the questionnaire and includes eight questions. A sample question and individual sports with Likert style choices include:
 - For the following items, intramural means competition between team or students within the same school. For each sport listed below, indicate whether you participated on an intramural team in this sport during the school year.

- a) Baseball
- b) Basketball
- c) Cheerleading, Pompom, or Drill Team

Note: Choices include: School does not have intramural team, Did not participate, and Participated in intramural sports.

3. Future Plans – This variable is addressed in the questionnaire and includes 15 questions.

A sample question with Likert style choices include:

- How important is each of the following to you in your life?
 - a) Being successful in my line of work.
 - b) Finding the right person to marry and having a happy family life.
 - c) Being able to find steady work.

Note: Choices include: Not important, Somewhat important, and Very important.

4. Familial Involvement – This variable is addressed in the questionnaire and includes nine questions. A sample question and individual items with Likert style choices include:

- In the first semester or term of this school year, how often have you discussed the following with either or both of your parents or guardians?
 - a) Selecting courses or programs at school.
 - b) Things you studied in class.
 - c) Going to college.

Note: Choices include: Never, Sometimes, and Often.

5. Confidence – This variable is addressed in the questionnaire and includes 22 questions.

A sample question and individual items with Likert style choices include:

- How often do these apply to me?

a) I'm certain that I can understand the most difficult material presented in math texts.

b) When studying, I try to work as hard as possible.

c) If I want to do well, I can.

Note: Choices include: Almost never, Sometimes, Often, and Almost always.

The second follow up (2006) questionnaire was used in this study to determine the number of students that persisted to the second year of their post-secondary careers.

Survey Respondents

The original sample (Base Year 2002) pulled information from 750 schools across the United States. There were a total of 16,197 students who answered questionnaires during their 10th grade year of high school. That total included 7,545 reported male students and 7,638 reported female students. There were 1,014 students who originally participated in the survey that did not enter a response.

Broken down by race, the sample (BY2002) reported 130 Indian/Alaska natives (non-Hispanic), 1,460 Asian, Hawaii/Pacific Islanders (non-Hispanic), 2,020 Black or African Americans (non-Hispanic), 996 Hispanics (no race specified), 1,221 Hispanics (race specified), and 8,682 Whites (non-Hispanic). There were 735 students who reported as more than one race (non-Hispanic), and 953 students who did not give a response in the category.

The second follow up questionnaire (2006) included 10,534 students who reported that they did start college after high school, while 3,503 reported that they had not yet attended a post-secondary institution. From the second follow up, 8,904 students moved forward into post-secondary education that responded to the survey. Thus, through attrition, approximately 46.4% of students who were part of the original survey sample, by 2006, were no longer considered. Looking forward, the third follow up eliminated students who did not complete their four-year degree. It is from the student questionnaire and at this phase that student persistence is examined relative to higher education experiences.

Demographic Characteristics

Though the study's primary aim is to explore FGCS and SPCD student levels of educational attainment, it will also be important to examine other variables including those pertaining to race and gender. Are there differences in educational attainment with regard to males and females or among students from different racial backgrounds? These are issues that also are explored in this study. Tables 3.1 and 3.2, offer a glimpse into the breakdowns of this demographic information from survey respondents.

Table 3.1

Student Population by Gender (Base Year 2002 Survey Questionnaire)

	<u>Frequency</u>	<u>Percentage</u>
Survey Component Legitimate skip/NA	179	1.1
Non-respondent	648	4.0
Male	7653	47.2
Female	7717	47.6
Total	16197	100.0

Table 3.2

Student Population by Race (Base Year 2002 Survey Questionnaire)

	<u>Frequency</u>	<u>Percentage</u>
Survey Component Legitimate skip/NA	305	1.9
Non-respondent	648	4.0
Amer. Indian/Alaska Native, Non-Hispanic	130	.8
Asian, Hawaii/Pacific Islander, non-Hispanic	1460	9.0
Black or African American, Non-Hispanic	2020	12.5
Hispanic, no race specified	996	6.1
Hispanic, race specified	1221	7.5
More than one race, non- Hispanic	735	4.5
White, non-Hispanic	8682	53.6
Total	16197	100.0

Data Analysis

Data analysis for this quantitative study was conducted using the IBM SPSS Statistical Analysis program (IBM Corp., 2013). Both descriptive statistics and the use of processes to determine statistical significance were utilized for this study. In seeking to analyze the data within the ELS (2002) instrument, it was first be necessary to identify all students whose parents had not achieved a four-year degree at the time of this study. Next, students who have at least one parent who attained at least a four-year degree were selected. The variable of interest that is being discussed here is that of the parent or parents' attainment of a four-year degree or higher. This was coded as a dichotomous variable (0 = no degree, 1 = degree). Thus, of the 16,197 students who were surveyed in the base year student questionnaire, 9,894 were placed in the category of students whose parents have not completed college (0, degree), and 6,303 were placed in the category of students who had at least one parent who completed a college degree or a higher degree (1, degree). Table 3.3 offers a breakdown of students' parents' highest level of education. This includes student respondents with some missing, skipped, and non-responder questions. Including these numbers as part of the sample allows for an understanding of the true count of students surveyed here.

The students' gender and racial categories were used to disaggregate the data during the analysis phase. In answering the research questions, race and gender considerations explored during the analysis were important to the discussion of findings.

Table 3.3
Parents' Highest Level of Education

	<u>Frequency</u>	<u>Percentage</u>
Missing	49	.3
Survey Component Legitimate skip/NA	179	1.1
Non-respondent	648	4.0
Did not finish high school	944	5.8
Graduated from high school Or GED	3,053	18.8
Attended 2-year school, No degree	1,666	10.3
Graduated 2-year school, Associate degree	1,597	9.9
Attended college, no 4-year Degree	1,758	10.9
Graduated from college	3,468	21.4
Completed Master's degree Or equivalent	1,786	11.0
Completed PhD, MD, or other Advanced degree	1,049	6.5
Total	16,197	100.0

After using descriptive statistics to examine the differences between gender and racial student groups, a factor analysis was conducted.

A factor analysis verified that the grouped questions pulled from the base year (2002) survey correlated with the factor presented and researched in the study. This factor takes the form of a linear model (Field, 2013; Warner, 2008). Analyses were

performed for all latent variables in the study's factorial design. From the results of this research design, a Binary Logistic Regression model was constructed.

In using this type of logistic regression, it is necessary that the outcome variables are categorical (Warner, 2008), in other words they must fall into distinct categories. This analysis sought to prove that the variables in question either do belong or do not belong in the group. These dichotomous factors either show positive or negative impact when plugged into the regression model. From the results of these two logit tables, comparison between that of the FGCS model and the SPCD model was performed.

There were some descriptive analyses performed in the course of this study as well. The questions used for the factor analysis in this study are Likert in style. A Likert scale question is "a 3 to 5-point rating scale (where the five response alternatives correspond to 'degrees of agreement' with a statement about attitude, belief, or behavior" (Warner, 2008, p. 9). From these questions and the variables that they are connected to, the means and standard deviations of the FGCS and SPCD groups also were observed. Discussion of issues regarding race and gender also can be associated with this descriptive analysis.

The analysis t tested for significant differences between the FGCS and SPCD groups using Binary Logistic regression. The alpha level used to test for significance was at $p < .05$, which is the probability that a Type I error might occur regarding the Hypotheses that are being tested here (Field, 2013; Warner, 2008). Further, this is "the probability value that is used to define the concept of very unlikely in a hypothesis test" (Gravetter & Wallnau, 2013, p. 238). The size of the study sample makes such an error unlikely at the prescribed significance level (Warner, 2008).

Independent Variables

The independent variables of interest for this study were pulled from the constructs developed within the base year questionnaire. They include the parts of each Questionnaire described earlier in this chapter and in Chapter One:

- 1) School Motivation
- 2) Sports Participation
- 3) Future Plans
- 4) Confidence
- 5) Familial Involvement
- 6) Race
- 7) Gender
- 8) Parental Education

Dependent Variable: Student Persistence to a Four-year Degree

The underlying issue explored using these data from the Questionnaires centers on positive student achievement in higher education and the support necessary to attain it. By separating students into groups who have parents with differing levels of education, a snapshot can be posed that may offer some indication, if not evidence that parental educational attainment is associated with student achievement either positively or negatively with regard to the student's attainment of higher education. The dependent variable, whether students attained a four-year degree, or they did not, is dichotomous, and it is being controlled for in the Binary Logistic regression procedures using the independent variables listed above. The results will not support a causal relationship, but tests the significance of each of the variables in predicting student persistence to a four

year degree, and how much of the variance in persistence each variable accounts for when measured in the regression model. A comparison of these two groups of students can offer several possible indicators that support higher education attainment. Ultimately, the final snapshot will look at these factors and how they contributed to student completion of a four-year college degree.

Limitations

Large datasets such as the ELS 2002, which uses survey questions to collect information related to issues such as student motivation and confidence, parent involvement, and extracurricular activities, have limitations that are apparent upon close examination. In these research designs, any time that an inference is made with regard to causality and a given dataset, caution must be considered paramount (Gall et al., 2007). It should further be noted that the ELS 2002 used obtrusive measures thus to some extent weakening the validity of the study. This means that students were expected to take the survey and answer the questions honestly and to the best of their ability, but there is no way to know whether they did so. To address such concerns in this study, the statistical procedure Cronbach's Alpha was performed in order to measure the reliability of the constructs being studied.

Conclusion

There is a great deal of data included within the ELS (2002), and to imply that any one variable can be the deciding factor relative to higher education attainment would be unjustified. This study intended to analyze the data in a way that shows the relationships between parental educational attainment and student higher education attainment in association with different variables measured through the survey.

There are previous studies conducted using ELS 2002 data that share an interest in cognitive implications albeit with differing perspectives. Studies have been performed regarding parental involvement and academic performance (Fan & Williams, 2010; Hae & Bonner, 2008; Kushner & Cho, 2007; Park & Bonner, 2008). Additional research has been performed to explore gender and racial issues when posed alongside extracurricular activities and other social capital that individual students experience in education (Dee, Ha, & Jacob, 2007; Dumais, 2006, 2009; Feldman & Matjasko, 2005; Mohammad & Dixon, 2008; Seifert, Park, Padgett, & Umbach, 2010; Wells, 2008;).

There are more possibilities for further study of these data and of the expansive ELS 2002 dataset in the future. Further, this examination of the data in this study is but one additional contribution to be offered to other researchers in the future. Chapter Four will provide a detailed account of the findings from the quantitative analyses relative to the research questions and hypotheses. Chapter Five will conclude with a discussion of these findings and recommendations for future research and solutions that improve the student experience, no matter their background, in the attainment of a higher education.

CHAPTER 4

RESULTS

Introduction

The purpose of this study is to examine factors that may be related to an increase or decrease in rates of persistence to completion of a four-year college degree. Variables of specific interest include a students' degree of motivation to attend school, participation in intramural sports, students' plans for the future, and the degree of confidence in their abilities. In particular, First Generation College Students (FGCS) and students who have parents that completed a four-year college degree (SPCD) are of interest. This study also investigated the importance of student characteristics such as race and gender relative to higher education attainment.

The work of Tinto (1993) and Astin (1987) suggests that the variables listed above likely play a role in determining persistence to completion of four-year degrees in higher education. In facilitating this research study, data from the Education Longitudinal Study of 2002, available on the National Center for Education Statistics website, were examined using selected questions from the Base Year (2002), additional student cases that were added in the First Follow up (2004), the cases of students who decided to go to college based upon the Second Follow up (2006), and the students who had completed at least a four-year college degree as reported in the Third Follow up (2012) questionnaires.

The original sample used for the ELS (2002) Base Year Student Survey included 16,197 students who were completing their sophomore year of high school. These students attended 750 high schools distributed across the United States. Of that group of

students, there were 15,244 eligible cases. Though there were a few students who were given the original survey as part of the First Follow up (2004) phase of the government study, the main function of this phase was the compilation of student transcripts. There was no use of student transcripts or restricted data in the performance of this research study. The Second Follow Up (2006) phase of the ELS (2002) was also used in conducting this study to analyze levels of higher education attainment. The Third Follow Up (2012) phase of the ELS (2002) was not used in this study.

Table 4.1, followed by Figure 4.1 below shows the frequency and percentage breakdown as to the number of valid participants ($n = 15,244$).

Table 4.1

Base year status and how sample member entered F1 sample

<u>Classification</u>	<u>Frequency</u>	<u>Percentage</u>
Base Year Participants	15,244	94.1
Base Year Non-participants	649	4.0
BY Questionnaire Ineligible	126	.8
F1 Freshened sample member	178	1.1
Total	16,197	100.0

Table 4.1 describes the actual number of students who participated in the initial survey questionnaire during the Base Year (2002), or their senior (First Follow up 2004) year of high school. It explains that of the 16,197 students who had been randomly selected to participate in the study, 15,244 base year participants, and 178 participants from the First Follow up (2004) actually completed the task. The remaining 775 students either failed to participate in the study, or turned over ineligible questionnaires.

