# REAL AND PERCEIVED FINANCIAL AND FINANCIAL AID OBSTACLES: AN EXAMINATION OF THE FACTORS THAT IMPACT THE COMPLETION OF THE FREE APPLICATION FOR FEDERAL STUDENT AID AND THE TRANSITION FROM SECONDARY TO POSTSECONDARY EDUCATION IN U.S. HIGH SCHOOL STUDENTS

by

TAMMY AGNEW WILLIAMS

(Under the Direction of Diann Moorman)

ABSTRACT

Using data from the National Center for Education Statistics' High School Longitudinal Study of 2009 (HSLS:09), this study examines the factors affecting FAFSA completion for U.S. high school students as they transition from high school to college. Participants of HSLS:09 were surveyed beginning in their freshman year of high school and continue to be followed through college and beyond. The study divides the participants into one of four groups: (1) those that completed the FAFSA and attended college; (2) those that did not complete the FAFSA and attended college; (3) those that completed the FAFSA and did not attend college; and (4) those that did not complete the FAFSA and did not attend college. General systems theory forms the theoretical framework used for the study.

INDEX WORDS: family financial support, financial aid complexity, sources of financial aid information, student's background, FAFSA completion, college attendance, general systems theory

# REAL AND PERCEIVED FINANCIAL AND FINANCIAL AID OBSTACLES: AN EXAMINATION OF THE FACTORS THAT IMPACT THE COMPLETION OF THE FREE APPLICATION FOR FEDERAL STUDENT AID AND THE TRANSITION FROM SECONDARY TO POSTSECONDARY EDUCATION IN U.S. HIGH SCHOOL STUDENTS

by

TAMMY AGNEW WILLIAMS

B. S., University of South Carolina, 1995

M. B. A., Mercer University, 2005

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2021

# REAL AND PERCEIVED FINANCIAL AND FINANCIAL AID OBSTACLES: AN EXAMINATION OF THE FACTORS THAT IMPACT THE COMPLETION OF THE FREE APPLICATION FOR FEDERAL STUDENT AID AND THE TRANSITION FROM SECONDARY TO POSTSECONDARY EDUCATION IN U.S. HIGH SCHOOL STUDENTS

by

TAMMY AGNEW WILLIAMS

| | |
|---|---|
| Major Professor: | Diann Moorman |
| Committee: | Kimberly Skobba<br>Kenneth White |

Electronic Version Approved:

Ron Walcott
Vice Provost for Graduate Education and Dean of the Graduate School
The University of Georgia
May 2021

## DEDICATION

This dissertation is dedicated to my husband (Allan), son (Marcus), niece (Camille), mother (Ella), family, and friends who supported and encouraged me during this wonderful experience. Your support will never be forgotten or taken for granted. I love you all!

ACKNOWLEDGEMENTS

This work has greatly benefited from the support and contributions of several people. I am incredibly grateful to my major professor, Dr. Diann Moorman, for her words of encouragement and help with organizing my thoughts. Whenever I felt overwhelmed during this dissertation process, your words calmed me and let me know that I was on the right track. Thank you so much for taking me on as a student and making time out of your hectic schedule to help me see this process through to the end.

I am unbelievable grateful to my newest committee member, Dr. Kimberly Skobba, who stepped in at the last minute to help me complete this journey. Thank you so much! I will never forget your kindness.

Special thanks are also due to my remaining committee member, Dr. Kenneth White, who gave me valuable suggestions on improving my dissertation design. I am so grateful to my entire committee. I am incredibly blessed with access to many incredible people in the Financial Planning, Housing, and Consumer Economics department. Special thanks are due to the UGA Graduate School and the College of Family and Consumer Sciences for all the financial contributions that have allowed me to complete my Ph.D. journey.

To my writing group, Portia Johnson, Aditi Routh, and Pan-Ju Chen, thank you so much for the encouragement during our early morning writing sessions. I wish you all the best of luck in completing your dissertations in the coming semesters.

To one of my dearest friends, Denise Harvey, thank you for never letting me make excuses for not getting things done. You are the best coach a friend could ask for, and I'm glad to call you a friend.

To my mother, Ella Cromer, and mother-in-law, Lena Williams, thank you both for keeping me sane during my Ph.D. journey and for all you did to fill in the gap for me when I couldn't make it to soccer or basketball practice, cook dinner, or clean the dishes. You both stepped up and kept things running smoothly. I will be forever grateful!

Finally, I would like to thank my husband, Allan Williams, for his help, encouragement, and support during these past years. You are my life's greatest blessing.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

## DEFINITIONS

- *Estimated Family Contribution (EFC)*: A student's EFC is the amount the student's family is expected to contribute to the cost of college attendance (Rubin, 2011). Several factors are used in determining the EFC, including the amount of need, household size, cost of attendance at an institution, full or part-time status, and the duration of the program (Rubin, 2011; U.S. Department of Education, 2020). Any federal aid awarded to the student considers the calculated EFC. Institutions use the EFC calculation to determine whether a student is eligible for federal, state, and institutional financial aid (Dynarski & Scott-Clayton, 2013).

- *Federal Pell Grant*: The Federal Pell Grant program offers need-based financial aid to low-income students pursuing their first undergraduate degree. The amount of aid is determined by calculating a student's EFC once the FAFSA has been completed (U.S. Department of Education, 2020).

- *Federal Stafford Loan – Subsidized*: Low-income students may qualify for subsidized Stafford Loans, which come with the benefits of government paid interest while the student is still enrolled in college (Belley, Frenette, & Lochner, 2014) and lower interest rates (Stratton, 2014). To determine a student's eligibility for the subsidized Stafford Loan, the student must complete the FAFSA by the required closing date.

Along with the Pell Grant, the subsidized Stafford Loan is one of the cheapest financial aid sources available to students and is based on their needs (Dynarski, 2000).

- *Federal Stafford Loan – Unsubsidized*: Created in 1992, the unsubsidized Stafford Loan provides aid to students regardless of their financial need (Dynarsk & Scott-Clayton, 2013). To qualify for the unsubsidized Stafford Loan, students will need to complete the FAFSA by the required deadline (Belley et al., 2014; Kofoed, 2017). Using the EFC, universities determine the amount of aid available to students through federal, state, and institutional programs, including the unsubsidized Stafford Loan program (Belley et al., 2014; Kofoed, 2017). Unlike with subsidized Stafford Loans, unsubsidized Stafford Loan interest is not paid by the federal government while the student is enrolled in college (Dynarski & Scott-Clayton, 2013; Kofoed, 2017).

- *Financial Aid*: In the United States, financial aid is available at the federal, state, and institutional levels. Financial aid takes the form of Pell Grants, student loans, state grants, scholarships and loans, and institutional grants, scholarships, and loans (Bettinger, Long, Oreopoulos, & Sanbonmatsu, 2012; Castleman & Page, 2014; Dynarski, 2003; Dynarski & Scott-Clayton, 2013). Aid amounts are typically based on financial need, which is determined by completing the FAFSA.

- *Summer Melt*: Also called summer attrition, summer melt occurs when a student has been accepted into college yet fails to attend college in the fall following their senior year of high school (Castleman & Page, 2014).

## ABBREVIATIONS

| | |
|---|---|
| AOTC | American Opportunity Tax Credit |
| ADCC | Absolute-Deviation-Continuous Construct |
| BPS | Beginning Postsecondary Students Longitudinal Study |
| BEOG | Basic Educational Opportunity Grant |
| CPS | Current Population Survey |
| CSS | College Scholarship Service |
| Dallas ISD | Dallas Independent School District |
| DOE | U.S. Department of Education |
| EFC | Estimated Family Contribution |
| EOG | Educational Opportunity Grant |
| ELS | Education Longitudinal Study of 2002 |
| ESA | Coverdell Education Savings Accounts |
| FAFSA | Free Application for Federal Student Aid |
| FFEL | Federal Family Education Loans |
| GPA | Grade Point Average |
| HLM | Hierarchical Linear Modeling |
| HOPE | Georgia's Helping Outstanding Students Educationally |
| HSLS:09 | High School Longitudinal Study of 2009 |
| IPEDS | Integrated Postsecondary Education Data System |
| IRS | Internal Revenue Service |

| | |
|---|---|
| LLC | Lifetime Learning Tax Credit |
| MANOVA | Multivariate Analysis of Variance |
| MAP | Monetary Award Program |
| OLS | Ordinary Least Squares Regression |
| NASFAA | National Association of Student Financial Aid Administrators |
| NCES | National Center for Education Statistics |
| NELS | National Education Longitudinal Study of 1988 |
| NPSAS | National Postsecondary Student Aid Study |
| NSC | National Student Clearinghouse |
| SES | Socioeconomic Status |
| STEM | Science, Technology, Engineering, and Math |
| VIF | Variance Inflation Factors |

# CHAPTER 1 - INTRODUCTION

When Marc W. graduated from high school in 2008, his father had just passed away one year earlier. Marc was born in Jamaica and was awaiting the final meeting that would have granted his family citizenship in the United States when his father died from a massive heart attack. Shortly thereafter, Marc's mother and brother returned to Jamaica, leaving Marc to navigate the U.S. college admissions process on his own. Marc was a bright student-athlete; however, he had little knowledge of the financial aspects of college attendance in the United States.

Rico A. became a homeless teen at age fifteen after his drug addicted mother abandoned him with a stepfather who no longer desired to raise a child who, biologically, was not his child. Rico's maternal aunt and uncle were granted emergency guardianship, and he remained in their custody until he graduated from high school. An intelligent student and athlete, Rico hoped for an athletic scholarship to attend college. When he was not recruited, it became necessary to figure out how he could afford to attend college without the help of his parents.

Jewelle M. had been raised by her paternal grandparents from birth because her parents could not provide the safe and stable environment needed for raising a child. Jewelle was a student in the International Baccalaureate program at her high school and was active in the dance community. When she graduated from high school in 2018, her grandparents, who had both immigrated to the U.S. in their twenties, could not assist Jewelle with completing the financial aid forms needed to attend college.

The stories of Marc, Rico, and Jewelle, and many others like them, motivated the current study on the financial and financial aid information obstacles facing high school seniors as they seek to transition from high school to college. The college enrollment problems faced by marginalized students, including those from low-income families, those facing homelessness, those being raised by someone other than their parents, and those who have lost a parent, will persist if strategies are not put in place to address the complicated nature of student financial aid application programs including, but not limited to the Free Application for Federal Student Aid (FAFSA).

**Statement of the Problem**

Qualified high school seniors, those students earning a 3.0 GPA or higher (Hein, Smerdon & Sambolt, 2013; Hodara & Lewis, 2017), are not all successfully transitioning from high school to college due, in part, to real and perceived financial and financial aid limitations (Finnie, Wismer, & Mueller, 2015; Frenette & Robson, 2011; Illinois Student Assistance Commission, 2003; Jez, 2018). A survey of 211 college counselors in Title I schools in Illinois revealed that of students in college preparatory programs who do not attend college, nearly 79% do not attend due to actual financial constraints (Illinois Student Assistance Commission, 2003). In addition, according to Frenette and Robson (2011), high school students in the eleventh and twelfth grades display evidence of a lack of financial aid and academic knowledge by overestimating the cost of college by 340% on average.

Although the statistics from the Illinois study are not generalizable to the U.S. population, the figures are indicative of an issue that plagues our nation – low- and

middle-income students face considerable real and perceived financial and financial aid obstacles when trying to access higher education. Since current financial aid options do not fully address these obstacles, generations of low- and middle-income students may be forced to forego college; thus, furthering the negative effects of the lack of a college degree. These outcomes could include lower lifetime earnings and lower net worth when compared with their counterparts from higher income families (Lovenheim & Owens, 2014).

**Importance of the Study**

In truth, there are many real financial and financial aid obstacles that hinder high school seniors from seeking to transition from high school to college in the United States (Dynarski & Scott-Clayton, 2007, 2013; Rubin, 2010; Stern, 2009). In addition, there are less obvious perception and knowledge-based constraints that also contribute to high school seniors failing to enroll at schools of higher education. The current study examines the real and perceived financial and financial aid obstacles from three perspectives: (1) *family financial support* as determined by the students' family household income, the perception of whether their family can afford to help, the number of family discussions surrounding financial aid, and their understanding of the cost of college; (2) *complexity of the financial aid system* including feeling that the FAFSA is too difficult to complete, not knowing about or how to apply for financial aid, and thinking they are not qualified for financial aid; and (3) the student's *source of financial aid information* which can be seen as a proxy representing the presence or lack of family and/or community support.

Using data from the High School Longitudinal Study of 2009 (HSLS:09), the current study explores the participants' real and perceived family financial support obstacles, financial aid knowledge gaps, financial aid sources, actual FAFSA completion or incompletion, and college attendance in an effort to understand college enrollment hurdles, especially among students from economically and historically disadvantaged backgrounds. Students from economically disadvantaged backgrounds include those who qualify for either free or reduced lunch in their public high school (Cox, 2016). Moreover, students from historically disadvantaged backgrounds disproportionately include those identifying as African American or Hispanic (Emmons & Noeth, 2012).

General systems theory forms the framework for the study and is used to assess the interactions between the real and perceived financial and informational obstacles of high school seniors in the United States as they seek to transition from high school to college. The study applies the framework to questions completed by students participating in the HSLS:09. For this analysis, participants of the HSLS:09 with a 3.0 GPA or higher are divided into one of four groups: (1) those who completed the FAFSA and attended college; (2) those who did not complete the FAFSA and attended college; (3) those who completed the FAFSA and did not attend college; and (4) those who did not complete the FAFSA and did not attend college (see Table 1.1).

**Table 1.1**

*Group Membership (FAFSA Completion vs. College Attendance)*

| | FAFSA Completion | |
|---|---|---|
| **College Attendance** | Yes | No |
| Yes | Group 1: Did complete the FAFSA and Did attend college | Group 2: Did Not complete the FAFSA and Did attend college |
| No | Group3: Did complete the FAFSA but did not attend college | Group 4: Did Not complete the FAFSA and Did Not attend college |

The current dissertation aims to examine the implications of the real and perceived financial and financial aid information obstacles on students' decision to complete or not complete the FAFSA and attend college. While much research has been conducted on the effect of high school counseling (Hallet & Griffen, 2015; Hurley & Coles, 2015; Owen & Westlund, 2016) and summer transition programs (Bird et al., 2019; Castleman, Meyer, Sullivan, Hartog, & Miller, 2017; Castleman & Page, 2015), little is known about the real and perceived financial and financial aid obstacles facing students as they seek to transition from high school to college.

## Theoretical Framework

The theoretical framework underlying the current study is Ludwig von Bertalanffy's general systems theory, which focuses on systems, subsystems, and suprasystems found in nature and industry (Von Bertalanffy, 1969). An example of a system in family and consumer science research would be the family unit itself, which may include subsystems such as siblings and parents. The family system may also belong to a suprasystem, that being their local or extended community. Von Bertalanffy (1969), a biologist, developed general systems theory to describe the interrelationships of biological elements of nature but later found the theory could be applied more widely. His research introduced the concept of open and closed systems, which could be used to

explain natural phenomena. Open systems, as in the current study, are defined by their lack of isolation from their environment (Mesarovic, 1964). In open systems, disturbance and uncertainties affect the feedback mechanism of the environment, which could lead to permanent changes in the behavior of the system (Mesarovic, 1964). On the other hand, closed systems retain their structure even if the environment is altered (Churchman, 1964).

To better comprehend the open system conceptualized in Figure 1.1, general systems theory has utility. Five major concepts of general systems theory—mutual influence, hierarchy, open systems, equifinality, and feedback—are captured in Figure 1.1. Mutual influence refers to the ability of one component within the system or subsystem to influence other components within that environment (Whitchurch & Constantine, 1993). Hierarchy refers to the layering nature of systems, subsystems, and suprasystems and suggest a level of influence on system components (Whitchurch & Constantine, 1993). Equifinality is the capacity to achieve the same goals through various routes (Whitchurch & Constantine, 1993). Feedback carries information through the system so that adjustments can be made, if necessary (Whitchurch & Constantine, 1993). The study that follows provides an overview of the association between system inputs including real and perceived financial and financial aid information obstacles, with the throughput of perceived FAFSA completion, and their association with an output, college attendance.

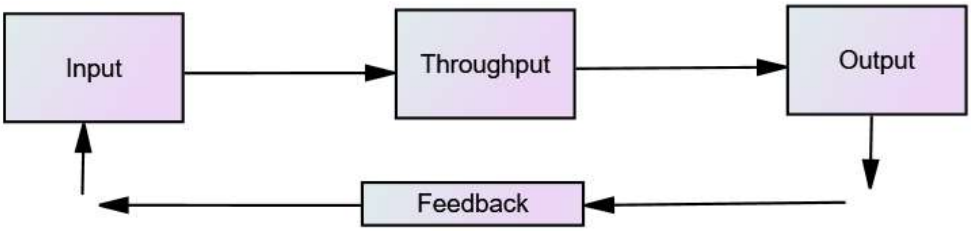



*Figure 1.1. Conceptualization of Bertalanffy's general systems theory*

**Research Questions and Hypotheses**

The present study uses general systems theory to examine FAFSA completion and college attendance decisions in the presence of different inputs such as real and perceived family financial support, financial aid knowledge, and sources of financial aid information. The throughput in the conceptualized system is FAFSA completion while the output to the system is college attendance (see Figure 1.2).

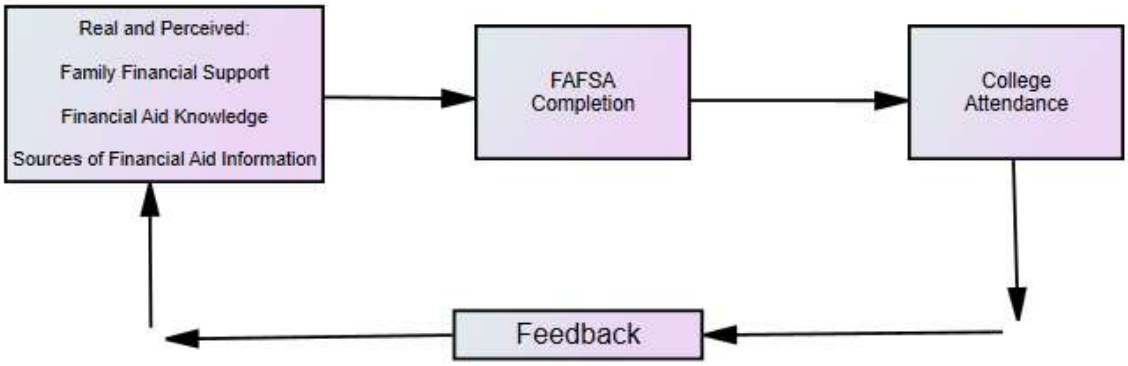



*Figure 1.2. Conceptualization of current study based on general systems theory*

Several research questions and hypotheses are presented below. The first research question is:

*What real and perceived financial obstacles contribute to qualified students not applying for the financial aid needed to attend college?*

The second research question is:

*What real and perceived financial aid knowledge obstacles contribute to qualified students not applying for the financial aid needed to attend college?*

The third research question is:

*Does family and community support contribute to qualified students not applying for the financial aid needed to attend college?*

**Summary**

Chapter 1 introduces the real and perceived financial and financial aid obstacles faced by high school students seeking to transition to college; discusses FAFSA completion and college attendance; and introduces general systems theory which provides the framework for the current study. The chapter also outlines the research questions that will be examined in the study. Chapter 2 provides a review of literature on the input, throughput, and output variables of the current study. Chapter 3 outlines the methods that were used to explore the relationship between real and perceived financial

and financial aid information obstacles, FAFSA completion, and college attendance. Chapter 4 provides the assumptions for the study, descriptive statistics, correlations, and results of the analysis of the data. Finally, Chapter 5 provides an overview of the study, summary and discussion of the major findings, the implications on higher education policy, recommendations for future research, and the limitations of the study.

# CHAPTER 2 - LITERATURE REVIEW

Chapter 2 begins with a brief description of the changes in the cost of college since 1963 – before federal financial aid was mandated in 1965 – then follows up with a historical view of financial aid. The chapter continues by explaining the underlying framework that guides the study, general systems theory, and continues to explore the literature related to the constructs – family financial support, the complexity of financial aid and the FAFSA form, the sources of financial aid information, and student's background – as they relate to FAFSA completion and college attendance. The chapter ends with a synthesis of the literature and a description of how the current study fills gaps in the body of knowledge.

## The Cost of College

As demonstrated in Figure 2.1, since 1963, the cost of college in the U.S. has risen from under $5,000 in 1963 to nearly $25,000 in 2018 (National Center for Education Statistics, 2020). Tuition and fees alone have risen from around $4,200 in 1963 to approximately $13,000 in 2018 (National Center for Education Statistics, 2020). According to Steelman and Powell (1991), even with parental support, the cost of college may cause some students to view college as an unaffordable luxury. In a 2013 study by the Illinois Student Assistance Commission, students reported not attending their first-choice school due to perceived unaffordability. In addition, parental uncertainty about the cost of college can also impact feelings of unaffordability (Grodsky & Jones, 2005).

Although federal student aid can relieve some of the pain of paying for college, many students do not apply due to concerns about the cost of college (Dynarski & Scott-Clayton, 2007; George-Jackson & Gast, 2015).

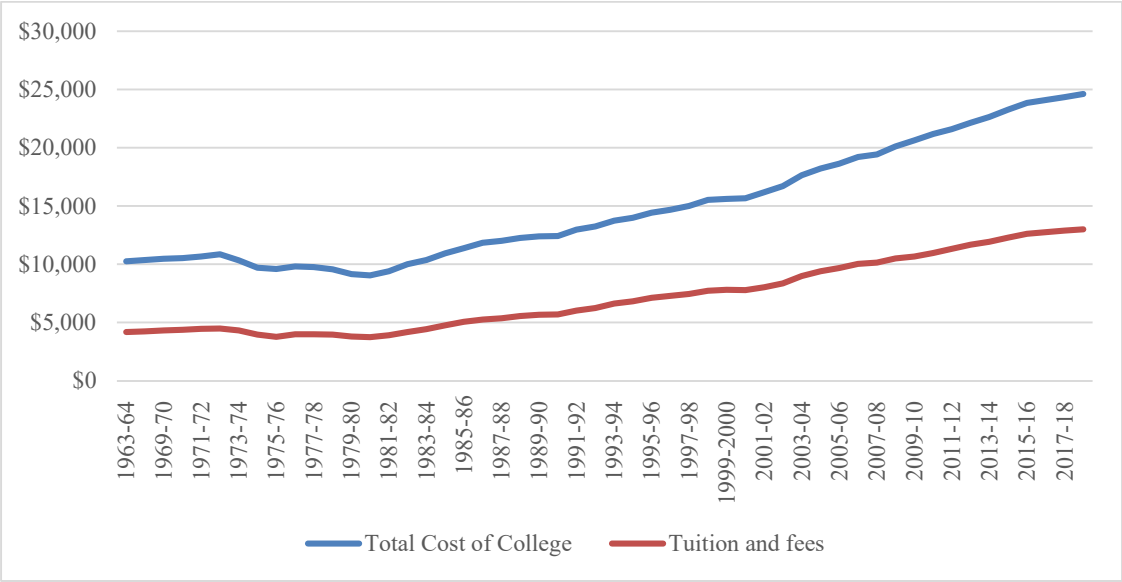



*Figure 2.1 NCES' Data on the Cost of College, 1963 – 2018. Source: nces.ed.gov*

To understand why some students are challenged with successfully applying for and receiving financial aid, it is important to explore the evolution of financial aid programs in the United States. The following section explores financial aid programs from 1965 to the current financial aid programs.

## History of Financial Aid Programs

### *Federal Financial Aid*

In November of 1965, President Lyndon Johnson signed the Higher Education Act of 1965 into law; thus, establishing the federal government as the principal supplier of financial aid support for post-secondary education (Dynarski & Scott-Clayton, 2013).

Title IV of the Higher Education Act of 1965, commonly known as "Title IV aid," led to other financial aid programs such as the Pell Grant, Stafford Loans, and the Federal Work Study program (Dynarski & Scott-Clayton, 2013). Title IV aid was created to ensure that all United States high school seniors, regardless of economic status, could afford to attend college (Dynarski & Scott-Clayton, 2013). Title IV of the Higher Education Act of 1965 created two programs: The Guaranteed Student Loan (GSL) program, predecessor to the Stafford Loan program, and the Educational Opportunity Grant program (EOG), precursor to the Pell Grant. Since Title IV legislation was enacted, college enrollment has dramatically expanded (Dynarski & Scott-Clayton, 2013; Stratton, 2014).

In 1972, the federal government split the EOG into the Supplemental Educational Opportunity Grant (SEOG), which delivered grant funds directly to colleges (Dynarski & Scott-Clayton, 2013; Kelchen, 2015), and the Basic Educational Opportunity Grant (BEOG), which became the first need-based, post-secondary education grant program directly available to students (Dynarski & Scott-Clayton, 2013; Kelchen, 2015; Rubin, 2011). Previously, need-based programs were administered through colleges or through state organizations. In 1980, BEOG was renamed the Pell Grant after Senator Claiborne Pell of Rhode Island who championed its revisions (Dynarski & Scott-Clayton, 2013). The new Pell Grant extended funding to students attending college part-time as well those taking vocational training or attending community college (Dynarski & Scott-Clayton, 2013). The revised grant criteria led to a 44% increase in college enrollment from 1972 to 1992 (Dynarski & Scott-Clayton, 2013).

According to Lovenheim and Owens (2014), federal student aid in the form of Pell Grants and Stafford Loans, both subsidized and unsubsidized, is the principal tool used by the Federal government to support college attendance of students falling in the lower end of the earnings distribution. The Pell Grant is a federally subsidized, need-based grant provided by the U.S. Department of Education (Chaplot, Cooper, Johnstone, & Karandjeff, 2015; Hlinka, Gericke, Akin, & Stephenson, 2018). The grants are awarded to students deemed eligible after completion of the FAFSA (McKinney & Novak, 2013, 2015; Novak & McKinney, 2011) so long as the FAFSA is completed by the application deadline (Pulcini, 2018). According to Stratton (2014), the Pell Grant is continuously under scrutiny by politicians concerned with the increasing revenue requirement to maintain the program. Per the College Board (Baum, Ma, Pender, & Libassi, 2019), over 31% of undergraduates receive the grant each year leading to a significant cost to the U.S. Department of Education. In 2009, total Pell Grant expenditures were $21 billion for 6.2 million recipients; however, in 2019, total Pell Grant expenditures were $28.2 billion for 6.8 million recipients (Baum et al., 2019). Unfortunately, research on the Pell Grant's effectiveness have been mixed with some researchers concluding that the program had little effect on access to college by high school graduates (Hansen, 1983; Kane, 1994, 1995; Rubin, 2011) while others found the program was effective (Denning, Marx, & Turner, 2019; Dynarski, 2003; Dynarski & Scott-Clayton, 2013; Kane, 2003; Stratton, 2014). For example, Stratton (2014) found that the 2010 Pell Grant Awards noticeably impacted summer registration in community colleges.

Of prime importance in student aid awards is determining a student's eligibility for financial aid. The FAFSA form operates as the "gatekeeper" for multiple federal and state government aid programs including the Pell Grant, subsidized and unsubsidized Stafford Loans, Perkins Loans, and the federal work-study program (Kofoed, 2017; McKinney & Novak, 2015). Per Rubin (2011), while Pell Grant awards may be determined by predefined federal guidelines, institutional methods for determining aid amounts is much less clear. Rubin (2011) found that federal criteria for calculating grant award amounts were transparent, while institutional methods were more subjective, differing from institution to institution. Because grant awards may be established using either federal and/or institutional measures, there is little clarity on which students are eligible for Pell Grant aid (Rubin, 2011).

The need-based aid is aimed at supporting students that are considered low-income (Bettinger et al., 2012, 2019; Castleman & Page, 2014; Johnson, 2013; Kelchen, 2015, 2017; Kofoed, 2017; Rubin, 2011; Stratton, 2014) and also promoting broader access to post-secondary education (Johnson, 2013). Students are considered low-income if their expected family contribution (EFC) towards the cost of their college education falls within the eligibility range for a Pell Grant (Castleman & Page, 2014; U.S. Department of Education, 2019). For academic year 2019-2020, the eligibility range for the Pell Grant is an EFC of zero to $5,140 (U.S. Department of Education, 2019). Students with the greatest amount of financial need are assigned an EFC of zero, which qualifies the student for the maximum amount of the grant award (Kelchen, 2015), which was $6,195 for academic year 2019-2020 (U.S. Department of Education, 2019).

Without access to aid such as the Pell Grant, many students would be unable to attend college (Stratton, 2014).

Despite the many benefits of receiving federal, state, and institutional financial aid, many low-income students remain unaware about access to the financial aid program (Dynarski, 2000; Ekstrom, 1992; Kofoed, 2017) and the deadlines for completing the application forms (Feeney & Heroff, 2013). Additionally, researchers found that the complexity of the FAFSA application prevented many otherwise eligible students from completing the form (Daun-Barnett & Mabry, 2012; Frenette & Robson, 2011; Kofoed, 2017; McKinney & Novak, 2015; Rubin, 2011). Frenette and Robson (2011) analyzed the FAFSA and found that the form was more complex than the average income tax form. Rubin (2011, p. 689) affirmed, "[a]s a result of the complexities associated with completing the FAFSA, many low-income students who would likely be eligible for the Pell Grant do not receive it." A study performed by Dynarski and Scott-Clayton (2007) found that 90% of the FAFSA questions used to calculate the amount of aid granted could be removed without changing the distribution of Pell Grant awards. King (2004) estimated that, during 2000, more than 10% of all college students failed to complete financial aid forms although they would be eligible for a Pell Grant. According to Kantrowitz (2018), millions of students eligible for the Pell Grant do not complete the FAFSA. Kantrowitz (2018) estimated that, for the 2015-16 academic year, over $2M was left unclaimed by students qualifying for a partial Pell Grant and over $1.2M was left unclaimed by students qualifying for the full Pell Grant (Figure 2.2). Findings from prior research revealed that 42% of community college students, those pursuing one- or two-year degrees, who were eligible for the Pell Grant in 2007-2008 failed to file a FAFSA

application (McKinney & Novak, 2015). Kofoed (2017) noted that over the last decade, the amount of financial aid that non-applicants have forgone increased with each new wave of available FAFSA data.

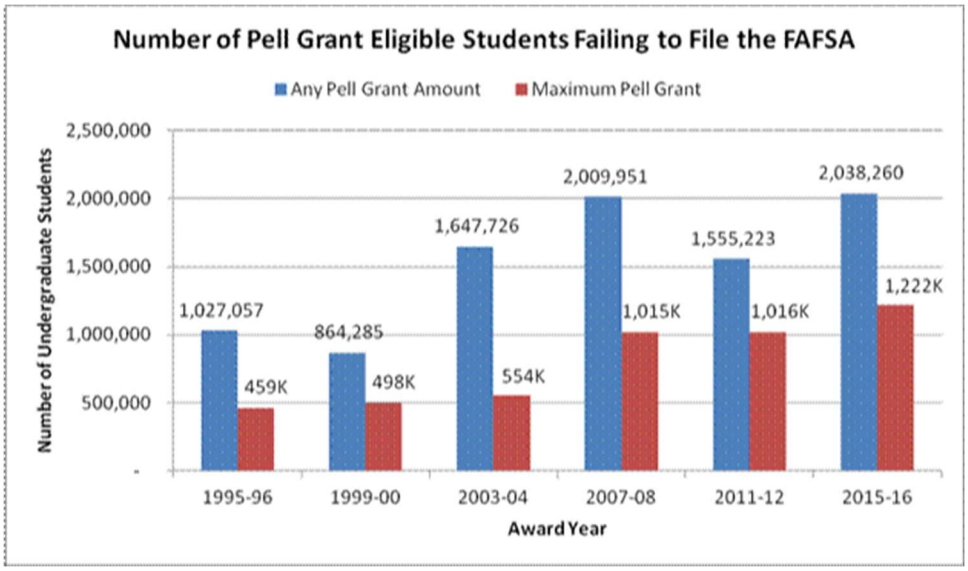



*Figure 2.2 Eligible for Pell Grant vs. Filing for Pell Grant, 1995 – 2016*
*Source:Kantrowitz (2018)*

In addition to grant aid, student loans are another way to fund a student's post-secondary education. Prior to the enactment of the Higher Education Act of 1965, low-income students had access to Perkins loans through their college or university that were backed by the U.S. Department of Education (Belley et al., 2014; Kofoed, 2017). Perkins loans were established in 1957-58 and were need-based financial aid available to those with exceptional financial need (Belley et al., 2014; Kofoed, 2017). The interest rate for the loans was capped at 5% and the loan was repaid directly through one of the 1,700 colleges and universities approved for issuing the loans (Belley et al., 2014; Kofoed, 2017). Although the loan program was quite popular, the program was discontinued in

2017 in an effort to consolidate student loan programs (Belley et al., 2014; Kofoed, 2017).

As part of the Higher Education Act of 1965, banks and other financial institutions were given the authority to loan money directly to college students through the Federal Family Education Loans (FFEL) program (Johnson, 2013). The FFEL loans were guaranteed by the U.S. Department of Education (Johnson, 2013); thereby, insuring private lenders against default. Four types of loans were available through the FFEL program: Stafford subsidized, Stafford unsubsidized, parent PLUS, and federal student loan consolidation.

The Health Care & Education Reconciliation Act of 2010 dissolved the FFEL program and replaced the program with the Direct Loan program. The Direct Loan program modified the loan originator from banks and private lenders to the U.S. Department of Education. From the students' perspective, the Direct Loan program is similar to the FFEL both in terms of the interest charged and the available loan types (Johnson, 2013). The four loan types – Stafford subsidized, Stafford unsubsidized, parent PLUS, and federal student loan consolidation – remain available through the Direct Loan program (Johnson, 2013).

Federally subsidized Stafford loans are the cheapest source of financial aid available to student borrowers and are reserved for students with the greatest level of need (Dynarski, 2000; Johnson, 2013). Stafford subsidized loans are an important source of college funding, and along with Pell Grants and unsubsidized loans, are the primary tool used by the Federal government to encourage college attendance among students from the lowest socioeconomic backgrounds (Johnson, 2013; Kofoed, 2017; Lovenheim

& Owens, 2014). Students from the highest-income levels are ineligible for subsidized student loans (Dynarski, 2000). A major benefit of the subsidized loan is that interest that is accrued on the loan while the student is still enrolled in college is paid by the federal government (Belley et al., 2014; Dynarski, 2000).

Beginning in 1992, federal unsubsidized Stafford loans were made available to students from low, middle, and high incomes regardless of their financial need (Dynarski & Scott-Clayton, 2013; Johnson, 2013; Kofoed, 2017). With Stafford unsubsidized loans, students are allowed to borrow up to the amount of their cost of attendance minus their families' EFC (Belley et al., 2014; Kelchen, 2017; Kofoed, 2017). The interest rate for federal, unsubsidized student loans typically ranges from 7 to 8% (Dynarski, 2000). Although the federal government does not underwrite the interest on unsubsidized loans while the student is enrolled in college, federal guidelines offer forbearance protections, interest rate limitations, and repayment options that make unsubsidized loans more attractive than private student loans (Dynarski & Scott-Clayton, 2013; Kofoed, 2017).

Once students have exhausted cheaper financing options such as the Pell Grant, Stafford subsidized loans, and Stafford unsubsidized loans, their parents are allowed to borrow up to the cost of attendance through the Parent PLUS loan program (Dynarski & Scott-Clayton, 2013). Unlike other federal loan types, the PLUS requires the parent submit to a credit check (Dynarski & Scott-Clayton, 2013) and the interest rates are, generally, higher than for other federal direct loans (Stratton, 2014). Per Dynarski and Scott-Clayton (2013), over half of student loans initiated each year consist of Parent PLUS and unsubsidized Stafford loans.

Private, nonfederal loans are another option for financing the cost of college in the United States (Belley et al., 2014; Kofoed, 2017). The private, nonfederal loan is the least attractive option due to its higher interest rate and the lack of income-based repayment options (Evans & Boatman, 2019; Kofoed, 2017). According to Evans and Boatman, "[t]he interest rates on private loans may vary over time, and the loans are generally more expensive than government loans" (Evans & Boatman, 2019, p. 186).

In addition to the Federal Pell Grant and federal loan programs, Title IV of the Higher Education Act of 1965 also established the Federal Work Study program. The Federal Work Study program provides students with part-time employment to assist them in meeting their financial needs and provide work experience (Braunstein, McGrath, & Pescatrice, 1999; Evans & Boatman, 2019). Research on the effectiveness of the Federal Work Study program's impact on college enrollment is somewhat mixed with some research finding that all forms of aid, including work study, positively impact college enrollment while also concluding that work study aid alone had little impact on college enrollment (Braunstein et al., 1999).

*State Financial Aid*

According to the Education Commission of the States, a nonprofit group that tracks state financial aid policy, all U.S. states offer either need-based and/or merit based financial aid for postsecondary education. Some states offer multiple types of financial aid (Education Commission of the States, 2020). Like federal financial aid, state based financial aid typically requires the completion of the FAFSA and/or a state specific financial aid application (Rubin, 2011). For example, in the state of Georgia, to qualify

for the Georgia Helping Outstanding Students Educationally (HOPE) scholarship, students must complete the FAFSA and/or the Georgia Student Finance Commission's state aid application (Georgia Student Finance Commission, 2020). Application deadlines vary from state to state; however, most institutions encourage students to file both federal and state financial aid applications by the states' deadline to maximize the financial aid award amount (McKinney & Novak, 2015).