This set of students ($n = 15,422$) were asked in the Second Follow up Survey (2006) if they had started an education at the post-secondary level. From this question and at this point, 8,904 students were found to have started a post-secondary educational

path of some kind. Table 4.2 will show the member status of these students as the Second Follow up (2006) is administered.

Table 4.2
Sample member status at time of Second Follow up (2006)

Classification	Frequency	Percentage
BYR F1R F2R ^{a.}	8,570	96.2
BYR F1NR F2R ^{b.}	306	3.4
BYR F1QS F2R ^{c.}	13	.1
BYI F1R F2R ^{d.}	10	.1
BYI F1IE F2R ^{e.}	3	.0
Other	2	.0
Total	8,904	100.0

- a. Base Year (2002), First Follow Up (2004), Second Follow Up (2006)
- b. Base Year (2002), First Follow Up (2004) No Response, Second Follow Up
- c. Base Year (2002), First Follow Up (2004) No Questionnaire (Transcript Only)
- d. Base Year (2002) Incomplete, First Follow Up (2004), Second Follow Up (2006)
- e. Base Year (2002) Incomplete, First Follow Up (2004) Ineligible, Second Follow Up (2006)

Table 4.2 portrays the actual number of students who participated in the initial survey during either their sophomore (Base Year 2002), or their senior (First Follow up 2004) year of high school, and then made the decision to continue on into a post-secondary education. It further breaks down the number of students that completed all phases of the ELS (2002) survey through the first three rounds. Of the 8,904 students, there were 8,570 that successfully completed the first three rounds of the survey. There were 334 cases in which students did not complete at least one of the phases.

Table 4.3
Sample by gender at time of Third Follow up (2012)

Classification	Frequency	Percentage
Male	2444	42.4
Female	3315	57.6
Total Degrees	5759	100

Table 4.4
Sample by race/ethnicity at time of Third Follow up (2012)

Classification	Frequency	Percent
American Indian	27	0.5
Asian	608	10.6
African American	505	8.8
Hispanic	321	5.6
Multiracial	249	4.3
White	3804	66.1
Total Degrees	5759	100

The final stage of the ELS study utilized data from the Third Follow Up (2012) round of the instrument. At this point, the sample was reduced to 5,759 student cases. A breakdown of these cases by gender and race are provided in Tables 4.3 and 4.4 above. These cases included all students who offered information that pertained to each of the variables being used in the study. If a case had missing data on any of the variables, the case was excluded from the study. Finally, the data in this round included students who had completed a four year degree, along with completing every phase of the ELS study.

In this chapter, the results of the statistical analyses that were selected to determine the answers to the research questions and hypotheses introduced in Chapter One will be presented. SPSS software was used to conduct the necessary procedures to attain the completed results.

Data Analysis

This study began by using a Principle Component Analysis (PCA) to insure that specific items answered in the ELS (2002) survey are compatible with the specific constructs that are to be examined here. Originally, the methods for this study planned to use a factor analysis to verify that the grouped questions pulled from the base year (2002) survey correlated with the factor presented and researched in the study. The reason the component analysis was used as opposed to the factor analysis discussed in Chapter Three is because as Meyers, Gamst, and Guarino (2013) point out, principal components can be viewed as latent variables or “composites descriptive of the information contained in the measured variables” that are part of the analysis (p. 662). In essence, these components can be described as arising out of the measured variables contained in the instrument. This process is generally used when one wants to reduce a somewhat large number of variables to a smaller amount capable of capturing the same information (Leach, Barrett, & Morgan, 2015).

Once the PCA was completed and reliability tested using Cronbach’s Alpha, the variables for school motivation, a student’s future plans, familial involvement, and a student’s confidence were entered into the logistic regression model, along with variables of race, gender, and parental education, to two opposing regression models, one that showed results of significance involving First Generation College Students, and another that showed the results of significance for students whose parents have a four-year college degree. These models achieved results that attempted to answer Research

Question One. In answering Research Question Two, a final logistic regression model involving both types of students was completed.

Binary Logistic regression was used because the dependent variable, whether students attained a four-year degree, or they did not, is dichotomous, and it is being controlled for using the independent variables. The results of this regression analysis tests the significance of each of the variables in predicting student persistence to a four year degree, and identifies the amount of the variance in persistence each variable accounts for when measured in the regression model.

The Principal Component Analysis

A principal component analysis of the variables, including school motivation, students' future plans, familial involvement in students' educational attainment, and students' confidence in their educational skills was conducted for this study. The reason for this analysis is to ensure that the items contained in the ELS (2002) study being examined captured information compatible with the constructs included in Research Question 1 and Hypothesis 1. The remainder of the variables, including parental education, sports participation, race and gender, were treated as dichotomous variables.

Research Question 1

How do school motivation, plans for the future, familial involvement, confidence, sports participation, race, gender, and parental education, differ for both First Generation College Students (FGCS) and students whose parents have a bachelor's degree (SPCD), in persistence to completion of their four-year college degree?

Hypothesis 1

There is a significant difference when one controls for school motivation, plans for the future, familial involvement, confidence, sports participation, race, gender, and a parent's level of education, for both FGCS and SPCD students in completion of a four-year college degree.

Variables

School Motivation

This four-point scale measured the items in terms of a student's inclination to strongly agree, agree, disagree, and strongly disagree. There were nine questions (items) included on the survey. The items were reverse coded to show that low scores mean low motivation and high scores are to mean higher motivation. The possible range of the scale was nine to thirty-six. Table 4.5 shows the percentage of variance for each item analyzed in the model.

Table 4.5
School Motivation Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.856	31.729	31.729	2.093	23.254	23.254
2	1.448	16.09	47.819	1.81	20.114	43.368
3	1.04	11.55	59.369	1.44	16.001	59.369
4	0.877	9.742	69.111			
5	0.791	8.791	77.901			
6	0.634	7.044	84.945			
7	0.539	5.986	90.932			
8	0.446	4.954	95.885			
9	0.37	4.115	100			

The Total Variance Explained for the latent variable, School Motivation in Table 4.5 indicates what components are to be rotated. Note that the first three components in the table explain 59.37% of the total variance.

The PCA regarding the latent variable for students' school motivation was performed using a Varimax and Kaiser Normalization which considered whether the variable clusters were compatible with the latent factor that was to be studied of school motivation. Of the nine variables that included class interest, satisfaction with doing what's expected, teacher and parent expected success in school, the importance of getting a job as well as skills for a job, as well as social integration variables. Three components were then rotated, based on the eigenvalues over 1 and the results shown in Figure 4.5. The eigenvalue is representative of the best fit of the line to the data points on the table (Meyers, Gamst, & Guarino, 2013; Warner, 2008). After the rotation, the first rotation accounted for 31.72% of the variance, the second component accounted for 16.09%, and component three accounted for 11.55 % of the variance. Table 4.6 displays the items and component loadings as they were rotated. The remaining components whose eigenvalues were less than one, as shown in Table 4.5 and underscored in Figure 4.1, were excluded from further analysis.

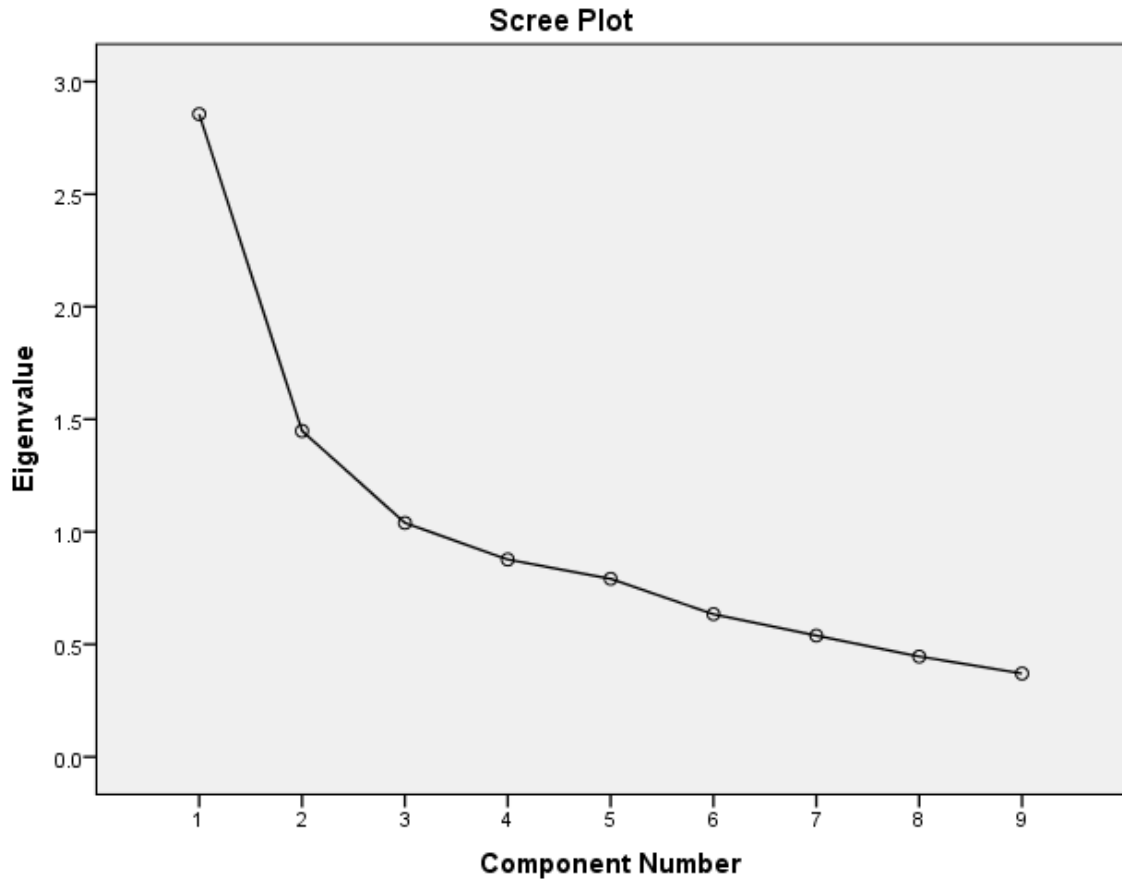


Figure 4.1
Scree Plot for Component Matrix for School Motivation

Table 4.6
Component Loadings for the Rotated Components

Item	Component Loading		
	1	2	3
Classes are interesting/challenging	.872		
Satisfied by doing what's expected	.846		
Teachers expect success in school		.435	
Parents expect success in school		.798	
Education is important to get a job		.735	
Learns skills for job in school		.596	
School is place to meet friends			.784
Plays on a team or belongs to a club			.647
Has nothing better to do than school			.602

In looking at the results in Table 4.6 above, it shows in the development of the scale that school motivation is in fact a favorable, though also a multi-dimensional construct. After completion of the PCA, three distinct components emerged. Keys to this latent variable's makeup included the following components: (1) student success, (2) expectation and importance of learning, and (3) social integration in an educational setting. All of the loadings were relatively high, though "teachers expect success in school" was marginal with a calculation of .435. The decision was made to cut one item (Has nothing better to do than school) that did not seem to fit with the other items and/or components in the model. These results of the PCA suggested that the three components form a coherent latent variable to be used in the regression model.

Reliability.

When working with inferential statistics, it is important to insure that the reliability of the data being used is high. Determination of high or low reliability is critical in moving forward with these measures. It is necessary that the level of reliability

that is assessed in the data being used garners a high, rather than a low level statistically. It is further assumed that all of the items being included are measures of the same construct (Field, 2013; Leach, Barrett, & Morgan, 2015; Meyers, Gamst, & Guarino, 2013; Warner, 2008).

In order to look at the reliability of the final eight variables that were combined to create the latent variable school motivation, the Cronbach's Alpha computation was used. In analyzing this and other reliability coefficients, it is necessary that the alpha be above .70, though it is often common to find article submissions that include scales that are somewhat lower in the .60 to .69 range (Leach, Barrett, & Morgan, 2015). Another effect of cutting the last variable was that it actually increased the reliability above the threshold discussed, for the PCA model. Table 4.7 shows that the alpha score was .725. This suggests that the items form a scale that has a reasonably consistent level of reliability.