Per Dynarski (2000), many new state and federal financial aid programs are shifting from a need-based focus to a merit-based focus. Since the early 1990s, more than one dozen states have instituted merit aid programs (Dynarski & Scott-Clayton, 2013). Georgia's HOPE scholarship program is one of the largest and best-known merit programs (Dynarski, 2000; Dynarski & Scott-Clayton, 2013). Because of the shift in focus from need-based to merit-based, many low-income students have seen a reduction in the amount of their aid awards (Dynarski, 2000). In Georgia, an additional effect of the shift in focus was that more Georgia graduates elected to remain in state to attend four-year colleges rather that matriculating out-of-state; thus, making in-state colleges and universities more competitive (Dynarski, 2000).

*Tax Incentives and Programs*

There are several Federal tax credits and deductions available to students and their families. Introduced in 1997, the Federal Hope Scholarship allowed families with students in college to offset the cost of education with, up to, an annual $1,500 tax credit (Bergman, Denning, & Manoli, 2019; Dynarski, 2000; Dynarski & Scott-Clayton, 2007, 2013). In 2009, the Federal Hope Scholarship program was renamed the American

Opportunity Tax Credit (AOTC) and the amount of the credit was increased to $2,500 (Bergman et al., 2019; Dynarski & Scott-Clayton, 2013; Stratton, 2014). An additional Federal education tax credit program aimed at making college less expensive was the Lifetime Learning Tax Credit (LLC) (Dynarski & Scott-Clayton, 2013). While the AOTC is only available to students in the first four years of their undergraduate degree program, the LLC is available to all students for up to $2,000 per year (Dynarski & Scott-Clayton, 2007).

Prior to 2018, and as opposed to choosing between the AOTC and LLC, families could opt to claim a tax deduction of up to $4,000 based on the student's tuition and fees (Dynarski & Scott-Clayton, 2013). There were income limitations for claiming the tuition and fees deduction and this tax option most benefited those in the middle- and upper-income levels (Greenfield, 2015; Dynarski & Scott-Clayton, 2013; Stratton, 2014). The tuition and fees deduction expired on January 1, 2018, and has not, thus far, been renewed (www.irs.gov, 2020). Alternatively, the student loan interest deduction allows families to deduct up to $2,500 of eligible student loan interest from their taxable income based on their filing status and income levels (Dynarski & Scott-Clayton, 2013).

In addition to federal tax credits and tax deduction programs, there are also federal and state tax incentives for educational savings (Dynarski, 2000; Dynarski & Scott-Clayton, 2013). Most notable are the federal Coverdell Education Savings Accounts (ESA) and state based 529 plans. The Coverdell ESA allows for contributions of up to $2,000 per year, per beneficiary, while 529s plans contributions are nearly limitless (Dynarski, 2000; Dynarski & Scott-Clayton, 2013). Contributions and interest are accumulated in both types of accounts on a tax-free basis as long as proceeds are

withdrawn for approved educational reasons (Dynarski, 2000; Dynarski & Scott-Clayton, 2013).

In the section that follows, general systems theory is introduced and examined. A historical overview, the major concepts of the theory, and the assumptions underlying the theory are outlined.

**General Systems Theory**

General systems theory will be utilized to explain the relationship between multiple interacting variables as part of a self-regulating mechanism (Gray & Rizzo, 1969; Von Bertalanffy, 1969), in this instance—the relationship between financial aid information, familial assistance, and college attendance within a family and community systems. In the theory, linear causality is supplemented by circular causality in the form of a feedback loop that includes input, throughput, and output (Von Bertalanffy, 1969) (see Figure 2.3).

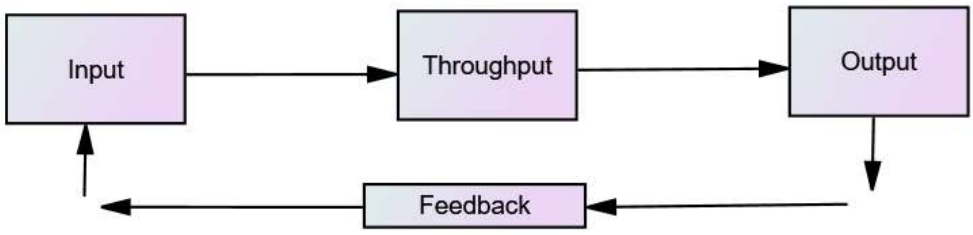



*Figure 2.3. Conceptualization of Bertalanffy's general systems theory*

General systems theory was initially developed by Ludwig von Bertalanffy for biological and biophysical applications (Gray & Rizzo, 1969; Von Bertalanffy, 1969).

However, the theory has made essential contributions in areas of science including psychology and the social sciences. There are several basic characteristics of general systems. First, systems can be either open or closed (Mesarovic, 1964). A system is deemed opened if it is not totally isolated from its environment (has disturbances or uncertainties), if experimentation causes permanent changes in behavior (adaptions occur), or if the system is influenced by or influences the experimenter (Mesarovic, 1964). Closed systems retain their structure even if the environment changes (Churchman, 1964). Second, systems have both structure and relations which contribute to the system's reproducibility or the ability to use the system in other settings (Mesarovic, 1964). Structures would include the inputs, throughputs, outputs, and feedback fundamental to system's environment (Deacon & Firebaugh, 1988; Whitchurch & Constantine, 1993). These structures are connected by relationships and allow communication via the feedback loop (Deacon & Firebaugh, 1988; Whitchurch & Constantine, 1993).

In the context of family research, which includes family decisions about financial aid, general systems theory seeks to explain boundary setting and maintenance, patterns of interaction, as well as communication and control (Deacon & Firebaugh, 1988; Whitchurch & Constantine, 1993). Current research using general systems theory examines how family processes should be understood, how family systems relate to other systems, and how family systems change (Whitchurch & Constantine, 1993).

There are five major concepts of general systems theory: interdependence and mutual influence, hierarchy, boundaries, and open/closed systems, equifinality, and feedback and control. Depending on the level of analysis, systems are made of either a

group of interrelationships or a group of components (Whitchurch & Constantine, 1993). Since the components of a system are interdependent, or systematically held together, the components demonstrate, mutual influence, changes in one component may affect other components (Whitchurch & Constantine, 1993). In the context of family research, the behaviors and decisions of one family member has consequences for others in the family unit (Whitchurch & Constantine, 1993). For example, having a parent who attended college could influence a child to attend college. Hierarchy describes the subsystems, systems, and suprasystems inherent in systems theories (Whitchurch & Constantine, 1993). Subsystems are the smaller systems embedded within a larger system called a suprasystem (Whitchurch & Constantine, 1993). Example of subsystems within the family system include siblings or parents. A community, including an academic community or neighborhood community is an example of a suprasystem within family research. Boundaries define what is included and excluded from a system and specify the interface connecting the system to its environment (Whitchurch & Constantine, 1993). Boundaries determine whether a system is open or closed. In family systems, the range of systems falls between completely open to completely closed (Whitchurch & Constantine, 1993). Equifinality refers to open systems and their ability to accomplish similar goals through multiple routes (Whitchurch & Constantine, 1993). For instance, if parents desire that their child attend college, they may either contribute to the child's tuition costs or they may provide support for the child in completing the child's loan applications. Either way, the child has the opportunity to attend college with the support of the parents. Feedback and control describe the ability of a closed system to monitor patterns of behavior and communicate with other parts of the system (Whitchurch &

Constantine, 1993). Feedback can be both positive and negative. Positive feedback is characterized by increasing one component due to an increase in another component (Whitchurch & Constantine, 1993). For example, an increase in household income could result in an increase in savings for college related expenses. On the other hand, negative feedback is meant to restore equilibrium (Whitchurch & Constantine, 1993). A loss in household income may cause a disruption in the equilibrium, therefore, causing one partner to seek additional income to return to the original household spending power especially if the household is supporting a child attending college. For the current study, the relationship between real and perceived financial and financial aid information (input), FAFSA completion (throughput), and college attendance (output) is examined (see Figure 2.4 and Table 2.1). The inability to overcome these financial and financial aid obstacles, as measured by the number of students that do not complete the FAFSA and do not attend college, provide feedback to system.

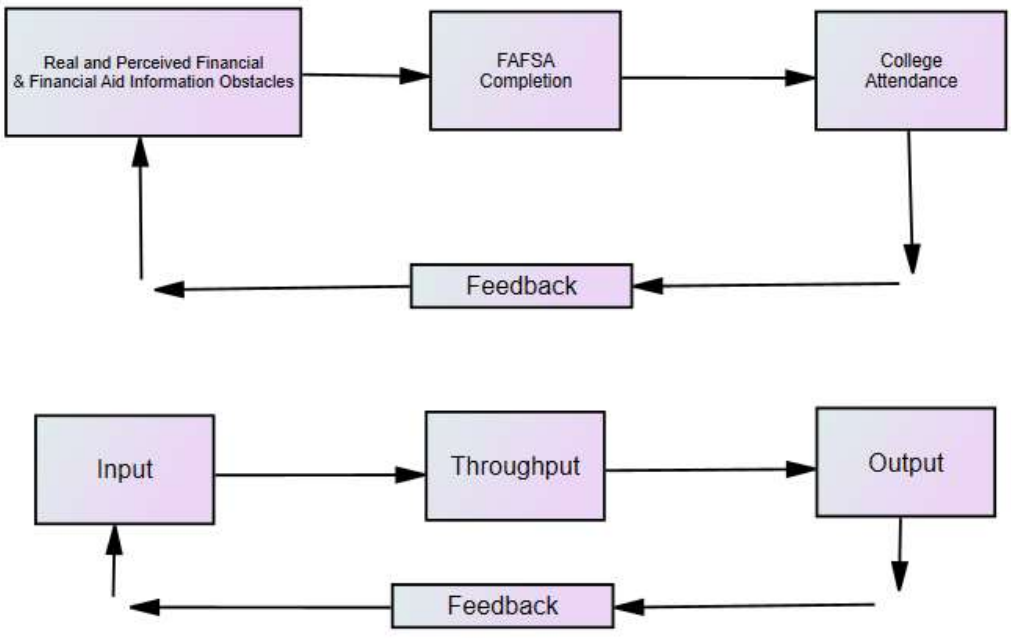



*Figure 2.4. Conceptualization of the current study using general systems theory*

**Table 2.1**

*Real and Perceived Financial and Financial Aid Information Obstacles*

| Inputs | Throughput | Output |
|---|---|---|
| *Family Financial Support* | | |
| Family can afford to help with college | FAFSA Completion | College Attendance |
| Household/Family Income | | |
| Financial Aid Discussions | | |
| Understanding and Estimating College Costs | | |
| *Complexity of Financial Aid* | | |
| Forms Too Difficult | FAFSA Completion | College Attendance |
| Knowledge about Financial Aid | | |
| Thought Not Qualified | | |
| *Sources of Financial Aid Information (Support)* | | |
| Most influential on thinking about financial aid? | FAFSA Completion | College Attendance |
| *Student's Background* | | |
| Gender | FAFSA Completion | College Attendance |
| Race | | |
| Mom's Education | | |
| Dad's Education | | |
| Mom's Occupation | | |
| Dad's Occupation | | |
| Household Size | | |
| Sibling Attended College | | |

## Family Financial Support

Family financial support is a critical input to the FAFSA completion process and eventual college attendance. Key considerations for family financial support include the level of family supportiveness, financial ability, financial aid discussions, and understanding of the cost of college.

### *Family Can Afford to Help - Supportiveness*

Literature on family financial contributions to college expenses tends to fall into one of two areas: expectations of family financial support and willingness of families to financially support the student. Expectations of support can be viewed from two perspectives: government expectations in the form of the expected family contributions (EFC) and student/parent's own expectations. Willingness to support typically depends on the family's expectation of their child's college attendance and can be evidenced by the family saving for college expenses.

#### *Government expectations (EFC)*

A student's EFC is defined as the amount that the family of the student can be expected to contribute to their annual cost of attending college (Rubin, 2011). Factors used to determine the student's EFC include: the amount of need, family size, cost of attendance, full vs. part time status, and the length of the academic program (Rubin, 2011; U.S. Department of Education, 2019). The EFC is important as its value determines the amount of Federal, State, and institutional aid awarded to the student (Dynarski & Scott-Clayton, 2013).

In 2011, Rubin sought to understand the relationship between EFC and college attendance. In particular, Rubin's (2011) study investigated the effect of eligibility for the Pell Grant, which is determined by the student's EFC, on initial college enrollment. Using regression discontinuity design and a logistic regression model, Rubin (2011) estimated the casual effect of being eligible for the Pell Grant on the probability of

college enrollment. Observations (n=5,260) for the study were taken from the Education Longitudinal Study of 2002 (ELS:2002), a nationally representative study performed by the NCES. Students from the study were divided into two groups – those having an EFC at or below federal guidelines for Pell Grant eligibility and those above those same guidelines. At the time of the study, the highest EFC allowed for Pell Grant eligibility was $3,850. Rubin (2011) found that the probability of attending college was not increased by a student's eligibility for the Pell Grant. Rubin (2011) reasoned that the Pell Grant award amounts were too small to have a significant effect on college enrollment.

In a 2014 article by Castleman and Page, the authors' objective was to examine the postsecondary plans of college intending, low-income high school graduates due to their susceptibility to *summer melt*. Summer melt is broadly defined as a change in college intentions during the period between high school graduation and the fall immediately following graduation (Castleman & Page, 2014). A student's EFC, the government's expectation for family financial support, was used to determine if the students were low-income (Castleman & Page, 2014). Those that were Pell eligible met the criteria for participation in the study (Castleman & Page, 2014). Additionally, on time graduates that applied and were accepted to college were considered college-intending (Castleman & Page, 2014). The authors had three questions concerning plans for post high school transitions to college: (1) to what degree do high school graduates that have college intentions fail to enroll during the period immediately following graduation from high school; (2) is there a measurable change in college plans among those that do enroll on time; and (3) how does socioeconomic status (SES) distinguish the responses to these questions? The quantitative study used linear probability models to

analyze the datasets and evaluate the research questions (Castleman & Page, 2014). Two datasets were used to analyze Castleman and Page's (2014) research questions. First, was data from the Last Dollar Scholarship program offered by uAspire, a Boston-based, nonprofit organization that provides financial aid advising and financial scholarships to Boston public school students (Castleman & Page, 2014). The program requires an application, submission of their student aid report by the deadline, completion of the FAFSA and completion of college applications (Castleman & Page, 2014). The analytical sample from uAspire consisted of 1,861 students (Castleman & Page, 2014). Second, data from the ELS:2002, a nationally representative study collected by the NCES, tracks students during the transition from high school to college and the labor market (Castleman & Page, 2014). The analytical sample for the ELS:2002 study was 6,410 students (Castleman & Page, 2014). Castleman and Page's (2014) findings indicate that students from lower income families, who are college intending, are markedly susceptible to summer attrition. The uAspire data sample revealed a summer melt rate of 22% within the lower SES student population as opposed to 18% among their wealthier counterparts (Castleman & Page, 2014). Additionally, the ELS:2002 data sample revealed a summer melt rate 15% among lower SES students compared to 10% among higher SES students when controlling for 10th grade cognitive ability (Castleman & Page, 2014).

Students with the greatest amount of financial need are assigned an EFC of zero, which qualifies the student for the maximum amount of the grant award (Kelchen, 2015). The government has no expectation of family financial support for students with an EFC of zero (Kelchen, 2015). In a 2015 article, Kelchen examined students with an EFC of

zero comparing their year over year status based on the method by which their EFC was determined – *automatic qualification* for those having income less than $24,000 (2014-2015), *simplified FAFSA* for those who made less than $50,000 or that qualify to complete IRS form 1040A or 1040EZ, or the *full FAFSA* for those who do not fall into either of these categories. Summary statistics were used to analyze the differences in characteristics between zero-EFC students based on method of assignment, college type, dependency status, and general demographics (Kelchen, 2015). Data for the study were drawn from multiple sources: the National Post-Secondary Aid Study (NPSAS) waves 1996 to 2012, the BPS, and FAFSA information from nine colleges and universities that were members of the NASFAA (Kelchen, 2015). Irrespective of the manner in which an EFC of zero was assigned, 95% of dependent students initially assigned a zero EFC were Pell eligible in the year that followed. Additionally, the rate of independent students with dependents qualifying for zero-EFC tended to rise from year to year (Kelchen, 2015).

*Student vs. Parent expectations*

Student and parent alignment on family financial support is another important topic to consider. Expectations can depend on socioeconomic factors, racial differences, or both (Warnock, 2016). Warnock (2016) evaluated the racial, ethnic, and socioeconomic differences in parents' perceived ability to pay for college. The author hypothesized that if racial, ethnic, and socioeconomic differences in parents' perception of their ability to pay for college existed, then actual disparities may also exist in college attendance based on these racial, ethnic, and socioeconomic differences (Warnock, 2016). The Wisconsin model of status attainment was used as the theoretical framework for this

study (Warnock, 2016). The framework proposes that academic ability and family background impact the educational expectations placed on the student by others (Warnock, 2016). Data from the National Education Longitudinal Study (NELS) was analyzed using logistic regression to estimate the racial, ethnic, and socioeconomic variance when comparing four parental perceptions for paying for college: (1) parents expect student to earn money; (2) parents have a way to pay for college; (3) parents are willing to go into debt; and (4) parents are able to get information about aid (Warnock, 2016). Warnock (2016) found that racial, ethnic, and socioeconomic differences existed in parental perceptions of funding their child's college expenses. More specifically, Warnock (2016) found African American parents were more willing to go into debt to pay for college while Whites were only less likely than Asians to expect their children to earn money for college.

Flaster (2018) was interested in understanding the impact of a student's expectations of family financial support on their enrollment decisions. Flaster's (2018) research questions assessed the parent and child characteristics associated with parental plans to contribute to college expenses, whether these parental plans aligned with the students' expectations, the impact of the parental plans for financial support on college enrollment, and whether these parental plans impacted the type of college or university attended. To assess the research questions using logistic regression, Flaster (2018) first used the matching technique known as inverse-probability weights with regression-adjustment. This technique is used when the researcher has little control over which participants receive the treatment versus the control (Flaster, 2018). The purpose of the treatment is to make the groups as similar as possible for comparison purposes (Flaster,

2018). Using data from the HSLS:09, the study examined 6,070 participants in the estimation sample (Flaster, 2018). Students with parents who planned to contribute to their child's education expenses were more advantaged in nearly every category – wealth, homeownership, educational attainment, and professional occupation (Flaster, 2018). However, there was a 40% discrepancy in student's expectations and parent's intention (Flaster, 2018). When expectations and intentions were aligned, college enrollment increased by 5% if support was expected by both parties and decreased by 10% when support was not expected by both parties (Flaster, 2018).

*Willingness to Support*

A family's willingness to support financially is typically based on the parent's expectations of their child attending college, their feelings of responsibility for college expenses, and their willingness to save for college costs. In a 1991 article, Steelman and Powell studied parental investment in college expenses based on three factors: (1) where the parent placed the primary responsibility for college – themselves, the child, or the government; (2) their ability and willingness to cover expenses as well as the child's ability to help; and (3) the amount parent's saved for the student's expenses. Steelman and Powell (1991) used logistic and OLS regression for the study and evaluated the parent survey portion of the High School and Beyond dataset with particular interest in the parents of seniors (n=2,295). The authors found that as sibship [1]size increased, parents placed more responsibility for college expenses on the child (Steelman & Powell, 1991). The authors also found that as parental financial resources increased, their

[1] Sibship is the number of siblings within a family unit (Steelman & Powell, 1991).

willingness to provide support increased (Steelman & Powell, 1991). Lastly, the authors found that parents who had received financial support from their own parents were more willing to provide for their children's college expenses (Steelman & Powell, 1991).

In a subsequent article by Agger, Meece, and Byun (2018), the authors explored the influences of family expectations and influence on college attendance. Using social capital as the framework, the authors investigated, among other topics, the effect of parental expectations on rural students when faced with deciding between enrolling in college or accepting a local job (Agger, Meece & Byun, 2018). The study was particularly concerned with the role of gender in the students' choice (Agger et al., 2018). The authors used both descriptive statistics and weighted least square mean and variance adjustment estimation to perform the analysis (Agger et al., 2018). The data for this study of rural students were drawn from the National Student Clearinghouse (NSC) (n=3,456) and from original data collected by the authors (Agger et al., 2018). Agger et al. (2018) found that family expectations were critical to rural students in determining their college plans. Additionally, parental expectations for college attendance were more important in the college going decision for females (Agger et al., 2018).

In a 2020 article by Zheng, Starks, Ellis and Elliott, the researchers assessed the association between children's savings accounts, parental education expectations, and academic achievement among low-to-moderate income households. The authors hypothesized that parental college expectations had a mediating effect between the children's savings accounts and educational achievement (Zheng, Starks, Ellis, O'Brien, & Elliott, 2020). The Theory of Planned Behavior formed the framework for the study and the data were analyzed using structural equation modeling (Zheng et al., 2020). Data

for the study was derived from the Harold Alfond College Challenge (HACC) Children's Saving Account Program (n=572), which began in 2008 for children born in Maine (Zheng et al., 2020). Yearly grants of $500 were offered to infants residing in Maine with additional funds of up to $300 deposited to match parental contributions at a rate of 50% (Zheng et al., 2020). Results of the study concluded that children's savings accounts as mediated by parent's college expectations had a positive association with math ability but no association with reading ability (Zheng et al., 2020). Additionally, having the children's saving account was positively associated with parental college expectations (Zheng et al., 2020).

In 2017, Kim, Huang, Sherraden and Clancy investigated the impact on parental savings through Child Development Accounts (CDA) on parental education expectations. The study utilized three theoretical frameworks as the basis for the study (1) status-attainment theory, which describes the complicated process by which children acquire their parents' values, thoughts, and behaviors; (2) identity-based motivation theory, which posits that parental saving cultivates the child's school focused identity; and (3) institutional theory of saving, which suggests that individuals rely on institutional support to save and hold assets. The study conducted a path analysis to estimate the mediating effect of parental savings on CDAs and expectations of college attendance (Kim, Huang, Sherraden, & Clancy, 2017). Study participants (n=2,160) were selected from the Saving for Education, Entrepreneurship, and Down Payment (SEED) for Oklahoma Kids (SEED OK) program. Participants of SEED OK have 529 accounts opened for them by the state of Oklahoma with an initial deposit of $1,000 (Kim et al., 2017). Participants were also incentivized to open and contribute to separate 529 accounts with $100 if opened by a

certain date along with matching contributions (Kim et al., 2017). Kim et al. (2017) found no significant direct effect of CDAs on educational expectations, however, having college savings via an OK 529 account was statistically and positively associated with parental education expectations.

In a 2018 study performed by Elliott, Starks, Seefeldt and Ellis, the authors researched the influence of children's savings accounts on parents plans for and talks with their children about college attendance. The qualitative study implemented a positivist approach and hypothesized that the study would find a conclusive connection between parental education expectations and having a college-saver identity for participants in the HACC, one of the oldest and most renowned college savings programs in the United States (Elliott, Starks, Seefeldt, & Ellis, 2018). The theoretical framework for the study was identity-based motivation theory, which theorizes educational expectations influence the child's possible-self and is instrumental in predicting the child's future behavior (Elliott et al., 2018). The study consisted of interviews with 22 families participating in the HACC program, which began in 2008 for children born in Maine whose parents opened a state 529 plan called NextGen, by their first birthday (Elliott et al., 2018). The program offers an initial grant of $500 for infants residing in Maine with an additional 50% matching funds of up to $300 deposited to encourage parental contributions (Elliott et al., 2018). Only 18 of the 22 interviews were used in the analysis due to faulty recording issues (Elliott et al., 2018). The study revealed that 56% of families had expectations of college attendance for their child upon graduation from high school (Elliott et al., 2018). However, there was no expectation on the type of college or university the child should attend (Elliott et al., 2018).

Song and Petracchi (2020) researched the impact of college savings or family discussions about college attendance on college attendance among low-income households. The authors hypothesized that parental college expectations and discussions about college attendance had a mediating effect on parental college savings and the child's college attendance (Song & Petracchi, 2020). In addition to descriptive statistics, the study employed multinomial logistic regression to answer the research questions (Song & Petracchi, 2020). The study sample was drawn from the ELS of 2002/2006, a nationally based sample of 752 participating high schools from which 26 tenth graders were randomly selected to participate from each high school (Song & Petracchi, 2020). The resulting sample was further narrowed to those from low-income households (n=3,997) (Song & Petracchi, 2020). The results of the study concluded that female students were more likely than male students to attend two-year and four-year institutions (Song & Petracchi, 2020). Moreover, parental college expectations had a statistically significant effect on the child's college attendance (Song & Petracchi, 2020). Furthermore, discussions about college had a statistically significant impact on increasing enrollment to two and four-year institutions for low-income students (Song & Petracchi, 2020).

### *Family Income - Ability to support*

Research surrounding the ability of the family to support the student financially is largely concerned with the connection between family household income and college attendance (Flaster, 2018; Illinois Student Assistance Commission, 2003). Although a family may expect and be willing to support their student's college attendance, the ability

to provide financial support may affect college aspirations (Dynarski, 2000; Dynarski & Scott-Clayton, 2013). Additionally, with the recent shift in focus from need-based to merit-based financial aid, family support is more critical for students from low-income households though they are less prepared than their middle- and high-income counterparts to provide financial support (Dynarski, 2000; Dynarski & Scott-Clayton, 2013; Sallie Mae, 2020).

In a 2003 research study performed by the Illinois Student Assistance Commission, researchers surveyed both Illinois counselors and student participants from 211 Title I schools in an effort to understand the relationship between academic standards, income, and college access. Title I schools are designated as such based on the percentage of students considered low-income that attend the school (Illinois Student Assistance Commission, 2003). In the study, researchers were interested in two topics (1) if a majority of students surveyed who were in college prep courses continue on to college; and (2) if there were students who participated in the survey who had the ability required to participate in college prep courses yet failed to take these courses. The researchers hypothesized that low-income students fail to enroll in college due, in part, to financial barriers (Illinois Student Assistance Commission, 2003). The quantitative study used descriptive and summary statistics to evaluate their research questions (Illinois Student Assistance Commission, 2003). The study was divided into two sections: (1) counselors from Title I and non-Title I schools in Illinois (n=203) and (2) those eligible (n=440) for the Illinois Monetary Award Program (MAP) (Illinois Student Assistance Commission, 2003). Eligible participants of MAP come from low- to moderate-income, Illinois households (Illinois Student Assistance Commission, 2003). Separate surveys

were issued to students who were recipients of the MAP award and those eligible for MAP funds but failed to claim their awards (Illinois Student Assistance Commission, 2003). According to the study, 79% of counselors at Title I schools agreed that students in college preparatory programs who do not attend college fail to attend due to financial constraints compared to 74% of counselors at non-Title I schools (Illinois Student Assistance Commission, 2003). Additionally, 79% of counselors at Title I schools agreed that students in college preparatory programs that do not attend college fail to attend because they decide to work compared to 70% of counselors at non-Title I schools (Illinois Student Assistance Commission, 2003). Furthermore, 86% of counselors from Title I schools and 87% of counselors from non-Title I schools agreed that there were students with academic ability who were not participating in college prep programs (Illinois Student Assistance Commission, 2003). The student portion of the study revealed that 96% of MAP recipients and 91% of the MAP eligible agreed that their parents encouraged them to attend college. Moreover, 69% of MAP recipients and 75% of the MAP eligible agreed that their high school counselor encouraged them to attend college (Illinois Student Assistance Commission, 2003). The study also revealed that MAP eligible students that attended college part-time, less than part-time, or not at all were lower income, had less support from their parents, and had more financial obligations than MAP recipients who attended college full-time (Illinois Student Assistance Commission, 2003).

As mentioned earlier, Flaster (2018) studied parental financial support and the college going decisions of their children. Using data from the HSLS:09, Flaster's study examined participants (n=6,070) and found that when both parents and children had

expectations of parental financial support, college enrollment increased by 5%, but decreased by 10% when there was no expectation of parental financial support (Flaster, 2018). The study also revealed that the best predictor of conflicting parental financial support expectations between the parent-child dyad was family income (Flaster, 2018). More specifically, low-income participants were more likely to have conflicting expectations of college support than high-income participants (Flaster, 2018).

In an article by Barnard, Dorrance, Elengold, and Ansong (2019), the authors challenge the government's assumption of mono-directional (parent to child) financial support for college expenses and reflect upon the bi-directional financial support that occurs predominately with low-income and first-generation students. In the mixed methods study of 65 individuals, the authors highlight the many ways that the federal system for granting financial aid miscalculates how much and even if families are able to contribute to college costs (Barnard et al., 2019). In addition to the 65 individuals interviewed, quantitative data were retrieved from the NPSAS to provide information on how families paid for college from 2017 to 2018 (Barnard et al., 2019). A key finding of the study was that many students regularly contributed to the family's household expenses by buying groceries, paying rent, and lending money when requested (Barnard et al., 2019). Additionally, financial shocks to the household – unemployment, incarceration, and bankruptcy – resulted in the loss of financial support from within the family for the student's college expenses (Barnard et al., 2019). Moreover, the study revealed that federal government's EFC was unrealistic for some households (Barnard et al., 2019).

Since the early 1990s, more than one dozen states have instituted merit aid

programs, which tend to favor middle- and high-income students (Dynarski & Scott-Clayton, 2013). According to the Education Commission of the States (Education Commission of the States, 2020), a nonprofit group that tracks state financial aid policy, all U.S. states now offer either need-based and/or merit based financial aid for postsecondary education. Georgia's HOPE scholarship program is one of the largest and best-known merit programs (Dynarski, 2000; Dynarski & Scott-Clayton, 2013).

Per Dynarski (2000), many new state and federal financial aid programs are shifting from a need-based focus to a merit-based focus. Because of the shift in focus from need-based to merit-based, many low-income students have seen a reduction in the amount of their aid awards and many middle- and high-income students have seen an increase in their aid (Dynarski, 2000). In Dynarski's (2000) study, the two research questions asked were (1) how will the shift from need-based aid to merit-based aid affect college attendance; and (2) will merit based aid granted to middle- and high-income students increase their college attendance rate. Using difference-in-difference and OLS estimation, Dynarski (2000) examined the changes in college attendance rates in Georgia before and after the implementation of the HOPE Scholarship. Data for the study were derived from the October Current Population Survey (CPS) and the Integrated Postsecondary Education Data System (IPEDS) (Dynarski, 2000). The CPS study (n=6,811) compared the number of students remaining in Georgia for their postsecondary studies to the number of students remaining in the southeast for their postsecondary studies during the four years before and after the implementation of the Georgia HOPE scholarship (Dynarski, 2000). Data from IPEDS allowed Dynarski to evaluate schooling choices such as private-vs.-public, and two-year versus four-year institutions (Dynarski,

2000). Dynarski (2000) found that the HOPE Scholarship caused students to shift from two-year to four-year colleges. Additionally, the HOPE Scholarship enticed Georgia residents to attend college in-state instead of enrolling in out-of-state colleges and universities (Dynarski, 2000).

In its 2020 report covering how Americans paid for college during the prior academic year, SLM Corporation (Sallie Mae) determined that high-income families, households making over $100,000 per year, are more likely to plan for college expenses (66%) than their middle- and low-income counterparts (both 44%). In addition, 45% of high-income families take the lead on making decisions about paying for college compared to 26% of their low-income counterparts (Sallie Mae, 2020). Both descriptive and summary statistics are provided in the study findings (Sallie Mae, 2020). Participants of the study included 996 parents of children between the ages of 18 and 24 that were enrolled as undergraduates and 1,000 undergraduates in the same age range (Sallie Mae, 2020).

### *Financial Aid Discussions*

During the process of determining how college costs will be funded, discussions about the costs associated with attending college as well as the forms required for pursuing financial aid are critical. These discussions typically take place by the following means: parents and students talk with counselors; parents speak with students or others; and/or counselors reach out to students and their families (Hallet & Griffen, 2015; Hurley & Coles, 2015; Owen & Westlund, 2016).

*Parents and students talk with counselors*

In an article by Hallet and Griffen (2015), the authors studied the impact of school encouragement of parental involvement during the college planning process on the improvement of college access. Using the Action Inquiry Model, a process by which researchers, practitioners, and average citizens collaborate to address social problems, the authors examined ways to improve college enrollment in low-income communities of color (Hallet & Griffen, 2015). The qualitative study was guided by two questions: (1) how do secondary school administrators and postsecondary researchers embolden parents to join their children in the pursuit of their postsecondary aspirations; and (2) how can parents be encouraged to become a knowledge leader while engaging their children in college-planning discussions (Hallet & Griffen, 2015). Participants in the study were members of Creative Opportunities Via Education, a group comprised of parents and administrators of middle and high schools in a Northern California community primarily containing low-income people of color (Hallet & Griffen, 2015). Data for the qualitative study was collected over the three-year period of 2011 to 2013 from 73 of the 113 families that agreed to participate in the program (Hallet & Griffen, 2015). The researchers were successful in reaching their goal of empowering parents to lead the conversation about college planning (Hallet & Griffen, 2015). Parental engagement increased during the program and each family created a college action plan, a living document that adjusts to include the evolution of the child's education plans (Hallet & Griffen, 2015).

In their 2015 study, Hurley and Coles sought to improve college access for students, particularly for underrepresented students with a focus on the Latino

community. The mixed methods study included a national survey and observational studies of the staffing, structural challenges, and counseling activities in six high schools across the U.S. serving large populations of Latino students (Hurley & Coles, 2015). Research questions for the quantitative portion of the study were as follows: (1) does the college enrollment rate vary by ethnic/racial composition for public high schools; (2) what is the correlation between high school counseling procedures and college enrollment; (3) does the characteristics of the counseling practices and school culture help to explain the variation in college enrollment; and (4) how do factors such as counselor experience or certification affect the college enrollment rates based on racial and ethnic composition (Hurley & Coles, 2015). Using both descriptive statistics and multivariate linear regression, the authors analyzed the data collected during the study (Hurley & Coles, 2015). Participants of the study included students, counselors, and administrators of the six high schools included in the study (Hurley & Coles, 2015). The authors found that the frequency of college advising events that were individualized to the student led to an increase in four-year college attendance for both white and non-white students (Hurley & Coles, 2015). To improve college access, the authors recommended a focus on personal contact with the students and their families, and comprehensive counseling that includes financial aid planning (Hurley & Coles, 2015).

In a study concerning college opportunity, school counselors, and FAFSA completion, Owen and Westlund (2016) studied the impact of the U.S. Department of Education's (DOE) initiative to provide real-time student level FAFSA completion information to some of the largest school districts in America. Their study focused on counselors in Albuquerque, NM who set up "trusted centers" were students and parents

would receive assistance with the completing the FAFSA (Owen & Westlund, 2016). The authors asked two questions (1) does an increase in counselor interactions and encouragement improve FAFSA completion rates; and (2) does an increase in counselor interactions and encouragement improve immediate college attendance (Owen & Westlund, 2016)? T-tests, bivariate linear regression, and multivariate regression techniques were used to analyze the data (Owen & Westlund, 2016). Participants of the study were drawn from 21 high schools in a large southwestern U.S. school district (Owen & Westlund, 2016). The two-year study, which began in 2010, covered similarly sized cohorts (n=8,655) with a majority (56%) Hispanic population (Owen & Westlund, 2016). FAFSA completion information from the DOE and college attendance information from the NSC were matched to the individual students in each cohort (Owen & Westlund, 2016). The authors found strong evidence that the school counseling interventions had a positive impact on FAFSA completion (10%) and college attendance (11%) for the 2011 cohort (Owen & Westlund, 2016).

*Parents speak with students or others about financial aid*

In 2016, Castleman and Page assessed the effect of parental influence on college decision making when prompted via text message to engage their student in completing college related tasks such as applications and financial aid forms. The authors framed the study around three questions: (1) does an automated yet personalized summer text campaign informing students of the task to be completed for college increase student enrollment and attendance; (2) are the results better if the parents are also engaged; and (3) are the results consistent with prior text campaigns through uAspire (Castleman &

Page, 2016). Participants of the study came from uAspire, a Boston-based, national nonprofit providing financial aid advising and college affordability analysis to Boston area public school students (Castleman & Page, 2016). Students (n=3,906) were randomly assigned to one of three groups (Castleman & Page, 2016). In treatment group one both parents and students received 14 text message reminders about tasks requiring their attention for college attendance (Castleman & Page, 2016). In treatment group two, only the students received the text message reminders (Castleman & Page, 2016). The third group acted as the control for the study and received no text reminders (Castleman & Page, 2016). Working with the NSC, uAspire obtained college enrollment information for study participants (Castleman & Page, 2016). Data related to text message engagement was provided by Signal Vine, a texting platform (Castleman & Page, 2016). Although parent participation was low, there was a 3.2% increase in college enrollment when parents received text alerts and a 2.9% increase when only students received the text alerts when compared to the control group (Castleman & Page, 2016).

Manly, Wells, and Bettencourt (2017) used capital conversion theory to investigate the financial planning methods parents used to finance their children's college education. Research questions asked during the study included (1) to what degree were factors of cultural capital involved in parental decisions and actions taken to support their child's college aspirations; (2) to what degree were the factors of cultural capital involved with the amount of capital saved for their child's college education; and (3) to what degree were the factors of cultural capital involved with specific actions taken by parents in planning for their child's college expense (Manly et al., 2017). Manly et al. (2017) used logistic regression to estimate the odds of parental financial planning for college

enrollment and multinomial logistic regression to determine which independent variables significantly predicted the amount of savings for college expenses. Using the ELS:2002, a survey of high school students and their parents, the study focused on the preparation for coverage of postsecondary expenses by parents of then 10th graders (Manly et al., 2017). The results revealed that, ceteris paribus, parental financial planning for college expenses was more likely to occur when parental involvement at school was reported (Manly et al., 2017). Parental involvement at school/home and income were also significant predictors of the amount of savings for college expenses (Manly et al., 2017).

In a qualitative study performed by Elliott, Starks, Seefeldt, and Ellis (2018), the authors hypothesized that parents of participants of the HACC, a children's savings account program based in Maine, would have positive expectations of college attendance for their children and that these parents would develop a college-saver identity due to participation in the program. Using identity-based motivation (IBM) theory, which suggests that individuals form multiple identities or possible selves but only act on some, the authors evaluate the educational expectations of parents, their college saving behavior, and the effect on college enrollment (Elliott et al., 2018). Qualitative data were collected from 22 parents with children participating in HACC (Elliott et al., 2018). Results of the study revealed that 56% of families in the program had positive expectations of college attendance and 72% of families demonstrated having developed a college-saver identity (Elliott et al., 2018).

*Nudging from counselors to complete financial aid forms*

In their 2015 study, Castleman and Page investigated the efficacy of personalized

college and financial aid related text messages and peer mentoring on the reduction of summer melt among low-income high school graduates within three agencies: the Dallas Independent School District (Dallas ISD); participants of uAspire, a Boston-based, nonprofit organization providing financial aid advisement and financial scholarships to Boston public school students; and Mastery Charter Schools, a Philadelphia based network of charter schools. Summer melt, sometimes called wilt, occurs when students with college intentions and college acceptance, fail to matriculate in the fall following high school graduation (Castleman & Page, 2015). The authors performed two randomized control trials (n=6,196) using personalized text messages on students in the Dallas ISD and uAspire and peer mentoring on students in uAspire and Mastery Charter Schools (Castleman & Page, 2015). For students receiving text messages, the authors found that enrollment in two-year institutions increased by more than 3% and enrollment in four-year institutions increased by 4.5%. For students receiving peer mentoring, the authors found that enrollment in four-year institutions also increased by 4.5%.

In a later study by Castleman, Meyer, Sullivan, Hartog, and Miller (2017), the authors evaluated the effect of financial aid nudging from postsecondary institutions on college enrollment. The study focused on nudging students in two areas (1) the financial aid process including the College Scholarship Service (CSS) Profile, verification forms required by some universities prior to granting institutional aid; and (2) the role of postsecondary institutions in proactively encouraging the completion of financial aid forms (Castleman et al., 2017). The authors used a difference-in-difference method to compare the treatment group, those eligible for text messages in either 2015 (pre) or 2016 (post), and the control group, those who were ineligible (Castleman et al., 2017). Data

for the study was obtained from the University of Virginia's AccessUVa program, which aims to ensure that all accepted students can afford to attend the university (Castleman et al., 2017). Participants of the program included Virginia residents who were first year students in two cohorts that were either early admits or regular decision admits (Castleman et al., 2017). The sample (n=7,964) was further reduced to include students that intended to apply for financial aid, opted into being contacted by the university, and provided a cell phone number (Castleman et al., 2017). The authors found that CSS Profile completion increased by 3.4% and on-time filing increased by 3.1% when comparing those that received text message nudges to those who opted out of receiving text messages (Castleman et al., 2017). However, the text message nudges were not found to improve enrollment outcomes for students in the program (Castleman et al., 2017).

In a separate study by Bird et al. (2019), the researchers investigated the impact of state and nationwide financial aid completion campaigns on financial aid receipt and college enrollment. Similar to previous studies, the campaigns included either a text message, email, or mail component and an offer of assistance, however, unlike previous studies, the messages were not personalized for each student (Bird et al., 2019). Both summary statistics and multivariate regression were used to analyze data in the studies (Bird et al., 2019). Students in the national study participated in the Common Application (n=836,269), which allows students to complete college applications for up to 20 of more than 800 participating postsecondary institutions (Bird et al., 2019). Those in the large statewide study (n=185,793) participated in a state-sponsored application portal, which allows students to complete applications for all four-year, some private and

some two-year institutions in that state (Bird et al., 2019). Unlike the local, small scale prior studies, the authors found that the scaled-up versions of the text nudges had no significant impact on financial aid outcomes nor college enrollment (Bird et al., 2019).

### *Understanding and Estimating the Cost of College*

An important impediment to college attendance includes disparities in the estimation of the cost of attendance. These discrepancies are particularly notable when considering the type of college for which the student is estimating costs.

Grodsky and Jones (2005) studied the real and imagined barriers to college attendance by evaluating the perceptions of college costs. The authors hypothesized that parents from disadvantaged backgrounds who believe that their child would attend college were less clear on the overall cost of attending college (Grodsky & Jones, 2005). Sociological theory and rational choice theory formed the theoretical framework for their study and both OLS and logistic regressions were used in the analysis (Grodsky & Jones, 2005). Grodsky and Jones (2005) analyzed data from National Household Education Survey, which collects data on parents of adolescents. The authors were interested in parents that responded to questions asking them to provide an estimate of the cost of college and the sources of their financial aid information (Grodsky & Jones, 2005). Findings of the study confirmed that parents of all backgrounds, not just the disadvantaged, tend to significantly overestimate the cost of college attendance (Grodsky & Jones, 2005). The authors also found that the quantity and quality of financial aid information played a role in college cost estimation (Grodsky & Jones, 2005).

In a 2015 review article, George-Jackson and Gast summarized the findings of 39

articles on financial awareness and preparedness for college costs. The study was guided by multiple research questions including which barriers and issues are faced by students and families when considering and preparing to pay for college (George-Jackson & Gast, 2015). The authors established that there were disparities in access to information needed in order to properly prepare for college costs, which include accurately estimating the cost of college attendance (George-Jackson & Gast, 2015). George-Jackson and Gast (2015) found that these disparities disproportionately affect students from low-income Black and Latino households.

In a qualitative study, Greenfield (2015) examined how a low-income group of minority students gained information about the costs of college and how they managed the financial aid process. The objective of the study was twofold, (1) understanding students' initial perception of college cost and finances; and (2) learning how students acquired "college financial literacy" (Greenfield, 2015). Greenfield defined college financial literacy as "the ability to access, read, write, communicate about and critically appraise the financial texts that mediate college attendance" (Greenfield, 2015, p. 317). The theories that framed the study were situated learning, which suggests that learning is influenced by the individual's community and expectations for the individual; and new literacy studies, which proposes that sociocultural practices not only reflect but resist social standards (Greenfield, 2015). Participants (n=14 students and n=6 staff) were selected from a small high school located in the Bronx, New York primarily serving low-income, minority students (Greenfield, 2015). The students were selected based on their low-income status and college aspirations (Greenfield, 2015). Greenfield found that participants of the study entered high school with little knowledge of the cost of college

other than a general sense that it was expensive (Greenfield, 2015). A surprising finding for Greenfield (2015) was that this perception did not change between grades nine and eleven. Additionally, most students reported learning about the cost of college from older siblings that had already navigated the transition to college (Greenfield, 2015).

In a 2017 investigation of the accuracy of estimating the cost of college, Nienhusser and Oshio developed a method known as absolute-deviation-continuous construct (ADCC) to evaluate 10,530 high school juniors participating in the HSLS:09, a national study of high school students beginning in ninth grade following through to their postsecondary education and beyond. ADCC "uses the absolute value of the difference between a student's estimate of the cost of college [&] fees and the actual cost", divided by the actual cost of tuition and fees, all multiplied by 100 to determine a student's accuracy in estimating college costs (Nienhusser & Oshio, 2017, p. 730). As the authors explained, students that over or underestimate the cost of college by $100 would have the same accuracy score (Nienhusser & Oshio, 2017). Perna's model of student choice formed the theoretical framework for this study (Nienhusser & Oshio, 2017). Perna's college choice conceptual framework, ''integrates aspects of the economic theory of human capital and sociological notions of social and cultural capital and recognizes that multiple layers of context influence an individual's college-related decision making'' (Perna 2006b, p. 1621). Nienhusser and Oshio's (2017) study was based on the following research questions: (1) how accurate are students estimates of the cost of attending four-year public and private institutions; (2) are there differences in estimates of college cost by racial/ethnic background; and (3) are there difference in estimated college cost based on race/ethnicity and other college related factors or interactions of

these variables (Nienhusser & Oshio, 2017). Data for the study were analyzed using multiple methods including descriptive statistics, MANOVA, and factorial MANOVA (Nienhusser & Oshio, 2017). The researchers found that 81.9% of students overestimated the cost of four-year public tuition while 64.9% overestimated the cost of four-year private tuition (Nienhusser & Oshio, 2017). The authors also found statistically significant racial differences in the estimation of college cost with Whites and Asians estimated college costs significantly better than Blacks and Hispanics for four-year public institutions (Nienhusser & Oshio, 2017).

## Complexity of Financial Aid/FAFSA

The complexity of financial aid is a well-documented input to the FAFSA completion and college attendance system, yet little change has been made to reduce its complexity or to make the process easier to navigate. Literature on the topic typically covers the difficulty of the form, the lack of knowledge of financial aid, and students' perceptions that they would not qualify for financial aid.

### *FAFSA Forms too Difficult*

According to most literature produced on the topic of FAFSA difficulty, there are three main reasons that students find the FAFSA difficult to complete: (1) the length of the questionnaire; (2) the challenge of answering questions on the form; and (3) the deadlines for filing are confusing.

*Length of questionnaire*

Most of the literature regarding the length of the FAFSA suggests that there is some relationship between the length of the questionnaire, rates of FAFSA completion, and college attendance. However, there is some debate on whether shortening the questionnaire alone will resolve students' belief that the form is too difficult to complete. Of relevance is the research of Dynarski and Scott-Clayton (2013) who questioned the effectiveness of existing student aid programs. The authors of the qualitative analysis found the length of the FAFSA an overly burdensome process for the largest grant program in the nation, the Pell Grant (Dynarski & Scott-Clayton, 2013). The authors' concluded that the complexity of the student aid application was undermining the effectiveness of FAFSA completion (Dynarski & Scott-Clayton, 2013).

In an article by Kreighbaum (2018) the author reported plans by the Department of Education to launch a mobile application designed to allow students to complete the FAFSA on their mobile devices. Kreighbaum (2018) noted that although the FAFSA would be more widely accessible by students, reducing the length of the application would require further action by Congress.

A study concerned specifically with reducing the length of the FAFSA was Narayan's (2019) investigation into the Internal Revenue Service (IRS) Data Retrieval Tool (DRT). Using summary statistics, differences-in-differences analysis, and least squares regression, Narayan (2019) sought to understand if use of the DRT alone would yield the same benefits as having personal assistance with completing the FAFSA. Data for the study (n=2,029) was gathered from multiple sources including college search databases, Peterson's and Cappex, and the IPEDS. Narayan (2019) reached the

conclusion that simplification of the application alone was not as efficient as personal assistance in improving FAFSA filings.

*Challenging to complete*

Researchers agree that there is complexity associated with the current financial aid process from the questions on the FAFSA to the language used on the financial aid award letters (Bettinger et al., 2012; Jez, 2018; Kofoed, 2017; Pulcini, 2018). Several researchers have noted that personalized assistance is the most effective solution in overcoming FAFSA complexity (Bettinger et al., 2012; Jez, 2018; Pulcini, 2018).

In a 2012 article by Bettinger et al., researchers, concerned about the complexity and confusion surrounding the FAFSA, partnered with H&R Block to investigate the effects on FAFSA completion when applying two treatments: an offer of personalized support with FAFSA completion or informational support regarding the FAFSA. Those receiving no treatment were used as the control group and participants in all groups were considered low-income (Bettinger et al., 2012). Participants in treatment group 1 were recruited while having their taxes prepared at H&R Block (Bettinger et al., 2012). Two-thirds of the information needed by the participants receiving personalized assistance was readily available from their completed tax forms which shortened the time required to complete the FAFSA to approximately ten minutes (Bettinger et al., 2012). Participants in group 2 received information about their likely aid eligibility based on information from their tax returns as well as information about tuition and fees at nearby universities (Bettinger et al., 2012). The participants in group 2 received encouragement by the tax preparer to complete the FAFSA on their own (Bettinger et al., 2012). The control group

received no intervention other than a brochure, which was given to all participants regardless of treatment group, containing information on the importance of higher education, general financial aid information and college costs (Bettinger et al., 2012). OLS regression was used to analyze the resulting data (Bettinger et al., 2012). The study's findings indicated that participants who received personalized assistance were more likely to receive financial aid and attend college (Bettinger et al., 2012). Overall, college enrollment rates among recent high school graduates and current high school seniors increased by 8% (to 42%) for those receiving assistance in the year following the experiment (Bettinger et al., 2012). Participants in the information only group (2) were no more likely to apply for financial aid than those in the control group (Bettinger et al., 2012).

Kofoed (2017) examined the influences affecting a student's decision not to complete the FAFSA and calculated the amount of aid the student missed. The author hypothesized that eligible students fail to complete the FAFSA due the application's complexity and also reasoned that students lacked motivation and encouragement from their parents and counselors to complete the FAFSA (Kofoed, 2017). Kofoed's (2017) conceptual model was based on utility theory, which states that decisions are based on one's preferences and values. Data drawn from several waves of the NPSAS (n=83,600) were used to evaluate the factors contributing to students' decision to forego completing the FAFSA as well as estimating the amount of foregone aid (Kofoed, 2017). Kofoed (2017) confirmed the hypothesis that many eligible students fail to complete the FAFSA foregoing billions in financial aid each year. The author attributes these findings to both the complexity of the FAFSA and the lack of knowledge of financial aid programs

(Kofoed, 2017).

Jez (2018) performed a qualitative study of the complex language used in the financial aid process from the FAFSA application to the letters that students receive explaining their financial aid award. Of particular concern to the author was the effect on college attendance especially among low-income and minority students (Jez, 2018). Jez (2018) found that in many financial documents different words are used to describe the same term making an already complex topic more complicated. For example, in examining 515 financial aid award documents, the term unsubsidized loan was represented in 136 different ways. With regards to the FAFSA, Jez (2018) suggested that application could benefit from simplification through tools such as skip logic, which requires students to answer only the questions necessary to determine their aid eligibility.

In a review of literature outlining the many reasons that low-income students fail to complete the FAFSA, Pulcini (2018) determined that students lacked an understanding on how to complete the application and its verification process. Verification occurs prior to the institution determining the individual's award amount and required information typically found on the tax return, for example, adjusted gross income (Pulcini, 2018). Pulcini (2018) discerned from the literature that institutions must do more to improve equity in higher learning across the socioeconomic classes by removing barriers to enrollment due to financial aid complexity.

Although some researchers have noted that parent/child custodial relationship issues contribute to difficulty in completing the FAFSA, the subject has received minimal attention (Cox, 2016; Feeney & Heroff, 2013; Jez, 2018; Page, Castleman & Meyer, 2018). Researchers, however, agree that providing personalized assistance with FAFSA

completion and customized nudges to complete the application improves completion rates.

Research investigating reasons that the FAFSA creates barriers for students revealed that some questions about family finances are difficult for students to answer due to parental absence or nontraditional family situations such as non-custodial parents, guardianships, or foster care (Cox, 2016; Feeney & Heroff, 2013; Jez, 2018). In a study by Cox (2016), the author researched the differences in postsecondary aspirations and the gaps between students from disadvantaged backgrounds and their counterparts. The study focused on historically underrepresented groups (i.e. low-income, Black and Latinx students) who are disproportionately affected by nontraditional family situations (Cox, 2016). The data were derived from a three-year, longitudinal study of 16 low-income, Black and Latinx students from two inner city high schools in the Northeastern part of the U.S. (Cox, 2016). The qualitative study, framed by Perna's (2006a, b) three phase college choice model, began the students' junior year of high school, and continued through the year following high school graduation (Cox, 2016). Perna's college choice conceptual framework combines economic, human capital and sociological theories to contextualize the multiple layers of influence affecting college decision making (Perna 2006b). Cox (2016) found that students from disadvantaged backgrounds faced obstacles not modeled in the college choice model. For example, disadvantaged students are more likely to be in guardianship situations or face housing insecurities that can impact their postsecondary plans (Cox, 2016).

*Filing deadlines are confusing*

In addition to the length of the FAFSA questionnaire and challenges associated with completing the forms, confusing deadlines also contribute to the FAFSA completion difficulty (McKinney & Novak, 2015). Although the federal deadline for completing the FAFSA concludes at the end of the summer semester, which completes the academic year, state and institutional deadlines vary from the end of January to the beginning of April of the calendar year.

In a 2004 study concerning missed financial aid opportunities due to untimely filing of the FAFSA, King found that a majority of those who filed the FAFSA in academic year 99-00 did so after key deadlines had passed, which decreased the probability of receiving available state and institutional financial aid. Using summary statistics, King (2004) described the characteristics of students who miss important financial aid filing deadlines based on income, attendance status, and institution type. Data for the study were obtained from both the 1999–2000 NPSAS and the 1995–96 BPS surveys. King (2004) found that nearly one-quarter of dependent, low-income students failed to file the FAFSA by the application deadline resulting in the loss of financial aid. Additionally, many others failed to receive the full amount of aid for which they were qualified because they filed too late to meet state and institutional deadlines (King, 2004).

In a similar study by Feeney and Heroff (2013), the authors examined reasons that the FAFSA created barriers for students noting the importance of the FAFSA in qualifying for Federal, State, and institutional financial aid. In particular, the authors were interested in understanding how EFC, first-generation status, and academic achievement affected the timing of FAFSA completion (Feeney & Heroff, 2013). Data

for Feeney and Heroff's (2013) study were drawn from three sources: the Illinois MAP, the Individual Student Information Report, and the State Scholars Program. The analytical sample was reduced to 4,000 students after including students from Illinois who were first-generation college students attending college as first-time students (Feeney & Heroff, 2013). Feeney and Heroff's (2013) study revealed that low-income students with higher EFCs were more likely to complete the FAFSA earlier than their lower EFC counterparts. Additionally, first-generation students were less likely to complete the FAFSA by the deadline (Feeney & Heroff, 2013). Finally, they found that strong academic performance was an indicator of early FAFSA completion (Feeney & Heroff, 2013).

In another study by McKinney and Novak (2015), the authors advanced the notion that confusing filing deadlines contribute to FAFSA difficulty among first-year college students. Data for the study were drawn from the BPS 04/06, which was collected by the NCES (McKinney & Novak, 2015). Three groups were evaluated using logistic regression to predict group membership in either non filing or late filing groups: undergraduates enrolled in (1) community colleges (N = 3,990); (2) public four-year institutions (N = 4,050); and (3) private, four-year nonprofit institutions (N = 3,230) during the 03-04 academic year who were also eligible to receive federal financial aid (McKinney & Novak, 2015). Like Cox (2016), McKinney and Novak (2015) use Perna's (2006a, b) model of college choice as the conceptual framework for their study. Overall findings of the study indicated that factors such as delayed enrollment, attending part-time, and not declaring a major were strong indicators of not filing a FAFSA or filing late (McKinney & Novak, 2015). The financial aid lost due to not filing or filing late may

have made it possible for the students to enroll in additional courses (McKinney & Novak, 2015).

### *Knowledge of Financial Aid*

Knowledge of financial aid is an important first step in college attendance especially for students from low-income backgrounds. However, the lack of financial aid knowledge remains an obstacle for many students (Jez, 2018; LaManque, 2009; Long, 2017; Olivérez & Tierney, 2005) and the language used on financial aid documents can lead to confusion (Burd et al., 2018; Taylor & Bicak, 2020; Taylor et al., 2019).

#### *Lack of knowledge about financial aid*

Olivérez and Tierney (2005) researched the means by which students and their families learned about financial assistance for college. The authors' research sought to understand the kinds of scholarships and financial aid information available to students and families, how the information was distributed, the producers and disseminators of this knowledge, and who received the information about financial aid (Olivérez & Tierney, 2005). Crosstabulations were used to compare financial aid resources by venue, by high school type, and by grade (Olivérez & Tierney, 2005). Data for the study were gathered from two private high schools, with populations of approximately 2,000, students, and nine public high schools, with populations ranging from approximately 3,000 to 5,000, all located in southern California (Olivérez & Tierney, 2005). Olivérez and Tierney (2005) observed that, despite their efforts, the high schools were not capable of systematically reaching all their target students with financial aid information and

directions on how to apply for aid. These results were due, in large part, to the size of the student population and the low counselor to student ratios (Olivérez & Tierney, 2005). Additionally, private high schools were found to provide more personalized financial aid guidance leading to higher rates of college enrollment when compared to public schools in the study (Olivérez & Tierney, 2005).

LaManque (2009) investigated the reasons that students delayed completing the FAFSA until the period immediately before enrolling in college. In particular, the author examined the discrepancy in students' familiarity with college systems and the relationship to the timely filing of the financial aid application (LaManque, 2009). LaManque (2009) used rational choice theory and segmentation analysis, a method which creates mutually exclusive groups for comparison. The sample (n=1,074) was drawn from community college students in an affluent area of California that draws low-income students from the surrounding areas (LaManque, 2009). To be included, participants must have completed the FAFSA and provided a valid email address (LaManque, 2009). The author found that students' decisions to apply for financial aid is directly related to their knowledge of the college process (LaManque, 2009). LaManque's (2009) research demonstrated the importance of knowledge of financial aid in the college decision making process.

In a 2017 article, Long examined research regarding the barriers to college access and choice especially for low-income and minority students. The author noted that one of the major obstacles to college access was a lack of information especially concerning the financial aid application process (Long, 2017). Long (2017) noted that the lack of information about financial aid did limit access to college and also noted that programs

targeting support during the financial aid process increased financial aid application rates and the likelihood of attending and persisting in college.

In a review of literature on student awareness and understanding of financial aid, Jez (2018) explored ways for the federal and state governments and postsecondary institutions to improve the flow of financial aid information to students especially underserved students from low-income and minority backgrounds. Jez (2018) considered the reasons for low use of financial aid, and how information and application process barriers could be addressed. Jez (2018) suggested that financial aid terms used on applications and letters of award from institutions must be standardized (see example - Appendix 1). The author recommended that information provided about financial aid should be designed to fit the needs of those with the greatest amount of financial need – students from low-income and minority households (Jez, 2018). Lastly, Jez (2018) advocated for providing student aid information in locations where students are most likely to seek guidance such as university websites.

*Financial Aid Language*

Burd et al. (2018) compared hundreds of financial aid award letters in an effort to understand the difficulty experienced by high school students and their families when trying to decide which financial aid offer was best. Award letters (n=11,257) were compared for nearly 6,000 students that participated in the 2016 cohort of uAspire, a Boston area nonprofit aimed at providing financial aid advisement to high school students (Burd et al., 2018). Burd et al. (2018) learned that acronyms and abbreviations geared toward financial aid professionals are often confusing for students and their families. For instance, the term *Parent Plus Loan* was listed in 76 different ways in the letters surveyed (Burd et al., 2018). Additionally, the term *Federal Direct Unsubsidized Loan* was listed in 136 ways in the letters reviewed (Burd et al., 2018). Burd et al. (2018) suggested that clear communication of financial aid information was necessary to reduce student confusion.

Taylor, Bicak, and Fry (2019) studied the language used in the financial aid process from application to the communication of financial awards. They were interested in understanding which financial aid terms or jargon were most difficult for prospective students to understand and if there were any demographic differences in the lack of understanding (Taylor et al., 2019). Descriptive statistics and regression models were used to analyze the data (Taylor et al., 2019). The nationally administered survey was given to prospective college students (n=1,230) in the U.S. and Puerto Rico via an online questionnaire (Taylor et al., 2019). Participants were randomly asked to read one of three text passages and identify the words or word phrases that the did not recognize or understand also called jargon terms (Taylor et al., 2019). The authors found that the

survey response time was the best indicator of reported jargon expressions (Taylor et al., 2019). Additionally, for two of the text passages, "FAFSA" was ranked in the top five list of jargon terms (Taylor et al., 2019).

Taylor and Bicak (2020) explored the institutional expressions used to communicate the process for applying for financial aid to potential students. The authors were primarily interested in the financial aid language used by institutions that confused first-generation students and if there were group differences based on race, income, religion, gender, or native language (Taylor & Bicak, 2020). Summary statistics, logistic regression, and OLS regression were used to evaluate the group differences while n-gram analysis was used to evaluate the words that were confusing (Taylor & Bicak, 2020). The randomized, primary study (n=752) captured data on potential first-generation students seeking postsecondary education at nationally selected four-year institutions (Taylor & Bicak, 2020). Taylor and Bicak (2020) discovered that the odds of reporting one unfamiliar term were two times more likely if the student identified as non-religious rather than Christian. Additionally, the longer the respondent took to complete the survey, the higher the odds of reporting at least one jargon term (Taylor & Bicak, 2020). For the OLS regression, nonbinary status, and the time to complete the survey were strong predictors of reporting more jargon terms (Taylor & Bicak, 2020).

### *Thought Not Qualified for Financial Aid*

Each year and for various reasons, students falsely believe that they are not qualified for financial aid (Bahr, Sparks, & Hoyer, 2018; Kantrowitz, 2009, 2011; King, 2004). In 2004, King explored the potential missed financial aid opportunities due to

lack of FAFSA completion. The author questioned who these students were, why they failed to apply, and would they have been qualified for financial aid if they had applied (King, 2004). Information for the study was drawn from the 1999-2000 NPSAS, a dataset produced by the DOE and the NCES aimed at understanding postsecondary financial aid decisions (King, 2004). Summary statistics were used to analyze the data (King, 2004). According to King (2004), the most common explanation given for not completing the FAFSA was that the students felt their family could afford to pay (41%). Students who thought that their family income made them ineligible represented 24% of study participants (King, 2004). King also noted that 16% of fulltime, 13% of half-time, and 11% of less than half time students who did not apply for financial may have been eligible if they had applied (King, 2004).

Kantrowitz (2009) researched the reasons that students provided for not applying for financial aid. Information was drawn from the 2007-2008 NPSAS (n=114,000 undergraduates), a survey focused on postsecondary student aid decision, and from the October and November 2008 FastWeb survey (n=1,202), an online scholarship resource (Kantrowitz, 2009). Summary statistics were used to analyze the data (Kantrowitz, 2009). Results from the 2007-2008 NPSAS survey indicated that 70% of FAFSA nonapplicants identified as either White or Asian compared to 53% of FAFSA applicants (Kantrowitz, 2009). Findings from the FastWeb survey revealed that 59% of survey respondents did not apply for financial aid because they felt they would not qualify (Kantrowitz, 2009).

In 2011, Kantrowitz used data from the 2007-2008 NPSAS to further assess the reasons that students do not apply for financial aid. Descriptive statistics were used to

illustrate the reasons that students (n=114,000 undergraduates; 14,000 graduates) from the NPSAS did not complete the FAFSA (Kantrowitz, 2011). Kantrowitz (2011) found that 61% of students that did not apply thought they were ineligible for financial aid. Sadly, one-third of study participants who did not apply would have been eligible for some Pell Grant funds while one-sixth would have qualified for the full Pell Grant (Kantrowitz, 2011).

Bahr, Sparks, and Hoyer (2018) evaluated the reasons students and parents gave for not completing the FAFSA. The authors wanted to understand FAFSA completion rates by student, family, and by characteristics of the high school attended – public vs. private (Bahr et al., 2018). They also wanted to understand the reasons that the FAFSA was not completed and if these results differed by student, family, or characteristics of the high school (Bahr, Sparks, & Hoyer, 2018). Data for the study (n=944 schools) came from the 2013 update of the HSLS:09, a nationally representative study of high school students collected by the NCES (Bahr et al., 2018). Descriptive statistics were used to analyze the data (Bahr et al., 2018). Bahr et al. (2018) found that 23% of respondents did not have enough information about how to complete the application, 15% did not know they could complete the application, and 9% felt the forms were too complex and time consuming. Additionally, 32% felt they would not qualify for financial aid (Bahr et al., 2018).

**Sources of Financial Aid Information**

Another important input to the FAFSA completion and college attendance system is the source of financial aid information. For students, the sources of financial aid

information range from family systems (Cholewa, Burkhardt & Hull, 2015; De La Rosa, 2006; Perna, 2006; Perna & Titus, 2005) to school systems (Bettinger & Evans, 2019; Owen & Westlund, 2016; Robinson & Roksa, 2016) with a growing number of students finding the information on their own (Cholewa et al., 2015).

*Parents/Family*

Perna and Titus (2005) examined the role of parental involvement in influencing the college attendance of African American and Hispanic students. The author wanted to understand the relationship between parental involvement, social capital, and college enrollment and the variation across racial groups (Perna & Titus, 2005). Research questions for the study concerned (1) the relationship between parental involvement, social capital, and college enrollment; (2) variations across racial groups; and (3) academic social networks and college enrollment (Perna & Titus, 2005). The conceptual framework for the study, the model for college enrollment, integrated theories including social capital and college choice and the author used multinomial, hierarchical linear modeling ($HLM^2$) to analyzed data for the study (Perna & Titus, 2005). Data from the 1992 and 1994 National Educational Longitudinal Study were evaluated in the study (Perna & Titus, 2005). Perna and Titus (2005) found that African Americans realized a smaller level of college enrollment when comparing levels of parental involvement. Additionally, African Americans are more sensitive to the cost of college than Hispanics (Perna & Titus, 2005).

[2] Hierarchical Linear Modeling is a form of OLS regression used when there are levels to the outcome variable (Perna & Titus, 2005).

In a follow up to her 2005 study, Perna (2006) reviewed literature concerning information acquisition regarding college attendance and financial aid. Perna (2006) questioned the disconnect between information availability and specific knowledge with respect to college prices and financial aid, and the effect of this information on college enrollment. In the literature review article, Perna (2006) used the college choice model, which integrates theoretical frameworks such as social capital and college choice. The author determined that although many students are provided with sufficient access to information on college costs and financial aid, some students are still inadequately informed on the cost of college and financial aid (Perna, 2006). Perna (2016) argued that policy makers should ensure that information is not only available, but also accessible, especially to groups with the greatest need for the information.

De La Rosa (2006) studied low-income, Southern California high school juniors and seniors and how they learn about college and financial aid and the impact of this knowledge on their college enrollment. De La Rosa (2006) examined the following research questions: (1) how is college and financial aid information learned in the low-income households; (2) what are the primary methods by which information is gained in low-income communities; (3) how does the method for gaining information about college and financial aid impact college enrollment. Using descriptive statistics, cross tabulation, and Chi-square analysis, the author evaluated data from the 2004 College Access and Financial Aid Survey (De La Rosa, 2006). The 2004 College Access and Financial Aid Survey is a survey administered to $11^{th}$ and $12^{th}$ graders (n=3,609) at seven Southern California, low-income high schools (De La Rosa, 2006). De La Rosa (2006) found that 54.1% of $11^{th}$ graders and 50.1% of $12^{th}$ graders received financial aid information from

family while 80.5% of 11th graders and 84.8% of 12th graders received information from teachers, counselors, or coaches.

Using social capital theory as the theoretical framework, Cholewa, Burkhardt, and Hull (2015) investigated whether college enrollment was affected by the social capital provided by high school counselors. The authors' research questions examined which students and which type of counselor support were most successful, from the students' point of view, at improving college enrollment (Cholewa et al., 2015). Additionally, the study was interested in determining the school and student qualities that forecast the likelihood of recognizing the high school counselor as the most important source of college information (Cholewa et al., 2015). In addition to using descriptive statistics to determine the most influential person for making college going decisions, the study used logistic regression to estimate the odds of choosing the school counselor as the most influential source of college information (Cholewa et al., 2015). The dataset used in the study was the second follow-up of the HSLS:09, a longitudinal study following students who were freshmen in 2009 through to postsecondary institutions and beyond (Cholewa et al., 2015). Cholewa et al. (2015) found that nearly 42% of students identified their parents as the most influential followed by nearly 29% who found themselves most influential (Cholewa et al., 2015). Surprisingly, school counselors were only found most influential by 2.84% of the survey respondents (Cholewa et al., 2015). Results from the logistic regression analysis indicated that the odds of choosing the high school counselor as the most influential were OR[3]=1.85 (p =0.011) for African American students when compared to White students (Cholewa et al., 2015). For first-generation students, the

[3] OR=Odds ratio

odds ratio was OR=2.48 ($p<0.001$) for choosing their high school counselor as most influential when compared to non-first-generation students (Cholewa et al., 2015). Additionally, for private school students, the odds ratio was OR=2.02 ($p=0.046$) for choosing the high school counselor as most influential when compared to public school students (Cholewa et al., 2015).

*Counselors/Teachers*

High school guidance counselors are often tasked with providing financial aid education (Bettinger, et al., 2012; Davidson, 2013, 2015), and motivation (Bettinger, et al., 2012; Essex, 2016; Feeney & Heroff, 2013; Kofoed, 2017) for students preparing to attend college. Unfortunately, high school student-to-counselor ratios make it difficult for counselors to provide the level of support that each student requires (Bettinger et al., 2012; Greenfield, 2015; Stratton, 2014). Moreover, counselors are negatively affected by their changing and expanding roles, which limit their ability to help students navigate the college going process (Essex, 2016). The negative impact of overextended, high school guidance counselors affects lower-income schools and students at proportionally higher rates (Dynarski & Scott-Clayton, 2007; Frenette & Robson, 2011) as they already have less access to resources such as college financial aid counselor visits (Dynarski & Scott-Clayton, 2007; Greenfield, 2015). Visits from college financial aid counselors allow students to gain clarification on their award letters and other college related financial considerations (Daun-Barnett & Mabry, 2012; Frenette & Robson, 2011). Furthermore, providing access to high school counselors during the summer between graduation and enrollment in college has been found to improve college attendance and reduce summer

melt (Castleman & Page, 2014; Daun-Barnett & Mabry, 2012). Having access to counselors during the summer months would benefit students by providing access to much needed social capital, especially for students who have delayed their decision to attend college (McKinney & Novak, 2015). According to Castleman and Page (2014, 2016), the lack of social support during the period immediately following high school graduation and immediately preceding college attendance contributes to summer melt.

Robinson and Roksa (2016) researched the role of high school counselors in postsecondary transitions of high school students. The authors were specifically interested in three research questions (1) does receiving college going information from a high school counselor improve the chances of applying to postsecondary institutions more than other information sources; (2) does the college going culture of the high school impact the benefit of the high school counselor on applying to college; and (3) how does the impact of counselors on college applications change when social class and the college going culture of the high school are considered (Robinson & Roksa, 2016). Both descriptive statistics and HLM multinomial logistic regression were used to analyze the data and social and cultural capital formed the framework for the study (Robinson & Roksa, 2016). Data from the ELS:02 (n=8,980), a nationally administered survey of participants in grade ten during 2002, were used for the study (Robinson & Roksa, 2016). The authors discovered that early and consistent use of high school counselors and the use of informal sources of information significantly improved the chances of applying to four-year colleges (Robinson & Roksa, 2016).

In their 2016 study, Owen and Westlund sought to determine whether high school counselor support and outreach activities improved FAFSA completion and immediate

college attendance. The research questions that guided their study were: (1) was there a positive relationship between counselor support and outreach activities and FAFSA completion; and (2) was there a positive relationship between counselor support and outreach activities and immediate college attendance (Owen & Westlund, 2016). Several methods such as descriptive statistics, bi- and multi-variate regression, and logistic regression were used in analyzing the data (Owen & Westlund, 2016). For the FAFSA Completion Project, data regarding FAFSA completion was obtained through the DOE's Financial Student Aid system while data regarding college enrollment was acquired from the NSC (Owen & Westlund, 2016). Owen and Westlund (2016) found that the intervention resulted in positive increases in both FAFSA completion and immediate college enrollment (Owen & Westlund, 2016).

In their 2019 randomized control study, Bettinger and Evans evaluated the effect of near peer [4]lead, college access programs on financial aid completion and college enrollment. Their main research question evaluated the impact of information and support with financial aid and college going activities on college enrollment (Bettinger & Evans, 2019). The results for the first three years of the study were pooled and analyzed using linear probability models (Bettinger & Evans, 2019). Data for the study was taken from the Texas Higher Education Coordinating Board and matched with data from the NSC. As far as overall college enrollment, the study found little to no impact of having an onsite college advisor on college enrollment (Bettinger & Evans, 2019). However, immediate enrollment in two-year colleges improved for low-income students by 1% and Hispanic students by 2% (Bettinger & Evans, 2019).

[4] Near peer programs arrange for experienced students to provide guidance to less experienced students in a school/community setting (Bettinger & Evans, 2019).