Table 4.7
Reliability Statistics of Cronbach's Alpha for School Motivation

<u>Cronbach's Alpha</u>	<u>N of Items</u>
.725	8

Once the reliability of the model was completed, the frequencies for the student responses were established. Table 4.6 offers the breakdown of responses in this three point scale. In the final factorial analysis, and using the scoring guidelines for the ELS (2002) study, higher scores indicated that a student was highly motivated to attend school, while lower scores suggested a lesser motivation. Using the language of this instrument, a less motivated student would be representative of a score of 8 to 14. A score in the range of

15 to 17 could suggest average motivation by a student. Finally, scores in the range of 18 points or higher could explain a high motivation for school attendance and performance.

Table 4.8
Frequencies for School Motivation

Responses	Frequency	Percent
8	52	0.6
9	22	0.2
10	149	2.6
11	266	4.6
12	379	6.6
13	514	8.9
14	632	11
15	680	11.8
16	736	12.8
17	648	11.3
18	505	8.8
19	400	6.9
20	306	5.3
21	168	2.9
22	92	1.6
23	43	0.7
24	35	0.6
25	23	0.4
26	18	0.3
27	10	0.2
28	12	0.2
29	8	0.1
30	3	0.1
31	2	0.1
32	6	0.1
Total	5759	100

Table 4.8 above shows the final rotation and results of the school motivation variable. Any survey using the future plans variable that submitted fewer than a score of 8, which meant all questions had not been submitted, and did not persist to graduation with a four year degree, were excluded from the final model.

Future Plans

This three-point scale measured the items in terms of a student's implication that the variables were not important, somewhat important, or very important. The items were coded respectively from one to three. Table 4.9 shows the percentage of variance for each item analyzed in the model.

Table 4.9
Future Plans Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.321	23.725	23.725	2.194	15.67	15.67
2	1.439	10.278	34.002	2.068	14.772	30.441
3	1.231	8.794	42.796	1.579	11.28	41.722
4	1.171	8.367	51.163	1.322	9.441	51.163
5	0.98	7.001	58.164			
6	0.866	6.183	64.347			
7	0.816	5.829	70.177			
8	0.68	4.854	75.03			
9	0.666	4.76	79.791			
10	0.641	4.579	84.37			
11	0.603	4.307	88.676			
12	0.587	4.194	92.87			
13	0.55	3.931	96.801			
14	0.448	3.199	100			

The Total Variance Explained for the latent variable, Future Plans in Table 4.9 indicates what components are to be rotated. Note that the first four components in the table explain 51.16 percent of the total variance. The scree plot in Figure 4.2 also shows the Eigenvalues, and coupled with Table 4.9; both support the conclusion that these items can be reduced to four components.

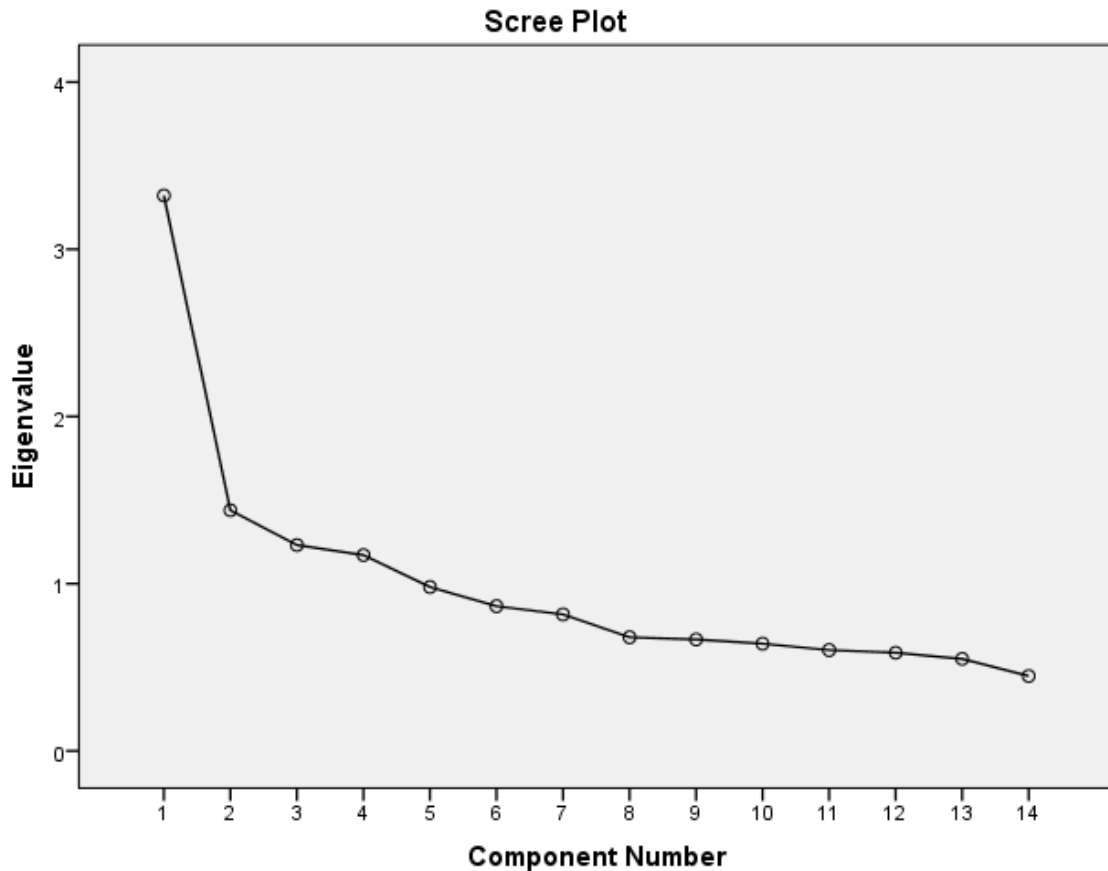


Figure 4.2
Scree Plot for Component Matrix for Future Plans

The PCA regarding the variable for students' future plans also used a Varimax and Kaiser Normalization to look at whether the variable clusters were compatible with the latent variable to be studied of future plans. The fourteen items being reduced to four components included the importance of marriage and family, the importance of having children, the importance of strong friendships, the importance of opportunities for their children, the importance of being successful in their work, the importance of a good education, the importance of finding steady work, the importance of being an expert in their field, the importance of work to correct equality, the importance of community outreach, the importance of living near parents and relatives, the importance of moving away from the area, the importance of having lots of money, and the importance of

leisure time. The final variable regarding leisure time was excluded from the final analysis as it offered no improved consistency to the construct and/or latent variable being placed in the logistic regression model.

The four components were then rotated, based on the eigenvalues over 1 and the results shown in Figure 4.2. After the rotation, the first rotation accounted for 23.72 percent of the variance, the second component accounted for 10.28 percent, component three accounted for 8.79 percent of the variance, and component four accounted for 8.37 percent of the variance. Table 4.10 displays the items and component loadings as they were rotated. The components that remained whose eigenvalues were less than one, also shown in Table 4.9 and underscored in Figure 4.2, were not analyzed further for the study.

Table 4.10
Component Loadings for the Rotated Components

Item	Component Loading			
	1	2	3	4
Import of marriage/family	.776			
Import of having children	.768			
Import of strong friendships	.532			
Import of better opps for children	.481			
Import of success in work		.762		
Import of good education		.689		
Import of finding steady work		.628		
Import of being expert in field		.623		
Import of work to correct inequality			.809	
Import of community outreach			.723	
Import of living near parents/relatives			.455	
Import of moving away from area				.737
Import of having lots of money				.576
Import of leisure time				.482

In looking at the results in Table 4.10 above, it shows in the development of the scale that students' future plans are in fact favorable and as with school motivation, a multi-dimensional construct. Again, upon completion of the PCA, in this instance four distinct components emerged. Keys to this latent variable's makeup included: (1) internal self-efficacies, (2) external self-efficacies, (3) personal and social justice, and (4) issues regarding status. All of the loadings were relatively high, though "importance of giving children better opportunities, importance of living close to parents," and the "importance of having leisure time" were marginal with calculations below .50 on the scale. As with the last scale, the decision was made to cut an item (Importance of moving away from home) that did not seem to be compatible with the other items and/or components. The results of the PCA showed that the four components formed a latent variable that could be added into the regression model. In the same manner as was performed above for the school motivation variable, analyses were performed with regard to reliability (Table 4.11) and as well as frequencies (Table 4.12) below.

Reliability.

Table 4.11
Reliability Statistics of Cronbach's Alpha for Future Plans

<u>Cronbach's Alpha</u>	<u>N of Items</u>
.728	13

Table 4.12
Frequencies for Future Plans Variable

Responses	Frequency	Percent
13	3	0.1
17	1	0
18	3	0.1
19	5	0.1
20	3	0.1
21	12	0.2
22	6	0.1
23	22	0.4
24	33	0.6
25	44	0.8
26	86	1.5
27	106	1.8
28	157	2.7
29	196	3.4
30	287	5
31	403	7
32	524	9.1
33	637	11.1
34	787	13.7
35	854	15
36	698	12.1
37	478	8.3
38	262	4.5
39	142	2.5
Total	5759	100

Familial Involvement

This three-point scale measured the items in terms of a student's implication that the variables were never, sometimes, or often discussed with family members. The items were coded respectively from one to three. Table 4.13 shows the percentage of variance for each item analyzed in the model.

Table 4.13
Familial Involvement Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.901	43.343	43.343	3.869	42.987	42.987
2	1.026	11.399	54.742	1.058	11.755	54.742
3	0.78	8.665	63.407			
4	0.711	7.902	71.309			
5	0.673	7.474	78.783			
6	0.577	6.416	85.198			
7	0.505	5.611	90.809			
8	0.427	4.746	95.555			
9	0.4	4.445	100			

The Total Variance Explained for the latent variable, Familial Involvement in Table 4.13 indicates what components are to be rotated. Note that the first two components in the table explain 54.74 percent of the total variance. The scree plot in Figure 4.3 also offers evidence concerning the Eigenvalues, and coupled with Table 4.13, the conclusion is supported that these items can be reduced to two components. Given further consideration of the weakness of the second component and its actual contribution to the model, it (the second component) was excluded from the familial involvement variable in the final analysis.

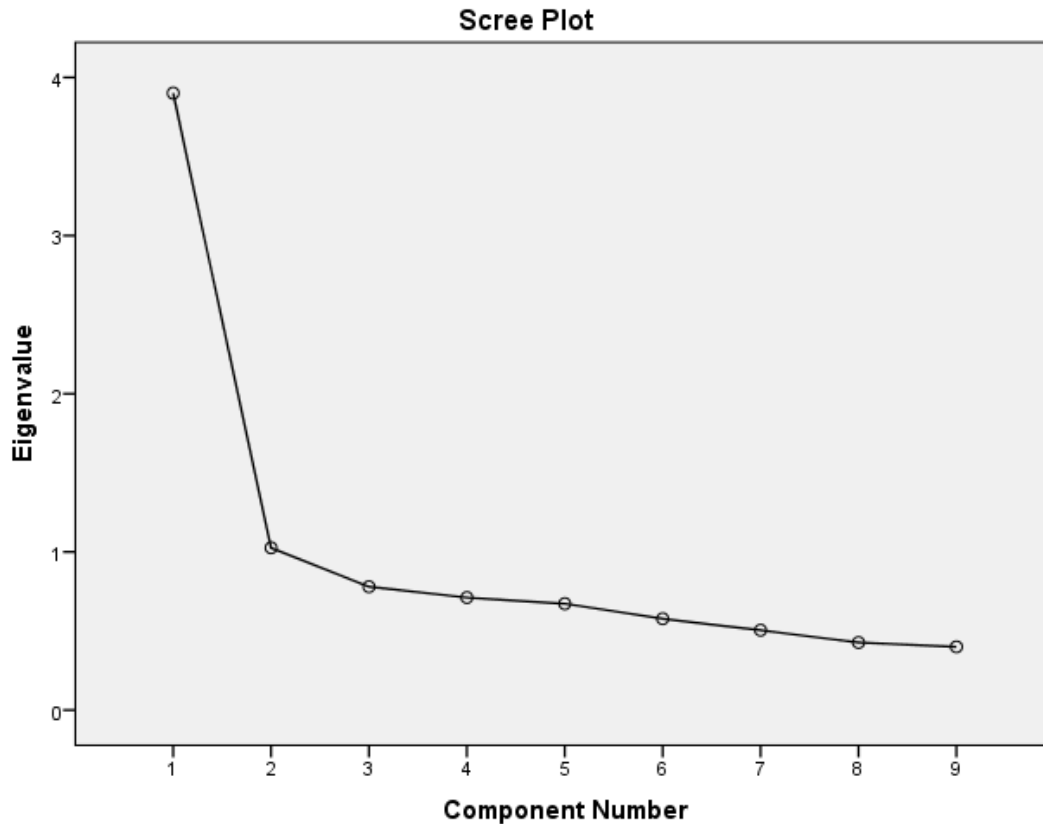


Figure 4.3
Scree Plot for Component Matrix for Familial Involvement

The PCA regarding the variable for students' familial involvement was performed using a Varimax and Kaiser Normalization. This was performed to look at whether the variable clusters were compatible with the latent variable to be studied of familial involvement. There were eight variables that included how often students discussed classwork, courses, school activities, attending college, grades, current events, preparation for the ACT or SAT, and troubling things at school.