## Student's Background

The student's background is yet another input to the FAFSA completion and college attendance system. The current study includes the following control variables in the student's background construct: gender, race, parent's education, parent's occupation, household size, and sibling attended college first. In terms of general systems theory, family background exemplifies the concepts of hierarchy and mutual influence. For example, the hierarchical relationship between the parent and child are examined as well as the mutual influence between these components. In this section, literature illustrating mutual influence and hierarchy within family is presented.

### *Gender*

Studies concerning the role of gender in FAFSA completion and college enrollment indicate some slight gender differences (Agger et al., 2018; Kofoed, 2017; McKinney & Novak, 2015). In the Agger et al. (2018) study on the influence of family expectations on college attendance, the authors determined that parental expectations were more important for female students. Similarly, McKinney and Novak (2015) found that although gender was not a significant factor in FAFSA completion for four-year institutions, females were more likely than males to complete the FAFSA for two-year institutions. Conversely, Kofoed (2017) found that both race and gender were significant factors in FAFSA completion decisions.

*Race*

Research on racial differences in FAFSA completion and college enrollment continue to identify disparities especially for minority students (Charles, Roscigno & Torres, 2007; Perna & Titus, 2005; Warnock, 2016). As mentioned earlier, Perna and Titus (2005) researched the role of parental involvement on college attendance for students identifying as African American or Hispanic. Using data from the 1992/1994 NELS and Perna's model for college enrollment, the authors found racial differences in college enrollment based on the level of parental involvement (Perna & Titus, 2005). More specifically, the authors found that African Americans realized smaller gains in college enrollment when comparing the level of parental involvement (Perna & Titus, 2005). In addition, the authors found African Americans more sensitive to the cost of college when compared to Hispanics (Perna & Titus, 2005).

Charles, Roscigno, and Torres (2007) studied the importance of family background on racial group differences in college attendance. Charles et al. (2007) focused on the racial gap in college attendance as determined by parental investments in their students' education over time. Race/class stratification theory formed the basis for their study and the NELS was used to analyze the racial differences in family background and parental involvement as relates to college attendance (Charles et al., 2007). Charles et al. (2007) found that household income differences among Whites and Blacks were nearly $17,000 annually. When compared to Whites and Asians, Blacks, Hispanics, and Native-Americans had less parental education and were less likely to hold professional occupations (Charles et al., 2007). Moreover, parental income and education had a strong positive relationship with college attendance (Charles et al., 2007).

In a study mentioned earlier, Warnock (2016) assessed factors such as race, ethnicity, and socioeconomic status and the role of these factors in parental perceptions of their ability to support their student's with college expenses. Using the Wisconsin model of stratus of attainment and data from the NELS, Warnock (2016) discovered differences existed in parental perceptions on their ability to support their child's college expenses based on race, ethnicity, and socioeconomic status. Furthermore, Warnock (2016) learned that parents of African American students were more inclined to take on debt to pay their child's college fees.

*Parent's Educational Attainment*

Family support during the transition to college can depend upon the family member's prior college attendance (Feeney & Heroff, 2013; Flaster, 2018; Owen & Westlund, 2020) as parents or family who have attended college can offer the benefit of their prior knowledge (Feeney & Heroff, 2013). First-generation students are somewhat disadvantaged as they are not able to depend on an immediate family member for support (Cholewa et al., 2015; Feeney & Heroff, 2013; Taylor & Bicak, 2020).

In the previously mentioned study by Feeney and Heroff (2013), which examined the barriers created by the FAFSA on low-income students, the authors investigated the effect of not having parents with previous college experience during the transition to college. Multiple sources of data were analyzed; however, the data were filtered to include first-generation students from Illinois (Feeney & Heroff, 2013). The study found that first-generation students were more likely to miss the institutional deadlines for completing the FAFSA, which most likely led to a loss of institutional financial aid

(Feeney & Heroff, 2013).

For many households, their students are the first generation to attend college; therefore, they lack the necessary skills to assist with college attendance forms. In the previously described study conducted by Cholewa et al. (2015), the authors used social capital theory and the second follow-up to the HSLS:09 to examine the social capital impact provided by high school counselors on college enrollment. The authors found that for first-generation students, the odds of choosing their high school counselor as most influential was OR=2.48 ($p<0.001$) when comparing first-generation students with non-first-generation students (Cholewa et al., 2015).

Taylor and Bicak (2020), in the beforementioned study, assessed the knowledge level regarding federal financial aid of potential first-generation students interested in four-year institutions. The authors learned that non-religious and older respondents were more likely to report jargon terms and that the length of time required to complete the survey indicated that more jargon terms were identified (Taylor & Bicak, 2020).

*Parent's Occupation*

Little research was available on parental occupation, FAFSA completion, and college enrollment. However, parental occupation, which strongly determines household income, can have a significant impact on parental plans to help support with college expenses (Flaster, 2018). Flaster (2018) used data from the HSLS:09 to evaluate parent-child expectations of family support and college enrollment. Flaster (2018) found that a necessary precursor to contributing to college costs was the value parents placed on higher education and that occupational differences would cause variation. Although

parental occupation is significant for parent's plans to contribute to college cost, Wells and Lynch (2012) found no significance relationship in their study on parental occupation and plans to delay immediate college enrollment.

*Household Size*

Household size is important in determining the families' EFC (Kantrowitz, 2009; Kelchen, 2017; Rubin, 2011). In determining the characteristics of students who fail to file for financial aid, Kantrowitz (2009) found that factors such as being male, independent, and having a household size were significant. Both Kelchen (2017) and Rubin (2011) noted that household size and the number of family members attending college impacted the amount of income protected during the EFC calculation.

*Sibling Attended College*

Research shows that students with an older sibling or parent who attended college had the advantage of social support not found with students who are first in their family to attend college (Dynarski & Scott-Clayton, 2007; Greenfield, 2015). These students can depend on their older siblings to help them manage financial aid and college planning (Hurley & Coles, 2015; Roska, 2019). However, research also found that older siblings benefited from greater parental investment than their younger siblings (Roska, 2019; Steelman & Powell, 1991).

## Summary

The following summary addresses the contributions of the literature discussed above to the body of knowledge, the gaps in knowledge, and the future research needed in the field. The section ends with a description of the chapter that will follow.

Current literature on the real and perceived financial and financial aid information obstacles facing high school seniors during the transition to college informs the importance of the factors impacting FAFSA completion and college attendance. For instance, expectations about family financial support need to be aligned within the family (Flaster, 2018; Warnock, 2016); however, the government's expectations of support are assumed in the calculation of the EFC (Dynarski & Scott-Clayton, 2013; Rubin, 2011; U.S. Department of Education, 2019). More consideration needs to be given to the parent's willingness to support the child financially (Agger et al., 2018; Steelman & Powell, 1991) and their ability to save for college expenses (Elliott et al., 2018; Kim et al., 2017; Song & Petracchi, 2020).

Household income is an important factor when it comes to the ability to support college expenses (Barnard et al., 2019; Flaster, 2018). Yet the shift from need-based to merit-based aid provides an advantage to students from higher income households who have access to resources needed to qualify for merit-based aid (Dynarski, 2000). Higher income households are also more likely to plan for college expenses than middle- and low-income households (Sallie Mae, 2020).

Existing literature also notes that parents should feel empowered to lead conversations about financial planning for college (Hallet & Griffen, 2015; Manly et al., 2017) and that increased discussions about college financial planning improves college

going rates (Castleman & Page, 2016; Hurley & Coles, 2015; Owen & Westlund, 2016). Personalized nudging to complete financial aid and other required college forms improves college enrollment (Castleman & Page, 2015; Castleman et al., 2017); however, general nudges have little impact (Bird et al., 2019).

Overestimating the cost of attending college is a widespread issue affecting students at all income levels (Grodsky & Jones, 2005); however, the problem disproportionately affects low-income, Blacks and Latinos (George-Jackson & Gast, 2015). In addition to school counselors, students are learning about the cost of college from sources including parents (Grodsky & Jones, 2005) and siblings (Greenfield, 2015) and yet overestimating the cost of college remains an issue (Nienhusser & Oshio, 2017).

Current literature posits that the complexity of the current application for financial aid, particularly the length, is undermining the effectiveness of the program (Dynarski & Scott-Clayton, 2013) and that changes to reduce complexity require congressional action (Kreighbaum, 2018). However, simplification alone will not resolve all issues with the application (Narayan, 2019). More programs, similar to the H&R Block FAFSA completion assistance program, are needed (Bettinger et al., 2012).

Part of the difficulty also lies in the complexity of the questions asked on the form, which results in billions of foregone financial aid funds each year (Kofoed, 2017). Contributing to the complexity of the questions is the language used on financial aid documents (Jez, 2018) and the confusing verification process requiring additional forms (Pulcini, 2018). Non-traditional family situations and custodial relationship issues can also contribute to completing the FAFSA (Cox, 2016; Feeney & Heroff, 2013; Jez, 2018).

Filing deadline discrepancies between the federal government, state government, and institutions also contribute to the complexity of financial aid and losses of financial aid funds (King, 2004). Confusing deadlines disproportionately affect low-income students with the lowest EFC students suffering most (Feeney & Heroff, 2013). Additionally, missing deadlines increases of the chances of delayed enrollment and having to attend on a part-time basis (McKinney & Novak, 2015).

School size contributes to the difficulty in distributing information about financing college expenses (Olivérez & Tierney, 2005). Yet, financial aid knowledge is essential to timely FAFSA filing (LaManque, 2009) and access to college (Long, 2017). Providing access to financial aid information where students are most likely to search is crucial for knowledge attainment (Jez, 2018).

Financial aid language should be consistently used across all financial aid documents including the FAFSA (Taylor et al., 2019) and award letters (Burd et al., 2018; Taylor et al., 2019). Efforts are required to reduce the use of acronyms and jargon which confuse the applicant (Taylor & Bicak, 2020).

Many students fail to apply for financial aid because they falsely believe they would not qualify (Bahr et al., 2018; Kantrowitz, 2009; King, 2004). Unfortunately, many students who believe they were not qualified would have been eligible for some forms of aid (Kantrowitz, 2011).

Parental involvement is important in improving college enrollment for some racial groups, however, African Americans realize smaller effects (Perna & Titus, 2005) and, along with Hispanics, are more sensitive to the cost of attending college (Perna & Titus, 2005). Information accessibility with regards to financial aid is key to improving access

to college (Perna, 2006). Financial aid information can be garnered from family (Cholewa et al., 2015) or from counselors (Bettinger, et al., 2012; Davidson, 2013, 2015) and often depends on grade level of the student (De La Rosa, 2006).

Early and consistent intervention from counselors improves the chances of college enrollment (Robinson & Roksa, 2016). These early inventions can also lead to improved FAFSA completion (Owen & Westlund, 2016). However, onsite college advising alone does not improve college enrollment (Bettinger & Evans, 2019) with the exception of two-year college enrollment for Hispanics and low-income students (Bettinger & Evans, 2019).

Discrepancies within current literature find gender differences are both significant (Agger et al., 2018; Kofoed, 2017) and insignificant in FAFSA completion for four-year institutions (McKinney & Novak, 2015). Racial differences exist in the sensitivity to the cost of college when comparing Blacks and Hispanics (Perna & Titus, 2005) and in the household income when comparing Blacks and Whites (Charles et al., 2007). Additionally, parents of Black students were more inclined to apply for loans to assist with college expenses when compared to other races (Warnock, 2016).

Having a parent with a college degree allows for a level of support that first-generation students lack (Cholewa et al., 2015; Feeney & Heroff, 2013; Taylor & Bicak, 2020). First-generation students often miss critical financial aid and college form deadlines, which lead to the loss of financial aid awards (Feeney & Heroff, 2013). First-generation students are, therefore, more reliant upon their high school counselor for important financial aid information (Cholewa et al., 2015). Parental occupation strongly determines household income and the ability to contribute financial support for college

expenses (Flaster, 2018). However, no significant relationship was found between parental occupation and plans to delay college enrollment (Wells & Lynch, 2012).

While existing research examines FAFSA completion and college enrollment through the lenses of theories including economic theory, behavioral science, and college choice theory, the current research study fills the gap in knowledge with regard to FAFSA completion and college enrollment framed by general systems theory. Little is known about the real and perceived financial and financial aid information obstacles associated with FAFSA completion and college enrollment in an open system while comparing students based on group membership.

Future research on the subject of FAFSA completion and college enrollment should further address low-income and minority populations and focus on gender differences. Additionally, more information is needed on the role of parental occupation on FAFSA completion and college enrollment.

In sum, this literature review provides a summary of literature related to real and perceived financial and financial aid information obstacles associated with FAFSA completion and college enrollment. In the chapter that follows, the dataset used for the current study is discussed along with the participants and the analytical plan.

# CHAPTER 3 - METHODOLOGY

The purpose of this study is to examine the correlations between real and perceived financial and financial aid information, FAFSA completion, and the pursuit of postsecondary education (see Figure 3.1). Using descriptive statistics and logistic regression methods, this study will analyze secondary data from the High School Longitudinal Study of 2009[5] (HSLS:09), a longitudinal dataset constructed of high school students' responses to survey questions beginning in their freshman year of high school. The dataset contains information on respondents' college aspirations, family background, school environment, and academic performance. In particular, the dataset measures FAFSA completion and college attendance for study participants. The chapter includes a restatement of the research questions and hypotheses, a description of the dataset, measures, reliability, validity, data analysis plan, and a summary.

## *Framework*

As mentioned, the framework underlying the current study is von Bertalanffy's (1969) general systems theory, which explains that nature is made of systems, subsystems, and suprasystems. In this study, systems examined are: the family system, which includes subsystems containing children and their parents; and a suprasystem, their community, which includes families and school personal. The study examines the

[5] This research study uses data from the High School Longitudinal Study of 2009, which is collected by the National Center for Education Statistics on behalf of the Department of Education. To obtain the public use data file used in this study, visit NCES's website https://nces.ed.gov/.

interrelationships of variables within these elements and how their inputs apply to FAFSA completion and college attendance.

An open system, such as the one explored in the current study, can be affected by its environment (Mesarovic, 1964). For instance, disturbances like the unexpected death of a parent and uncertainties such as homelessness or a pandemic may affect the environment's feedback mechanism; thus, leading to changes in the system (Mesarovic, 1964).

In the model for this study, college attendance represents the output in the conceptualized system and potentially generates feedback to the environment on whether adjustments or maintenance are required. FAFSA completion is the throughput in the system, which receives information from the inputs (real and perceived financial and financial information) and provides information to the output (college attendance).

The inputs to the system, real and perceived financial and financial aid information, both receive feedback and provide information to the system. The inputs are broken down further into the following groups: family financial support, the complexity of financial aid, sources of financial aid information, and the student's background. Family financial support further includes 1) whether parents can afford to support college costs, 2) whether they have the ability to support, 3) the number of financial aid discussions that occurred within the family unit, and 4) how well the financial cost of college is understood by the student and members of the student's household. The complexity of financial aid input includes the difficulty in completing the FAFSA, the lack of knowledge about financial aid, and feeling unqualified for financial aid. Source of financial aid information is a proxy for family and counselors' support and lists the

person each student identified as most influential in providing to them financial aid knowledge. The final input is the student's background, including gender, race, parental education attainment, and parental occupations.

**Research Questions/Hypotheses**

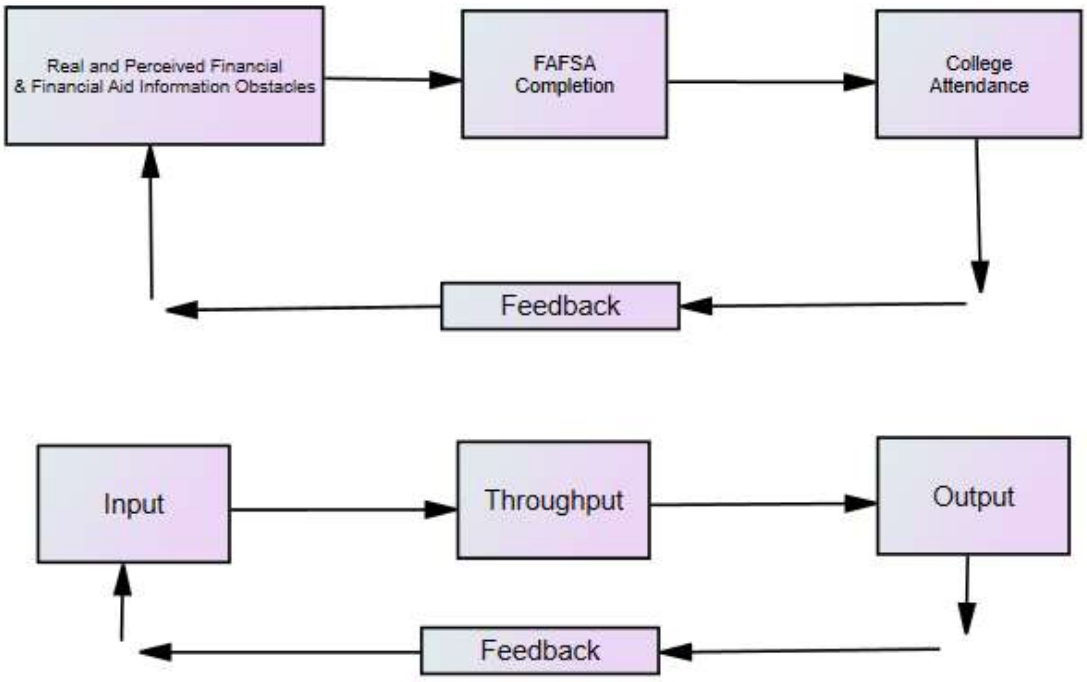



*Figure 3.1. Conceptualization of the current study using general systems theory*

The following research questions and hypotheses will be tested in this study:

*RQ1: What real and perceived financial obstacles contribute to qualified students not applying for the financial aid needed to attend college?*

$H_{1.1}$: Students who did fill out the FAFSA and did go to college (Group1) are more likely to have a perception of family financial support compared to students

who did not fill out the FAFSA and did not go to college (Group4).

$H_{1.2}$: Students who did not fill out the FAFSA and did go to college (Group2) are more likely to be from high-income households compared to students who did not fill out the FAFSA and did not go to college (Group4).

$H_{1.3}$: Students who did fill out the FAFSA and did not go to college (Group3) are more likely to have had more family discussions about financial aid compared to students who did not fill out the FAFSA and did not go to college (Group4).

$H_{1.4}$: Students who did fill out the FAFSA and did go to college (Group1) are more likely to have overestimated the cost of college compared to students who did not fill out the FAFSA and did go to college (Group2).

*RQ2: What real and perceived financial aid knowledge obstacles contribute to qualified students not applying for the financial aid needed to attend college?*

$H_{2.1}$: Students who did fill out the FAFSA and did go to college (Group1) are less likely to feel the FAFSA is too difficult compared to students who did not fill out the FAFSA and did not go to college (Group4).

$H_{2.2}$: Students who did not fill out the FAFSA and did go to college (Group2) are more likely to believe that they wouldn't qualify compared to students who did not fill out the FAFSA and did not go to college (Group4).

$H_{2.3}$: Students who did not fill out the FAFSA and did not go to college (Group4) are more likely to feel the FAFSA is too difficult compared to students who did not fill out the FAFSA and did go to college (Group2).

$H_{2.4}$: Students who did not fill out the FAFSA and did not go to college (Group4) are more likely to state that they did not know how to apply for aid compared to students who did not fill out the FAFSA and did go to college (Group2).

*RQ3: Does family and community support contribute to qualified students not applying for the financial aid needed to attend college?*

$H_{3.1}$: Students who did fill out the FAFSA and did go to college (Group1) are more likely to have community support compared to students who did not fill out the FAFSA and did not go to college (Group4).

$H_{3.2}$: Students who did not fill out the FAFSA and did go to college (Group2) are more likely to have community support compared to students who did not fill out the FAFSA and did not go to college (Group4).

$H_{3.3}$: Students who did fill out the FAFSA and did not go to college (Group3) are less likely to have family support compared to students who did fill out the FAFSA and did go to college (Group1).

$H_{3.4}$: Students who did not fill out the FAFSA and did not go to college (Group4) are less likely to have family support compared to students who did fill out the FAFSA and did go to college (Group1).

**Data**

The High School Longitudinal Study of 2009 (HSLS:09) is a longitudinal research survey administered by the National Center of Education Statistics (NCES). The HSLS:09 was first administered in 2009 to 9th-grade students randomly selected from high schools across the United States (see Table 3.1). The primary purpose of the HSLS:09 is to observe the academic and career trajectory of students commencing in their freshman year of high school through postsecondary education and further (Engberg & Gilbert, 2014; NCES, 2018). More specifically, the HSLS:09 evaluated the students' choices in college, major, and career and how they made their choice between studying STEM (science, technology, engineering, and math) and non-STEM majors (Duprey, 2018). The first follow-up occurred in 2012 when students were in their junior year of high school. An abbreviated follow-up occurred in 2013 immediately after most students graduated from high school, but before they began the freshman semester of college in the fall. The students' high school transcripts from 2013 to 2014 were also made

available for analysis upon their graduation. Students participated in the second follow-up in 2016, three years post-high school graduation.

**Table 3.1**

*High School Longitudinal Study 2009 - Collection Waves*

| Academic Year | School Level | Collection Wave |
|---|---|---|
| 2009 - 2010 | HS Freshman | Base Year |
| 2010 - 2011 | HS Sophomore | -- |
| 2011 - 2012 | HS Junior | First Follow-up |
| 2012 - 2013 | HS Senior | 2013 Update |
| 2013 - 2014 | Col Freshman | High School Transcripts |
| 2014 - 2015 | Col Sophomore | -- |
| 2015 - 2016 | Col Junior | Second Follow-up |
| 2016 - 2017 | Col Senior | -- |
| 2017 - 2018 | Post Grad | Postsecondary Transcripts |

*Source*: National Center for Education Statistics

## Reliability and Validity

The NCES is one of the principal federal statistics agencies charged with collecting and analyzing education related data in the United States and beyond (www.ed.gov/open/plan/nces, 2020). NCES' experience collecting and evaluating research is one reason that the reliability of the survey instrument can be reasonably assured. Additionally, survey participants were randomly selected from a pool of U. S. high school students, which also lends to the data's reliability. NCES ensured the validity of the instrument by performing various tests of the psychometric properties of the instrument, testing for both item complexity and discrimination (Duprey, 2018).

*Sample*

The population of concern for this study was high school seniors in the United States. The study sample includes students who participated in the HSLS:09 survey, who earned a high school GPA of 3.0 or higher and responded in the base year survey and all follow-up surveys. The HSLS:09 survey is a nationally representative sample of 23,000+ 9th grade students from 944 schools collected in 2009 (Duprey, 2018). After the base year (2009), follow-up questionnaires were administered in 2012, 2013, and 2016 (Duprey, 2018). Students participating in the study are followed beginning in their freshman year in high school through secondary and postsecondary years and beyond (Duprey, 2018). The sample for the current study includes 8,273 cases with complete FAFSA and college attendance information across all waves of the study.

## Measures

*Dependent Variable (Output to the System)*

In general systems theory, the output process provides feedback to the system on successes and failures, which leads to either maintenance or adjustments to the system. The output of interest was whether the student attended college by February following their high school graduation. The variable, *S4Evratndclg*, was measured by a one-question survey item from HSLS:09 second follow-up, which asked respondents if they attended college by February of 2016 (Duprey, 2018). Available responses to the question included: "*1=Yes or 0=No"* (Duprey, 2018) (see Appendix 2 – Codebook). No recoding was necessary for this variable as missing or nonresponses were not included in the study.

*Covariate (System Throughput)*

Throughput, in general systems theory, allows for the processing of positive and negative inputs so that adjustments can be made to the environment. In the current study, FAFSA completion acts as throughput for the system. To measure FAFSA completion, *S3Appfafsa*, the survey question asked if the student had completed the FAFSA for the purpose of pursuing postsecondary education (Duprey, 2018). Available responses included (1) *"Yes,"* (2) *"No,"* (3) *"You don't know what a FAFSA is,"* and (4) *"You don't know if [you/your teenager] or another family member completed a FAFSA"* (Duprey, 2018). The variable was recoded to (1) *"Yes,"* and (2) or (3) "No," and option (4) was recoded as missing.

*Independent Variables (Inputs to the System)*

In general systems theory, inputs are placed into the system to drive a process. The inputs, or independent variables, selected for analysis include financial aid information sources and family background. For the current study, the following input variables were operationalized: the perception of family financial support, *S1Afford*; household income, *X2Famincome;* the number of family discussions regarding financial aid, *S2Aidtalkpar*; understanding the cost of college attendance, *Estimated*[6]; FAFSA difficulty, *S2Formsdiff*; FAFSA knowledge, *S2Dkhowapply*; thought unqualified for financial aid, *Notqualified*[7]; and sources of financial aid information, *S3Aidinflu*.

[6] The variable *Estimated* is calculated based on level of college attended (S3CLGLVL), estimates of college cost by level (S2COST2YPUB; S2COST4YPUB; or S2COST4YPRV), and the actual cost of attendance (S3CLGCOST).

[7] If the student answered "Yes" to any of the following variables about feeling not qualified: S3FAMNOTQUAL [family not qualified], S3CREDIT [bad credit], S3HIGHINCOME [income too high], S3LOWSCORES [GPA too low], or S3PTNOTQUAL [part-time]), then "Yes" was assigned to NOTQUALIFIED.

**Table 3.2**

*Measures used in the study*

| System Component | Variable Type | Variable Name | Survey Question |
|---|---|---|---|
| **Output** | Dependent | S4Evratndclg | Any college or trade school by Feb 2016? |
| **Throughput** | Covariate | S3Appfafsa | Complete the FAFSA? |
| **Input** | | | |
| *Family Financial Support (RQ1)* | | | |
| | Independent | S1Afford | Family cannot afford to help with college? |
| | | X2Famincome | Total family income in 2011? |
| | | S2Aidtalkpar | Number of conversations about financial aid? |
| | | Estimated* | Estimate of the cost of college? |
| *Complexity of Financial Aid (RQ2)* | | | |
| | Independent | S2Formsdiff | Won't apply - forms too difficult? |
| | | S2Dkhowapply | Won't apply - don't know how? |
| | | Notqualified** | Won't apply - thought not qualified (various reasons)? |
| *Sources of Financial Aid Information (Support) (RQ3)* | | | |
| | Independent | S3Aidinflu | Most influential on thinking about financial aid? |
| *Student's Background (All RQs)* | | | |
| | Control | X2Sex | Gender at birth? |
| | | X2Race | Race? |
| | | X2Momedu | Mom's Education |
| | | X2Dadedu | Dad's Education |
| | | X2Momocc2 | Mom's Occupation |
| | | X2Dadocc2 | Dad's Occupation |
| | | X2HHNumber | Number in household |
| | | S4Sibclg | Sibling attended college first |

*Source* : National Center for Education Statistics

*Notes* : *The variable ESTIMATED is calculated based on level of college attended (S3CLGLVL), type of institution (X4PS1CTRL), estimates of college cost by level (S2COST2YPUB; S2COST4YPUB; or S2COST4YPRV), and the actual cost of attendance (S3CLGCOST). **If the student answered "Yes" to any of the following variables about feeling not qualified: S3FAMNOTQUAL [family not qualified], S3CREDIT [bad credit], S3HIGHINCOME [income too high], S3LOWSCORES [GPA too low], or S3PTNOTQUAL [part-time]), then "Yes" was assigned to NOTQUALIFIED.

The variable used to capture the perception of family financial support, *S1Afford*, was measured by asking if the student felt the family could not afford to help with the expense of college (Duprey, 2018). The question was measured with a four-point Likert scale: (1) "*Strongly Agree,"* (2) "A*gree,"* (3) "*Disagree,"* and (4) "*Strongly Disagree"* (Duprey, 2018). The variable was recoded to mean that a student selecting (1) or (2) "*Agree[d]"* that their family cannot afford to support their college expenses and (3) or (4) *"Disagree[d]"* that their family cannot afford to help with college expenses.

For the variable household income, *X2Famincome*, the survey asked the students to describe their "Total family income from all sources 2011" (Duprey, 2018) and the following levels were allowed (see Table 3.3). The variable was recoded into four groups: <= $35,000; >$35,000 and <= $75,000; > $75,000 and <= $135,000; and > $135,000.

**Table 3.3**

*Income levels for Total Family Income from All Sources in 2011*

| | |
|---|---|
| 1 | Family income less than or equal to $15000 |
| 2 | Family income > $15000 and <= $35000 |
| 3 | Family income > $35000 and <= $55000 |
| 4 | Family income > $55000 and <= $75000 |
| 5 | Family income > $75000 and <= $95000 |
| 6 | Family income > $95000 and <= $115000 |
| 7 | Family income > $115000 and <= $135000 |
| 8 | Family income > $135000 and <= $155000 |
| 9 | Family income > $155000 and <=$175000 |
| 10 | Family income > $175000 and <= $195000 |
| 11 | Family income > $195000 and <= $215000 |
| 12 | Family income > $215000 and <= $235000 |
| 13 | Family income > $235000 |
| -8 | Unit non-response |

The student was also asked to provide the number of times, in the past year, that the family discussed financial aid, *S2Aidtalkpar* (Duprey, 2018). Allowed responses included: (1) *"None,"* (2) *"One to three,"* and (3) *"Four or more"* (Duprey, 2018). No recoding was required for this variable.

To understand how well students understood and could estimate the cost of college attendance, students were asked to estimate the costs of two-year public, *S2Cost2ypub;* four-year public, *S2Cost4ypub*; and four-year private, *S2Cost4Yprv*, institutions (Duprey, 2018). The estimates made by the students were then compared to the student provided actual cost of attendance, *S3Clgcost*; based on the level of college attended, *S3Clglvl*; and the type of institution, *X4Ps1ctrl.* These values were used to determine if the student over or underestimated the cost of college attendance by more than $100[8]. This information was captured in an SPSS computed variable named "*Estimated*" (Duprey, 2018).

The complexity associated with completing the FAFSA, *S2Formsdiff*, was determined by the student's response to a question that asked if the reason they would not complete the FAFSA was related to difficulty understanding the application (Duprey, 2018). Responses to the question included: "*1=Yes or 0=No"* (Duprey, 2018). No recoding was required for this variable.

The student's knowledge about applying for financial aid, *S2Dkhowapply*, was ascertained by a question that asked if the reason they would not complete the FAFSA was related to their lack of knowledge about applying (Duprey, 2018). Allowed responses to the question included: "*1=Yes or 0=No"* (Duprey, 2018). No recoding was

[8] Based on Nienhusser and Oshio's (2017) study on student accuracy in estimating the cost of college.

required for this variable.

Several questions were administered, addressing why students thought they might not qualify for financial aid. The stem of the question asked why the student felt they would not qualify for financial aid (Duprey, 2018). The survey allowed the student to respond "*1=Yes or 0=No"* to the following: a family member was not qualified (S3Famnotqual), there are concerns about creditworthiness (S3Credit), the family's income was too high (S3Highincome), grades/GPA is too low (S3Lowscores), and planned to attend part-time (S3Ptnotqual) (Duprey, 2018). No recoding of responses was required for this variable; however, if any response was "Yes," then the student response was coded "Yes" in a computed variable named "*Notqualified*." Otherwise, the student's response was coded as "No."

To determine the person with the most significant influence on the student when thinking about financial aid, *S3Aidinflu*, the student was allowed to select from the following options (*1) "A high school counselor," (2) "A counselor hired by your family to help [you/your teenager] prepare for college admission," (3) "A teacher," (4) "[Your/His/Her] parents," (5) "Another family member," (6) "[Your/His/Her] friends," (7) "[Your/His/Her] employer," (8) "A military recruiter," (9) "A coach or scout," (10) "[Yourself/Himself/Herself]," (11) "No one in particular," or (12)" Don't know"* (Duprey, 2018). The variable, *S3Aidinflu*, was recoded to one of three groups: family support (items 4, 5, and 10); community support (items 1, 2, 3, 6, 8, and 9); and no support (items 11 and 12) (Duprey, 2018). The student options were recoded as follows: 'family support' for items (4), (5), and (10); "community support" for items (1), (2), (3), (6), (7), (8), and (9); or "no support" for items (11) and (12).

*Control variables (Inputs to the System)*

Demographic variables[9] also act as inputs to the system in the current study. The demographic variables used in the study included gender, race, mother's education, father's education, mother's occupation, and father's occupation (Duprey, 2018).

Students' gender was captured with the variable *X2Sex* (Duprey, 2018). The survey question asked participants to provide the gender they were assigned at birth (Duprey, 2018). Available responses to the question included: (1) *Male* or (2) *Female* (Duprey, 2018). No recoding was required for the gender variable.

Students' race was obtained by the variable *X2Race* (Duprey, 2018). Student responses included (1) *American Indian/Alaska Native, non-Hispanic;* (2) *Asian, non-Hispanic;* (3) *Black/African American, non-Hispanic;* (4) *Hispanic, no race specified;* (5) *Hispanic, race specified;* (6) *More than one race, non-Hispanic;* (7) *Native Hawaiian/Pacific Islander, non-Hispanic; and* (8) *White, non-Hispanic* (Duprey, 2018). The variable was recoded into the following categories: *Black/African American, non-Hispanic* (3); *White* (8); *Hispanic* (4) and (5); *Other* (1), (2), (6) and (7) (Duprey, 2018).

For the variable mother's education, *X2Momedu*, the survey asked the students to describe their mother's highest level of education. The following responses were allowed: (0) *No bio/adoptive/step-mother in household,* (1) *Less than high school,* (2) *High school diploma or GED,* (3) *Certificate/Diploma, (4) Associate's degree,* (5) *Bachelor's degree,* (6) *Master's degree; and* (7) *Ph.D./M.D/Law/other high level*

[9] Data for the study was also filtered for a GPA (X3GPAtot) of higher than 3.0.

*professional degree* (Duprey, 2018). The variable was recoded as follows: *HS or less* (1) and (2); *Some College* (3) and (4); *BA/BS Degree* (5); and *Graduate Degree* (6) and (7).

For the variable father's education, *X2Dadedu*, the survey item asked students to describe their father's highest level of education. The following responses were allowed: (0) *No bio/adoptive/stepmother in household,* (1) *Less than high school,* (2) *High school diploma or GED,* (3) *Certificate/Diploma, (4) Associate's degree,* (5) *Bachelor's degree,* (6) *Master's degree; and* (7) *Ph.D./M.D./Law/other high level professional degree* (Duprey, 2018). The variable was recoded as follows: *HS or less* (1) and (2); *Some College* (3) and (4); *BA/BS Degree* (5); and *Graduate Degree* (6) and (7).

For the variable mother's occupation, *X2Momocc2*, the survey asked the students to describe the occupation of their mother or female guardian and the following responses were allowed: (0) *No bio/adoptive/step-mother in household,* (11) *Management Occupations,* (13) *Business and Financial Operations Occupations,* (15) *Computer and Mathematical Occupations,* (17) *Architecture and Engineering Occupations,* (19) *Life, Physical, and Social Science Occupations,* (21) *Community and Social Services Occupation,* (23) *Legal Occupations,* (25) *Education, Training, and Library Occupations,* (27) *Arts, Design, Entertainment, Sports, and Media Occupations,* (29) *Healthcare Practitioners and Technical Occupations,* (31) *Healthcare Support Occupations,* (33) *Protective Service Occupations,* (35) *Food Preparation and Serving Related Occupations,* (37) *Building and Grounds Cleaning and Maintenance Occupations,* (41) *Sales and Related Occupations,* (43) *Office and Administrative Support Occupations,* (45) *Farming, Fishing, and Forestry Occupations,* (47) *Construction and Extraction Occupations,* (49) *Installation, Maintenance, and Repair*

*Occupations,* (51) *Production Occupations,* (53) *Transportation and Material Moving Occupations, and* (55) *Military Specific Occupations* (Duprey, 2018). Mother's occupation was recoded into two groups: *White Collar* (items 11, 13, 15, 17, 19, 21, 23, 25, 27, and 43) and *Blue Collar* (items 29, 31, 33, 35, 37, 39, 41, 45, 47, 49, 51, 53, and 55) (See Figure 3.2).

**Figure 3.2**

| White Collar Occupations | Blue Collar Occupations |
|---|---|
| Management Occupations | Healthcare Practitioners and Technical Occupations |
| Business and Financial Operations Occupations | Healthcare Support Occupations |
| Computer and Mathematical Occupations | Protective Service Occupations |
| Architecture and Engineering Occupations | Food Preparation and Serving Related Occupations |
| Life, Physical, and Social Science Occupations | Building and Grounds Cleaning and Maintenance Occupations |
| Community and Social Services Occupations | Personal Care and Service Occupations |
| Legal Occupations | Sales and Related Occupations |
| Education, Training, and Library Occupations | Farming, Fishing, and Forestry Occupations |
| Arts, Design, Entertainment, Sports, and Media Occupations | Construction and Extraction Occupations |
| Office and Administrative Support Occupations | Installation, Maintenance, and Repair Occupations |
| | Production Occupations |
| | Transportation and Material Moving Occupations |
| | Military Specific Occupations |

*Figure 3.2. Occupation categories for parental occupation*

For the variable father's occupation, *X2Dadocc2*, the survey asked the students to describe the occupation of their father or male guardian and the following responses were allowed: (0) *No bio/adoptive/step-mother in household,* (11) *Management Occupations,* (13) *Business and Financial Operations Occupations,* (15) *Computer and Mathematical Occupations,* (17) *Architecture and Engineering Occupations,* (19) *Life, Physical, and*

*Social Science Occupations,* (21) *Community and Social Services Occupation,* (23) *Legal Occupations,* (25) *Education, Training, and Library Occupations,* (27) *Arts, Design, Entertainment, Sports, and Media Occupations,* (29) *Healthcare Practitioners and Technical Occupations,* (31) *Healthcare Support Occupations,* (33) *Protective Service Occupations,* (35) *Food Preparation and Serving Related Occupations,* (37) *Building and Grounds Cleaning and Maintenance Occupations,* (41) *Sales and Related Occupations,* (43) *Office and Administrative Support Occupations,* (45) *Farming, Fishing, and Forestry Occupations,* (47) *Construction and Extraction Occupations,* (49) *Installation, Maintenance, and Repair Occupations,* (51) *Production Occupations,* (53) *Transportation and Material Moving Occupations, and* (55) *Military Specific Occupations* (Duprey, 2018). Mother's occupation was recoded into two groups: *White Collar* (items 11, 13, 15, 17, 19, 21, 23, 25, 27, and 43) and *Blue Collar* (items 29, 31, 33, 35, 37, 39, 41, 45, 47, 49, 51, 53, and 55) (See Figure 3.2).