The assumptions of normality, linear relationships between paired variables, as well as the correlation of variables at a moderate level were checked and all met the given assumptions. Two components were then rotated, based on the eigenvalues over 1 and the

results shown in Figure 4.3. Given the rotation, the first component accounted for 43.34% of the variance, while the second component accounted for 11.4% of the variance. Table 4.14 displays the items and component loadings as they were rotated.

Table 4.14
Component Loadings for the Rotated Components

Item	Component Loading	
	1	2
How oft disc classwork w/parents	.776	
How oft disc schl courses w/parents	.748	
How oft disc schl activities w/ parents	.745	
How oft disc go to college w/parents	.707	
How oft disc grades w/parents	.702	
How oft disc cur events w/parents	.626	
How oft disc ACT/SAT prep w/parents	.626	
How oft disc troubles w/parents	.612	
How oft transferring school		.962

Viewing the results in Table 4.14 above, it shows in the development of the scale that students' familial involvement is in fact a favorable construct. Keys to this latent variable's makeup revolve around family makeup. Because the item (How often transferring schools) did not go along with the rest of the items that were part of the first component, it was dropped from the rotation. Despite this exclusion, looking at the remainder of the results of the PCA implied that the component formed a coherent latent variable that could be added to the regression model. In the same manner as was performed above for the school motivation variable, analyses were performed with regard to reliability (Table 4.11) and as well as frequencies (Table 4.12) below.

Reliability.

Table 4.15

Reliability Statistics of Cronbach's Alpha for Familial Involvement

<u>Cronbach's Alpha</u>	<u>N of Items</u>
.851	8

Table 4.16

Frequencies for Familial Involvement Variable

<u>Responses</u>	<u>Frequency</u>	<u>Percent</u>
8	89	1.5
9	62	1.1
10	90	1.6
11	128	2.2
12	176	3.1
13	254	4.4
14	397	6.9
15	537	9.3
16	774	13.4
17	499	8.7
18	481	8.4
19	440	7.6
20	436	7.6
21	421	7.3
22	417	7.2
23	269	4.7
24	289	5
Total	5759	100

Confidence

This four-point scale measured the items in terms of what applied to the student with ratings of almost never, sometimes, often, or almost always. The items were coded respectively from one to four. Table 4.17 shows the percentage of variance for each item analyzed in the model.

Table 4.17
Confidence Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.865	60.818	60.818	4.865	60.818	60.818
2	0.841	10.511	71.328			
3	0.519	6.482	77.81			
4	0.462	5.769	83.579			
5	0.391	4.889	88.468			
6	0.356	4.455	92.923			
7	0.291	3.639	95.562			
8	0.275	3.438	100			

The Total Variance Explained for the latent variable, Confidence in Table 4.17 indicates what components are to be rotated. Note that the first component in the table explains 60.82 percent of the total variance. The scree plot in Figure 4.4 also shows the Eigenvalues, and coupled with Table 4.17; both support the conclusion that these items can be reduced to a single component.

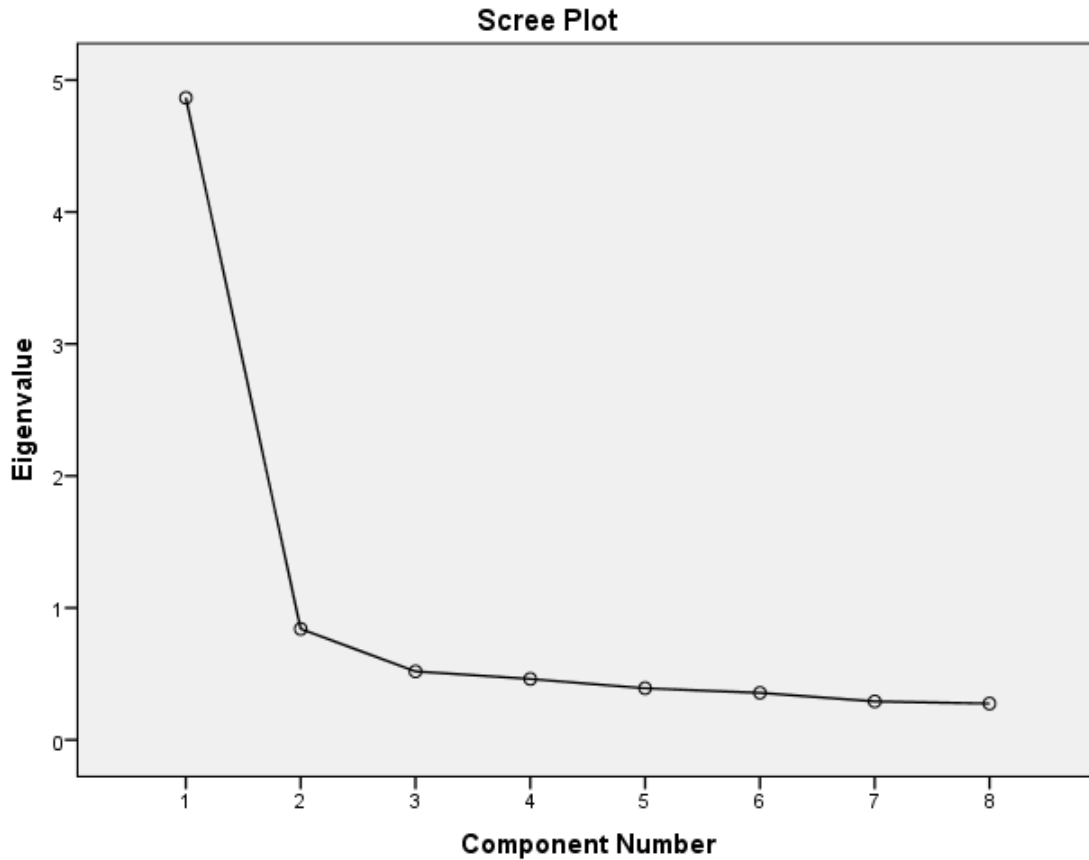


Figure 4.4
Scree Plot for Component Matrix for Confidence

The PCA regarding the variable for students' confidence was performed using a Varimax and Kaiser Normalization. This was performed to look at whether the variable clusters were compatible with the latent factor to be studied of confidence. There were eight components that included whether students studied to increase job opportunities, studied to get good grades, studied to ensure financial security, worked as hard as possible when studying, remembered the most important things when studying, kept studying even if the material was difficult, did best to learn what was studied, and put forth best effort while studying.

The assumptions of normality, linear relationships between paired variables, as well as the correlation of variables at a moderate level were checked and all met the given assumptions.

The component was again rotated, based on the eigenvalues that were over 1 and the results are shown in figure 4.4. Table 4.18 displays the items and component loadings as they were rotated.

Table 4.18
Component Loadings for the Rotated Components

Item	Component Loading
	1
Studies to increase job opportunities	.777
Works hard as possible when studies	.808
Puts forth best effort when studying	.795
Studies to insure financial security	.776
Studies to get a good grade	.744
Does best to learn what studies	.805
Keeps studying even if material difficult	.784
Remembers most important things in study	.747

In looking at the results in Table 4.18 above, it shows in the development of the scale that students' confidence is in fact a favorable construct. All of the loadings were closely related, and the items discussed regarding maximized student effort were highest with calculations above .80 on the scale. Again, a decision had to be made to cut one item (Importance of moving away from the area) that did not mesh with the other items and/or components in the model. The PCA results would suggest that these components do seem to form a coherent latent variable that could be used in the regression model. In the same manner as was performed above for the school motivation variable, analyses were

performed with regard to reliability (Table 4.11) and as well as frequencies (Table 4.12) below.

Reliability.

Table 4.19
Reliability Statistics of Cronbach's Alpha for Familial Involvement

Cronbach's Alpha	N of Items
.908	8

Table 4.20
Frequencies for Confidence Variable

Responses	Frequency	Percent
8	46	0.8
9	19	0.3
10	30	0.5
11	32	0.6
12	34	0.6
13	67	1.2
14	75	1.3
15	127	2.2
16	390	6.8
17	259	4.5
18	279	4.8
19	281	4.9
20	327	5.7
21	339	5.9
22	335	5.8
23	347	6
24	526	9.1
25	353	6.1
26	299	5.2
27	251	4.4
28	247	4.3
29	237	4.1
30	229	4
31	221	3.8
32	409	7.1
Total	5759	100

Sports Participation

There was no PCA performed for the intramural sports construct as students were asked in the survey what sports they participated in at the secondary level. This was converted to a dichotomous variable asking if the student participated or did not participate in intramural sports.

Table 4.21
Frequencies for Sports Participation variable

Responses	Frequency	Percent
No Participation	3994	69.4
Participation	1765	30.6
Total	5759	100

Any cases using the sports participation variable that failed to complete the question, and did not persist to graduation with a four year degree, were excluded from the final model.

Race

The variable for race was examined with regard to the survey categories that included American Indians, Asians, African Americans, Hispanics, Multiracial, and White.

Table 4.22
Frequencies for race variable

Responses	Frequency	Percent
American Indian	27	0.5
Asian	608	10.6
African American	505	8.8
Hispanic	321	5.6
Multiracial	249	4.3
White	3804	66.1
Total	5759	100

Any case that failed to complete the question, and did not persist to graduation with a four year degree, was excluded from the final model.

Gender

The variable gender was converted to a dichotomous variable based upon the student's self-identification as male or female.

Table 4.23
Frequencies for gender variable

Responses	Frequency	Percent
Male	2444	42.4
Female	3315	57.6
Total	5759	100

Any case that failed to complete the question, and did not persist to graduation with a four year degree, was excluded from the final model.

Parental Education

This was converted to a dichotomous variable based upon whether at least one parent attained a four-year college degree or did not.

Table 4.24
Frequencies for Parental Education variable

Responses	Frequency	Percent
No bachelor degree	2733	47.5
Bachelor degree or above	3026	52.5
Total	5759	100

Any case that failed to complete the question, and did not persist to graduation with a four year degree, was excluded from the final model.

Regression Analysis

It has been pointed out in previous chapters that this study would seek to determine how specific characteristics (including school motivation, future plans, familial involvement, sports participation, confidence, race, gender, and parental education) were associated with a students' persistence to completion of a four-year college degree. Completion of that four-year degree is the outcome (dependent) variable in the regression model and is dichotomous; either the student completed a four-year degree or they did not. Given the variables in this study, binary logistic regression is the logical instrument to answer the question at hand. A final expectation for use of the regression model is that there are a minimum of 20 cases per predictor, and a minimum of 60 cases total for the entire model. That requirement is easily exceeded in the cases selected from the ELS (2002) study that included 5,759 cases that shared each of the selected predictor characteristics.

To maximize understanding, logistic regression models were conducted to answer research question one, which included the variables school motivation, future plans, familial involvement, confidence, sports participation, race, gender, and parental

education. Both the grouping of First Generation College Students (FGCS) and that of students whose parents have college degrees (SPCD) were examined using this research model. Each of the models are described and illustrated in the tables below. From these results, comparisons can be made in future discussions. These variables will be considered together to determine the degree of significance that each possesses or does not possess.

Binary Logistic Regression 1 – FGCS

This binary logistic regression model was run to examine the impact of the variables including school motivation, future plans, familial involvement, confidence, sports participation, race, and gender on FGCS students’ persistence to completion of a four-year college degree.

Table 4.25 below offers a look at the Wald Test that is used in logistic regression. Essentially, this is equivalent to a t-test. It is shown to be significant at .000.

Table 4.25
Wald Test^a

	B	S.E	Wald	df	Sig.	Exp(B)
Constant	-0.357	0.039	84.458	1	.000	.700

a. Parental education = .00 no four-year degree

This suggests that the constant, by itself, proves that the regression model is able to significantly enhance a prediction of the significance of variables in a student’s persistence to a four-year degree.

Table 4.26 below, shows the Omnibus Test of Model Coefficients table which contains a Chi-Square value of 154.433. This is the difference between the constant only model, and the full model.

Table 4.26
Omnibus Tests of Model Coefficients

	Chi-square	df	Sig
Step	154.433	11	.000
Block	154.433	11	.000
Model	154.433	11	.000

Based upon the results of the Omnibus Tests of Model Coefficients, the overall model showed that there was a statistically significant difference in the possibility that FGCS would complete their four year college degree or they would not when considering the variables presented.