For the variable household size, *X2HHNumber*, the survey asked the participant to provide the total number of people living in the participants household (Duprey, 2018). The participant chose a household size of two (2) through eleven plus (11+). The variable was recoded to merge all values five (5) and above into an option called five plus (5+).

The variable sibling attended college first, *S4Sibclg*, the survey asked if the respondent had a sibling that attended college first (Duprey, 2018). Responses to the question included: *1=Yes or 0=No* (Duprey, 2018). No recoding was required for this variable.

## Data Analysis

*Descriptive Statistics*

Frequencies and percentages were calculated for *Group Membership*. The most frequently observed category of *Group Membership* was Group1 - FAFSA & Attend College (n = 6577, 28%). Both frequencies and percentages are presented in Table 3.4.

**Table 3.4**

*Frequency Table for Group Membership*

| Variable | *n* | *%* |
|---|---|---|
| Group Membership | | |
| Group1 - FAFSA & Attend College | 6577 | 27.98 |
| Group2 - No FAFSA & Attend College | 1068 | 4.54 |
| Group3 - FAFSA & Didn't Attend College | 318 | 1.35 |
| Group4 - No FAFSA & Didn't Attend College | 310 | 1.32 |
| Missing[10] | 15230 | 64.80 |

*Note.* Due to rounding issues, percentages may not equal 100%.

Frequencies and percentages were calculated for *Gender*, *Race*, *MOMs Education*, *DADs Education*, *MOM's Occupation*, *DAD's Occupation*, *HHSize*, and *Sibs College* (see Table 3.5). The *Gender* category most frequently observed was Female (*n* = 4,758, 58%). The most frequently observed category of *Race* was White (*n* = 4,909, 62%). The most frequently observed category of *Mom's Education* was High School or Less (*n* = 2,608, 34%). The most frequently observed category of *Dad's Education* was High School or Less (*n* = 2,447, 37%). The most frequently observed category of *Mom's Occupation* was White Collar Occupation (*n* = 4,322, 58%). The most frequently observed category of *Dad's Occupation* was White Collar Occupation

[10] Missing data includes nonresponses, and items logically skipped questions (question did not apply).

(*n* = 3,356, 51%). The most frequently observed category of *HHSize* was 3 (*n* = 2,647, 33%). The most frequently observed category of *Sibs College* was No (*n* = 4,115, 54%).

**Table 3.5**

*Frequency Table for Students' Background*

| Variable | *n* | % | Cumulative % |
|---|---|---|---|
| *Gender* | | | |
| *Male* | 3515 | 42.49 | 42.49 |
| *Female* | 4758 | 57.51 | 100.00 |
| *Race* | | | |
| *Black* | 496 | 6.22 | 6.22 |
| *White* | 4909 | 61.58 | 67.80 |
| *Hispanic* | 920 | 11.54 | 79.34 |
| *Other Races* | 1647 | 20.66 | 100.00 |
| *Moms Education* | | | |
| *High School or Less* | 2608 | 33.96 | 33.96 |
| *Some College* | 1367 | 17.80 | 51.76 |
| *BS/BA Degree* | 2363 | 30.77 | 82.53 |
| *Graduate Degree* | 1342 | 17.47 | 100.00 |
| *Dads Education* | | | |
| *High School or Less* | 2447 | 37.19 | 37.19 |
| *Some College* | 952 | 14.47 | 51.66 |
| *BS/BA Degree* | 1765 | 26.83 | 78.49 |
| *Graduate Degree* | 1415 | 21.51 | 100.00 |
| *Moms Occupation* | | | |
| *White Collar Occupation* | 4322 | 57.58 | 57.58 |
| *Blue Collar Occupation* | 3184 | 42.42 | 100.00 |
| *Dads Occupation* | | | |
| *White Collar Occupation* | 3356 | 51.46 | 51.46 |
| *Blue Collar Occupation* | 3166 | 48.54 | 100.00 |
| *HHSize* | | | |
| *1* | 501 | 6.20 | 6.20 |
| *2* | 2069 | 25.59 | 31.79 |
| *3* | 2647 | 32.74 | 64.53 |
| *4* | 1625 | 20.10 | 84.63 |
| *5+* | 1243 | 15.37 | 100.00 |
| *Sibs College* | | | |
| *No* | 4115 | 53.70 | 53.70 |
| *Yes* | 3548 | 46.30 | 100.00 |

*Note.* Due to rounding errors, percentages may not equal 100%. Missing data include nonresponses and logically skipped questions (did not apply).

*Statistical Analysis*

To examine the hypotheses, binary logistic regression was used to analyze the association between real and perceived financial and financial aid information and membership in one of the four groups (see Table 3.6). The binary logistic regression is a suitable statistical analysis tool when the intention of the study is to assess whether a set of nominal, ordinal, or ratio/interval independent variables forecast a dichotomous outcome variable (Stevens, 2009). This assessment enables the evaluation of the odds of inclusion in one of the four outcome categories based on the combination of independent variable values.

**Table 3.6**

*Frequency Table for Group Membership*

| Variable | *n* | *%* |
|---|---|---|
| Group Membership | | |
| Group1 - FAFSA & Attend College | 6577 | 27.98 |
| Group2 - No FAFSA & Attend College | 1068 | 4.54 |
| Group3 - FAFSA & Didn't Attend College | 318 | 1.35 |
| Group4 - No FAFSA & Didn't Attend College | 310 | 1.32 |
| Missing[11] | 15230 | 64.80 |

*Note.* Due to rounding issues, percentages may not equal 100%.

Binary logistic regression estimation overcomes numerous restrictive assumptions of linear regression. For instance, homoscedasticity and normality of the residuals are not an assumption in binary logistic regression. Logistic regression methods require the absence of multicollinearity among the independent variables. Multicollinearity will be measured by calculating variance inflation factors (VIF). Generally, VIF values over 10

[11] Missing data include nonresponses, and logically skipped questions (question did not apply).

imply the presence of multicollinearity (Menard, 2009).

The overall significance of the logistic regression model is examined by using the chi-square test of model coefficients. McFadden's $R^2$ will be reviewed and appraised to approximate the percent of variance accounted for by the independent variables in the model. The predicted probabilities of an event occurring will be determined by Exp(*B*), also known as the odds ratio. Sensitivity and specificity of the models was also evaluated by comparing the percentage of correctly predicted versus observed observations.

**Summary**

Chapter three explained the purpose of the research in the current study, which includes examining the correlations between real and perceived financial and financial aid information obstacles, financial aid application completion, and postsecondary education pursuits. The chapter also specified the dataset used in the study, described the participants, outlined the measures used for analysis, discussed the dataset's reliability and validity, and summarized the plan for data analysis. The chapter that follows describes the findings of the study and provides a discussion of these findings.

# CHAPTER 4 - RESULTS

In the section that follows, descriptive statistics for all independent variables and correlations for the ordinal independent variables are provided. Additionally, the results of the logistic regression analyses for each hypothesis are provided.

## Descriptive Statistics

In Table 4.1, frequencies and percentages are provided for the independent variables in the study: *Afford, Family Income, Financial Aid Talks, Over/Underestimated, Forms Too Difficult, Don't Know How, Thought Not Qualified, and Financial Aid Influence*. The most often observed category for *Afford* was *Disagrees/Strongly Disagrees* (n = 6,447, 85%) while the category most frequently observed for *Family Income* was *>$75,000 and <=$135,000* (n = 2,516, 31%). For *Financial Aid Talks*, *One to Three* (n = 3,897, 49%) was the most frequently observed category. The most often observed category for *Over/Underestimated* was *Over or Underestimated by 100* (n = 2,999, 95%). For the variables *Forms Too Difficult* and *Don't Know How*, the most observed category was *No* with n = 741 (97%) and n = 704 (92%), respectively. The most frequently observed category of *Thought Not Qualified* was *Yes* (n = 541, 92%), and the most highly observed category for *Financial Aid Influence* was *Family Support* (n = 6,239, 79%).

**Table 4.1**

*Frequency Table for Independent Variables*

| Variable | *n* | % | Cumulative % |
|---|---|---|---|
| Afford | | | |
| Agrees/Strongly Agrees | 1127 | 14.88 | 14.88 |
| Disagrees/Strongly Disagrees | 6447 | 85.12 | 100.00 |
| Family Income | | | |
| <=$35000 | 1446 | 17.88 | 17.88 |
| >$35000 and <=$75000 | 2366 | 29.26 | 47.15 |
| >$75000 and <=$135000 | 2516 | 31.12 | 78.27 |
| >$135000 | 1757 | 21.73 | 100.00 |
| Financial Aid Talks | | | |
| None | 2119 | 26.51 | 26.51 |
| One to Three | 3897 | 48.75 | 75.26 |
| Four or more | 1978 | 24.74 | 100.00 |
| Over Underestimated | | | |
| Accurately Estimated | 162 | 5.12 | 5.12 |
| Over or Under Estimated by 100 | 2999 | 94.88 | 100.00 |
| Forms Too Difficult | | | |
| No | 741 | 97.12 | 97.12 |
| Yes | 22 | 2.88 | 100.00 |
| Don't Know How | | | |
| No | 704 | 92.15 | 92.15 |
| Yes | 60 | 7.85 | 100.00 |
| Thought Not Qualified | | | |
| No | 47 | 7.99 | 7.99 |
| Yes | 541 | 92.01 | 100.00 |
| Financial Aid Influence | | | |
| Family Support | 6239 | 78.87 | 78.87 |
| Community Support | 777 | 9.82 | 88.70 |
| No Support | 894 | 11.30 | 100.00 |

*Note.* Due to rounding errors, percentages may not equal 100%.

**Table 4.2**

*Correlations Between Ordinal Variables*

| | | | Family Income | Financial Aid Talks | Moms Education | Dads Education | HHSize |
|---|---|---|---|---|---|---|---|
| Spearman's rho | Family Income | Correlation Coefficient | 1.000 | -0.062 ** | 0.393 ** | 0.420 ** | 0.045 ** |
| | | Sig. (2-tailed) | | 0.000 | 0.000 | 0.000 | 0.000 |
| | | N | 8085 | 7994 | 7680 | 6579 | 8085 |
| | Financial Aid Talks | Correlation Coefficient | -0.062 ** | 1.000 | -0.002 | 0.008 | -0.023 * |
| | | Sig. (2-tailed) | 0.000 | | 0.867 | 0.543 | 0.039 |
| | | N | 7994 | 7994 | 7595 | 6504 | 7994 |
| | Moms Education | Correlation Coefficient | 0.393 ** | -0.002 | 1.000 | 0.473 ** | -0.018 |
| | | Sig. (2-tailed) | 0.000 | 0.867 | | 0.000 | 0.111 |
| | | N | 7680 | 7595 | 7680 | 6292 | 7680 |
| | Dads Education | Correlation Coefficient | 0.420 ** | 0.008 | 0.473 ** | 1.000 | 0.002 |
| | | Sig. (2-tailed) | 0.000 | 0.543 | 0.000 | | 0.874 |
| | | N | 6579 | 6504 | 6292 | 6579 | 6579 |
| | HHSize | Correlation Coefficient | 0.045 ** | -0.023 * | -0.018 | 0.002 | 1.000 |
| | | Sig. (2-tailed) | 0.000 | 0.039 | 0.111 | 0.874 | |
| | | N | 8085 | 7994 | 7680 | 6579 | 8085 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

**Correlations**

In Table 4.2, Spearman's correlations are displayed for ordinal variables included in the study. The result of the correlations was examined based on an alpha value of 0.05. Additionally, Cohen's (1988) standard was used to assess the relationship's effect size or strength. Per Cohen (1988), coefficients around .10 signify a small effect size, coefficients around .30 signify a moderate effect size, and coefficients above .50 denote a large effect size.

A significant negative correlation was observed between *Family Income* and *Financial Aid Talks* (-0.06, $p < .001$). The correlation coefficient between *Family Income* and *Financial Aid Talks* was -0.06, indicating a small effect size. This correlation indicates that as *Family Income* increases, *Financial Aid Talks* tends to decrease. A significant positive correlation was observed between *Family Income* and *Mom's Education* (0.39, $p < .001$). The correlation coefficient between *Family Income* and *Mom's Education* was 0.39, indicating a moderate effect size. This correlation indicates that as *Family Income* increases, *Mom's Education* tends to increase. A significant positive correlation was observed between *Family Income* and *Dad's Education* (0.42, $p < .001$). The correlation coefficient between *Family Income* and *Dad's Education* was 0.42, indicating a moderate effect size. This correlation indicates that as *Family Income* increases, *Dad's Education* tends to increase. A significant positive correlation was observed between *Family Income* and *HHSize* (0.45, $p = .001$). The correlation coefficient between *Family Income* and *HHSize* was 0.45, indicating a moderate effect size. This correlation indicates that as *Family Income* increases, *HHSize* tends to increase. A significant negative correlation was observed between *Financial Aid*

*Talks* and *HHSize* (-0.02, $p = .039$). The correlation coefficient between *Financial Aid Talks* and *HHSize* was -0.02, indicating a small effect size. This correlation indicates that as *Financial Aid Talks* increases, *HHSize* tends to decrease. A significant positive correlation was observed between *Mom's Education* and *Dad's Education* (0.47, $p < .001$). Mom's Education and Dad's Education's correlation coefficient was 0.47, indicating a moderate effect size. This correlation indicates that as *Mom's Education* increases, *Dad's Education* tends to increase[12].

**Logistic Regression Results**

Binary logistic regressions were conducted to examine each of the hypotheses in the study. For logistic regression, there is an assumption of the absence of multicollinearity, which was examined by calculating the Variance Inflation Factors (VIFs) between the predictor variables for each hypothesis. The general rule of thumb for VIFs is that the value should be less than 10. For each hypothesis, the VIFs, sensitivity, specificity, and logistic regression analysis results are presented.

Hypothesis 1.1 stated that students who did fill out the FAFSA and did go to college (*Group1*) are more likely to have a perception of family financial support (*Afford)* compared to students who did not fill out the FAFSA and did not go to college (*Group4*). The VIFs were calculated for *Afford, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College.* All the predictor variables in the regression model for $H_{1.1}$ had VIFs of less than 10 (see Table 4.3).

[12] Data was analyzed using SAS, SPSS, and Intellectus Statistics (2020).

**Table 4.3**

*Variance Inflation Factors for Model $H_{1.1}$ - Afford, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*

| Variable | VIF |
|---|---|
| *Afford* | 1.05 |
| *Gender* | 1.01 |
| *Race* | 1.06 |
| *Mom's Education* | 1.28 |
| *Dad's Education* | 1.35 |
| *Mom's Occupation* | 1.04 |
| *Dad's Occupation* | 1.10 |
| *HHSize* | 1.04 |
| *Sibs College* | 1.02 |

Table 4.4 displays the logistic regression model for $H_{1.1}$ evaluated based on an alpha of 0.05. The overall model was significant, $\chi^2(18) = 172.51$, $p < .001$, which suggests that *Afford*, *Gender*, *Race*, *Mom's Education*, *Dad's Education*, *Mom's Occupation*, *Dad's Occupation*, *HHSize*, and *Sibs College* had a significant effect on the odds of observing the *Group4* category of *Group1* vs. *Group4*. McFadden's R-squared was also computed to examine the model fit. Values greater than .2 indicate the model has an excellent fit (Louviere et al., 2000). The McFadden R-squared value computed for this model was 0.13.

The regression coefficient for *Afford - Disagrees/Strongly Disagrees* was significant, $B = -1.08$, $OR = 0.34$, $p < .001$, indicating that for a one-unit increase in *Afford - Disagrees/Strongly Disagrees*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 66%. The regression coefficient for *Gender - Female* was significant, $B = -0.81$, $OR = 0.44$, $p < .001$, indicating that for a one-unit increase in *Gender - Female*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 56%. The regression coefficient

for *Race - White* was not significant, $B = 0.62$, $OR = 1.86$, $p = .154$, indicating that *Race - White* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Race - Hispanic* was not significant, $B = -0.14$, $OR = 0.87$, $p = .781$, indicating that *Race - Hispanic* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Race - Other Race*s was not significant, $B = -0.11$, $OR = 0.90$, $p = .824$, indicating that *Race - Other Race*s did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Mom's Education - Some College* was significant, $B = -0.79$, $OR = 0.45$, $p = .001$, indicating that for a one-unit increase in *Mom's Education - Some College*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 55%. The regression coefficient for *Mom's Education - BS/BA Degree* was significant, $B = -1.03$, $OR = 0.36$, $p < .001$, indicating that for a one-unit increase in *Mom's Education - BS/BA Degree*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 64%. The regression coefficient for *Mom's Education - Graduate Degree* was significant, $B = -0.73$, $OR = 0.48$, $p = .013$, indicating that for a one-unit increase in *Mom's Education - Graduate Degree*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 52%. The regression coefficient for *Dad's Education - Some College* was not significant, $B = 0.06$, $OR = 1.06$, $p = .803$, indicating that *Dad's Education - Some College* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Dad's Education - BS/BA Degree* was not significant, $B = -0.30$, $OR = 0.74$, $p = .213$, indicating that *Dad's Education - BS/BA Degree* did not

significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Dad's Education - Graduate Degree* was significant, $B$ = -1.25, $OR$ = 0.29, $p$ = .002, indicating that for a one-unit increase in *Dad's Education - Graduate Degree*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 71%. The regression coefficient for *Mom's Occupation - Blue Collar Occupation* was significant, $B$ = 0.54, $OR$ = 1.71, $p$ = .002, indicating that for a one-unit increase in *Mom's Occupation - Blue Collar Occupation*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would increase by approximately 71%. The regression coefficient for *Dad's Occupation - Blue Collar Occupation* was not significant, $B$ = 0.12, $OR$ = 1.12, $p$ = .510, indicating that *Dad's Occupation - Blue Collar Occupation* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 2* was not significant, $B$ = 0.68, $OR$ = 1.98, $p$ = .268, indicating that *HHSize - 2* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 3* was not significant, $B$ = 0.43, $OR$ = 1.54, $p$ = .480, indicating that *HHSize - 3* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 4* was not significant, $B$ = 0.62, $OR$ = 1.86, $p$ = .321, indicating that *HHSize - 4* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 5+* was not significant, $B$ = 0.44, $OR$ = 1.55, $p$ = .485, indicating that *HHSize - 5+* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Sibs College* was significant, $B$ = -0.58, $OR$ = 0.56, $p$ = .001, indicating that for a one-unit increase in *Sibs*

*College*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 44%.

**Table 4.4**

*Logistic Regression Results for Model $H_{1.1}$ - Afford, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College Predicting Group1 vs. Group4*

| Variable | *B* | *SE* | 95% CI | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|---|
| *(Intercept)* | -2.37 | 0.77 | [-3.88, -0.86] | 9.47 | .002 | |
| *Afford - Disagrees/Strongly Disagrees* | -1.08 | 0.18 | [-1.44, -0.72] | 34.28 | < .001 | 0.34 |
| *Gender - Female* | -0.81 | 0.17 | [-1.14, -0.48] | 23.03 | < .001 | 0.44 |
| *Race - White* | 0.62 | 0.44 | [-0.23, 1.47] | 2.04 | .154 | 1.86 |
| *Race - Hispanic* | -0.14 | 0.51 | [-1.14, 0.85] | 0.08 | .781 | 0.87 |
| *Race - Other Race*s | -0.11 | 0.48 | [-1.06, 0.84] | 0.05 | .824 | 0.90 |
| *Mom's Education - Some College* | -0.79 | 0.25 | [-1.28, -0.30] | 10.09 | .001 | 0.45 |
| *Mom's Education - BS/BA Degree* | -1.03 | 0.25 | [-1.52, -0.53] | 16.51 | < .001 | 0.36 |
| *Mom's Education - Graduate Degree* | -0.73 | 0.30 | [-1.31, -0.15] | 6.11 | .013 | 0.48 |
| *Dad's Education - Some College* | 0.06 | 0.23 | [-0.39, 0.50] | 0.06 | .803 | 1.06 |
| *Dad's Education - BS/BA Degree* | -0.30 | 0.24 | [-0.78, 0.17] | 1.55 | .213 | 0.74 |
| *Dad's Education - Graduate Degree* | -1.25 | 0.40 | [-2.03, -0.47] | 9.96 | .002 | 0.29 |
| *Mom's Occupation - Blue Collar Occupation* | 0.54 | 0.17 | [0.20, 0.87] | 9.91 | .002 | 1.71 |
| *Dad's Occupation - Blue Collar Occupation* | 0.12 | 0.18 | [-0.23, 0.47] | 0.43 | .510 | 1.12 |
| *HHSize - 2* | 0.68 | 0.62 | [-0.53, 1.89] | 1.23 | .268 | 1.98 |
| *HHSize - 3* | 0.43 | 0.61 | [-0.77, 1.64] | 0.50 | .480 | 1.54 |
| *HHSize - 4* | 0.62 | 0.62 | [-0.60, 1.84] | 0.98 | .321 | 1.86 |
| *HHSize - 5+* | 0.44 | 0.63 | [-0.80, 1.68] | 0.49 | .485 | 1.55 |
| *Sibs College* | -0.58 | 0.18 | [-0.93, -0.23] | 10.60 | .001 | 0.56 |

*Note.* $\chi^2(18) = 172.51$, $p < .001$, McFadden $R^2 = 0.13$.

Hypothesis 1.2 stated that students who did not fill out the FAFSA and did go to college (*Group 2*) are more likely to be from high-income households (*Family Income*) compared to students who did not fill out the FAFSA and did not go to college (*Group4*). The VIFs were calculated for *Family Income, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*. All the

predictor variables in the regression model for $H_{1.2}$ had VIFs of less than 10 (see Table 4.5).

**Table 4.5**

*Variance Inflation Factors for Model $H_{1.2}$ - Family Income, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*

| Variable | VIF |
|---|---|
| Family Income | 1.48 |
| *Gender* | 1.05 |
| *Race* | 1.20 |
| *Mom's Education* | 1.55 |
| *Dad's Education* | 1.61 |
| *Mom's Occupation* | 1.14 |
| *Dad's Occupation* | 1.10 |
| *HHSize* | 1.08 |
| *Sibs College* | 1.06 |

Table 4.6 displays the logistic regression model for $H_{1.2}$ evaluated based on an alpha of 0.05. The overall model was significant, $\chi^2(20) = 218.67$, $p < .001$, which suggests that *Family Income*, *Gender*, *Race*, *Mom's Education*, *Dad's Education*, *Mom's Occupation*, *Dad's Occupation*, *HHSize*, and *Sibs College* had a significant effect on the odds of observing the *Group4* category of *Group2* vs. *Group4*. McFadden's R-squared was also computed to examine the model fit. Values greater than .2 indicate the model has an excellent fit (Louviere et al., 2000). The McFadden R-squared value computed for this model was 0.24.

The regression coefficient for *Family Income>$35,000 and <=$75,000* was not significant, $B$ = -0.22, $OR$ = 0.80, $p$ = .451, indicating that *Family Income>$35,000 and <=$75,000*, did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Family Income>$75,000 and*

*<=$135,000* was significant, $B$ = -0.85, $OR$ = 0.43, $p$ = .007, indicating that for a one-unit increase in *Family Income>$75,000 and <=$135,000*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 57%. The regression coefficient for *Family Income>$135,000* was significant, $B$ = -1.50, $OR$ = 0.22, $p$ < .001, indicating that for a one-unit increase in *Family Income>$135,000*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 78%. The regression coefficient for *Gender - Female* was significant, $B$ = -0.62, $OR$ = 0.54, $p$ = .002, indicating that for a one-unit increase in *Gender - Female*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 46%. The regression coefficient for *Race - White* was not significant, $B$ = -0.07, $OR$ = 0.93, $p$ = .894, indicating that *Race - White* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Race - Hispanic* was significant, $B$ = -1.14, $OR$ = 0.32, $p$ = .048, indicating that for a one-unit increase in *Race - Hispanic*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 68%. The regression coefficient for *Race - Other Race*s was not significant, $B$ = -0.53, $OR$ = 0.59, $p$ = .340, indicating that *Race - Other Race*s did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Mom's Education - Some College* was significant, $B$ = -0.90, $OR$ = 0.41, $p$ = .002, indicating that for a one-unit increase in *Mom's Education - Some College*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 59%. The regression coefficient for *Mom's Education - BS/BA Degree* was significant, $B$ = -1.28, $OR$ = 0.28, $p$ < .001, indicating that for a one-unit increase in *Mom's Education*

- *BS/BA Degree*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 72%. The regression coefficient for *Mom's Education - Graduate Degree* was significant, $B$ = -1.05, $OR$ = 0.35, $p$ = .002, indicating that for a one-unit increase in *Mom's Education - Graduate Degree*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 65%. The regression coefficient for *Dad's Education - Some College* was not significant, $B$ = 0.01, $OR$ = 1.01, $p$ = .971, indicating that *Dad's Education - Some College* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Dad's Education - BS/BA Degree* was not significant, $B$ = -0.46, $OR$ = 0.63, $p$ = .094, indicating that *Dad's Education - BS/BA Degree* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Dad's Education - Graduate Degree* was significant, $B$ = -1.25, $OR$ = 0.29, $p$ < .001, indicating that for a one-unit increase in *Dad's Education - Graduate Degree*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 71%. The regression coefficient for *Mom's Occupation - Blue Collar Occupation* was not significant, $B$ = -0.02, $OR$ = 0.98, $p$ = .930, indicating that *Mom's Occupation - Blue Collar Occupation* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Dad's Occupation - Blue Collar Occupation* was not significant, $B$ = 0.40, $OR$ = 1.48, $p$ = .050, indicating that *Dad's Occupation - Blue Collar Occupation* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 2* was not significant, $B$ = 0.92, $OR$ = 2.50, $p$ = .189, indicating that *HHSize - 2* did not significantly affect the odds of

observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 3* was not significant, $B = 0.64$, $OR = 1.89$, $p = .358$, indicating that *HHSize - 3* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 4* was not significant, $B = 0.89$, $OR = 2.43$, $p = .206$, indicating that *HHSize - 4* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 5+* was not significant, $B = 0.90$, $OR = 2.47$, $p = .206$, indicating that *HHSize - 5+* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Sibs College* was significant, $B = -0.58$, $OR = 0.56$, $p = .004$, indicating that for a one-unit increase in *Sibs College*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 44%.

**Table 4.6**

*Logistic Regression Results for Model $H_{1.2}$ - Family Income, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College Predicting Group2 vs. Group4*

| Variable | *B* | *SE* | 95% CI | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|---|
| *(Intercept)* | 0.09 | 0.89 | [-1.64, 1.83] | 0.01 | .915 | |
| *Family Income>$35000 and <=$75000* | -0.22 | 0.29 | [-0.79, 0.35] | 0.57 | .451 | 0.80 |
| *Family Income>$75000 and <=$135000* | -0.85 | 0.32 | [-1.47, -0.23] | 7.17 | .007 | 0.43 |
| *Family Income>$135000* | -1.50 | 0.36 | [-2.21, -0.79] | 16.97 | < .001 | 0.22 |
| *Gender - Female* | -0.62 | 0.20 | [-1.01, -0.23] | 9.69 | .002 | 0.54 |
| *Race - White* | -0.07 | 0.50 | [-1.06, 0.92] | 0.02 | .894 | 0.93 |
| *Race - Hispanic* | -1.14 | 0.58 | [-2.27, -0.01] | 3.90 | .048 | 0.32 |
| *Race - Other Races* | -0.53 | 0.55 | [-1.61, 0.55] | 0.91 | .340 | 0.59 |
| *Mom's Education - Some College* | -0.90 | 0.29 | [-1.46, -0.34] | 9.81 | .002 | 0.41 |
| *Mom's Education - BS/BA Degree* | -1.28 | 0.28 | [-1.82, -0.74] | 21.47 | < .001 | 0.28 |
| *Mom's Education - Graduate Degree* | -1.05 | 0.35 | [-1.73, -0.37] | 9.24 | .002 | 0.35 |
| *Dad's Education - Some College* | 0.01 | 0.28 | [-0.55, 0.57] | 0.00 | .971 | 1.01 |
| *Dad's Education - BS/BA Degree* | -0.46 | 0.28 | [-1.00, 0.08] | 2.81 | .094 | 0.63 |
| *Dad's Education - Graduate Degree* | -1.25 | 0.38 | [-1.99, -0.51] | 10.94 | < .001 | 0.29 |
| *Mom's Occupation - Blue Collar Occupation* | -0.02 | 0.21 | [-0.42, 0.38] | 0.01 | .930 | 0.98 |
| *Dad's Occupation - Blue Collar Occupation* | 0.40 | 0.20 | [-0.00, 0.79] | 3.83 | .050 | 1.48 |
| *HHSize - 2* | 0.92 | 0.70 | [-0.45, 2.29] | 1.72 | .189 | 2.50 |
| *HHSize - 3* | 0.64 | 0.69 | [-0.72, 2.00] | 0.85 | .358 | 1.89 |
| *HHSize - 4* | 0.89 | 0.70 | [-0.49, 2.27] | 1.60 | .206 | 2.43 |
| *HHSize - 5+* | 0.90 | 0.71 | [-0.50, 2.31] | 1.60 | .206 | 2.47 |
| *Sibs College* | -0.58 | 0.20 | [-0.97, -0.18] | 8.10 | .004 | 0.56 |

*Note.* $\chi^2(20) = 218.67$, $p < .001$, McFadden $R^2 = 0.24$.

Hypothesis$_{1.3}$ ($H_{1.3}$) stated that students who did fill out the FAFSA and did not go to college (*Group3*) are more likely to have had more family discussions about financial aid (*Financial Aid Talks*) compared to students who did not fill out the FAFSA and did not go to college (*Group4*). The VIFs were calculated for *Financial Aid Talks*, *Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation,*

*HHSize, and Sibs College*. All the predictor variables in the regression model for $H_{1.3}$ had VIFs of less than 10 (see Table 4.7).

**Table 4.7**

*Variance Inflation Factors for Model $H_{1.3}$ - Financial Aid Talks, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*

| Variable | VIF |
|---|---|
| Financial Aid Talks | 1.13 |
| *Gender* | 1.07 |
| *Race* | 1.20 |
| *Mom's Education* | 1.43 |
| *Dad's Education* | 1.52 |
| *Mom's Occupation* | 1.12 |
| *Dad's Occupation* | 1.14 |
| *HHSize* | 1.21 |
| *Sibs College* | 1.12 |

Table 4.8 displays the logistic regression model for $H_{1.3}$ evaluated based on an alpha of 0.05. The overall model was significant, $\chi^2(19) = 56.57$, $p < .001$, which suggests that *Financial Aid Talks*, *Gender*, *Race*, *Mom's Education*, *Dad's Education*, *Mom's Occupation*, *Dad's Occupation*, *HHSize*, and *Sibs College* had a significant effect on the odds of observing the *Group4* category of *Group3* vs. *Group4*. McFadden's R-squared was also computed to examine the model fit. Values greater than .2 indicate the model has an excellent fit (Louviere et al., 2000). The McFadden R-squared value computed for this model was 0.12.

The regression coefficient for *Financial Aid Talks - One to Three* was significant, $B = -0.80$, $OR = 0.45$, $p = .002$, indicating that for a one-unit increase in *Financial Aid Talks - One to Three*, the odds of observing the *Group4* category of

*Group3* vs. *Group4* would decrease by approximately 55%. The regression coefficient for *Financial Aid Talks - Four or more* was significant, $B$ = -1.32, $OR$ = 0.27, $p < .001$, indicating that for a one-unit increase in *Financial Aid Talks - Four or more*, the odds of observing the *Group4* category of *Group3* vs. *Group4* would decrease by approximately 73%. The regression coefficient for *Gender - Female* was not significant, $B$ = -0.39, $OR$ = 0.68, $p$ = .105, indicating that *Gender - Female* did not significantly affect the odds of observing the *Group4* category of *Group3* vs. *Group4*. The regression coefficient for *Race - White* was significant, $B$ = 0.94, $OR$ = 2.57, $p$ = .046, indicating that for a one-unit increase in *Race - White*, the odds of observing the *Group4* category of *Group3* vs. *Group4* would increase by approximately 157%. The regression coefficient for *Race - Hispanic* was not significant, $B$ = 0.28, $OR$ = 1.33, $p$ = .617, indicating that *Race - Hispanic* did not significantly affect the odds of observing the *Group4* category of *Group3* vs. *Group4*. The regression coefficient for *Race - Other Race*s was not significant, $B$ = 0.22, $OR$ = 1.24, $p$ = .684, indicating that *Race - Other Race*s did not significantly affect the odds of observing the *Group4* category of *Group3* vs. *Group4*. The regression coefficient for *Mom's Education - Some College* was not significant, $B$ = -0.31, $OR$ = 0.73, $p$ = .345, indicating that *Mom's Education - Some College* did not significantly affect the odds of observing the *Group4* category of *Group3* vs. *Group4*. The regression coefficient for *Mom's Education - BS/BA Degree* was not significant, $B$ = -0.25, $OR$ = 0.78, $p$ = .467, indicating that *Mom's Education - BS/BA Degree* did not significantly affect the odds of observing the *Group4* category of *Group3* vs. *Group4*. The regression coefficient for *Mom's Education - Graduate Degree* was not significant, $B$ = 0.45, $OR$ = 1.57, $p$ = .385, indicating that *Mom's Education - Graduate*

*Degree* did not significantly affect the odds of observing the *Group4* category of *Group3* vs. *Group4*. The regression coefficient for *Dad's Education - Some College* was not significant, $B$ = -0.07, $OR$ = 0.93, $p$ = .825, indicating that *Dad's Education - Some College* did not significantly affect the odds of observing the *Group4* category of *Group3* vs. *Group4*. The regression coefficient for *Dad's Education - BS/BA Degree* was not significant, $B$ = 0.36, $OR$ = 1.43, $p$ = .323, indicating that *Dad's Education - BS/BA Degree* did not significantly affect the odds of observing the *Group4* category of *Group3* vs. *Group4*. The regression coefficient for *Dad's Education - Graduate Degree* was not significant, $B$ = -0.21, $OR$ = 0.81, $p$ = .678, indicating that *Dad's Education - Graduate Degree* did not significantly affect the odds of observing the *Group4* category of *Group3* vs. *Group4*. The regression coefficient for *Mom's Occupation - Blue Collar Occupation* was not significant, $B$ = 0.47, $OR$ = 1.59, $p$ = .056, indicating that *Mom's Occupation - Blue Collar Occupation* did not significantly affect the odds of observing the *Group4* category of *Group3* vs. *Group4*. The regression coefficient for *Dad's Occupation - Blue Collar Occupation* was not significant, $B$ = -0.46, $OR$ = 0.63, $p$ = .070, indicating that *Dad's Occupation - Blue Collar Occupation* did not significantly affect the odds of observing the *Group4* category of *Group3* vs. *Group4*. The regression coefficient for *HHSize - 2* was significant, $B$ = 1.94, $OR$ = 6.98, $p$ = .008, indicating that for a one-unit increase in *HHSize - 2*, the odds of observing the *Group4* category of *Group3* vs. *Group4* would increase by approximately 598%. The regression coefficient for *HHSize - 3* was significant, $B$ = 1.92, $OR$ = 6.84, $p$ = .008, indicating that for a one-unit increase in *HHSize - 3*, the odds of observing the *Group4* category of *Group3* vs. *Group4* would increase by approximately 584%. The regression coefficient for *HHSize - 4* was

significant, $B$ = 1.90, $OR$ = 6.66, $p$ = .010, indicating that for a one-unit increase in *HHSize - 4*, the odds of observing the *Group4* category of *Group3* vs. *Group4* would increase by approximately 566%. The regression coefficient for *HHSize - 5+* was significant, $B$ = 1.80, $OR$ = 6.06, $p$ = .016, indicating that for a one-unit increase in *HHSize - 5+*, the odds of observing the *Group4* category of *Group3* vs. *Group4* would increase by approximately 506%. The regression coefficient for *Sibs College* was not significant, $B$ = 0.08, $OR$ = 1.08, $p$ = .767, indicating that *Sibs College* did not significantly affect the odds of observing the *Group4* category of *Group3* vs. *Group4*.