Observances of results regarding the Cox and Snell R^2 and the Nagelkerke R^2 , which indicates whether or not this group of variables can improve the dependent variable (completion of a four-year college degree) can be predicted any better than chance, is found in Table 4.27 below. This is another model in SPSS that can help to predict goodness of fit. The preferred model of the two is the Nagelkerke R^2 , as it can reach a maximum value of one. The Cox and Snell R^2 cannot achieve this.

Table 4.27
Model Summary for -2 Log Likelihood Ratio (-2LL)

Step	-2 LL	Cox & Snell R^2	Nagelkerke R^2
1	3548.500	.055	.074

The Nagelkerke R^2 , in this case, suggests that given the independent variables in the regression model, it can have the effect of 7.4 percent on whether a student will get a four year degree or not.

The Hosmer and Lemeshow Test results in Table 4.28 reveal a goodness of fit that is not significant, and therefore an acceptable result at (.327). This indicates that the

null hypothesis, that there is no difference between FGCS completing a degree or not, is not significant ($p < .05$) and this is the desirable effect (Meyers, Gamst, & Guarino, 2013; Warner, 2008).

Table 4.28
Hosmer and Lemeshow Test for Goodness of Fit

Step	Chi-Square	df	p
1	9.189	8	.327

The logistic regression model conducted here was utilized to assess whether school motivation, future plans, familial involvement, confidence, sports participation, race, and gender of FGCS students have predictive qualities that suggest their graduation with a four-year college degree.

Table 4.29
Logistic Regression Predicting FGCS persistence to completion of a Four-year degree

Variable	B	SE	Odds ratio	P
Female	.131	.083	1.140	.115
Native American	-.583	.531	.558	.272
Asian	.452	.139	1.572	.001
Black	-.406	.137	.666	.003
Hispanic	-.462	.126	.630	.000
Multiracial	-.292	.205	.747	.153
School motivation	.042	.014	1.043	.003
Sports Participation	.081	.087	1.085	.353
Future Plans	-.019	.014	.981	.160
Familial Involvement	.040	.012	1.041	.001
Confidence	.051	.008	1.052	.000
Constant	-2.591	.455	.075	.000

The regression model suggests that when all of the variables are considered together, only school motivation, familial involvement, and a student's confidence significantly predicts FGCS' persistence to completion of a four-year college degree.

Table 4.29 above also presents the odds ratios. This suggests that Asian respondents are 57.2% more likely than White counterparts to complete a four-year college degree.

Compared with Whites, Black and Hispanic students are about 33% less likely to complete a four-year degree. For a one-point increase in the school motivation scale, a student is about 4% more likely to graduate with a four-year degree. For a one-point increase on the familial involvement scale, a student is about 4% more likely to graduate with a four-year degree. For a one-point increase on the confidence scale, a student is about 5% more likely to graduate with a four-year degree.

Binary Logistic Regression 2 – SPCD

This binary logistic regression model was run to examine the impact of the variables including school motivation, future plans, familial involvement, confidence, sports participation, race, and gender on SPCD students' persistence to completion of a four-year college degree. In the same manner as was performed above for the Binary Logistic Regression 1 - FGCS, analyses were performed with regard to the Wald Test (Table 4.30), the Omnibus Tests of Model Coefficients (Table 4.31), Model Summary for -2 Log Likelihood Ratio (-2LL) (Table 4.32) and the Hosmer and Lemeshow Test for Goodness of Fit (Table 4.33) below.

Table 4.30
Wald Test^a

	B	S.E	Wald	df	Sig.	Exp(B)
Constant	.682	.038	314.139*	1	.000	1.978

a. Parental education = 1.00 four-year degree or above

Table 4.31
Omnibus Tests of Model Coefficients

	Chi-square	df	Sig
Step	148.098	11	.000
Block	148.098	11	.000
Model	148.098	11	.000

Table 4.32
Model Summary for -2 Log Likelihood Ratio (-2LL)

Step	-2 LL	Cox & Snell R ²	Nagelkerke R ²
1	3714.172	.048	.066

Table 4.33
Hosmer and Lemeshow Test for Goodness of Fit

Step	Chi-Square	df	p
1	13.630	8	.092

The logistic regression model was conducted in order to assess whether school motivation, future plans, familial involvement, confidence, sports participation, race, and gender of SPCD students have predictive qualities that suggest their graduation with a four-year college degree.

Table 4.34

Logistic Regression Predicting SPCD persistence to completion of a Four-year degree

Variable	<i>B</i>	<i>SE</i>	<i>Odds ratio</i>	<i>P</i>
Female	.019	.081	1.019	.816
Native American	-.201	.753	.818	.790
Asian	-.004	.128	.996	.974
Black	-.920	.146	.399	.000
Hispanic	-.639	.151	.528	.000
Multiracial	-.068	.191	.934	.721
School motivation	.003	.014	1.003	.816
Sports Participation	-.229	.086	.795	.008
Future Plans	.003	.014	1.003	.801
Familial Involvement	.047	.012	1.048	.000
Confidence	.048	.009	1.049	.000
Constant	-1.272	.420	.280	.002

The regression model suggests that when all of the variables are considered together, only sports participation in a negative light, familial involvement and a student's confidence significantly predict SPCD persistence to completion of a four-year college degree. School motivation was not significant in this model. Table 4.34 above also presents the odds ratios. Compared with White students, Black students are about 60% less likely to graduate with a four-year degree, while Hispanic students are about 47% less likely to graduate with a four-year degree. Students who participated in sports in high school were about 20% less likely to graduate with a four-year degree. In terms of familial involvement, a one-point increase on the scale increases the odds of a student graduating with a four-year degree by 4.8%. For a one-point increase on the confidence scale, a student is 4.9% more likely to graduate with a four-year degree.

Research Question 2

Are there significant differences between first generation college students (FGCS) and students whose parents have a bachelor's degree (SPCD) as they persist to completion of their four year college degree?

Hypothesis 2

There are significant differences in persistence to completion of college between FGCS and SPCD students.

Binary Logistic Regression 3 – All Students

This binary logistic regression model was run to examine the impact of the variables including school motivation, future plans, familial involvement, confidence, sports participation, race, and gender on all students' persistence to completion of a four-year college degree.

The Wald Test found in Table 4.35 below offers a look at a procedure that is used in logistic regression. As was mentioned in the previously conducted logistic regression models, the Wald Test is equivalent to a t-test. It is shown to be significant at .000. In the same manner as was performed above for the Binary Logistic Regression 1 - FGCS, analyses were performed with regard to the Wald Test (Table 4.35), the Omnibus Tests of Model Coefficients (Table 4.36), Model Summary for -2 Log Likelihood Ratio (-2LL) (Table 4.37) and the Hosmer and Lemeshow Test for Goodness of Fit (Table 4.38) below.

Table 4.35
Wald Test

	B	S.E	Wald	df	Sig.	Exp(B)
Constant	.178	.026	45.222	1	.000	1.195

Table 4.36
Omnibus Tests of Model Coefficients

	Chi-square	df	Sig
Step	648.625	12	.000
Block	648.625	12	.000
Model	648.625	12	.000

Table 4.37
Model Summary for -2 Log Likelihood Ratio (-2LL)

Step	-2 LL	Cox & Snell R ²	Nagelkerke R ²
1	7289.644	.107	.142

Table 4.38
Hosmer and Lemeshow Test for Goodness of Fit

Step	Chi-Square	df	p
1	15.594	8	.049

The logistic regression model conducted here was utilized to assess whether school motivation, future plans, familial involvement, confidence, sports participation, race, and gender of all students have predictive qualities that suggest their graduation with a four-year college degree. Table 4.39 below, more clearly defines and further describes these variables' qualities.

Table 4.39
Logistic Regression Predicting student persistence to completion of a Four-year degree

Variable	<i>B</i>	<i>SE</i>	<i>Odds ratio</i>	<i>P</i>
Parental education	.940	.057	2.560	.000
Female	.068	.057	1.070	.240
Native American	-.504	.421	.604	.231
Asian	.214	.095	1.239	.024
Black	-.653	.101	.521	.000
Hispanic	-.543	.097	.581	.000
Multiracial	-.157	.137	.855	.252
School Motivation	.022	.010	1.022	.026
Sports participation	-.077	.061	.926	.212
Future plans	-.009	.009	.991	.343
Familial involvement	.043	.009	1.044	.000
Confidence	.050	.006	1.051	.000
Constant	-2.322	.310	.098	.000

The regression model suggests that when all of the variables are considered together, parental education, school motivation, familial involvement, and a student's confidence significantly predict students' persistence to completion of a four-year college degree. Table 4.39 above also presents the odds ratios. The regression model clearly shows a more positive outcome for students who have a parent with a four-year college degree SPCD. In considering the odds ratio, SPCD students are one and a half times more likely to attain a four-year college degree than are FGCS students. This answers Research Question Two.

The regression model further suggests that the odd of completing a four-year college degree for an Asian student is 57.2% is higher than that of their White counterparts. Compared with White students, Black students are about 48% less likely to complete a four-year degree, while Hispanic students are about 42% less likely to complete a four-year degree. In terms of school motivation, a one-point increase on the

scale would increase the likelihood of attaining a four-year college degree by 2.2%. For familial involvement, a one-point increase on the scale increases the odd of completing a four-year degree by 4.4%. Similarly, students who scored one point higher on the confidence scale are 5.1% more likely to attain the four-year college degree.

Summary of Results

The results of the Binary Logistic regression models conducted in this study did answer Research Question One and addressed Hypothesis One, though the results are mixed. There is a significant difference between FGCS and SPCD students with regard to school motivation, and sports participation. The level of FGCS students' school motivation was a clear factor in their decision whether or not to begin a post-secondary education. In contrast, it was not a significant factor for SPCD students according to the data. Sports participation was not a significant factor for FGCS students, while the data showed that such participation was relevant for SPCD students.

Race, gender, students' future plans, familial involvement, and students' confidence levels all proved to be similar in significance between the two groups. Gender showed no significant difference between males or females with regard to who was more likely to attend college. The question of students' race/ethnicity was determined to be of significance for both groups. Students' future plans were not significant indicators for FGCS or SPCD students, while familial involvement and confidence proved significant for both parties.

The third and final regression model offered a clear answer to Research Question Two and its corresponding Hypothesis Two. There is a significant difference between the four year degree completion rates of FGCS and SPCD students. Further, the odds ratio shows the clear advantage that SPCD students hold over their FGCS counterparts.

Conclusion

After conducting three Binary Logistical Regressions for this study, answers were obtained for both research questions. In Question One, as the FGCS and SPCD logistic regression models and their results were compared. Two of the three models showed that school motivation, familial involvement, and a student's confidence were capable of positively predicting a student's completion of a four-year college degree.

When comparing the two logistic regression models regarding race, both models revealed that Black and Hispanic students' chances of completing a four year degree were at the very least one third less than the odds of White students completing the same degree. These percentages, however, did increase for SPCD students. Another difference between the two models in the final analysis of the logistic regression model was that Asian students, who were FGCS, had a 57 percent greater chance to complete a four-year college degree than did their white peers. This did not have the same result for the SPCD students.

In the final analysis of the third logistic regression model, the most relevant predictor for FGCS and SPCD students was parental education. This variable was excluded as a dependent variable, which was its function in the previous two logistic regression models, and added as an independent variable. As the dependent variable, Parental Education predicted that an FGCS student was 1.5 times less likely to complete a four year college degree, than the odds for an SPCD to complete a four-year college degree. In Chapter Five, these results will be further discussed and expounded upon.

CHAPTER 5

DISCUSSION

This study began with the intention of looking at the differences in college attainment between First Generation College Students (FGCS) and students who have a parent with a college degree (SPCD). In looking at literature on this topic, there are many factors which seem to be associated with whether FGCS complete a four-year college degree. There have been observations made about their lack of either an understanding or a desire to enroll in rigorous subjects during their secondary careers in anticipation of the next level (Horn, Nunez, & Bobbit, 2000). Further, many FGCS exhibit weaker cognitive understanding of higher level learning (Terenzini et al., 1996). Many, in turn, exude a poor ability to study (Filkins & Doyle, 2002), and have a less academic approach to their own self-efficacy (McConnell, 2000).

That is not to say there is no literature that suggests FGCS groups don't bring certain social abilities grown out of bonds and connections begun within their families, and extended into their communities. Moll, Amanti, Neff, & Gonzalez (1992) discuss these "funds of knowledge" (p. 133) and the impact such historical and cultural communicative abilities could have on students who are largely underrepresented in higher education. Further, could such research be cultivated and exploited by teachers to improve and perhaps better internalize student learning in the classroom. Intergenerational studies of first generation students have also afforded researchers insights into the way that family history can improve a student's self-efficacy through positively related family values and a perceived strong social identity (Miller & Tatum, 2008). Pascarella, Pierson, Wolniak, & Terenzini (2004) found that as FGCS progressed

to their third and fourth years of post-secondary work, their cognitive approach seemed to have a more positive effect on their overall educational experience than that of their SPCD peers.