**Table 4.8**

*Logistic Regression Results for Model $H_{1.3}$ - Financial Aid Talks, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College Predicting Group3 vs. Group4*

| Variable | *B* | *SE* | 95% CI | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|---|
| *(Intercept)* | -1.71 | 0.83 | [-3.34, -0.07] | 4.19 | .041 | |
| *Financial Aid Talks - One to Three* | -0.80 | 0.26 | [-1.30, -0.29] | 9.62 | .002 | 0.45 |
| *Financial Aid Talks - Four or more* | -1.32 | 0.37 | [-2.04, -0.60] | 12.93 | < .001 | 0.27 |
| *Gender - Female* | -0.39 | 0.24 | [-0.86, 0.08] | 2.62 | .105 | 0.68 |
| *Race - White* | 0.94 | 0.47 | [0.02, 1.87] | 3.99 | .046 | 2.57 |
| *Race - Hispanic* | 0.28 | 0.57 | [-0.83, 1.40] | 0.25 | .617 | 1.33 |
| *Race - Other Race*s | 0.22 | 0.53 | [-0.82, 1.26] | 0.17 | .684 | 1.24 |
| *Mom's Education - Some College* | -0.31 | 0.33 | [-0.96, 0.34] | 0.89 | .345 | 0.73 |
| *Mom's Education - BS/BA Degree* | -0.25 | 0.35 | [-0.94, 0.43] | 0.53 | .467 | 0.78 |
| *Mom's Education - Graduate Degree* | 0.45 | 0.52 | [-0.56, 1.46] | 0.75 | .385 | 1.57 |
| *Dad's Education - Some College* | -0.07 | 0.32 | [-0.69, 0.55] | 0.05 | .825 | 0.93 |
| *Dad's Education - BS/BA Degree* | 0.36 | 0.36 | [-0.35, 1.07] | 0.98 | .323 | 1.43 |
| *Dad's Education - Graduate Degree* | -0.21 | 0.50 | [-1.18, 0.77] | 0.17 | .678 | 0.81 |
| *Mom's Occupation - Blue Collar Occupation* | 0.47 | 0.24 | [-0.01, 0.94] | 3.64 | .056 | 1.59 |
| *Dad's Occupation - Blue Collar Occupation* | -0.46 | 0.26 | [-0.97, 0.04] | 3.29 | .070 | 0.63 |
| *HHSize - 2* | 1.94 | 0.73 | [0.52, 3.37] | 7.13 | .008 | 6.98 |
| *HHSize - 3* | 1.92 | 0.72 | [0.51, 3.34] | 7.09 | .008 | 6.84 |
| *HHSize - 4* | 1.90 | 0.73 | [0.46, 3.33] | 6.70 | .010 | 6.66 |
| *HHSize - 5+* | 1.80 | 0.75 | [0.34, 3.27] | 5.83 | .016 | 6.06 |
| *Sibs College* | 0.08 | 0.26 | [-0.44, 0.59] | 0.09 | .767 | 1.08 |

*Note.* $\chi^2(19) = 56.57$, $p < .001$, McFadden $R^2 = 0.12$.

Hypothesis$_{1.4}$ ($H_{1.4}$) stated that students who did fill out the FAFSA and did go to college (*Group1*) are more likely to have overestimated the cost of college (*Over/Underestimated*) compared to students who did not fill out the FAFSA and did go to college (*Group2*). The VIFs were calculated for *Over/Underestimated*, *Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*. All the predictor variables in the regression model for $H_{1.4}$ had VIFs of less than 10 (see Table 4.9).

**Table 4.9**

*Variance Inflation Factors for Model $H_{1.4}$ - Over/Underestimated, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*

| Variable | VIF |
|---|---|
| *Estimated* | 1.01 |
| *Gender* | 1.01 |
| *Race* | 1.05 |
| *Mom's Education* | 1.27 |
| *Dad's Education* | 1.34 |
| *Mom's Occupation* | 1.05 |
| *Dad's Occupation* | 1.11 |
| *HHSize* | 1.06 |
| *Sibs College* | 1.02 |

Table 4.10 displays the logistic regression model for $H_{1.4}$ evaluated based on an alpha of 0.05. The overall model was significant, $\chi^2(18) = 101.63$, $p < .001$, which suggests that *Estimated*, *Gender*, *Race*, *Mom's Education*, *Dad's Education*, *Mom's Occupation*, *Dad's Occupation*, *HHSize*, and *Sibs College* had a significant effect on the odds of observing the *Group2* category of *Group1* vs. *Group2*. McFadden's R-squared was also computed to examine the model fit. Values greater than .2 indicate the model has an excellent fit (Louviere et al., 2000). The McFadden R-squared value computed for this model was 0.06.

The regression coefficient for *Estimated - Over or Under Estimated by 100* was significant, $B = -0.51$, $OR = 0.60$, $p = .048$, indicating that for a one-unit increase in *Estimated - Over or Under Estimated by 100*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would decrease by approximately 40%. The regression coefficient for *Gender - Female* was significant, $B = -0.26$, $OR = 0.77$, $p = .047$, indicating that for a one-unit increase in *Gender - Female*, the odds of observing the *Group2* category of

*Group1* vs. *Group2* would decrease by approximately 23%. The regression coefficient for *Race - White* was not significant, $B = 0.76$, $OR = 2.14$, $p = .060$, indicating that *Race - White* did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *Race - Hispanic* was not significant, $B = 0.88$, $OR = 2.42$, $p = .055$, indicating that *Race - Hispanic* did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *Race - Other Race*s was not significant, $B = 0.69$, $OR = 1.99$, $p = .105$, indicating that *Race - Other Race*s did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *Mom's Education - Some College* was not significant, $B = 0.38$, $OR = 1.46$, $p = .147$, indicating that *Mom's Education - Some College* did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *Mom's Education - BS/BA Degree* was significant, $B = 0.65$, $OR = 1.91$, $p = .004$, indicating that for a one-unit increase in *Mom's Education - BS/BA Degree*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would increase by approximately 91%. The regression coefficient for *Mom's Education - Graduate Degree* was significant, $B = 0.88$, $OR = 2.42$, $p < .001$, indicating that for a one-unit increase in *Mom's Education - Graduate Degree*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would increase by approximately 142%. The regression coefficient for *Dad's Education - Some College* was significant, $B = 0.60$, $OR = 1.81$, $p = .024$, indicating that for a one-unit increase in *Dad's Education - Some College*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would increase by approximately 81%. The regression coefficient for *Dad's Education - BS/BA Degree* was significant, $B = 0.71$, $OR = 2.03$, $p = .002$,

indicating that for a one-unit increase in *Dad's Education - BS/BA Degree*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would increase by approximately 103%. The regression coefficient for *Dad's Education - Graduate Degree* was significant, $B = 1.11$, $OR = 3.02$, $p < .001$, indicating that for a one-unit increase in *Dad's Education - Graduate Degree*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would increase by approximately 202%. The regression coefficient for *Mom's Occupation - Blue Collar Occupation* was not significant, $B = 0.11$, $OR = 1.12$, $p = .405$, indicating that *Mom's Occupation - Blue Collar Occupation* did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *Dad's Occupation - Blue Collar Occupation* was not significant, $B = 0.05$, $OR = 1.06$, $p = .696$, indicating that *Dad's Occupation - Blue Collar Occupation* did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *HHSize - 2* was not significant, $B = 0.67$, $OR = 1.95$, $p = .140$, indicating that *HHSize - 2* did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *HHSize - 3* was not significant, $B = 0.59$, $OR = 1.80$, $p = .188$, indicating that *HHSize - 3* did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *HHSize - 4* was not significant, $B = 0.31$, $OR = 1.37$, $p = .497$, indicating that *HHSize - 4* did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *HHSize - 5+* was not significant, $B = 0.33$, $OR = 1.39$, $p = .482$, indicating that *HHSize - 5+* did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *Sibs College* was significant, $B = 0.35$, $OR =$

1.42, $p = .007$, indicating that for a one-unit increase in *Sibs College*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would increase by approximately 42%.

**Table 4.10**

*Logistic Regression Results for Model $H_{1.4}$ - Over/Underestimated, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College Predicting Group1 vs. Group2*

| Variable | *B* | *SE* | 95% CI | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|---|
| *(Intercept)* | -4.04 | 0.70 | [-5.42, -2.67] | 33.32 | < .001 | |
| *Estimated - Over or Under Estimated by 100* | -0.51 | 0.26 | [-1.02, -0.00] | 3.91 | .048 | 0.60 |
| *Gender - Female* | -0.26 | 0.13 | [-0.51, -0.00] | 3.94 | .047 | 0.77 |
| *Race - White* | 0.76 | 0.40 | [-0.03, 1.56] | 3.55 | .060 | 2.14 |
| *Race - Hispanic* | 0.88 | 0.46 | [-0.02, 1.78] | 3.69 | .055 | 2.42 |
| *Race - Other Race*s | 0.69 | 0.42 | [-0.14, 1.52] | 2.64 | .105 | 1.99 |
| *Mom's Education - Some College* | 0.38 | 0.26 | [-0.13, 0.90] | 2.10 | .147 | 1.46 |
| *Mom's Education - BS/BA Degree* | 0.65 | 0.23 | [0.20, 1.09] | 8.20 | .004 | 1.91 |
| *Mom's Education - Graduate Degree* | 0.88 | 0.24 | [0.42, 1.35] | 13.88 | < .001 | 2.42 |
| *Dad's Education - Some College* | 0.60 | 0.26 | [0.08, 1.11] | 5.08 | .024 | 1.81 |
| *Dad's Education - BS/BA Degree* | 0.71 | 0.23 | [0.26, 1.15] | 9.77 | .002 | 2.03 |
| *Dad's Education - Graduate Degree* | 1.11 | 0.22 | [0.67, 1.54] | 24.76 | < .001 | 3.02 |
| *Mom's Occupation - Blue Collar Occupation* | 0.11 | 0.14 | [-0.15, 0.38] | 0.69 | .405 | 1.12 |
| *Dad's Occupation - Blue Collar Occupation* | 0.05 | 0.14 | [-0.22, 0.33] | 0.15 | .696 | 1.06 |
| *HHSize - 2* | 0.67 | 0.45 | [-0.22, 1.55] | 2.18 | .140 | 1.95 |
| *HHSize - 3* | 0.59 | 0.45 | [-0.29, 1.47] | 1.74 | .188 | 1.80 |
| *HHSize - 4* | 0.31 | 0.46 | [-0.59, 1.21] | 0.46 | .497 | 1.37 |
| *HHSize - 5+* | 0.33 | 0.47 | [-0.59, 1.26] | 0.49 | .482 | 1.39 |
| *Sibs College* | 0.35 | 0.13 | [0.10, 0.61] | 7.22 | .007 | 1.42 |

*Note.* $\chi^2(18) = 101.63$, $p < .001$, McFadden $R^2 = 0.06$.

Hypothesis $_{2.1}(H_{2.1})$ stated that students who did fill out the FAFSA and did go to college (*Group1*) are less likely to feel the FAFSA is too difficult (Forms Too Difficult) compared to students who did not fill out the FAFSA and did not go to college (*Group4*). The VIFs were calculated for *Forms Too Difficult*, *Gender, Race, Mom's Education,*

*Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*. All the predictor variables in the regression model for $H_{2.1}$ had VIFs of less than 10 (see Table 4.11).

**Table 4.11**

*Variance Inflation Factors for Model $H_{2.1}$ - Forms Too Difficult, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*

| Variable | VIF |
|---|---|
| *Forms Too Difficult* | 1.15 |
| *Gender* | 1.10 |
| *Race* | 1.25 |
| *Mom's Education* | 1.50 |
| *Dad's Education* | 1.69 |
| *HHSize* | 1.24 |
| *Sibs College* | 1.09 |

Table 4.12 displays the logistic regression model for $H_{2.1}$ evaluated based on an alpha of 0.05. The overall model was significant, $\chi^2(16) = 44.74$, $p < .001$, which suggests that *Forms Too Difficult*, *Gender*, *Race*, *Mom's Education*, *Dad's Education*, *HHSize*, and *Sibs College* had a significant effect on the odds of observing the *Group4* category of *Group1* vs. *Group4*. McFadden's R-squared was also computed to examine the model fit. Values greater than .2 indicate the model has an excellent fit (Louviere et al., 2000). The McFadden R-squared value computed for this model was 0.20.

The regression coefficient for *Forms Too Difficult - Yes* was not significant, $B = 0.98$, $OR = 2.68$, $p = .305$, indicating that *Forms Too Difficult - Yes*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Gender - Female* was significant, $B = -0.98$, $OR = 0.37$, $p = .022$, indicating that for a one-unit increase in *Gender - Female*, the odds of observing the

*Group4* category of *Group1* vs. *Group4* would decrease by approximately 63%. The regression coefficient for *Race - White* was not significant, $B = 0.26$, $OR = 1.29$, $p = .838$, indicating that *Race - White* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Race - Hispanic* was not significant, $B = -1.02$, $OR = 0.36$, $p = .485$, indicating that *Race - Hispanic* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Race - Other Race*s was not significant, $B = -0.47$, $OR = 0.62$, $p = .722$, indicating that *Race - Other Race*s did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Mom's Education - Some College* was not significant, $B = -1.22$, $OR = 0.30$, $p = .057$, indicating that *Mom's Education - Some College* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Mom's Education - BS/BA Degree* was significant, $B = -1.63$, $OR = 0.20$, $p = .004$, indicating that for a one-unit increase in *Mom's Education - BS/BA Degree*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 80%. The regression coefficient for *Mom's Education - Graduate Degree* was significant, $B = -1.43$, $OR = 0.24$, $p = .032$, indicating that for a one-unit increase in *Mom's Education - Graduate Degree*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 76%. The regression coefficient for *Dad's Education - Some College* was not significant, $B = 0.05$, $OR = 1.05$, $p = .933$, indicating that *Dad's Education - Some College* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Dad's Education - BS/BA Degree* was not significant, $B = -0.55$, $OR = 0.58$, $p = .353$,

indicating that *Dad's Education - BS/BA Degree* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Dad's Education - Graduate Degree* was not significant, $B$ = -0.23, $OR$ = 0.79, $p$ = .716, indicating that *Dad's Education - Graduate Degree* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 2* was not significant, $B$ = 1.00, $OR$ = 2.73, $p$ = .399, indicating that *HHSize - 2* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 3* was not significant, $B$ = -1.19, $OR$ = 0.30, $p$ = .336, indicating that *HHSize - 3* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 4* was not significant, $B$ = 0.98, $OR$ = 2.66, $p$ = .413, indicating that *HHSize - 4* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 5+* was not significant, $B$ = -0.53, $OR$ = 0.59, $p$ = .682, indicating that *HHSize - 5+*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Sibs College* was not significant, $B$ = -0.07, $OR$ = 0.93, $p$ = .865, indicating that *Sibs College* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*.

**Table 4.12**

*Logistic Regression Results for Model $H_{2.1}$ - Forms Too Difficult, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College Predicting Group1 vs. Group4*

| Variable | *B* | *SE* | 95% CI | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|---|
| *(Intercept)* | -1.13 | 1.58 | [-4.23, 1.96] | 0.52 | .472 | |
| *Forms Too Difficult - Yes* | 0.98 | 0.96 | [-0.90, 2.87] | 1.05 | .305 | 2.68 |
| *Gender - Female* | -0.98 | 0.43 | [-1.82, -0.14] | 5.26 | .022 | 0.37 |
| *Race - White* | 0.26 | 1.25 | [-2.20, 2.71] | 0.04 | .838 | 1.29 |
| *Race - Hispanic* | -1.02 | 1.47 | [-3.90, 1.85] | 0.49 | .485 | 0.36 |
| *Race - Other Race*s | -0.47 | 1.34 | [-3.09, 2.14] | 0.13 | .722 | 0.62 |
| *Mom's Education - Some College* | -1.22 | 0.64 | [-2.47, 0.03] | 3.63 | .057 | 0.30 |
| *Mom's Education - BS/BA Degree* | -1.63 | 0.57 | [-2.74, -0.52] | 8.28 | .004 | 0.20 |
| *Mom's Education - Graduate Degree* | -1.43 | 0.67 | [-2.75, -0.12] | 4.58 | .032 | 0.24 |
| *Dad's Education - Some College* | 0.05 | 0.61 | [-1.15, 1.26] | 0.01 | .933 | 1.05 |
| *Dad's Education - BS/BA Degree* | -0.55 | 0.59 | [-1.72, 0.61] | 0.86 | .353 | 0.58 |
| *Dad's Education - Graduate Degree* | -0.23 | 0.64 | [-1.48, 1.02] | 0.13 | .716 | 0.79 |
| *HHSize - 2* | 1.00 | 1.19 | [-1.33, 3.34] | 0.71 | .399 | 2.73 |
| *HHSize - 3* | -1.19 | 1.24 | [-3.63, 1.24] | 0.92 | .336 | 0.30 |
| *HHSize - 4* | 0.98 | 1.20 | [-1.36, 3.32] | 0.67 | .413 | 2.66 |
| *HHSize - 5+* | -0.53 | 1.29 | [-3.06, 2.00] | 0.17 | .682 | 0.59 |
| *Sibs College* | -0.07 | 0.42 | [-0.90, 0.76] | 0.03 | .865 | 0.93 |

*Note.* $\chi^2(16) = 44.74$, $p < .001$, McFadden $R^2 = 0.20$.

Hypothesis$_{2.2}$ ($H_{2.2}$) stated that students who did not fill out the FAFSA and did go to college (*Group2*) are more likely to believe that they wouldn't qualify (Thought Not Qualified) compared to students who did not fill out the FAFSA and did not go to college (*Group4*). The VIFs were calculated for *Thought Not Qualified*, *Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*. All the predictor variables in the regression model for $H_{2.2}$ had VIFs of less than 10 (see Table 4.13).

**Table 4.13**

*Variance Inflation Factors for Model $H_{2.2}$ - Thought Not Qualified, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*

| Variable | VIF |
|---|---|
| *Thought Not Qualified* | 1.22 |
| *Gender* | 1.23 |
| *Race* | 1.45 |
| *Mom's Education* | 2.05 |
| *Dad's Education* | 1.79 |
| *Mom's Occupation* | 1.26 |
| *Dad's Occupation* | 1.18 |
| *HHSize* | 1.34 |
| *Sibs College* | 1.10 |

The overall model was significant, $\chi^2(18) = 65.08$, $p < .001$, which suggests that *Thought Not Qualified*, *Gender*, *Race*, *Mom's Education*, *Dad's Education*, *Mom's Occupation*, *Dad's Occupation*, *HHSize*, and *Sibs College* had a significant effect on the odds of observing the *Group4* category of *Group2* vs. *Group4*. McFadden's R-squared was also computed to examine the model fit. Values greater than .2 indicate the model has an excellent fit (Louviere et al., 2000). The McFadden R-squared value computed for this model was 0.25.

The regression coefficient for *Thought Not Qualified - Yes* was not significant, $B = -0.75$, $OR = 0.47$, $p = .254$, indicating that *Thought Not Qualified - Yes*, did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Gender - Female* was significant, $B = -1.36$, $OR = 0.26$, $p = .003$, indicating that for a one-unit increase in *Gender - Female*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 74%. The regression coefficient for *Race - White* was not significant, $B = -1.03$, $OR =$

0.36, $p = .197$, indicating that *Race - White* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Race - Hispanic* was significant, $B = -2.60$, $OR = 0.07$, $p = .013$, indicating that for a one-unit increase in *Race - Hispanic*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 93%. The regression coefficient for *Race - Other Race*s was significant, $B = -2.06$, $OR = 0.13$, $p = .027$, indicating that for a one-unit increase in *Race - Other Race*s, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 87%. The regression coefficient for *Mom's Education - Some College* was significant, $B = -2.14$, $OR = 0.12$, $p = .013$, indicating that for a one-unit increase in *Mom's Education - Some College*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 88%. The regression coefficient for *Mom's Education - BS/BA Degree* was significant, $B = -1.93$, $OR = 0.14$, $p < .001$, indicating that for a one-unit increase in *Mom's Education - BS/BA Degree*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 86%. The regression coefficient for *Mom's Education - Graduate Degree* was not significant, $B = -1.12$, $OR = 0.33$, $p = .064$, indicating that *Mom's Education - Graduate Degree* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Dad's Education - Some College* was not significant, $B = 0.52$, $OR = 1.69$, $p = .388$, indicating that *Dad's Education - Some College* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Dad's Education - BS/BA Degree* was not significant, $B = -0.22$, $OR = 0.80$, $p = .685$, indicating that *Dad's Education - BS/BA Degree* did not significantly affect the odds of observing

the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Dad's Education - Graduate Degree* was significant, $B$ = -1.68, $OR$ = 0.19, $p$ = .017, indicating that for a one-unit increase in *Dad's Education - Graduate Degree*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 81%. The regression coefficient for *Mom's Occupation - Blue Collar Occupation* was not significant, $B$ = -0.35, $OR$ = 0.71, $p$ = .422, indicating that *Mom's Occupation - Blue Collar Occupation* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Dad's Occupation - Blue Collar Occupation* was not significant, $B$ = 0.28, $OR$ = 1.33, $p$ = .496, indicating that *Dad's Occupation - Blue Collar Occupation* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 2* was not significant, $B$ = -0.30, $OR$ = 0.74, $p$ = .828, indicating that *HHSize - 2* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 3* was not significant, $B$ = -0.23, $OR$ = 0.80, $p$ = .867, indicating that *HHSize - 3* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 4* was not significant, $B$ = 0.26, $OR$ = 1.30, $p$ = .849, indicating that *HHSize - 4* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 5+* was not significant, $B$ = -0.40, $OR$ = 0.67, $p$ = .782, indicating that *HHSize - 5+*, did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Sibs College* was significant, $B$ = -1.07, $OR$ = 0.34, $p$ = .010, indicating that for a one-unit increase in *Sibs*

*College*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 66%.

**Table 4.14**

*Logistic Regression Results for Model $H_{2.2}$ - Thought Not Qualified, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College Predicting Group2 vs. Group4*

| Variable | *B* | *SE* | 95% CI | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|---|
| *(Intercept)* | 2.31 | 1.83 | [-1.27, 5.90] | 1.60 | .206 | |
| *Thought Not Qualified - Yes* | -0.75 | 0.66 | [-2.04, 0.54] | 1.30 | .254 | 0.47 |
| *Gender - Female* | -1.36 | 0.46 | [-2.25, -0.46] | 8.85 | .003 | 0.26 |
| *Race - White* | -1.03 | 0.80 | [-2.61, 0.54] | 1.66 | .197 | 0.36 |
| *Race - Hispanic* | -2.60 | 1.05 | [-4.66, -0.55] | 6.15 | .013 | 0.07 |
| *Race - Other Race*s | -2.06 | 0.93 | [-3.88, -0.23] | 4.89 | .027 | 0.13 |
| *Mom's Education - Some College* | -2.14 | 0.86 | [-3.83, -0.45] | 6.15 | .013 | 0.12 |
| *Mom's Education - BS/BA Degree* | -1.93 | 0.57 | [-3.05, -0.81] | 11.39 | < .001 | 0.14 |
| *Mom's Education - Graduate Degree* | -1.12 | 0.60 | [-2.30, 0.06] | 3.44 | .064 | 0.33 |
| *Dad's Education - Some College* | 0.52 | 0.61 | [-0.66, 1.71] | 0.74 | .388 | 1.69 |
| *Dad's Education - BS/BA Degree* | -0.22 | 0.54 | [-1.28, 0.84] | 0.16 | .685 | 0.80 |
| *Dad's Education - Graduate Degree* | -1.68 | 0.70 | [-3.05, -0.30] | 5.73 | .017 | 0.19 |
| *Mom's Occupation - Blue Collar Occupation* | -0.35 | 0.43 | [-1.20, 0.50] | 0.64 | .422 | 0.71 |
| *Dad's Occupation - Blue Collar Occupation* | 0.28 | 0.42 | [-0.53, 1.10] | 0.46 | .496 | 1.33 |
| *HHSize - 2* | -0.30 | 1.38 | [-3.00, 2.40] | 0.05 | .828 | 0.74 |
| *HHSize - 3* | -0.23 | 1.37 | [-2.91, 2.45] | 0.03 | .867 | 0.80 |
| *HHSize - 4* | 0.26 | 1.37 | [-2.43, 2.95] | 0.04 | .849 | 1.30 |
| *HHSize - 5+* | -0.40 | 1.47 | [-3.28, 2.47] | 0.08 | .782 | 0.67 |
| *Sibs College* | -1.07 | 0.42 | [-1.89, -0.26] | 6.64 | .010 | 0.34 |

*Note.* $\chi^2(18) = 65.08$, $p < .001$, McFadden $R^2 = 0.25$.

Hypothesis$_{2.3}$ ($H_{2.3}$) stated that students who did not fill out the FAFSA and did not go to college (*Group4*) are more likely to feel the FAFSA is too difficult (Forms Too Difficult) compared to students who did not fill out the FAFSA and did go to college (*Group2*). The VIFs were calculated for *Forms Too Difficult*, *Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs*

*College*. All the predictor variables in the regression model for $H_{2.3}$ had VIFs of less than 10 (see Table 4.15).

**Table 4.15**

*Variance Inflation Factors for Model $H_{2.3}$ - Forms Too Difficult, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*

| Variable | VIF |
|---|---|
| *Forms Too Difficult* | 1.25 |
| *Gender* | 1.29 |
| *Race* | 1.61 |
| *Mom's Education* | 2.74 |
| *Mom's Occupation* | 1.79 |
| *Dad's Occupation* | 1.40 |
| *HHSize* | 1.62 |
| *Sibs College* | 1.16 |

Table 4.16 displays the logistic regression model for $H_{2.3}$ evaluated based on an alpha of 0.05. The overall model was significant, $\chi^2(15) = 62.73$, $p < .001$, which suggests that *Forms Too Difficult*, *Gender*, *Race*, *Mom's Education*, *Mom's Occupation*, *Dad's Occupation*, *HHSize*, and *Sibs College* had a significant effect on the odds of observing the *Group4* category of *Group2* vs. *Group4*. McFadden's R-squared was also computed to examine the model fit. Values greater than .2 indicate the model has an excellent fit (Louviere et al., 2000). The McFadden R-squared value computed for this model was 0.38.

The regression coefficient for *Forms Too Difficult - Yes* was not significant, $B = 0.66$, $OR = 1.94$, $p = .627$, indicating that *Forms Too Difficult - Yes*, did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Gender - Female* was significant, $B = -1.37$, $OR = 0.25$, $p = .017$,

indicating that for a one-unit increase in *Gender - Female*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 75%. The regression coefficient for *Race - White* was not significant, $B$ = -1.12, $OR$ = 0.33, $p$ = .508, indicating that *Race - White* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Race - Hispanic* was not significant, $B$ = -2.76, $OR$ = 0.06, $p$ = .193, indicating that *Race - Hispanic* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Race - Other Race*s was not significant, $B$ = -0.95, $OR$ = 0.39, $p$ = .594, indicating that *Race - Other Race*s did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Mom's Education - Some College* was significant, $B$ = -2.96, $OR$ = 0.05, $p$ = .002, indicating that for a one-unit increase in *Mom's Education - Some College*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 95%. The regression coefficient for *Mom's Education - BS/BA Degree* was significant, $B$ = -3.29, $OR$ = 0.04, $p$ < .001, indicating that for a one-unit increase in *Mom's Education - BS/BA Degree*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 96%. The regression coefficient for *Mom's Education - Graduate Degree* was significant, $B$ = -4.08, $OR$ = 0.02, $p$ < .001, indicating that for a one-unit increase in *Mom's Education - Graduate Degree*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 98%. The regression coefficient for *Mom's Occupation - Blue Collar Occupation* was significant, $B$ = -1.34, $OR$ = 0.26, $p$ = .049, indicating that for a one-unit increase in *Mom's Occupation - Blue Collar Occupation*, the odds of observing the *Group4* category of

*Group2* vs. *Group4* would decrease by approximately 74%. The regression coefficient for *Dad's Occupation - Blue Collar Occupation* was significant, $B = 1.97$, $OR = 7.19$, $p = .001$, indicating that for a one-unit increase in *Dad's Occupation - Blue Collar Occupation*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would increase by approximately 619%. The regression coefficient for *HHSize - 2* was not significant, $B = 0.43$, $OR = 1.54$, $p = .767$, indicating that *HHSize - 2* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 3* was not significant, $B = -1.85$, $OR = 0.16$, $p = .225$, indicating that *HHSize - 3* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 4* was not significant, $B = 0.03$, $OR = 1.03$, $p = .986$, indicating that *HHSize - 4* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 5+* was not significant, $B = -0.77$, $OR = 0.46$, $p = .624$, indicating that *HHSize - 5+*, did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Sibs College* was significant, $B = -1.20$, $OR = 0.30$, $p = .026$, indicating that for a one-unit increase in *Sibs College*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 70%.

**Table 4.16**

*Logistic Regression Results for Model $H_{2.3}$ - Forms Too Difficult, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College Predicting Group2 vs. Group4*

| Variable | *B* | *SE* | 95% CI | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|---|
| *(Intercept)* | 2.94 | 2.31 | [-1.58, 7.47] | 1.63 | .202 | |
| *Forms Too Difficult - Yes* | 0.66 | 1.36 | [-2.01, 3.33] | 0.24 | .627 | 1.94 |
| *Gender - Female* | -1.37 | 0.58 | [-2.50, -0.24] | 5.69 | .017 | 0.25 |
| *Race - White* | -1.12 | 1.69 | [-4.43, 2.19] | 0.44 | .508 | 0.33 |
| *Race - Hispanic* | -2.76 | 2.12 | [-6.92, 1.40] | 1.69 | .193 | 0.06 |
| *Race - Other Race*s | -0.95 | 1.78 | [-4.45, 2.54] | 0.28 | .594 | 0.39 |
| *Mom's Education - Some College* | -2.96 | 0.95 | [-4.82, -1.11] | 9.80 | .002 | 0.05 |
| *Mom's Education - BS/BA Degree* | -3.29 | 0.85 | [-4.95, -1.63] | 15.03 | < .001 | 0.04 |
| *Mom's Education - Graduate Degree* | -4.08 | 0.97 | [-5.98, -2.19] | 17.88 | < .001 | 0.02 |
| *Mom's Occupation - Blue Collar Occupation* | -1.34 | 0.68 | [-2.67, -0.01] | 3.87 | .049 | 0.26 |
| *Dad's Occupation - Blue Collar Occupation* | 1.97 | 0.61 | [0.77, 3.18] | 10.29 | .001 | 7.19 |
| *HHSize - 2* | 0.43 | 1.45 | [-2.41, 3.28] | 0.09 | .767 | 1.54 |
| *HHSize - 3* | -1.85 | 1.53 | [-4.85, 1.14] | 1.47 | .225 | 0.16 |
| *HHSize - 4* | 0.03 | 1.48 | [-2.87, 2.92] | 0.00 | .986 | 1.03 |
| *HHSize - 5+* | -0.77 | 1.58 | [-3.86, 2.32] | 0.24 | .624 | 0.46 |
| *Sibs College* | -1.20 | 0.54 | [-2.25, -0.14] | 4.93 | .026 | 0.30 |

*Note.* $\chi^2(15) = 62.73$, $p < .001$, McFadden $R^2 = 0.38$.

Hypothesis$_{2.4}$ ($H_{2.4}$) stated that students who did not fill out the FAFSA and did not go to college (*Group4*) are more likely to state that they did not know how to apply for aid (*Don't Know How*) compared to students who did not fill out the FAFSA and did go to college (*Group2*). The VIFs were calculated for *Don't Know How*, *Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*. All the predictor variables in the regression model for $H_{2.4}$ had VIFs of less than 10 (see Table 4.17).

**Table 4.17**

*Variance Inflation Factors for Model $H_{2.4}$ - Don't Know How, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*

| Variable | VIF |
|---|---|
| *Don't Know How* | 1.28 |
| *Gender* | 1.43 |
| *Race* | 1.58 |
| *Mom's Education* | 3.10 |
| *Dad's Education* | 2.13 |
| *Mom's Occupation* | 1.88 |
| *Dad's Occupation* | 1.57 |
| *HHSize* | 1.96 |
| *Sibs College* | 1.19 |

Table 4.18 displays the logistic regression model for $H_{2.4}$ evaluated based on an alpha of 0.05. The overall model was significant, $\chi^2(18) = 66.54$, $p < .001$, which suggests that *Don't Know How*, *Gender*, *Race*, *Mom's Education*, *Dad's Education*, *Mom's Occupation*, *Dad's Occupation*, *HHSize*, and *Sibs College* had a significant effect on the odds of observing the *Group4* category of *Group2* vs. *Group4*. McFadden's R-squared was also computed to examine the model fit. Values greater than .2 indicate the model has an excellent fit (Louviere et al., 2000). The McFadden R-squared value computed for this model was 0.40.

The regression coefficient for *Don't Know How - Yes* was not significant, $B = 0.41$, $OR = 1.51$, $p = .665$, indicating that *Don't Know How - Yes*, did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Gender - Female* was significant, $B = -1.51$, $OR = 0.22$, $p = .015$, indicating that for a one-unit increase in *Gender - Female*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 78%. The

regression coefficient for *Race - White* was not significant, $B$ = -1.25, $OR$ = 0.29, $p$ = .477, indicating that *Race - White* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Race - Hispanic* was not significant, $B$ = -2.84, $OR$ = 0.06, $p$ = .200, indicating that *Race - Hispanic* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Race - Other Race*s was not significant, $B$ = -1.01, $OR$ = 0.36, $p$ = .588, indicating that *Race - Other Race*s did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Mom's Education - Some College* was significant, $B$ = -2.89, $OR$ = 0.06, $p$ = .003, indicating that for a one-unit increase in *Mom's Education - Some College*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 94%. The regression coefficient for *Mom's Education - BS/BA Degree* was significant, $B$ = -3.01, $OR$ = 0.05, $p$ < .001, indicating that for a one-unit increase in *Mom's Education - BS/BA Degree*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 95%. The regression coefficient for *Mom's Education - Graduate Degree* was significant, $B$ = -3.92, $OR$ = 0.02, $p$ < .001, indicating that for a one-unit increase in *Mom's Education - Graduate Degree*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 98%. The regression coefficient for *Dad's Education - Some College* was not significant, $B$ = 0.46, $OR$ = 1.59, $p$ = .573, indicating that *Dad's Education - Some College* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Dad's Education - BS/BA Degree* was not significant, $B$ = -0.73, $OR$ = 0.48, $p$ = .357, indicating that *Dad's Education - BS/BA Degree* did not

significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Dad's Education - Graduate Degree* was not significant, $B$ = -1.06, $OR$ = 0.35, $p$ = .183, indicating that *Dad's Education - Graduate Degree* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Mom's Occupation - Blue Collar Occupation* was significant, $B$ = -1.46, $OR$ = 0.23, $p$ = .040, indicating that for a one-unit increase in *Mom's Occupation - Blue Collar Occupation*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 77%. The regression coefficient for *Dad's Occupation - Blue Collar Occupation* was significant, $B$ = 1.60, $OR$ = 4.97, $p$ = .016, indicating that for a one-unit increase in *Dad's Occupation - Blue Collar Occupation*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would increase by approximately 397%. The regression coefficient for *HHSize - 2* was not significant, $B$ = 0.33, $OR$ = 1.39, $p$ = .837, indicating that *HHSize - 2* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 3* was not significant, $B$ = -1.97, $OR$ = 0.14, $p$ = .240, indicating that *HHSize - 3* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 4* was not significant, $B$ = 0.18, $OR$ = 1.19, $p$ = .914, indicating that *HHSize - 4* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 5+* was not significant, $B$ = -0.56, $OR$ = 0.57, $p$ = .746, indicating that *HHSize - 5+*, did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Sibs College* was significant, $B$ = -1.16, $OR$ = 0.31, $p$ = .036, indicating that for a one-unit increase in *Sibs*

*College*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 69%.