Vincent Tinto's Theory of Interaction undergirds this research study regarding persistence in higher education. This study has attempted to take a closer look at one of his three most enduring aspects of research. In particular, the ideas he espoused regarding the commitment that a student may or may not bring onto a university campus (Long, 2012). Though Tinto's research falls short of discussing the particular first generation group specifically, it should be clear that FGCS students and their attainment of four-year college degrees are an important area of study in U.S. higher education.

Further, as it was mentioned in chapter two, Tinto viewed the components of community as a key assertion in determining a student's successes or failures in college and beyond. This community starts with the family unit then branches out based upon that family's own involvement. The data utilized in this study clearly shows that students who are encouraged by their families, are motivated by either parental or school based encouragement, and take confidence from those family and community experiences, are more likely to complete their four-year college degrees. As Tinto said, and this research study now shows, the success of a student to completion may rest upon a surplus or lack of such variables.

The logistic regression models in this study also seem to minimize the effect that future goals and intentions play in a student's persistence to completion. Tinto theorized that participatory intentions played a key role in matters concerning retention. But future plans are not considered significant in any of the three models. In the SPCD world, this

might not be particularly relevant, but in the FGCS community, this could prove to be a telling problem. Again, the literature points to the fact that a student's inability to connect individual aspirations with familial expectations can have a negative effect on whether they complete, drop out, or stop out.

The data results regarding sports participation only partially support Astin's theoretical assumptions. His understanding of the importance of extracurricular activities such as sporting events and the like, have suggested these are exceptionally important to FGCS. And yet, the data extracted from this study indicate that in fact, this is not a significant factor with regard to their completion. It is however significant to SPCD families. One might be led to believe, in viewing these results, that athletic scholarship opportunities offer more benefit to SPCD and/or more affluent students. This could be contributing to even wider gaps in completion rates between the two groups when considering persistence to completion.

It would seem reasonable to consider the college readiness of students in a university setting based upon their social and academic experiences prior to postsecondary enrollment. Yet the discussion is arduous and wide ranging when investigating the actual factors that are most prevalent. As has been mentioned in the literature review, some scholars have looked at the effects of classroom instruction (Pascarella, Salisbury, & Blaich, 2011), rather than student motivation, social interaction, or even the possibility of providing greater access to technological advances in and out of the classroom (Astin, 1987).

This is not a new area of concern, but an aged one that seems as relevant today as it has been since the late 20th century. This study was intended to take this research a step

further; to explore some of these effects as they occurred in the experiences of First Generation College Students and those students whose parents had attained higher education degrees prior to those students' entrance into college. The question regarding this difference seems to be an important one, especially as one takes a close look at the persistence rates inside postsecondary institutions.

The purpose of this study was to look at the gaps between FGCS and SPCD students based upon their responses to the Education Longitudinal Study of 2002 (ELS 2002) survey of their secondary educational experiences, and to explore the relationships between these factors and their attainment of a four-year college degree. Greenwald (2012) reported that nearly 17% of college students who enter higher education are first generation students. This percentage is perhaps lower in comparison to the numbers found in this study. Given the nearly 6,000 cases ($n=5,759$) that were part of the logistic regression models, 47.5% were FGCS.

Yet, when the logistic regression model was built using the variables that had been selected for inclusion, the results showed that FGCS were 1.5 times less likely to graduate with their four-year college degree than SPCD. Another nugget of relevance found in this research analysis was that under represented students, particularly African-American and Latina students, showed to be at least 40 percent less likely to complete a four-year degree than white students. Even more troubling than that however, was the fact that African-American and Latina who are included in the SPCD group, are less likely to attain a four-year college degree than their FGCS counterparts.

For urban colleges and universities, this should be especially troubling. While there is still work to be done regarding access to education for students of color, this

study is concerned with their ability to complete a degree after they arrive. More work is needed to improve academic advising for students that need additional support. This study seems to be clear in showing the uphill battle that still exists to establish a more equal educational balance. To make this happen, faculty, academic advisors, and student affairs' administrators must step up and seek best practices that can level the playing field for these students. Learning communities for FGCS are growing in number, but there is a need to continue to expand these areas in coming years.

A further concern should be the more than 740,000 Dreamers that have been awarded Deferred Action for Childhood Arrivals (DACA) status (Nunez, 2017). It is fair to say that the overwhelming majority of this group of students, now being afforded the opportunity to go to school and eventually apply for a permanent work visa, also have FGCS status. This is an issue not soon going away and the more knowledge that can be collected, the better.

Findings and Implications

It was my intention at the beginning of this process to seek out a pre-existing government study that included a large sample population. I was interested to learn how to use this 'big' data that is made available by the U. S. Department of Education for research to the public. After looking for a sample that could serve my purposes, the selection of the Educational Longitudinal Survey (2002) became the choice.

These data are well used and as was mentioned in Chapter Three, there are many studies that have been performed using this data set. I began with the intention to work with the entire Student Questionnaire, but after being given sage advice from members of my committee, cut back to a more manageable examination. The constructs that I chose

to examine, having studied the literature, were important to Tinto and Astin as they crafted their studies, and seemed the most compelling to me at that time. They formed the basis for my research questions. I will be discussing the results of the study beginning with the first question.

Research Question 1

How do school motivation, plans for the future, familial involvement, confidence, sports participation, race, gender, and parental education, differ for both First Generation College Students (FGCS) and students whose parents have a bachelor's degree (SPCD), in persistence to completion of their four-year college degree?

This first question was formulated to look at the differences that each group experienced given the constructs selected for study. Initially, the idea was to compare the two groups directly, but the data organization led to an alternative approach. The decision was made to examine each group, using separate logistic regression models, as the best approach to achieving the goals of this study.

After inputting the variables into SPSS and performing the logistic regression models for both FGCS and SPCD students, several tests were performed for each. In looking at the analysis, the ability of the model to look at the significance of the variables used in both an FGCS student's persistence to completion and that of a SPCD student was confirmed by the Wald test, showing a significant p value < .05. Further, looking at the Omnibus Tests of Model Coefficients, a t-test, the score showed that the model could offer a significant difference regarding the possibility that FGCS students' and SPCD students' completion of a four-year degree based upon the variables chosen for this study.

In turn, the logistic regression model showed a clear goodness of fit using the Hosmer and Lemeshow test.

In looking at the results of the logistic regression model for FGCS students, there were several significant findings in the model. Essentially the model showed that a student's school motivation (4 percent), familial involvement (4 percent), and a student's confidence level (5 percent) will increase the chance of completing a four-year college degree with each point increase on their scales. The literature review supports these conclusions.

For school motivation, it was found that teachers were more successful in producing strong and well-educated students, if those students were highly motivated (Fabbi, 2015; Torff, 2008; Warburton & Torff; & Sobar & Doria, 2003). Thus, as a student's motivation increases, so too does that student's chances to succeed at the postsecondary level, all the way to completion.

These results should offer pause to all student affairs and academic advising administrators, as well as faculty that encounter these students upon their entry into institutions of higher learning. How can these groups reach out to students who may be lacking such motivation as they begin college? What can be done to find out where FGCS motivations lie on day one in the post-secondary realm?

Linda Suskie (2009) suggests a possible correlation between reflections and behaviors. The implication is that the best way to understand where students are in their adjustment to higher learning and thinking, is to ask them to reflect on the experience as they see it. Both administrators and faculty spend a great deal of time determining what the best practices are or should be that will improve student learning and understanding.

The question that needs to be asked and perhaps the elephant in the room is ‘Why not ask the students?’ Through reflection, there is an avenue to stronger understanding of student values and mores that generally go unchecked. FGCS students can then be separated out and explored alongside SPCD attitudes and beliefs.

The crux of this idea is that such reflections actually become learning experiences for the students themselves (Suskie, 2009). Any chance to make a student take a step back in seeking to understand their strengths and weaknesses is a teachable moment for everyone involved. Asking students leading questions, which student affairs programs are apt to do, reinforces programming already in place (Schuh, et. al., 2001), but does it lead to new, more relevant and timely applications? More effective and strategically enhanced policies and procedures should not be placed merely to assist the institution, but also to improve the student experience. FGCS, it has been shown in this study, graduate with a four year degree at a lesser rate than do SPCD. There’s no better time than the present to look for ways to improve this regrettable statistic.

Some universities have begun using summer bridge programs to better understand FGCS factors that lead to successful persistence. This is a helpful entity that can shed a great deal of light on possible paths to success for these students in higher education. A focus group was conducted over two consecutive years at UMKC (2014 and 2015 summers) to discuss the positives and negatives participants associated with the program. This is important information that should be studied carefully, and shared between administrators, faculty, and advising entities alike in making decisions on best practices for the program moving forward.

Orientation programs are also growing in practice across the country as part of a university's recruitment process. These can be great training grounds, not only for the students, but for administrators and faculty as well. In many instances, again, leading questions are asked of students that seek to justify an institution's continued practices. However, the goal of these programs should be more centered toward what students perceive and how effective the results of such programming affect actual persistence with regard to students' attitudes and beliefs. Do students leave campus more excited and with greater understanding, or are they more intimidated and less confident that they belong in the higher learning realm? Reflective questions give far better answers and need to be utilized more than they are currently.

In relation to familial involvement, it's important to remember Simpkins (2015), who pointed out that children receive the majority of their socialization from their parents. Further, it has been pointed out that a student's confidence level rises the higher they consider themselves with regard to their own intellect (Dweck & Leggett, 1988).

The results for the SPCD students offered a slight increase in odds for familial involvement (4.8 percent) and confidence (4.9 percent), though it's interesting that school motivation was not determined to be significant for these students. Looking at these results alongside those for FGCS at the beginning of a student's higher education adventure, again, should suggest that more specialized care should be taken by academic advisors, faculty, and student affairs administrators. Best practices need to be shaped and reshaped annually or bi-annually as necessary, to match student groups not only with their specific skill sets, but also with the needs that are evolving. Student learning should always supersede an institution's goals and objectives. It is this researcher's opinion,

born of this research and prior literature studied, that assessment of these practices can never cease and must continually be improved as students cycle through higher education.

Race turned out to offer the most significant results in each of the logistic regression models conducted for FGCS and SPCD students. Significance was predicted for FGCS Asian, Black, and Hispanic students, though moving in different directions. It was determined in the model, that Asian students who were FGCS were 57.2 percent more likely to complete a four year college degree than their White counterparts. Black and Hispanic students in the model for FGCS, were more than one third less likely to complete a four year college degree than White students. For Black and Hispanic students, the numbers were reduced if they were SPCD students. Black students were 60 percent less likely to complete a four year college degree than White students, while Hispanic students were 47 percent less likely to complete the same degree as were their White counterparts.

This should be a finding of great interest. There is ongoing research into the effects of race and class as students of color transition into the postsecondary climate (Wilkins, 2014). Could there be problems for underrepresented minorities thrust into middle class society by newly successful parents? How can it be possible, that these students would have a tougher time at the college level than their first generation counterparts?

In observing the information that has come from these two opposing logistic regression models, the answers to this research question are not simple nor are they a complete surprise. The information extracted from the ELS (2002) shows that both

FGCS and SPCD students alike face similar challenges and are generally affected by these variables in similar ways as they persist toward that elusive four-year degree.

Research Question 2

Are there significant differences between first generation college students (FGCS) and students whose parents have a bachelor's degree (SPCD) as they persist to completion of their four year college degree?

In the third regression model, the students were combined together as a whole sample to look at the factors as they determined whether students actually persisted to completion of a four year college degree. The dependent variable here, rather than whether or not their parents' had a four year degree, sought to determine whether or not they graduated from college with a four year degree. Once again, the Wald test showed a significant $P < .05$, that the logistic regression model does in fact have predictive qualities necessary to extract the desired data. The Omnibus Tests of Model Coefficients, showed a score that indicated the model could offer a significant difference regarding the possibility that a student might or might not be able to persist to completion of their four year degree when using the prescribed variables. However, there was a setback with the combined logistic regression model regarding goodness of fit. Table 4.36 shows the result of the Hosmer and Lemeshow Test as being significant, which is not the desired effect in that $p = .049$. In considering that the other two models were clearly a good fit as the data were separated by the dependent variable parental education, now an independent variable as part of this round, the determination was to move forward with the data offered in the final logistic regression model. Further, it has become more and more prevalent in the social science community to view the Hosmer and Lemeshow goodness

of fit test as less reliable with the use of large samples of data. As an example, a data set that included 1,393 Intensive Care Unit patients, when using the test for various iterations, obtained nearly one million p values ranging from .01 to .95 (Bertolini, D'amico, Nardi, Tinazzi, & Apolone, 2000).

In looking at the results of the third logistic regression model for all students, as was mentioned in Chapter Four, the logistic regression model offers a very clear indicator that SPCD students are far more likely to persist to completion of a four year college degree than their FGCS peers. The odds ratio for this single variable is the most impactful of all results in this study, and gives a definitive answer to research question two. The indication that an SPCD student is one and a half more times likely to graduate with a four year college degree demonstrates the importance of implementing practices that support student success among FGCS peers. As Tinto (2012) indicates, there is a need not only to start college, but ultimately to complete the degree.

Choy (2001) in a study found that FGCS students were two times as likely as SPCD students to leave four year institutions in the second year. Further study has indicated that FGCS students that persist past the third year will still be less likely to complete a four-year college degree (Terenzini et al, 1996). Thus, the results found here, seem to align with the research others have conducted. This study seems to confirm that the issue of student retention and degree completion among FGCS is a true one and the need to seek new ways to combat student attrition is more necessary than ever.

Other findings in the logistic regression model show that for all students' together, school motivation, familial involvement, and again, students' confidence can significantly add to the inclination that they will or will not complete a four year college

degree. School motivation when examined in the combined model, showed though still significant, only a 2.2 percent increase with each point toward completion of the four year degree.

The literature tells us that the mere intent to participate can be a strong factor in determining a student's persistence to completion at the post-secondary level (Astin, 1975; Bean, 1982). As they enter college, FGCS are already lagging behind SPCD in this behavioral transition (Ward, Siegel, & Davenport, 2012). So, in looking at the results from the logistic regression model, school motivation, as one would expect, does have a significant impact on a student's persistence to completion of a four-year college degree.

The surprising thing about the results however, is that this variable was not found to be significant when viewed strictly through the lens of the SPCD model. This would be an area of interest with regard to future research in this area. Why is it that SPCD students are not as motivated by their secondary school experiences as their FGCS peers?

That the two groups, when placed back amongst one another, return school motivation to a more modest level of significance, should offer better understanding of the gap that exists between the two groups. Tinto (1993) pointed out that it remains important in light of any new information, that there is still no constant that shows a students' level of commitment entering higher education. It is hoped that studies such as these, will expand and look to narrow these gaps in the future.

All three of the models show significance in familial involvement, as well as student confidence. Astin & Antonio (2012) discussed in their research the factors regarding student maturation and the intention to move toward, rather than away from social transformation. The life of a student within and without the family unit was part of

this research. The results found in this study should not be ignored in light of these authors' research.

FGCS were shown as their familial involvement increased on the scale to be more likely to persist to complete a four-year degree. This clearly shows the importance of such relationships and support when one reaches the post-secondary level. SPCD students' results on the logistic regression model were very similar to that of FGCS, and together, in the final logistic regression model, the entire group falls in line to offer the similarity and evident necessity of this variable to student persistence to completion. The implication here is that FGCS do not enjoy the familial motivation that implies completion as the expectation rather than merely an ideal. This study has shown that such a factor is indeed a strong indicator.

Looking at this from a distance, and in light of the completion rates of FGCS and SPCD in this study, one should clearly see a problem. It is that a lack of familial involvement could be a great detriment to those FGCS students who do not persistence to completion of a four-year degree. This is a factor that will be difficult for higher education to overcome, as even their reach is limited with regard to access to the family unit. But further research, perhaps even a more pin pointed approach through interviews, and possibly even focus groups, perhaps could make an impact that has not yet been harnessed.

Finally, student confidence, and an ability to see oneself as generally intelligent when reaching the post-secondary level (Dweck & Leggett, 1988), showed similar results in each of the three logistic regression models as well. Again, this should shed light on the likely need that FGCS students have to improve in this area, in order to be able to

match their SPCD peers in completion to graduation. There should be even less question regarding the importance of this variable in solving the equation that is higher education completion.

The gaps regarding race continued down a similar path as the other two models, perhaps giving a more general and normed picture of what should be a societal concern regarding our country's future. Asian students showed a slight advantage overall at an increase of 2.2 percent greater likelihood of completing than Whites. As for students of color, both Blacks and Hispanics were found statistically to be 50 percent less likely to persist to completion of a four year degree than Whites. These overall results seem to follow the literature that purports the cultural challenges that continue to persist in our society (Bettie, 2002). Engle and Tinto (2008) offer even greater disparagement as their study found that it was a four times greater likelihood that low-income students, of which many students of color are a part, would not persist past their freshman year of college.

Limitations

In selecting the variables that were used in this study, there were of course many others that were not analyzed. This study was intended to offer starting points for study to address issues of concern within higher education.

Though this was a large and fairly representative sample, there are certainly other factors that have not been considered in this research. Restricted data were not used in this study, including transcript data. Much of the information sought in this study was cognitive, and this is but a small sampling of the entire issue. In my current work in academic assessment, I am very aware that even the greatest of efforts to observe direct and indirect data, can only offer a snapshot of the overall issues at hand. In essence, this

is the indirect evidence, which, as Linda Suskie (2009) points out, is “less clear, and less convincing than direct evidence” (p. 20).

Another limitation in this study is with regard to the logistic regression model itself. It is important to remember that the predicted values in logistic regression are probabilities which restricts the end result to a dichotomous (0, 1) solution when seeking an outcome (Gareth, Witten, Hastie, & Tibshirani, 2013).

Future Research

Baum and Payea (2004) discuss the harm that can come to our society if we take our citizenry less seriously. Tinto (2011) agreed and also pointed out that the decline of education can further cause the decline of ethics as they currently are held. Issues of such concern cannot be left to chance. It’s my conclusion, based on the literature that I have read and the statistical analyses that has been performed here, that there is a great deal left to be done to achieve what former President Lyndon Johnson once dubbed the “Great Society.” Is this a true ideal, or merely an aspiration with hopeless implications? No matter the current outcome data, we need to reach further into the literature and the research in order to find just where our future educational achievement and attainment will have the opportunity to rest.

The relatively new and innovative application of Design Thinking in higher education could be one such area of opportunity. When administrators and educators set out as designers, they are interested in supporting others as a decision is made to bridge gaps between current issues of concern, and push for more manageable solutions moving forward (Cohen, 2011). Universities such as Stanford, Carnegie Mellon, and Harvard are teaching design thinking courses now. It’s relatively easy for faculty and administration

to point out flaws, but understanding just how a new path or direction might turn out is far more difficult to determine (Cohen, 2011).

Design Thinking can lead to divergent, or far-reaching and explorable solutions. From that point, a convergent thinking process can narrow down the best fits for such ideas. This is not very far detached from the actionable plans developed to close the loop in many higher education assessment practices. In the end, much of the work that needs to be done to improve FGCS' persistence to completion of a four-year degree can be categorized as a component of 'wicked problems.' These are deemed as problems that might seem to be vividly clear, yet the solutions can take a far greater amount of time to envision and/or to ultimately implement (Rittel & Webber, 1973; Beinecke, 2009).

This shouldn't be an area that academia fears in seeking to improve student persistence. This process is important to consider as the research in previous chapters of this dissertation has shown that FGCS seem to be in a state of growth as each year passes. Connecting theoretical knowledge to evidential practice is a solid, but very narrow framework. A Design Thinking approach can open pathways that could improve completion rates both for FGCS groups in the first year of college and as they persist further in higher education.

Astin (1993) and his IEO model of Input, Environment, leading to Output is a thoughtful process that can capture a great deal of the information we seek regarding the effects of growing up as a first generation college student. More work needs to be done using surveys like the ELS (2002) in order to focus the snapshot more and more. Qualitative research using university led case studies that discuss and demonstrate more impressive rates of four-year degree completion for FGCS and SPCD groups would be

beneficial as well. Additional pieces might include individual interviews and/or focus groups to include not only students, but also advisers and even instructors. Such poignant research could lead to an even better understanding of the phenomenon that is persistence to completion of a four-year college degree by students of more diverse backgrounds.

It would be desirable in the future to focus looking at restricted data that is made available by the U.S. Department of Education, in order to try to connect indirect and more direct data, giving a far richer understanding of the data set than has been completed to date by this author. Further, a more localized approach to FGCS and SPCD experiences might be beneficial as a more focused approach to the larger national data set that was used here.

There are even more opportunities that should be considered that would focus on a more localized approach to FGCS research. Many higher education institutions maintain archives of student data that could be extracted in a far more drilled down and qualitative manner. Some colleges and universities now offer a student experience that is designed with FGCS student interests at the core of the services offered that supports study skills, career inventories, and uses intrusive advising practices.

Academic advising, as mentioned earlier in this chapter, has an abundance of opportunities within its purview. Intrusive advising through the use of faculty and staff in aiding FGCS has proven to improve academic efficacy of these students (Miller, 2010). It is not enough, however to merely place individuals in course work that fits their degree interests. More time spent on non-academic attributes are essential in order to prevent higher student dropout rates (Lotkowski, Robbins, & Noeth, 2004). More

research involving the ways that advising is performed and what the best practices are currently, need to be pursued moving forward.

To intrude, according to The American Heritage Dictionary of the English Language (2013) suggests one lacks an invitation or permission to perform an action. This is a practice that is aimed at students who are not yet prepared for higher education, yet are expected to push forward in spite of such deficiencies (Fowler & Boylan, 2010). Lotkowski, Robbins, and Noeth, (2004) discuss greater risks for students that have only their academic problems addressed in advanced training situations. Taking a closer look at these students' personal experiences more directly through case studies built from individual interviews and focus groups could possibly produce a fresh knowledge base that might lead to even more profound understanding.

Phenomenological research is practiced with a general concern for the understanding of issues involving people from both a social and psychological perspective (Welman & Kruger (1999). It is quite possible that such rich data could add a great deal to this discussion. Through such research, in the spirit of a mixed methods approach, even broader areas of new data that in turn could open new studies of greater focus might emerge.

Finally, another area that was not expounded upon in this study and more likely could be considered an opportunity lost, is the effect this first generation epidemic may be having on the Lesbian, Gay, Bi-sexual, and Transgender (LGBT) community. A study was done recently that discussed the negative treatment of first generation LGBT students (Garvey, 2015). Further studies could be tailored specifically to FGCS and that specific community.

Conclusion

First generation college students, based on the literature and especially in consideration of the analyses conducted for this study, are a group that is growing exponentially in numbers as each year passes. These are the children and grandchildren of the Baby Boom generation, of both documented and undocumented immigrants, and of an ever growing minority population in this country. There is a great deal that has yet to be learned about just how these people, young and old, will cope with the way they value or disvalue a completed college education.

The rate of growth in the U.S. population, not to mention around the world, can be staggering to consider. Each year, we see growth around the globe upwards of 75 million people (U.S. Census Bureau, 2016). With each year of growth in population, there becomes a need for growth in education capacity and access both in equal parts. Research done as part of studies like this one, with expanded reach, have an opportunity to aid in that growth while improving the footprint of our growing society in the years ahead.

APPENDIX A

IRB APPROVAL LETTER



UMKC
5319 Rockhill Road
Kansas City, MO 64110
TEL: (816) 235-5927
FAX: (816) 235-5602

NOT HUMAN SUBJECTS RESEARCH DETERMINATION

Principal Investigator: Dr. Jennifer Friend
328 Education Building
Kansas City, MO 64110

Protocol Number: 17-063

Protocol Title: A Quantitative Exploration of the Educational Paths Taken by First Generation College Students and Students Who Have a Parent with a Four-Year Degree

Type of Review: Not Human Subjects Determination

Date of Determination: 02/24/2017

Dear Dr. Friend,

The above referenced study, and your participation as a principal investigator, was reviewed and determined to be Not Human Subjects Research (NHSR). As such, your activity falls outside the parameters of IRB review. You may conduct your study, without additional obligation to the IRB, as described in your application.

The NHSR Determination is based upon the following Federally provided definitions:

"Research" is defined by these regulations as "a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge."

The regulations define a "Human Subject" as "a living individual about whom an investigator (whether professional or student) conducting research obtains: data through intervention or interaction with the individual, or identifiable private information."

Attachments include the following:

Attachments

- EdD Applied Dissertation Project Proposal Approval Form
- Methodology Section of Dissertation
- Dissertation - List of Variables

All Human Subjects Research must be submitted to the IRB. If your study changes in such a way that it becomes Human Subjects Research, please contact the Research Compliance office immediately for the appropriate course of action.

Please contact the Research Compliance Office (email: umkcirb@umkc.edu; phone: (816)235-5927) if you have questions or require further information.

Thank you,

A handwritten signature in black ink, appearing to read 'Jennifer Friend', is written below the 'Thank you,' text.