**Table 4.18**

*Logistic Regression Results for Model $H_{2.4}$ - Don't Know How, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College Predicting Group2 vs. Group4*

| Variable | *B* | *SE* | 95% CI | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|---|
| *(Intercept)* | 3.60 | 2.47 | [-1.23, 8.44] | 2.13 | .144 | |
| *Don't Know How - Yes* | 0.41 | 0.95 | [-1.45, 2.27] | 0.19 | .665 | 1.51 |
| *Gender - Female* | -1.51 | 0.62 | [-2.73, -0.30] | 5.93 | .015 | 0.22 |
| *Race - White* | -1.25 | 1.76 | [-4.70, 2.20] | 0.51 | .477 | 0.29 |
| *Race - Hispanic* | -2.84 | 2.22 | [-7.19, 1.50] | 1.64 | .200 | 0.06 |
| *Race - Other Race*s | -1.01 | 1.87 | [-4.68, 2.65] | 0.29 | .588 | 0.36 |
| *Mom's Education - Some College* | -2.89 | 0.96 | [-4.77, -1.01] | 9.10 | .003 | 0.06 |
| *Mom's Education - BS/BA Degree* | -3.01 | 0.89 | [-4.75, -1.26] | 11.44 | < .001 | 0.05 |
| *Mom's Education - Graduate Degree* | -3.92 | 1.04 | [-5.97, -1.88] | 14.11 | < .001 | 0.02 |
| *Dad's Education - Some College* | 0.46 | 0.82 | [-1.15, 2.08] | 0.32 | .573 | 1.59 |
| *Dad's Education - BS/BA Degree* | -0.73 | 0.79 | [-2.29, 0.83] | 0.85 | .357 | 0.48 |
| *Dad's Education - Graduate Degree* | -1.06 | 0.80 | [-2.62, 0.50] | 1.78 | .183 | 0.35 |
| *Mom's Occupation - Blue Collar Occupation* | -1.46 | 0.71 | [-2.85, -0.07] | 4.23 | .040 | 0.23 |
| *Dad's Occupation - Blue Collar Occupation* | 1.60 | 0.66 | [0.30, 2.90] | 5.85 | .016 | 4.97 |
| *HHSize - 2* | 0.33 | 1.62 | [-2.84, 3.50] | 0.04 | .837 | 1.39 |
| *HHSize - 3* | -1.97 | 1.67 | [-5.25, 1.32] | 1.38 | .240 | 0.14 |
| *HHSize - 4* | 0.18 | 1.63 | [-3.01, 3.36] | 0.01 | .914 | 1.19 |
| *HHSize - 5+* | -0.56 | 1.71 | [-3.91, 2.80] | 0.11 | .746 | 0.57 |
| *Sibs College* | -1.16 | 0.55 | [-2.25, -0.08] | 4.40 | .036 | 0.31 |

*Note.* $\chi^2(18) = 66.54$, $p < .001$, McFadden $R^2 = 0.40$.

Hypothesis$_{3.1}$ ($H_{3.1}$) stated that students who did fill out the FAFSA and did go to college (*Group1*) are more likely to have community support (*Community Support*) compared to students who did not fill out the FAFSA and did not go to college (*Group4*). The VIFs were calculated for *Community Support*, *Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*. All

the predictor variables in the regression model for $H_{3.1}$ had VIFs of less than 10 (see Table 4.19).

**Table 4.19**

*Variance Inflation Factors for Model $H_{3.1}$ - Community Support, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*

| Variable | VIF |
|---|---|
| *Community Support* | 1.04 |
| *Gender* | 1.01 |
| *Race* | 1.06 |
| *Mom's Education* | 1.28 |
| *Dad's Education* | 1.36 |
| *Mom's Occupation* | 1.04 |
| *Dad's Occupation* | 1.11 |
| *HHSize* | 1.04 |
| *Sibs College* | 1.01 |

Table 4.20 displays the logistic regression model for $H_{3.1}$ evaluated based on an alpha of 0.05. The overall model was significant, $\chi^2(18) = 142.46$, $p < .001$, which suggests that *Community Support*, *Gender*, *Race*, *Mom's Education*, *Dad's Education*, *Mom's Occupation*, *Dad's Occupation*, *HHSize*, and *Sibs College* had a significant effect on the odds of observing the *Group4* category of *Group1* vs. *Group4*. McFadden's R-squared was also computed to examine the model fit. Values greater than .2 indicate the model has an excellent fit (Louviere et al., 2000). The McFadden R-squared value computed for this model was 0.10.

The regression coefficient for *Community Support - Yes* was not significant, $B = 0.25$, $OR = 1.28$, $p = .317$, indicating that *Community Support - Yes*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Gender - Female* was significant, $B = -0.87$, $OR = 0.42$, $p < .001$,

indicating that for a one-unit increase in *Gender - Female*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 58%. The regression coefficient for *Race - White* was not significant, $B = 0.30$, $OR = 1.36$, $p = .401$, indicating that *Race - White*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Race - Hispanic* was not significant, $B = -0.27$, $OR = 0.77$, $p = .542$, indicating that *Race - Hispanic*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Race - Other Race*s was not significant, $B = -0.29$, $OR = 0.75$, $p = .487$, indicating that *Race - Other Race*s, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Mom's Education - Some College* was significant, $B = -0.83$, $OR = 0.44$, $p < .001$, indicating that for a one-unit increase in *Mom's Education - Some College*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 56%. The regression coefficient for *Mom's Education - BS/BA Degree* was significant, $B = -1.18$, $OR = 0.31$, $p < .001$, indicating that for a one-unit increase in *Mom's Education - BS/BA Degree*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 69%. The regression coefficient for *Mom's Education - Graduate Degree* was significant, $B = -0.94$, $OR = 0.39$, $p = .001$, indicating that for a one-unit increase in *Mom's Education - Graduate Degree*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 61%. The regression coefficient for *Dad's Education - Some College* was not significant, $B = 0.02$, $OR = 1.02$, $p = .934$, indicating that *Dad's Education - Some College*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*.

The regression coefficient for *Dad's Education - BS/BA Degree* was not significant, $B$ = -0.38, $OR$ = 0.69, $p$ = .108, indicating that *Dad's Education - BS/BA Degree*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Dad's Education - Graduate Degree* was significant, $B$ = -0.99, $OR$ = 0.37, $p$ = .003, indicating that for a one-unit increase in *Dad's Education - Graduate Degree*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 63%. The regression coefficient for *Mom's Occupation - Blue Collar Occupation* was significant, $B$ = 0.44, $OR$ = 1.56, $p$ = .007, indicating that for a one-unit increase in *Mom's Occupation - Blue Collar Occupation*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would increase by approximately 56%. The regression coefficient for *Dad's Occupation - Blue Collar Occupation* was not significant, $B$ = 0.07, $OR$ = 1.07, $p$ = .690, indicating that *Dad's Occupation - Blue Collar Occupation* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 2* was not significant, $B$ = 0.70, $OR$ = 2.01, $p$ = .253, indicating that *HHSize - 2*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 3* was not significant, $B$ = 0.51, $OR$ = 1.66, $p$ = .406, indicating that *HHSize - 3*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 4* was not significant, $B$ = 0.81, $OR$ = 2.24, $p$ = .190, indicating that *HHSize - 4*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 5+* was not significant, $B$ = 0.65, $OR$ = 1.91, $p$ = .299, indicating that *HHSize - 5+*, did not significantly affect the odds of observing the

*Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Sibs College* was significant, $B$ = -0.57, $OR$ = 0.56, $p < .001$, indicating that for a one-unit increase in *Sibs College*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 44%.

**Table 4.20**

*Logistic Regression Results for Model $H_{3.1}$ - Community Support, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College Predicting Group1 vs. Group4*

| Variable | *B* | *SE* | 95% CI | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|---|
| *(Intercept)* | -2.83 | 0.72 | [-4.23, -1.43] | 15.61 | < .001 | |
| *Community Support - Yes* | 0.25 | 0.25 | [-0.24, 0.73] | 1.00 | .317 | 1.28 |
| *Gender - Female* | -0.87 | 0.16 | [-1.19, -0.55] | 28.73 | < .001 | 0.42 |
| *Race - White* | 0.30 | 0.36 | [-0.41, 1.01] | 0.71 | .401 | 1.36 |
| *Race - Hispanic* | -0.27 | 0.43 | [-1.12, 0.59] | 0.37 | .542 | 0.77 |
| *Race - Other Race*s | -0.29 | 0.41 | [-1.09, 0.52] | 0.48 | .487 | 0.75 |
| *Mom's Education - Some College* | -0.83 | 0.24 | [-1.30, -0.37] | 12.29 | < .001 | 0.44 |
| *Mom's Education - BS/BA Degree* | -1.18 | 0.24 | [-1.66, -0.71] | 24.30 | < .001 | 0.31 |
| *Mom's Education - Graduate Degree* | -0.94 | 0.29 | [-1.52, -0.37] | 10.32 | .001 | 0.39 |
| *Dad's Education - Some College* | 0.02 | 0.22 | [-0.41, 0.45] | 0.01 | .934 | 1.02 |
| *Dad's Education - BS/BA Degree* | -0.38 | 0.23 | [-0.84, 0.08] | 2.59 | .108 | 0.69 |
| *Dad's Education - Graduate Degree* | -0.99 | 0.34 | [-1.65, -0.33] | 8.70 | .003 | 0.37 |
| *Mom's Occupation - Blue Collar Occupation* | 0.44 | 0.16 | [0.12, 0.76] | 7.36 | .007 | 1.56 |
| *Dad's Occupation - Blue Collar Occupation* | 0.07 | 0.17 | [-0.27, 0.40] | 0.16 | .690 | 1.07 |
| *HHSize - 2* | 0.70 | 0.61 | [-0.50, 1.90] | 1.31 | .253 | 2.01 |
| *HHSize - 3* | 0.51 | 0.61 | [-0.69, 1.70] | 0.69 | .406 | 1.66 |
| *HHSize - 4* | 0.81 | 0.61 | [-0.40, 2.01] | 1.72 | .190 | 2.24 |
| *HHSize - 5+* | 0.65 | 0.62 | [-0.57, 1.87] | 1.08 | .299 | 1.91 |
| *Sibs College* | -0.57 | 0.17 | [-0.90, -0.24] | 11.45 | < .001 | 0.56 |

*Note.* $\chi^2(18) = 142.46$, $p < .001$, McFadden $R^2 = 0.10$.

Hypothesis$_{3.2}$ ($H_{3.2}$) stated that students who did not fill out the FAFSA and did go to college (*Group2*) are more likely to have community support (*Community Support*) compared to students who did not fill out the FAFSA and did not go to college (*Group4*).

The VIFs were calculated for *Community Support*, *Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*. All the predictor variables in the regression model for $H_{3.2}$ had VIFs of less than 10 (see Table 4.21).

**Table 4.21**

*Variance Inflation Factors for Model $H_{3.2}$ - Community Support, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*

| Variable | VIF |
|---|---|
| *Community Support* | 1.03 |
| *Gender* | 1.04 |
| *Race* | 1.12 |
| *Mom's Education* | 1.48 |
| *Dad's Education* | 1.51 |
| *Mom's Occupation* | 1.12 |
| *Dad's Occupation* | 1.11 |
| *HHSize* | 1.07 |
| *Sibs College* | 1.05 |

Table 4.22 displays the logistic regression model for $H_{3.2}$ evaluated based on an alpha of 0.05. The overall model was significant, $\chi^2(18) = 182.84$, $p < .001$, which suggests that *Community Support*, *Gender*, *Race*, *Mom's Education*, *Dad's Education*, *Mom's Occupation*, *Dad's Occupation*, *HHSize*, and *Sibs College* had a significant effect on the odds of observing the *Group4* category of *Group2* vs. *Group4*. McFadden's R-squared was also computed to examine the model fit. Values greater than .2 indicate the model has an excellent fit (Louviere et al., 2000). The McFadden R-squared value computed for this model was 0.21.

The regression coefficient for *Community Support - Yes* was not significant, $B = 0.20$, $OR = 1.22$, $p = .511$, indicating that *Community Support - Yes*, did not significantly

affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Gender - Female* was significant, $B$ = -0.60, $OR$ = 0.55, $p$ = .003, indicating that for a one-unit increase in *Gender - Female*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 45%. The regression coefficient for *Race - White* was not significant, $B$ = -0.21, $OR$ = 0.81, $p$ = .678, indicating that *Race - White* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Race - Hispanic* was significant, $B$ = -1.12, $OR$ = 0.33, $p$ = .049, indicating that for a one-unit increase in *Race - Hispanic*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 67%. The regression coefficient for *Race - Other Race*s was not significant, $B$ = -0.57, $OR$ = 0.57, $p$ = .299, indicating that *Race - Other Race*s did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Mom's Education - Some College* was significant, $B$ = -0.91, $OR$ = 0.40, $p$ = .002, indicating that for a one-unit increase in *Mom's Education - Some College*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 60%. The regression coefficient for *Mom's Education - BS/BA Degree* was significant, $B$ = -1.51, $OR$ = 0.22, $p$ < .001, indicating that for a one-unit increase in *Mom's Education - BS/BA Degree*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 78%. The regression coefficient for *Mom's Education - Graduate Degree* was significant, $B$ = -1.38, $OR$ = 0.25, $p$ < .001, indicating that for a one-unit increase in *Mom's Education - Graduate Degree*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 75%. The regression coefficient for *Dad's Education -*

*Some College* was not significant, $B$ = -0.00, $OR$ = 1.00, $p$ = .991, indicating that *Dad's Education - Some College* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Dad's Education - BS/BA Degree* was significant, $B$ = -0.65, $OR$ = 0.52, $p$ = .016, indicating that for a one-unit increase in *Dad's Education - BS/BA Degree*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 48%. The regression coefficient for *Dad's Education - Graduate Degree* was significant, $B$ = -1.59, $OR$ = 0.20, $p$ < .001, indicating that for a one-unit increase in *Dad's Education - Graduate Degree*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 80%. The regression coefficient for *Mom's Occupation - Blue Collar Occupation* was not significant, $B$ = 0.06, $OR$ = 1.07, $p$ = .753, indicating that *Mom's Occupation - Blue Collar Occupation* did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Dad's Occupation - Blue Collar Occupation* was significant, $B$ = 0.43, $OR$ = 1.54, $p$ = .033, indicating that for a one-unit increase in *Dad's Occupation - Blue Collar Occupation*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would increase by approximately 54%. The regression coefficient for *HHSize - 2* was not significant, $B$ = 0.68, $OR$ = 1.97, $p$ = .330, indicating that *HHSize - 2*, did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 3* was not significant, $B$ = 0.47, $OR$ = 1.60, $p$ = .498, indicating that *HHSize - 3*, did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 4* was not significant, $B$ = 0.75, $OR$ = 2.11, $p$ = .285, indicating that *HHSize - 4*, did not significantly affect the odds of observing the

*Group4* category of *Group2* vs. *Group4*. The regression coefficient for *HHSize - 5+* was not significant, $B = 0.72$, $OR = 2.06$, $p = .309$, indicating that *HHSize - 5+*, did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. The regression coefficient for *Sibs College* was significant, $B = -0.64$, $OR = 0.53$, $p = .001$, indicating that for a one-unit increase in *Sibs College*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 47%.

**Table 4.22**

*Logistic Regression Results for Model $H_{3.2}$ - Community Support, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College Predicting Group2 vs. Group4*

| Variable | *B* | *SE* | 95% CI | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|---|
| *(Intercept)* | -0.17 | 0.86 | [-1.87, 1.52] | 0.04 | .840 | |
| *Community Support - Yes* | 0.20 | 0.30 | [-0.40, 0.80] | 0.43 | .511 | 1.22 |
| *Gender - Female* | -0.60 | 0.20 | [-0.98, -0.21] | 9.07 | .003 | 0.55 |
| *Race - White* | -0.21 | 0.50 | [-1.18, 0.77] | 0.17 | .678 | 0.81 |
| *Race - Hispanic* | -1.12 | 0.57 | [-2.24, -0.00] | 3.87 | .049 | 0.33 |
| *Race - Other Race*s | -0.57 | 0.54 | [-1.63, 0.50] | 1.08 | .299 | 0.57 |
| *Mom's Education - Some College* | -0.91 | 0.29 | [-1.47, -0.34] | 9.94 | .002 | 0.40 |
| *Mom's Education - BS/BA Degree* | -1.51 | 0.27 | [-2.05, -0.98] | 30.44 | < .001 | 0.22 |
| *Mom's Education - Graduate Degree* | -1.38 | 0.34 | [-2.04, -0.72] | 16.89 | < .001 | 0.25 |
| *Dad's Education - Some College* | -0.00 | 0.28 | [-0.56, 0.55] | 0.00 | .991 | 1.00 |
| *Dad's Education - BS/BA Degree* | -0.65 | 0.27 | [-1.18, -0.12] | 5.79 | .016 | 0.52 |
| *Dad's Education - Graduate Degree* | -1.59 | 0.37 | [-2.31, -0.88] | 19.01 | < .001 | 0.20 |
| *Mom's Occupation - Blue Collar Occupation* | 0.06 | 0.20 | [-0.33, 0.46] | 0.10 | .753 | 1.07 |
| *Dad's Occupation - Blue Collar Occupation* | 0.43 | 0.20 | [0.03, 0.83] | 4.52 | .033 | 1.54 |
| *HHSize - 2* | 0.68 | 0.70 | [-0.69, 2.04] | 0.95 | .330 | 1.97 |
| *HHSize - 3* | 0.47 | 0.69 | [-0.89, 1.82] | 0.46 | .498 | 1.60 |
| *HHSize - 4* | 0.75 | 0.70 | [-0.62, 2.12] | 1.14 | .285 | 2.11 |
| *HHSize - 5+* | 0.72 | 0.71 | [-0.67, 2.12] | 1.04 | .309 | 2.06 |
| *Sibs College* | -0.64 | 0.20 | [-1.04, -0.25] | 10.09 | .001 | 0.53 |

*Note.* $\chi^2(18) = 182.84$, $p < .001$, McFadden $R^2 = 0.21$.

Hypothesis$_{3.3}$ ($H_{3.3}$) stated that students who did fill out the FAFSA and did not go to college (*Group3*) are less likely to have family support (*Family Support*) compared to students who did fill out the FAFSA and did go to college (*Group1*). The VIFs were calculated for *Family Support*, *Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*. All the predictor variables in the regression model for $H_{3.3}$ had VIFs of less than 10 (see Table 4.23).

**Table 4.23**

*Variance Inflation Factors for Model $H_{3.3}$ - Family Support, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*

| Variable | VIF |
|---|---|
| *Family Support* | 1.02 |
| *Gender* | 1.01 |
| *Race* | 1.05 |
| *Mom's Education* | 1.36 |
| *Dad's Education* | 1.43 |
| *Mom's Occupation* | 1.05 |
| *Dad's Occupation* | 1.12 |
| *HHSize* | 1.03 |
| *Sibs College* | 1.01 |

Table 4.24 displays the logistic regression model for $H_{3.3}$ evaluated based on an alpha of 0.05. The overall model was significant, $\chi^2(18) = 341.66$, $p < .001$, which suggests that *Family Support*, *Gender*, *Race*, *Mom's Education*, *Dad's Education*, *Mom's Occupation*, *Dad's Occupation*, *HHSize*, and *Sibs College* had a significant effect on the odds of observing the *Group2* category of *Group1* vs. *Group2*. McFadden's R-squared was also computed to examine the model fit. Values greater than .2 indicate the model has an excellent fit (Louviere et al., 2000). The McFadden R-squared value computed for this model was 0.08.

The regression coefficient for *Family Support - Yes* was significant, $B$ = -1.37, $OR$ = 0.25, $p < .001$, indicating that for a one-unit increase in *Family Support - Yes*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would decrease by approximately 75%. The regression coefficient for *Gender - Female* was significant, $B$ = -0.27, $OR$ = 0.76, $p = .001$, indicating that for a one-unit increase in *Gender - Female*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would decrease by approximately 24%. The regression coefficient for *Race - White* was significant, $B$ = 0.57, $OR$ = 1.77, $p = .018$, indicating that for a one-unit increase in *Race - White*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would increase by approximately 77%. The regression coefficient for *Race - Hispanic* was significant, $B$ = 0.57, $OR$ = 1.77, $p = .036$, indicating that for a one-unit increase in *Race - Hispanic*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would increase by approximately 77%. The regression coefficient for *Race - Other Race*s was not significant, $B$ = 0.43, $OR$ = 1.54, $p = .086$, indicating that *Race - Other Race*s did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *Mom's Education - Some College* was not significant, $B$ = 0.13, $OR$ = 1.14, $p = .365$, indicating that *Mom's Education - Some College*, did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *Mom's Education - BS/BA Degree* was significant, $B$ = 0.40, $OR$ = 1.49, $p = .001$, indicating that for a one-unit increase in *Mom's Education - BS/BA Degree*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would increase by approximately 49%. The regression coefficient for *Mom's Education - Graduate Degree* was significant, $B$ = 0.58, $OR$ = 1.78, $p < .001$, indicating that for a

one-unit increase in *Mom's Education - Graduate Degree*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would increase by approximately 78%. The regression coefficient for *Dad's Education - Some College* was not significant, $B$ = 0.18, $OR$ = 1.19, $p$ = .245, indicating that *Dad's Education - Some College* did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *Dad's Education - BS/BA Degree* was significant, $B$ = 0.47, $OR$ = 1.60, $p$ < .001, indicating that for a one-unit increase in *Dad's Education - BS/BA Degree*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would increase by approximately 60%. The regression coefficient for *Dad's Education - Graduate Degree* was significant, $B$ = 0.68, $OR$ = 1.98, $p$ < .001, indicating that for a one-unit increase in *Dad's Education - Graduate Degree*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would increase by approximately 98%. The regression coefficient for *Mom's Occupation - Blue Collar Occupation* was not significant, $B$ = 0.17, $OR$ = 1.18, $p$ = .055, indicating that *Mom's Occupation - Blue Collar Occupation* did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *Dad's Occupation - Blue Collar Occupation* was not significant, $B$ = -0.13, $OR$ = 0.88, $p$ = .155, indicating that *Dad's Occupation - Blue Collar Occupation* did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *HHSize - 2* was not significant, $B$ = 0.10, $OR$ = 1.11, $p$ = .690, indicating that *HHSize - 2*, did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *HHSize - 3* was not significant, $B$ = 0.06, $OR$ = 1.06, $p$ = .805, indicating that *HHSize - 3*, did not significantly affect the odds of observing the

*Group2* category of *Group1* vs. *Group2*. The regression coefficient for *HHSize - 4* was not significant, $B = 0.02$, $OR = 1.02$, $p = .937$, indicating that *HHSize - 4*, did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *HHSize - 5+* was not significant, $B = -0.12$, $OR = 0.89$, $p = .652$, indicating that *HHSize - 5+*, did not significantly affect the odds of observing the *Group2* category of *Group1* vs. *Group2*. The regression coefficient for *Sibs College* was significant, $B = 0.22$, $OR = 1.25$, $p = .008$, indicating that for a one-unit increase in *Sibs College*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would increase by approximately 25%.

**Table 4.24**

*Logistic Regression Results for Model $H_{3.3}$ - Family Support, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College Predicting Group1 vs. Group2*

| Variable | *B* | *SE* | 95% CI | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|---|
| *(Intercept)* | -1.92 | 0.36 | [-2.63, -1.20] | 27.71 | < .001 | |
| *Family Support - Yes* | -1.37 | 0.09 | [-1.55, -1.19] | 224.39 | < .001 | 0.25 |
| *Gender - Female* | -0.27 | 0.08 | [-0.44, -0.11] | 10.61 | .001 | 0.76 |
| *Race - White* | 0.57 | 0.24 | [0.10, 1.04] | 5.59 | .018 | 1.77 |
| *Race - Hispanic* | 0.57 | 0.27 | [0.04, 1.10] | 4.41 | .036 | 1.77 |
| *Race - Other Race*s | 0.43 | 0.25 | [-0.06, 0.93] | 2.95 | .086 | 1.54 |
| *Mom's Education - Some College* | 0.13 | 0.14 | [-0.15, 0.42] | 0.82 | .365 | 1.14 |
| *Mom's Education - BS/BA Degree* | 0.40 | 0.12 | [0.16, 0.64] | 10.38 | .001 | 1.49 |
| *Mom's Education - Graduate Degree* | 0.58 | 0.14 | [0.31, 0.85] | 17.67 | < .001 | 1.78 |
| *Dad's Education - Some College* | 0.18 | 0.15 | [-0.12, 0.47] | 1.35 | .245 | 1.19 |
| *Dad's Education - BS/BA Degree* | 0.47 | 0.12 | [0.22, 0.71] | 14.18 | < .001 | 1.60 |
| *Dad's Education - Graduate Degree* | 0.68 | 0.13 | [0.43, 0.94] | 28.20 | < .001 | 1.98 |
| *Mom's Occupation - Blue Collar Occupation* | 0.17 | 0.09 | [-0.00, 0.34] | 3.67 | .055 | 1.18 |
| *Dad's Occupation - Blue Collar Occupation* | -0.13 | 0.09 | [-0.31, 0.05] | 2.02 | .155 | 0.88 |
| *HHSize - 2* | 0.10 | 0.25 | [-0.39, 0.60] | 0.16 | .690 | 1.11 |
| *HHSize - 3* | 0.06 | 0.25 | [-0.43, 0.55] | 0.06 | .805 | 1.06 |
| *HHSize - 4* | 0.02 | 0.26 | [-0.48, 0.52] | 0.01 | .937 | 1.02 |
| *HHSize - 5+* | -0.12 | 0.26 | [-0.64, 0.40] | 0.20 | .652 | 0.89 |
| *Sibs College* | 0.22 | 0.08 | [0.06, 0.39] | 6.93 | .008 | 1.25 |

*Note.* $\chi^2(18) = 341.66$, $p < .001$, McFadden $R^2 = 0.08$.

Hypothesis$_{3.4}$ ($H_{3.4}$) stated that students who did not fill out the FAFSA and did not go to college (*Group4*) are less likely to have family support (*Family Support*) compared to students who did fill out the FAFSA and did go to college (*Group1*). The VIFs were calculated for *Family Support*, *Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*. All the predictor variables in the regression model for $H_{3.4}$ had VIFs of less than 10 (see Table 4.25).

**Table 4.25**

*Variance Inflation Factors for Model $H_{3.4}$ - Family Support, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College*

| Variable | VIF |
|---|---|
| *Family Support* | 1.03 |
| *Gender* | 1.01 |
| *Race* | 1.07 |
| *Mom's Education* | 1.32 |
| *Dad's Education* | 1.42 |
| *Mom's Occupation* | 1.06 |
| *Dad's Occupation* | 1.11 |
| *HHSize* | 1.05 |
| *Sibs College* | 1.02 |

Table 4.26 displays the logistic regression model for $H_{3.4}$ evaluated based on an alpha of 0.05. The overall model was significant, $\chi^2(18) = 245.31$, $p < .001$, which suggests that *Family Support*, *Gender*, *Race*, *Mom's Education*, *Dad's Education*, *Mom's Occupation*, *Dad's Occupation*, *HHSize*, and *Sibs College* had a significant effect on the odds of observing the *Group4* category of *Group1* vs. *Group4*. McFadden's R-squared was also computed to examine the model fit. Values greater than .2 indicate the model has an excellent fit (Louviere et al., 2000). The McFadden R-squared value computed for this model was 0.17.

The regression coefficient for *Family Support - Yes* was significant, $B = -1.74$, $OR = 0.18$, $p < .001$, indicating that for a one-unit increase in *Family Support - Yes*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 82%. The regression coefficient for *Gender - Female* was significant, $B = -0.83$, $OR = 0.44$, $p < .001$, indicating that for a one-unit increase in *Gender - Female*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by

approximately 56%. The regression coefficient for *Race - White* was not significant, $B$ = 0.34, $OR$ = 1.41, $p$ = .361, indicating that *Race - White* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Race - Hispanic* was not significant, $B$ = -0.37, $OR$ = 0.69, $p$ = .410, indicating that *Race - Hispanic*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Race - Other Race*s was not significant, $B$ = -0.34, $OR$ = 0.71, $p$ = .413, indicating that *Race - Other Race*s, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Mom's Education - Some College* was significant, $B$ = -0.74, $OR$ = 0.48, $p$ = .002, indicating that for a one-unit increase in *Mom's Education - Some College*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 52%. The regression coefficient for *Mom's Education - BS/BA Degree* was significant, $B$ = -1.09, $OR$ = 0.33, $p$ < .001, indicating that for a one-unit increase in *Mom's Education - BS/BA Degree*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 67%. The regression coefficient for *Mom's Education - Graduate Degree* was significant, $B$ = -0.87, $OR$ = 0.42, $p$ = .004, indicating that for a one-unit increase in *Mom's Education - Graduate Degree*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 58%. The regression coefficient for *Dad's Education - Some College* was not significant, $B$ = 0.16, $OR$ = 1.17, $p$ = .484, indicating that *Dad's Education - Some College* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Dad's Education - BS/BA Degree* was not significant, $B$ = -0.24, $OR$ = 0.79, $p$ = .328, indicating that *Dad's*

*Education - BS/BA Degree*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Dad's Education - Graduate Degree* was significant, $B$ = -0.91, $OR$ = 0.40, $p$ = .007, indicating that for a one-unit increase in *Dad's Education - Graduate Degree*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 60%. The regression coefficient for *Mom's Occupation - Blue Collar Occupation* was significant, $B$ = 0.40, $OR$ = 1.49, $p$ = .018, indicating that for a one-unit increase in *Mom's Occupation - Blue Collar Occupation*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would increase by approximately 49%. The regression coefficient for *Dad's Occupation - Blue Collar Occupation* was not significant, $B$ = 0.05, $OR$ = 1.05, $p$ = .782, indicating that *Dad's Occupation - Blue Collar Occupation* did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 2* was not significant, $B$ = 0.79, $OR$ = 2.20, $p$ = .209, indicating that *HHSize - 2*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 3* was not significant, $B$ = 0.59, $OR$ = 1.81, $p$ = .343, indicating that *HHSize - 3*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 4* was not significant, $B$ = 0.94, $OR$ = 2.56, $p$ = .136, indicating that *HHSize - 4*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *HHSize - 5+* was not significant, $B$ = 0.75, $OR$ = 2.12, $p$ = .238, indicating that *HHSize - 5+*, did not significantly affect the odds of observing the *Group4* category of *Group1* vs. *Group4*. The regression coefficient for *Sibs College* was significant, $B$ = -0.50, $OR$ = 0.61, $p$ = .004, indicating that for a one-

unit increase in *Sibs College*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 39%.

**Table 4.26**

*Logistic Regression Results for Model $H_{3.4}$ - Family Support, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation, Dad's Occupation, HHSize, and Sibs College Predicting Group1 vs. Group4*

| Variable | *B* | *SE* | 95% CI | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|---|
| *(Intercept)* | -1.84 | 0.74 | [-3.29, -0.40] | 6.28 | .012 | |
| *Family Support - Yes* | -1.74 | 0.17 | [-2.07, -1.42] | 109.67 | < .001 | 0.18 |
| *Gender - Female* | -0.83 | 0.17 | [-1.15, -0.50] | 24.50 | < .001 | 0.44 |
| *Race - White* | 0.34 | 0.37 | [-0.39, 1.07] | 0.83 | .361 | 1.41 |
| *Race - Hispanic* | -0.37 | 0.45 | [-1.24, 0.51] | 0.68 | .410 | 0.69 |
| *Race - Other Race*s | -0.34 | 0.42 | [-1.17, 0.48] | 0.67 | .413 | 0.71 |
| *Mom's Education - Some College* | -0.74 | 0.24 | [-1.22, -0.27] | 9.33 | .002 | 0.48 |
| *Mom's Education - BS/BA Degree* | -1.09 | 0.25 | [-1.58, -0.61] | 19.58 | < .001 | 0.33 |
| *Mom's Education - Graduate Degree* | -0.87 | 0.30 | [-1.46, -0.28] | 8.35 | .004 | 0.42 |
| *Dad's Education - Some College* | 0.16 | 0.23 | [-0.29, 0.61] | 0.49 | .484 | 1.17 |
| *Dad's Education - BS/BA Degree* | -0.24 | 0.24 | [-0.71, 0.24] | 0.96 | .328 | 0.79 |
| *Dad's Education - Graduate Degree* | -0.91 | 0.34 | [-1.58, -0.25] | 7.20 | .007 | 0.40 |
| *Mom's Occupation - Blue Collar Occupation* | 0.40 | 0.17 | [0.07, 0.73] | 5.62 | .018 | 1.49 |
| *Dad's Occupation - Blue Collar Occupation* | 0.05 | 0.18 | [-0.29, 0.39] | 0.08 | .782 | 1.05 |
| *HHSize - 2* | 0.79 | 0.63 | [-0.44, 2.02] | 1.58 | .209 | 2.20 |
| *HHSize - 3* | 0.59 | 0.62 | [-0.63, 1.82] | 0.90 | .343 | 1.81 |
| *HHSize - 4* | 0.94 | 0.63 | [-0.29, 2.18] | 2.23 | .136 | 2.56 |
| *HHSize - 5+* | 0.75 | 0.64 | [-0.50, 2.00] | 1.39 | .238 | 2.12 |
| *Sibs College* | -0.50 | 0.17 | [-0.84, -0.16] | 8.19 | .004 | 0.61 |

*Note.* $\chi^2(18) = 245.31$, $p < .001$, McFadden $R^2 = 0.17$.

**Summary**

As a review, $H_{1.1}$ stated that students who did fill out the FAFSA and did go to college (*Group1*) are more likely to have a perception of family financial support (*Afford*) compared to students who did not fill out the FAFSA and did not go to college (*Group4*). The survey question asked whether students agreed that their family *could not afford* to

help them financially with college expenses. The model, which included the predictor variables *Afford, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation,* and *Dad's Occupation,* was significant, $\chi^2(18) = 172.51$, $p < .001$. The results indicated that, ceteris paribus, a one-unit increase in *Afford - Disagrees/Strongly Disagrees* decreased the odds of a student being in *Group4* when compared to *Group1* by approximately 66%. With 4,191 observations correctly predicted of 4,191, the sensitivity of the model is 100%. With 0 observations predicted and 159 observed, the specificity of the model is not calculated. The overall predictive percentage for the model is 96.3%.

$H_{1.2}$ stated that students who did not fill out the FAFSA and did go to college (*Group2*) are more likely to be from higher income households (*Family Income*) compared to students who did not fill out the FAFSA and did not go to college (*Group4*). The survey question asked the respondent to provide the total family income in 2011. The model, which included the predictor variables *Family Income, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation,* and *Dad's Occupation*, was significant, $\chi^2(20) = 218.67$, $p < .001$. The results indicated that, ceteris paribus, for a one-unit increase in *Family Income>$75,000 and <=$135,000*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 57%. Additionally, for a one-unit increase in *Family Income>$135,000*, the odds of observing the *Group4* category of *Group2* vs. *Group4* would decrease by approximately 78%. With 709 observations correctly predicted of 750, the sensitivity of the model is 94.5%. With 64 observations predicted and 114 observed, the specificity of the model is 36. The overall predictive percentage for the model is 83.3%.

$H_{1.3}$ stated that students who did fill out the FAFSA and did not go to college

(*Group3*) are more likely to have had more family discussions about financial aid (*Financial Aid Talks*) compared to students who did not fill out the FAFSA and did not go to college (*Group4*). The survey question asked how many conversations the students had with their parents about financial aid. The model, which included the predictor variables *Financial Aid Talks, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation,* and *Dad's Occupation*, was significant, $\chi^2(19) = 56.57$, $p < .001$. The results indicated that, ceteris paribus, for a one-unit increase in *Financial Aid Talks - One to Three*, the odds of observing the *Group4* category of *Group3* vs. *Group4* would decrease by approximately 55%. Also, for a one-unit increase in *Financial Aid Talks - Four or more*, the odds of observing the *Group4* category of *Group3* vs. *Group4* would decrease by approximately 73%. With 122 observations correctly predicted of 180, the sensitivity of the model is 67.8%. With 116 observations predicted and 57 observed, the specificity of the model is 67.1. The overall predictive percentage for the model is 67.4%.

$H_{1.4}$ stated that students who did fill out the FAFSA and did go to college (*Group1*) are more likely to have overestimated the cost of college (*Over/Underestimated*) compared to students who did not fill out the FAFSA and did go to college (*Group2*). The survey question asked the students to estimate the cost of college attendance. The model, which included the predictor variables *Over/Underestimated, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation,* and *Dad's Occupation*, was significant, $\chi^2(18) = 101.63$, $p < .001$. The results indicated that, ceteris paribus, for a one-unit increase in *Over/Underestimated - Over or Underestimated by 100*, the odds of observing the *Group2* category of *Group1*

vs. *Group2* would decrease by approximately 40%. With 1,954 observations correctly predicted of 1,954, the sensitivity of the model is 100%. With 0 observations predicted and 287 observed, the specificity of the model is not calculated. The overall predictive percentage for the model is 87.2%.

$H_{2.1}$ stated that students who did fill out the FAFSA and did go to college (*Group1*) were less likely to feel the FAFSA was too difficult (*Forms Too Difficult*) compared to students who did not fill out the FAFSA and did not go to college (*Group4*). The survey question asked if the student would not apply for financial aid because the forms were too difficult. The model, which included the predictor variables *Forms Too Difficult, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation,* and *Dad's Occupation*, was significant, $\chi^2(16) = 44.74$, $p < .001$. However, results indicated that *Forms Too Difficult - Yes*, had no significant effect on the odds of observing the *Group4* category of *Group1* vs. *Group4.* With 356 observations correctly predicted of 360, the sensitivity of the model is 98.9%. With two observations predicted and 30 observed, the specificity of the model is 6.3. The overall predictive percentage for the model is 91.3%.

$H_{2.2}$ stated that students who did not fill out the FAFSA and did go to college (*Group2*) are more likely to believe that they wouldn't qualify (*Thought Not Qualified*) compared to students who did not fill out the FAFSA and did not go to college (*Group4*). The survey question asked if the student would not apply for financial aid because they did not think they would qualify for various reasons. The model, which included the predictor variables *Thought Not Qualified, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation,* and *Dad's Occupation*, was significant, $\chi^2(18) =$

65.08, $p < .001$. Yet, results indicated that *Thought Not Qualified - Yes*, had no significant effect on the odds of observing the *Group4* category of *Group2* vs. *Group4.* With 384 observations correctly predicted of 388, the sensitivity of the model is 99%. With three observations predicted and 35 observed, the specificity of the model is 7.9. The overall predictive percentage for the model is 90.8%.