APPENDIX B

A PERSONAL ACCOUNT

In performing this study, it should be noted that both my personal and professional experiences, as well as those of my family have brought me to this place and time. The issue strikes a chord that cuts deep. There is a need for such research and my father's path to a college degree speaks as strongly as any student's might.

In 1965 Luther (Lou) Stroud, this researcher's father, decided to enter the ministry. In making this life altering decision he consulted his pastor, who told him if he was serious about making this change, more than anything else, it would be necessary to go to college. To someone ready this, this advice might not seem so profound. For Lou, it may have been necessary, but it was by no means a clear and simple solution.

He had been married more than a year and he and his wife had just had their first child an aptly named boy named Dan. Lou had barely finished high school, where he had worked hard to achieve status as the class clown. His grades were poor, at best. After high school he knew that he needed to find a trade. His father and mother helped him work his way through barber school. Lou became a skilled sculptor of hair and made a solid living wage in a large downtown St. Louis, Missouri barbershop. He met his future wife Nancy through a friend who dated a colleague of hers in the hair salon across the street. They were stable members of the labor force on track toward what it looked to both them and their families could be a long and stable future.

Both Lou and Nancy were raised in and around St. Louis. Nancy grew up in the heart of the city, while Lou spent his youth in a community on the outskirts known as Dogtown, then later on the outskirts of St. Louis County, in the town of Barnhart,

Missouri. Born in a poor neighborhood with a mother who was prone to alcohol abuse and a non-existent father, Nancy took solace in her early schooling as a means of escape. She would later move to a foster home in a small suburban community in Webster Groves. She went after and successfully completed her secondary education ahead of schedule. Nancy was an exemplary student but had her mind set on raising a family, thus chose to go to school for hair styling.

Lou lived in a rural community and fully embraced his carefree childhood. He found time to hunt, fish, work on cars, and nearly everything else that was available to a young boy in such a community. He did not, however find as much time for his studies, despite the stern expectations of his mother, a lady with a third grade education who aspired to see her two children attain high school educations. Though he struggled through to gain his diploma, Lou was always the first to admit to his children that he was nearly illiterate upon graduation. Though his parents were proud of the completion of his high school studies, they and Lou were aware that trade school might be his best option as he sought a career track.

Lou and Nancy met and married very young. Lou was twenty-two years old and Nancy had just turned eighteen. Both had gone through similar vocational schools. Lou graduated from barber school and Nancy received her certificate as a hairdresser. It had never been a priority of Lou's parents for him to go to college – the barber trade would be an honorable profession and in the 1960's the pay was actually quite generous. They perceived it to be a profession that would provide for a family which was the main concern.

Nancy had never been pushed or prodded by her family to do anything with her education either. During her last year in high school and for a short time afterward, she had dated a young man headed to medical school. To her foster family and extended relatives, this was an achievement in itself.

After marriage and the birth of their first son, they were advised that with the added responsibility of an expanding family and Lou's decision to enter the ministry, more education would be necessary. My father struggled a great deal, having escaped high school as was previously mentioned, with the barest of literacy skills. But his educational baggage was far heavier than that.

As was earlier mentioned, Lou's mother, Dorothy was nearly illiterate when she began her family in the late 1930's. 'Dottie' as she was known to her siblings, was one of twelve children. In those arduous times, for the poorer families, a child's ability to attend school was a luxury. This had less to do with the cost of an education and more to do with the need for all family members to throw in together doing whatever work they were able to perform, in order to keep food on the table. In her mind, Dottie was fortunate as she would recall several brothers and sisters who received even less reading and writing instruction than her. Two of her brothers were whisked off to fight in World War II with no literacy training at all.

Dottie's husband, and Lou's father, Isaac, whose nickname was Zeke, actually completed eight years of schooling, though he, like my father, would never be considered a motivated student. His life would be one that was spent working in construction, demolition, and eventually as a machinist. America was growing and there was money to be made by men willing to do such work. Needless to say, given my grandparents' lack

of educational focus during Lou's early years, familial expectations were minimal as opposed to more current societal aspirations. It was a proud day for Dottie, who actually improved her reading and writing skills while helping her children, when my father graduated from high school. It was a momentous achievement to her when both children, first the elder child Alice, and then the younger Lou, received something that had eluded her and Zeke. Alice's marriage to a union worker and Lou's completion of trade school were added bonuses.

So it was with a sense of bewilderment, that Dottie and Zeke questioned Lou's decision to attend college. He did, after all, in their minds, already possess more education than most in his family to that point had ever attained. Such added education must have to them seemed a glut and unnecessary. In turn, he had a family to support now: furthering his education seemed to them nothing more than extravagance. Lou realized very early that he could not look to his parents for support in his decision to seek a post-secondary education.

I have childhood memories of sitting in the living room, reading German language dialogues from son to father then back to son as memorization and pronunciation was practiced for a coming class session. Late nights writing term papers often involved Lou pouring through his note cards while Nancy typed from his rough drafts. As the eldest son, I was often the coffee runner; allowing me the ability to stay up later in the evening, a benefit worth its weight in gold to an eleven year old. In May of 1977, nearly twelve years after he began, Luther Fredrick Stroud walked across the stage at Southwest Baptist College in Bolivar, Missouri and was granted his Bachelor of Arts degree. He would be the first in his entire family, of siblings, parents, grandparents,

uncles, aunts, nieces, nephews and cousins to complete a college degree. He had sailed thru unchartered waters and reached the other shore. It became a great example of purpose and determination for his immediate family to follow. An alternative path to higher education had been carved out for his children if they chose to follow that path. They had been shown that anything was possible, and that nothing is predetermined.

This narrative about a first generation college student's path to completion is a familiar tale that is repeated over and over again, year after year. It is a struggle that many have embraced and overcome. Yet there are even more who are not as fortunate and fail to complete their intended goal; that of completing a 4-year degree. Thousands each year drop out or stop out, oftentimes either delaying or destroying their hopes for future achievement.

Many of the factors that will be studied here were mentioned in this narrative. There are others that were not, but are just as important to understand. There are no bad people in this ethnography; they were just misinformed, holding misperceptions about preparation and priorities that drive a strong society.

APPENDIX C

AN OVERVIEW OF INSTRUMENT USAGE

Education Longitudinal Study of 2002

NCES Statistics; U. S. Department of Education (Student Questionnaire – Base Year)

Data Set - els_02_12_byf3pststu_v1_0.sav

Race

(Item – BYRACE)

Gender

(Item – BYSEX) (1 = Male, 2 = Female)

Parents' Education

BYPARED

School Motivation

27. How much do you agree or disagree with the following statements about why you go to school?

(BYS27a – i)

(Strongly Agree

Agree

Disagree

Strongly Disagree)

- a. I go to school because I think the subjects I'm taking are interesting and challenging.
- b. I go to school because I get a feeling of satisfaction from doing what I'm supposed to do in class.
- c. I go to school because I have nothing better to do.
- d. I go to school because education is important for getting a job later on.
- e. I go to school because it's a place to meet my friends.
- f. I go to school because I play on a team or belong to a club.
- g. I go to school because I'm learning skills that I will need for a job.
- h. I go to school because my teachers expect me to succeed.
- i. I go to school because my parents expect me to succeed.

Sports/Intramural Participation

Current Question

39. For the following items, intramural means competition between teams or students within the same school. For each sport listed below, indicate whether you participated on an intramural team in this sport during this school year.

(School does not have intramural teams Did not participate

Participated)

(Items - BY39a-h)

- a. Baseball
- b. Softball
- c. Basketball

- d. Football
- e. Soccer
- f. Other team sport
- g. An individual sport (Golf, Tennis, etc.)
- h. Cheerleading, Pompon

Future Plans

Current Question

54. How important is each of the following to you in your life?

(Items – BY54a-o)

(Not Important Somewhat Important Very Important)

- a. Being successful in my line of work.
- b. Finding the right person to marry and having a happy life.
- c. Having lots of money.
- d. Having strong friendships.
- e. Being able to find steady work.
- f. Helping other people in my community.
- g. Being able to give my children better opportunities than I've had.
- h. Living close to parents and relatives.
- i. Getting away from this area of the country.
- j. Working to correct social and economic inequalities.
- k. Having children.
- l. Having leisure time to enjoy my own interests.
- m. Deleted

- n. Becoming an expert in my field of work.
- o. Getting a good education.

Familial Involvement

86. In the first semester or term of this school year, how often have you discussed the following with either or both of your parents or guardians?

(Items BY86a-i)

(Never Sometimes Often)

- a. Selecting courses or programs at school
- b. School activities or events of particular interest to you.
- c. Things you've studied in class.
- d. Your grades.
- e. Transferring to another school.
- f. Plans and preparation for ACT or SAT tests.
- g. Going to college.
- h. Community, national and world events.
- i. Things that are troubling you.

Confidence

Current Question

89. How often do these things apply to you?

(Item names - BY89a-v)

(Almost Never Sometimes Often Almost Always)

- a. I'm confident that I can do an excellent job on my math tests.
- b. I'm certain I can understand the most difficult material presented in math texts.

- c. I'm certain I can understand the most difficult material presented in English texts.
- d. I study to get a good job.
- e. When I sit myself down to learn something really hard, I can learn it.
- f. I'm confident I can understand the most complex material presented by my English teacher.
- g. When I study, I make sure that I remember the most important things.
- h. I study to increase my job opportunities.
- i. I'm confident I can do an excellent job on my English assignments.
- j. When studying, I try to work as hard as possible.
- k. I'm confident I can do an excellent job on my English tests.
- l. I'm confident I can understand the most complex material presented by my math teacher.
- m. I'm certain I can master the skills being taught in my English class.
- n. If I decide not to get any bad grades, I can really do it.
- o. When studying, I keep working even if the material is difficult.
- p. I study to ensure that my future will be financially secure.
- q. If I decide not to get any problems wrong, I can really do it.
- r. I'm confident I can do an excellent job on my math assignments.
- s. When studying, I try to do my best to acquire the knowledge and skills taught.
- t. If I want to learn something well, I can.
- u. I'm certain I can master the skills being taught in my math class.
- v. When studying, I put forth my best effort.

ELS 2002

2nd Follow Up

F2BO7 - Whether student has ever attended a postsecondary school

3rd Follow Up

The purpose of ELS: 2002 is to understand young people's transition from high school to Adulthood, including the different pathways people take towards further education and the world of work. Today, we are asking you to complete a follow -up interview which will ask questions about your education, your most recent work experiences, your family, and your community. On average, it takes about 35 minutes to complete, depending on your responses.

Variables of interest (with questions)

Variable 3A13A

Have you earned a degree or certificate? (Yes or No)

If yes – then go to Variable F3A13B

What type of degree or certificate did you receive?

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VITA

Daniel (Dan) Isaac Stroud was born June 18, 1965, in St. Louis, Missouri. As the son of Luther Frederick Stroud and Nancy Lee Baute Stroud, he was the oldest brother of three other siblings, David, Stephen, and Nancy Lou. He is an uncle to Tiffany and Hope (David's children), as well as Jacob, Baylor, and Evan (Stephen's children). The next generation is just beginning with a great nephew and a pair of great nieces including Enoch and Ruth (Tiffany's children), along with Addison (Hope's first child), who will be introduced to her family in the fall of 2017.

Dan attended Westwood High School in Palestine, Texas and graduated in 1983. Upon completion of his secondary education, Stroud enlisted and proudly served as a member of the U. S. Navy. He served in the U. S. Submarine Service and earned designation as a qualified Submariner on board the *USS Lafayette* (SSBN 616), the *USS Groton* (SSN 694), and the *USS Boston* (SSN 703). He was honorably discharged in August of 1987 after four years of active duty service with the rank of Petty Officer Third-Class (SS).

He attended several universities during his undergraduate years including the University of New Hampshire in Durham, New Hampshire, Jefferson College in Hillsboro, Missouri, and the University of Missouri at both the Columbia and Kansas City campuses. He graduated from the University of Missouri – Kansas City in 2007 with a Bachelor of Arts degree in Political Science. In 2011, he completed a Master of Arts degree in Political Science at the University of Missouri-Kansas City (UMKC).

Stroud has taught at UMKC in the Political Science department first as a Graduate Teaching Assistant, and later as an Adjunct Professor since 2009. He has also served as a

founding editor of a global journal titled *Poverty and Public Policy* since 2008. Since the journal's inception, he has overseen the publication of 9 volumes, 33 issues, and more than 200 peer-reviewed articles, public policy papers, and book reviews.

Serving as the Assessment Specialist at Midwestern State University in Wichita Falls, Texas since June, 2016, Stroud currently advises faculty and staff in performance of assessment plans to improve student learning on campus. His plans upon completion of his degree requirements will be to continue efforts through deep and rich assessment that will enhance the FGCS experience, as well as increasing the numbers that reach completion of their four-year college degrees.