$H_{2.3}$ stated that students who did not fill out the FAFSA and did not go to college (*Group4*) are more likely to feel the FAFSA is too difficult (*Forms Too Difficult*) compared to students who did not fill out the FAFSA and did go to college (*Group2*). The survey question asked if the student would not apply for financial aid because the forms were too difficult. The model, which included the predictor variables *Forms Too Difficult, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation,* and *Dad's Occupation*, was significant, $\chi^2(15) = 62.73$, $p < .001$. Nonetheless, results indicated that *Forms Too Difficult - Yes*, did not significantly affect the odds of observing the *Group4* category of *Group2* vs. *Group4*. With 134 observations correctly predicted of 140, the sensitivity of the model is 95.7%. With 19 observations predicted and 13 observed, the specificity of the model is 59.4. The overall predictive percentage for the model is 89%.

$H_{2.4}$ stated that students who did not fill out the FAFSA and did not go to college (*Group4*) are more likely to state that they did not know how to apply for aid (*Don't Know How*) compared to students who did not fill out the FAFSA and did go to college (*Group2*). The survey question asked if the student would not apply for financial aid because they did not know how to apply. The model, which included the predictor variables *Don't Know How, Gender, Race, Mom's Education, Dad's Education, Mom's*

*Occupation,* and *Dad's Occupation*, was significant, $\chi^2(18) = 66.54$, $p < .001$. Yet, results indicated that *Don't Know How - Yes*, had no significant effect on the odds of observing the *Group4* category of *Group2* vs. *Group4*. With 132 observations correctly predicted of 140, the sensitivity of the model is 94.3%. With 19 observations predicted and 13 observed, the specificity of the model is 59.4. The overall predictive percentage for the model is 87.8%.

$H_{3.1}$ stated that students who did fill out the FAFSA and did go to college (*Group1*) are more likely to have community support (*Community Support*) compared to students who did not fill out the FAFSA and did not go to college (*Group4*). The survey question asked who the student felt was most influential in their thinking about financial aid. The model, which included the predictor variables *Community Support, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation,* and *Dad's Occupation*, was significant, $\chi^2(18) = 142.46$, $p < .001$. Nevertheless, results indicated that *Community Support - Yes*, had no significant effect on the odds of observing the *Group4* category of *Group1* vs. *Group4*. With 4,230 observations correctly predicted of 4,230, the sensitivity of the model is 100%. With 0 observations predicted and 171 observed, the specificity of the model is not calculated. The overall predictive percentage for the model is 96.1%.

$H_{3.2}$ stated that students who did not fill out the FAFSA and did go to college (*Group2*) are more likely to have community support (*Community Support*) compared to students who did not fill out the FAFSA and did not go to college (*Group4*). The survey question asked who the student felt was most influential in their thinking about financial aid. The model, which included the predictor variables *Community Support, Gender,*

*Race, Mom's Education, Dad's Education, Mom's Occupation,* and *Dad's Occupation*, was significant, $\chi^2(18) = 182.84$, $p < .001$. Nonetheless, results suggested that *Community Support - Yes*, had no significant effect on the odds of observing the *Group4* category of *Group2* vs. *Group4*. With 691 observations correctly predicted of 722, the sensitivity of the model is 95.7%. With 47 observations predicted and 124 observed, the specificity of the model is 27.5. The overall predictive percentage for the model is 82.6%.

$H_{3.3}$ stated that students who did fill out the FAFSA and did not go to college (*Group3*) are less likely to have family support (*Family Support*) compared to students who did fill out the FAFSA and did go to college (*Group1*). The survey question asked who the student felt was most influential in their thinking about financial aid. The model, which included the predictor variables *Family Support, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation,* and *Dad's Occupation*, was significant, $\chi^2(18) = 152.82$, $p < .001$. The results indicated that, ceteris paribus, for a one-unit increase in *Family Support - Yes*, the odds of observing the *Group2* category of *Group1* vs. *Group2* would decrease by approximately 62%. With 4,230 observations correctly predicted of 4,230, the sensitivity of the model is 100.0%. With 0 observations predicted and 173 observed, the specificity of the model is not calculated. The overall predictive percentage for the model is 96.1%.

$H_{3.4}$ stated that students who did not fill out the FAFSA and did not go to college (*Group4*) are less likely to have family support (*Family Support*) compared to students who did fill out the FAFSA and did go to college (*Group1*). The survey question asked who the student felt was most influential in their thinking about financial aid. The model,

which included the predictor variables *Family Support, Gender, Race, Mom's Education, Dad's Education, Mom's Occupation,* and *Dad's Occupation*, was significant, $\chi^2(18) = 245.31$, $p < .001$. The results indicated that, ceteris paribus, for a one-unit increase in *Family Support - Yes*, the odds of observing the *Group4* category of *Group1* vs. *Group4* would decrease by approximately 82%. With 4,230 observations correctly predicted of 4,230, the sensitivity of the model is 100%. With 0 observations predicted and 171 observed, the specificity of the model is not calculated. The overall predictive percentage for the model is 96.1%.

In the chapter that follows, key findings of the current study are discussed, connections of these findings to general systems theory are addressed, the implications of the findings are presented, as well as the limitations of the current study, and recommendations for future research.

# CHAPTER 5 - DISCUSSION

This chapter discussed the key findings of the current study, connections of these findings to general systems theory, the implications of the results, the limitations of the current study, and recommendations for future research. As a reminder, the problem addressed in this study is that qualified high school students are failing to successfully transition from high school to college due, partly, to real and perceived financial and financial aid obstacles. The aim was to examine the implications of the real and perceived financial and financial aid information obstacles on students' decision to complete or not complete the FAFSA and attend college.

## Summary of Research Findings

Using general systems theory (see Figure 5.1) as the framework and a nationally collected dataset of high school students, HSLS:09, the study addressed several research questions. These questions included: (1) What real and perceived financial obstacles contribute to qualified students not applying for the financial aid needed to attend college; (2) What real and perceived financial aid knowledge obstacles contribute to qualified students not applying for the financial aid needed to attend college; and (3) Does family and community support contribute to qualified students not applying for the financial aid needed to attend college. The first research question was answered by testing the following hypotheses:

$H_{1.1}$: Students who did fill out the FAFSA and did go to college (*Group1*) are more likely to have a perception of family financial support compared to students who did not fill out the FAFSA and did not go to college (*Group4*).

$H_{1.2}$: Students who did not fill out the FAFSA and did go to college (*Group2*) are more likely to be from higher income households compared to students who did not fill out the FAFSA and did not go to college (*Group4*).

$H_{1.3}$: Students who did fill out the FAFSA and did not go to college (*Group3*) are more likely to have had more family discussions about financial aid compared to students who did not fill out the FAFSA and did not go to college (*Group4*).

$H_{1.4}$: Students who did fill out the FAFSA and did go to college (Group 1) are more likely to have overestimated the cost of college compared to students who did not fill out the FAFSA and did go to college (*Group2*).

The second research question was addressed by testing the following hypotheses:

$H_{2.1}$: Students who did fill out the FAFSA and did go to college (*Group1*) are less likely to feel the FAFSA is too difficult compared to students who did not fill out the FAFSA and did not go to college (*Group4*).

$H_{2.2}$: Students who did not fill out the FAFSA and did go to college (*Group2*) are more likely to believe that they wouldn't qualify compared to students who did not fill out the FAFSA and did not go to college (*Group4*).

$H_{2.3}$: Students who did not fill out the FAFSA and did not go to college (*Group4*) are more likely to feel the FAFSA is too difficult compared to students who did not fill out the FAFSA and did go to college (*Group2*).

$H_{2.4}$: Students who did not fill out the FAFSA and did not go to college (*Group4*) are more likely to state that they did not know how to apply for aid compared to students who did not fill out the FAFSA and did go to college (*Group2*).

The third research question was addressed by testing the following hypotheses:

$H_{3.1}$: Students who did fill out the FAFSA and did go to college (*Group1*) are more likely to have community support compared to students who did not fill out the FAFSA and did not go to college (*Group4*).

$H_{3.2}$: Students who did not fill out the FAFSA and did go to college (*Group2*) are more likely to have community support compared to students who did not fill out the FAFSA and did not go to college (*Group4*).

$H_{3.3}$: Students who did fill out the FAFSA and did not go to college (*Group3*) are less likely to have family support when compared to students who did fill out the FAFSA and did go to college (*Group1*).

$H_{3.4}$: Students who did not fill out the FAFSA and did not go to college (*Group4*) are less likely to have family support compared to students who did fill out the FAFSA and did go to college (*Group1*).

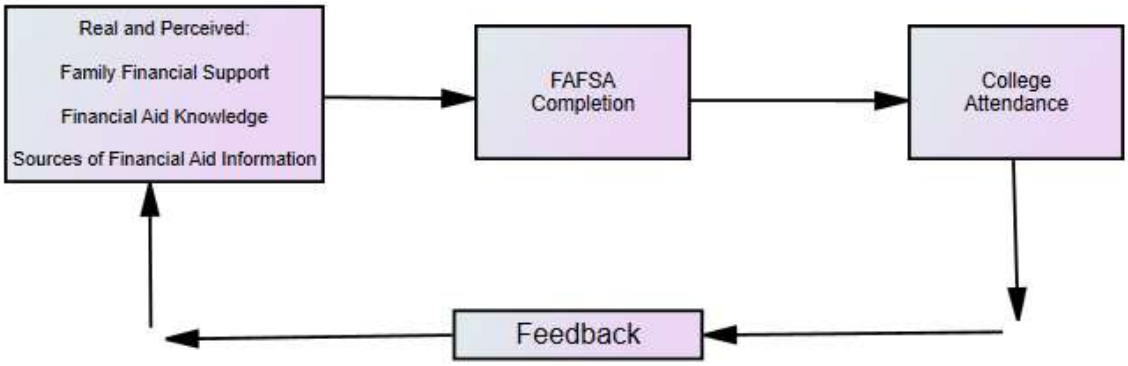



*Figure 5.1. Conceptualization of the current study using general systems theory*

Findings for the first research question, F*amily Financial Support*, indicated that the student's perception of their family's ability to afford to help with college expenses had a significant impact on whether or not the student completed the FAFSA (*Group1* vs. *Group4*) and not attending college (*Group4*). Additionally, family household income was significant in predicting college attendance (*Group4*) for students who did not complete the FAFSA (*Group2* vs. *Group4*). Also, the number of financial aid talks between parents and students was significant in predicting whether students who did not attend college (*Group3* vs. *Group4*) failed to complete the application for financial aid (*Group4*). Lastly, whether students over or underestimated college cost was a significant predictor for FAFSA completion (*Group1* vs. *Group2*) for students who failed to attend college (*Group2*).

Findings for the second research question, C*omplexity of Financial Aid*, were mixed. Although the overall model, including control variables and the independent variable, *Forms Too Difficult*, was significant, the independent variable was not significant in predicting whether students decided to complete the FAFSA (*Group1* vs. *Group4*) and did not attend college (*Group4*). In addition, the independent variable, *Forms Too Difficult,* was not significant in predicting those who don't complete the FAFSA yet do attend college (*Group2)* when compared to those who don't complete the FAFSA or attend college (*Group4)*. Likewise, the overall model, including control variables and the independent variable, *Thought Not Qualified*, was significant. However, the independent variable was not significant in predicting whether students who did not complete the FAFSA (*Group2* vs. *Group4*) did not attend college (*Group4*). Finally, although the overall model, including control variables and the independent variable, *Don't Know How*, was significant, the independent variable was not significant in predicting whether students who did not complete the FAFSA (*Group2* vs. *Group4*) did not attend college (*Group4*).

Findings for the third research question, *Sources of Financial Aid Information (Support),* were also mixed. The overall models for *Community Support* and *Family Support*, including the control variables, were significant. However, the independent variable, *Community Support*, was not significant in predicting if a student did not attend college (*Group4*) regardless of whether or not they completed the FAFSA (*Group1* vs. *Group4*; *Group2* vs. *Group4*). On the other hand, *Family Support* was a significant predictor of not completing the financial aid application (*Group2*) for students who attended college (*Group1 vs. Group2*). Additionally, *Family Support* was a significant

predictor of students not completing the FAFSA and not attending college (*Group4*) when compared to those who did complete the FAFSA and did attend college (Group1).

These findings indicate that having the financial support of one's family significantly impacted the transition from high school to college. In addition, findings suggest that the complexity of the financial aid forms does not have as negative an impact as presumed for students transitioning from high school to college. Lastly, the findings indicated that the source of financial aid information is most significant for students receiving the information from their families.

**Discussion of Research Findings**

Current literature on *Family Financial Support* generally agrees that support from the student's family is a significant input to FAFSA completion and college attendance (Flaster, 2018; Warnock, 2016). For example, Flaster (2018) and Warnock (2016) found that expectations of family support must be aligned between the parents and students. The current study found that students' perception of their family's ability or inability to afford to help with college expenses had a significant impact on not completing the FAFSA and not attending college. Similar to the expectation of financial support for college expenses, current literature also revealed that the ability to support financially is also an important input (Barnard et al., 2019; Flaster, 2018). The current study agreed that family household income was significant in predicting college attendance for students who did not complete the FAFSA. Current literature found that increased discussions about college financial planning improved college-going rates (Castleman & Page, 2016; Hurley & Coles, 2015; Owen & Westlund, 2016). The current study agreed,

finding that the number of financial aid talks between parents and students was significant in predicting whether students who did not attend college completed the application for financial aid. Lastly, current literature found that another important input to FAFSA completion and college attendance is the ability to properly estimate the cost of college (George-Jackson & Gast, 2015; Greenfield, 2015; Grodsky & Jones, 2005; Nienhusser & Oshio, 2017). The current study also found that whether students over or underestimated college's cost was a significant predictor of FAFSA completion for students who attended college.

Current literature on the *Complexity of Financial Aid* suggests that the application's complexity, including its length and the language used, contributes to billions in foregone financial aid (Jez, 2018; Kofoed, 2017). However, the current study found mixed results. In the current study, the independent variable, *Forms Too Difficult*, was not significant in predicting whether students who did or did not complete the FAFSA did or did not attend college. Current research on FAFSA knowledge identified confusing deadlines (Feeney & Heroff, 2013; LaManque, 2009; McKinney & Novak, 2015); the difficulty in distributing information about financial aid (Long, 2017; Oliverez & Tierney, 2005); and the importance of providing access to information (Jez, 2018) as important factors to college attendance. However, the current study found the independent variable, *Don't Know How*, was not significant in predicting whether students who did not complete the FAFSA did not attend college. Bahr et al. (2018), King (2004), and Kantrowitz (2009) found that many students fail to apply for financial aid because they falsely believe they would not qualify. Yet, in the current study, the

independent variable, *Thought Not Qualified*, was not significant in predicting whether or not students who did not complete the FAFSA did not attend college.

Existing literature concerning the *Sources of Financial Aid Information (Support)* mainly addresses the importance of parental involvement and information accessibility (Perna & Titus, 2005) and discusses the typical sources of financial aid information such as parents (Cholewa et al., 2015) or counselors (Bettinger et al., 2012; Davidson, 2013, 2015). The literature also suggested that early and consistent intervention from counselors improved the chances of college enrollment (Robinson & Roksa, 2016) and led to improved FAFSA completion (Owen & Westlund, 2016). However, onsite advising on its own was not enough to improve college enrollment, with some exceptions for race and income (Bettinger & Evans, 2019). The current study indicated that the source of financial aid information is most significant for students who received the information from their families.

## Implications of Findings

### *Policymakers*

The findings of this research study suggest that policymakers should focus their attention on helping students understand the cost of college, helping families communicate better about the cost of college, and making college more affordable so that the family's income can better support the student's college expenses. Expectations of family support and families' willingness to support should factor more highly in calculating the student's EFC since, for some students, the government's expectation of family support does not meet their reality.

*Practitioners*

In practice, this study's findings could help high school guidance counselors and college financial aid counselors to encourage further parental involvement in the college-going process. For instance, counselors can help parents and students better understand the impact of financial expectations and how, when these expectations do not align, college attendance declines. Although the current study only partially affirms that the complexity of financial aid impacts college attendance, institutions should do more to decrease complexity by using a common financial aid award letter. Doing so would allow families to better compare award offers as they decide where their students should attend college.

*Researchers*

Findings from the current study both support and refute existing literature on the factors contributing to FAFSA completion and college attendance. Literature concerning the willingness and ability to support college expenses, the effect of financial aid discussions and college attendance, and the impact of improperly estimated college costs were supported by the findings of this study. Future research on the real and perceived financial obstacles should further address the topic for underrepresented groups such as Blacks and Latinos. Conversely, literature regarding the financial aid system's complex nature was only partially supported by this study's findings. Therefore, more research is needed to clarify the impact of the complexity of financial aid on the transition to college.

## Limitations of the Current Study

The study includes several limitations. First, the data used in the study were derived from a secondary, longitudinal research study, HSLS:09. Although there are many advantages to using secondary, longitudinal research, including cost, time, and accessibility, there are also some disadvantages. One such disadvantage is the inability to find questions that exactly match the needs of the current study. Additionally, as with any longitudinal study, participant attrition is expected. Since the current study includes data from follow-up surveys, the effects of attrition should be minimized. Furthermore, secondary data is subject to the biases of those collecting and cleaning the data. It can only be assumed that the data were collected and cleaned in an unbiased manner. Moreover, the data used in the current study were collected through self-reported surveys using randomly selected high school students. Although self-reporting has the advantage of allowing respondents to provide their perspective, not all respondents will answer accurately or truthfully. Finally, the questions used in the survey were not created with the general systems theory framework. Thus, the analysis of this research study may be limited due to the impreciseness of the questions.

## Recommendations for Future Studies

Further research in the area of FAFSA completion and college attendance should include research on the financial obstacles faced by students in nontraditional family settings such as guardianships, foster care, and those experiencing homelessness. In my opinion, this population of students is most vulnerable to the complexity of the financial aid system and are more at risk of failing to attend college. The presumed lack of family

support through encouragement, assistance with applications, and financial support for students in this population can have devastating effects on their pursuit of human capital improvement.

Additionally, further research in the area of FAFSA completion and college attendance should focus on the impact of eliminating the FAFSA application and automatically approving full financial aid for students whose parents or guardians are receiving government assistance such as free or reduced lunch, food stamps, and welfare. Eliminating the FAFSA for this population has the potential to dramatically improve college attendance outcomes for these students and reduce costs in processing financial aid applications for Federal and State governments and institutions.

# REFERENCES


Agger, C., Meece, J., & Byun, S. Y. (2018). The influences of family and place on rural adolescents' educational aspirations and post-secondary enrollment. *Journal of youth and adolescence, 47*(12), 2554-2568. doi:10.1007/s10964-018-0893-7

Bahr, S., Sparks, D., & Hoyer, K. M. (2018). Why didn't students complete a free application for federal student aid (FAFSA)? A detailed look. *National Center for Education Statistics*. Retrieved from https://arc.accesslex.org/di-admissions/20/

Barnard, J., Dorrance, J., Elengold, K. S., & Ansong, D. (2019). "I was on my own:" Reconsidering regulatory framework for family support during college.

Baum, S., Ma, J., Pender, M., & Libassi, C. J. (2019). *Trends in higher education series: Trends in student aid 2019*. Retrieved from https://research.collegeboard.org/trends/student-aid

Belley, P., Frenette, M., & Lochner, L. (2014). Post-secondary attendance by parental income in the U.S. and Canada: Do financial aid policies explain the differences? *The Canadian Journal of Economics*, 47(2), 664-696. Retrieved from https://www.jstor.org/stable/43818294

Bergman, P., Denning, J. T., & Manoli, D. (2019). Is information enough? The effect of information about education tax benefits on student outcomes. *Journal of Policy Analysis and Management, 38*(3), 706-731. doi:10.1002/pam.22131

Bettinger, E. P., & Evans, B. J. (2019). College guidance for all: A randomized experiment in pre-college advising. *Journal of Policy Analysis and Management, 38*(3), 579-599. doi:10.1002/pam.22133

Bettinger, E. P., Long, B. T., Oreopoulos, P., & Sanbonmatsu, L. (2012). The role of application assistance and information in college decisions: Results from the H&R Block FAFSA experiment. *Quarterly Journal of Economics, 127*(3), 1205-1242. doi:10.1093/qje/qjs017

Bird, K. A., Castleman, B. L., Denning, J. T., Goodman, J., Lamberton, C., & Rosinger, K. O. (2019). *Nudging at scale: experimental evidence from FAFSA completion campaigns*. Brown University. Providence, RI.

Braunstein, A., McGrath, M., & Pescatrice, D. (1999). Measuring the impact of income and financial aid offers on college enrollment decisions. *Research in Higher Education, 40*(3), 247-259. Retrieved from https://eric.ed.gov/?id=ED419479

Burd, S., Fishman, R., Keane, L., Habbert, J., Barrett, B., Dancy, K., & Williams, B. (2018). *Decoding the cost of college: The case for transparent financial aid award letters*. Retrieved from https://www.brookings.edu/

Castleman, B., Meyer, K. E., Sullivan, Z., Hartog, W. D., & Miller, S. (2017). Nudging Students Beyond the FAFSA: The Impact of University Outreach on Financial Aid Behaviors and Outcomes. *Journal of Student Financial Aid, 47*(3), 4-27. Retrieved from <Go to ISI>://WOS:000418767300002

Castleman, B. L., & Page, L. C. (2014). A trickle or a torrent? Understanding the extent of summer "melt" among college-intending high school graduates. *Social Science Quarterly, 95*(1), 202-220. doi:10.1111/ssqu.12032

Castleman, B. L., & Page, L. C. (2015). Summer nudging: Can personalized text messages and peer mentor outreach increase college going among low-income high school graduates? *Journal of Economic Behavior & Organization, 115*, 144-160. doi:10.1016/j.jebo.2014.12.008

Castleman, B. L., & Page, L. C. (2016). *Parental influences on postsecondary decision-making: Evidence from a text messaging experiment*. EdPolicyWorks. University of Virginia. Charlottesville, VA. Retrieved from https://journals-sagepub-com.proxy-remote.galib.uga.edu/doi/full/10.3102/0162373716687393

Chaplot, P., Cooper, D. M., Johnstone, R., & Karandjeff, K. (2015). *Beyond financial aid: How colleges can strengthen the financial stability of low-income students and improve student outcomes*. Retrieved from Lumina Foundation: https://vtechworks.lib.vt.edu/handle/10919/83263

Charles, C. Z., Roscigno, V. J., & Torres, K. C. (2007). Racial inequality and college attendance: The mediating role of parental investments. *Social Science Research, 36*(1), 329-352. doi:10.1016/j.ssresearch.2006.02.004

Cholewa, B., Burkhardt, C. K., & Hull, M. F. (2015). Are school counselors impacting underrepresented students' thinking about postsecondary education? A nationally representative study. *Professional School Counseling, 19*(1), 144-154. doi:10.5330/1096-2409-19.1.144

Churchman, C. W. (1964). An approach to general systems theory. In M. D. Mesarovic (Ed.), *Views on general systems theory* (pp. 173-175). New York, NY: John Wiley and Sons, Inc.

Cohen, J. (1988). Statistical power analysis for the behavior sciences (2nd ed.). West Publishing Company.

Cox, R. D. (2016). Complicating conditions: Obstacles and interruptions to low-Income students' college "choices". *Journal of Higher Education, 87*(1), 1-26. doi:10.1353/jhe.2016.0005

Daun-Barnett, N., & Mabry, B. (2012). Integrating tax preparation with FAFSA completion: Three case models. *Journal of Student Financial Aid, 42*(3), 25-45. Retrieved from https://ir.library.louisville.edu/jsfa/vol42/iss3/2

Davidson, J. C. (2013). Increasing FAFSA completion rates: Research, policies and practices. *Journal of Student Financial Aid, 43*(1), 38–54. Retrieved from http://publications.nasfaa.org/jsfa/vol43/iss1/4

Davidson, J. C. (2015). Improving the financial aid process for community college students: A literature review of FAFSA simplification, information, and verification. C*ommunity College Journal of Research and Practice, 39*(5), 397-408. Retrieved from https://naspa.tandfonline.com/doi/abs/10.1080/10668926.2013.820157

Deacon, R. E., & Firebaugh, F. M. (1988). *Family resource management: Principles and application.* Boston, MA:Allyn and Bacon, Inc.

De La Rosa, M. L. (2006). Is opportunity knocking? Low-income students' perceptions of college and financial aid. *American Behavioral Scientist, 49*(12), 1670-1686. Retrieved from https://journals.sagepub.com/doi/abs/10.1177/0002764206289139

Denning, J. T., Marx, B. M., & Turner, L. J. (2019). ProPelled: The effects of grants on graduation, earnings, and welfare. *American Economic Journal: Applied Economics, 11*(3), 193-224. doi:10.1257/app.20180100

Duprey, M. A., Pratt, D. J., Jewell, D. M., Cominole, M. B., Fritch, L. B., & Ritchie, E. A., . . . RTI International. (2018). *High school longitudinal study of 2009 (HSLS:09) base-year to second follow-up* [Data file and code book]. Retrieved from: https://nces.ed.gov/surveys/hsls09/hsls09_data.asp

Dynarski, S. (2000). Hope for whom? Financial aid for the middle class and its impact on college attendance. *National Tax Journal, 53*(3), 629-662. Retrieved from https://users.nber.org/~dynarski/2000%20Hope%20for%20Whom.pdf

Dynarski, S. M. (2003). Does aid matter? Measuring the effect of student aid on college attendance and completion. *American Economic Review, 93*(1), 279-288. Retrieved from https://www.jstor.org/stable/3132174

Dynarski, S. M., & Scott-Clayton, J. E. (2007). *College grants on a postcard: A proposal for simple and predictable federal student aid* (Discussion Paper 2007-01). Retrieved from Brookings Institution: https://users.nber.org/~dynarski/200702dynarski-scott-clayton.pdf

Dynarski, S., & Scott-Clayton, J. (2013). Financial Aid Policy: Lessons from Research. *Future of Children, 23*(1), 67-91. doi:10.1353/foc.2013.0002

Education Commission of the States (2020). *Financial Aid by State*. Retrieved from https://www.ecs.org/

Ekstrom, R. B. (1992). *Attitudes toward borrowing and participation in postsecondary education* (College Board Report No. 92-6). Retrieved from College Board: https://onlinelibrary.wiley.com/doi/pdf/10.1002/j.2333-8504.1992.tb01467.x

Elliott, W., Starks, B., Seefeldt, K., & Ellis, J. (2018). Children's savings account programs enable parents to plan and talk about college with children and others. *Sociology Mind, 08*(04), 345-365. doi:10.4236/sm.2018.84022

Emmons, W. R., & Noeth, B. J. (2012). Household financial stability: Who suffered the most from the crisis? *The Regional Economist 20*(3), 11-17. Retrieved from https://ideas.repec.org/a/fip/fedlre/y2012ijul.html

Engberg, M. E., & Gilbert, A. J. (2014). The counseling opportunity structure: Examining correlates of four-year college-going rates. *Research in Higher Education, 55*(3), 219-244. Retrieved from https://link.springer.com/article/10.1007/s11162-013-9309-4

Essex, A. (2016). *College access: Findings on the FAFSA completion initiative.* (Doctoral dissertation). Johns Hopkins University Baltimore, Maryland. Retrieved from https://jscholarship.library.jhu.edu/

Evans, B. J., & Boatman, A. (2019). Understanding how information affects loan aversion: A randomized control trial of providing federal loan information to high school seniors. *Journal of Higher Education, 90*(5), 800-832. doi:10.1080/00221546.2019.1574542

Feeney, M., & Heroff, J. (2013). Barriers to need-based financial aid predictors of timely FAFSA completion among low-income students. *Journal of Student Financial Aid, 43*(2), 65-85. Retrieved from http://publications.nasfaa.org/jsfa/vol43/iss2/2

Finnie, R., & Wismer, A. (2015). Access and barriers to postsecondary education: Evidence from the youth in transition survey. *Canadian Journal of Higher Education, 45*(2), 229-262. Retrieved from https://hdl.handle.net/10133/4888

Flaster, A. (2018). Kids, college, and capital: Parental financial support and college choice. *Research in Higher Education, 59*(8), 979-1020. doi:10.1007/s11162-018-9496-0

Frenette, M., & Robson, J. (2011). *Financial literacy of low-income students: Literature review and environmental scan*. Retrieved from http://www.heqco.ca/en-ca/Research/ResPub/Pages/Financial-Literacy-of-Low-income-Students-Literature-Review-and-Environmental-Scan.aspx

George-Jackson, C., & Gast, M. J. (2015). Addressing information gaps: Disparities in financial awareness and preparedness on the road to college. *Journal of Student Financial Aid, 44*(3), 202-234. Retrieved from https://ir.library.louisville.edu/jsfa

Georgia Student Finance Commision. (2020). *State Aid Application.* Retrieved from https:/ www.gafutures.org, 2020

Gray, W., & Rizzo, N. D. (1969). History and development of general systems theory. In W. Gray, F. J. Duhl, & N. D. Rizzo (Eds.), *General systems theory and psychiatry*. Boston, MA: Little, Brown and Company.

Greenfield, J. S. (2015). Challenges and opportunities in the pursuit of college finance literacy. *The High School Journal, 98*(4), 316-336. Retrieved from https://muse.jhu.edu/article/583904

Grodsky, E., & Jones, M. (2005). Real and imagined barriers to college entry: Perceptions of cost. *Social Science Research, 36*(2), 745-766. Retrieved from https://escholarship.org/content/qt7v87v3j0/qt7v87v3j0.pdf

Hallett, R. E., & Griffen, J. (2015). Empowering parents in the college-planning process: An action-inquiry case study. *Journal of Education for Students Placed at Risk*, *20*(1-2), 101-119. Retrieved from https://doi.org/10.1080/10824669.2014.984035

Hansen, W. L. (1983). Impact of student financial aid on access. *Academy of Political Science, 35*(2), 84-96. Retrieved from https://www.jstor.org/stable/3700892

Hein, V., Smerdon, B., & Sambol, M. (2013). Predictors of postsecondary success. Retrieved from: https://eric.ed.gov/?id=ED555671

Hlinka, K. R., Gericke, K. L., Akin, S. R., & Stephenson, L. G. (2018). Students' perspectives on a gap-funded program: The community scholarship program of McCracken County, Kentucky. *Journal of Student Financial Aid, 48*(1), 29-52. Retrieved from https://ir.library.louisville.edu/jsfa/vol48/iss1/3

Hurley, S., & Coles, A. (2015). *College counseling for Latino and underrepresented students*. Higher Education Policy for Minorities in the United States. Virginia Tech, Blacksburg, VA.

Illinois Student Assistance Commission. (2003). *Are cost barriers keeping qualified students from college*. Retrieved from Illinois Student Assistance Commission: https://www.isac.org/dotAsset/9ae84440-c140-4ddc-9293-9ef53d25a9f5.pdf

Intellectus Statistics [Online computer software]. (2020). Intellectus Statistics. https://analyze.intellectusstatistics.com/

Jez, S. J. G. (2018). *Increasing students' awareness and understanding of financial aid*. Retrieved from The Institute for College Access & Success: https://ticas.org/files/pub files/designing financial aid for californias future.pdf#page=50

Johnson, M. T. (2013). Borrowing constraints, college enrollment, and delayed entry. *Journal of Labor Economics, 31*(4), 669-725. Retrieved from https://pdfs.semanticscholar.org/7538/5a56d742acf505962b15cfb81e523583b16d.pdf

Kane, T. J. (1994). College entry by Blacks since 1970: The role of college costs, family background, and the returns to education. *Journal of Political Economy, 102*(5), 878-911. Retrieved from https://www.jstor.org/stable/2138651

Kane, T. J. (2003). *Quasi-experimental estimate of the impact of financial aid on college-going*. National Bureau of Economic Research. Cambridge, MA. Retrieved from https://www.nber.org/papers/w9703

Kantrowitz, M. (2009). Analysis of why some students do not apply for financial aid. *Student Aid Policy Analysis*. Retrieved from https://finaid.org/educators/20090427CharacteristicsOfNonApplicants.pdf

Kantrowitz, M. (2011). *Reasons why students do not file the FAFSA*. Retrieved from Student Aid Policy Analysis: https://www.finaid.org/educators/20110118nofafsareasons.pdf

Kantrowitz, M. (2018, September 17). Millions of students still fail to file the FAFSA each year. *Saving for College*. Retrieved from www.savingforcollege.com

Kelchen, R. (2015). Financial need and aid volatility among students with zero expected family contribution. *Journal of Student Financial Aid, 44*(3), 179-201. Retrieved from https://ir.library.louisville.edu/jsfa

Kelchen, R. (2017). The distributional and cost implications of negative expected family contributions. *Journal of Student Financial Aid, 47*(1), 4-24. Retrieved from https://ir.library.louisville.edu/jsfa/vol47/iss1/2

Kim, Y., Huang, J., Sherraden, M., & Clancy, M. (2017). Child development accounts, parental savings, and parental educational expectations: A path model. *Children and Youth Services Review, 79*, 20-28. doi:10.1016/j.childyouth.2017.05.021

King, J. E. (2004). *Missed opportunities: Students who do not apply for financial aid* (Issue Brief No. 1). Retrieved from American Council on Education: https://www.acenet.edu/Documents/IssueBrief-2004-Missed-Opportunities-Students-Who-Do-Not-Apply-for-Financial-Aid.pdf

Kofoed, M. S. (2017). To apply or not to apply: FAFSA completion and financial aid gaps. *Research in Higher Education, 58*(1), 1-39. doi:10.1007/s11162-016-9418-y

Kreighbaum, A. (2018, July 24). Education department to begin rollout of mobile student aid application. *Inside Higher Ed*. Retrieved from https://www.insidehighered.com

LaManque, A. (2009). Factors associated with delayed submission of the free application for federal financial aid. *Journal of Applied Research in the Community College, 17*(1), 1-7. Retrieved from https://www.ingentaconnect.com/content/montezuma/jarcc/2009/00000017/00000001/art00001

Long, B. T. (2017). Access to higher education: Barriers to enrollment and choice. In *Encyclopedia of International Higher Education Systems and Institutions* (pp. 1-4): Springer, Dordrecht.

Louviere, J. J., Hensher, D. A., & Swait, J. D. (2000). Stated choice methods: Analysis and Applications. Cambridge University Press. https://doi.org/10.1017/CBO9780511753831

Lovenheim, M. F., & Owens, E. G. (2014). Does federal financial aid affect college enrollment? Evidence from drug offenders and the Higher Education Act of 1998. *Journal of Urban Economics, 81*, 1-13. doi:10.1016/j.jue.2014.01.005

Manly, C. A., Wells, R. S., & Bettencourt, G. M. (2017). Financial planning for college: Parental preparation and capital conversion. *Journal of family and economic issues, 38*(3), 421-438. doi:10.1007/s10834-016-9517-0

McKinney, L., & Novak, H. (2013). The relationship between FAFSA filing and persistence among first-year community college students. *Community College Review, 41*(1), 63-85. doi:10.1177/0091552112469251

McKinney, L., & Novak, H. (2015). FAFSA filing among first-year college students: Who files on time, who doesn't, and why does it matter? *Research in Higher Education, 56*(1), 1-28. doi:10.1007/s11162-014-9340-0

Menard, S. (2009). *Logistic regression: From introductory to advanced concepts and applications.* Sage Publications. Thousand Oaks, CA.

Mesarovic, M. D. (1964). Foundations for a general systems theory In M. D. Mesarovic (Ed.), *Views on general systems theory* (pp. 1-24). New York, NY: John Wiley and Sons, Inc.

Narayan, A. (2019). Does simplifying the college financial aid form matter? *Economics of Education Review, 75*(1), 1-25. doi:https://doi.org/10.1016/j.econedurev.2020.101959

National Center for Education Statistics. (2009). The High School Longitudinal Study Of 2009 (HSLS:09) [Data file and code book]. Retrieved from: www.nces.ed.gov

National Center for Education Statistics. (2020). *What's new at NCES.* Retrieved from https://www.nces.ed.gov.

Nienhusser, H. K., & Oshio, T. (2017). High school students' accuracy in estimating the cost of college: A proposed methodological approach and differences among racial/ethnic groups and college financial-related factors. *Research in Higher Education, 58*(7), 723-745. doi:10.1007/s11162-017-9447-1

Novak, H., & McKinney, L. (2011). The Consequences of Leaving Money on the Table: Examining Persistence among Students Who Do Not File a FAFSA. *Journal of Student Financial Aid, 41*(3), 5-23. Retrieved from <Go to ISI>://WOS:000219918300001

Olivérez, P. M., & Tierney, W. G. (2005). *Show us the money: Low-income students, families, and financial aid.* Retrieved from Los Angeles, CA: https://eric.ed.gov/?id=ED484811

Owen, L., & Westlund, E. (2016). Increasing college opportunity: School counselors and FAFSA completion. *Journal of College Access, 2*(1), 6-26. Retrieved from http://scholarworks.wmich.edu/jca/vol2/iss1/3

Page, L. C., Castleman, B. L., & Meyer, K. (2018). *Customized nudging to improve FAFSA completion and income verification.* https://www.signalvine.com/app/uploads/2018/07/Research-CustomizedNudgingtoImproveFAFSACompletion.pdf

Perna, L. W. (2006b). Understanding the relationship between information about college prices and financial aid and students' college-related behaviors. *American Behavioral Scientist, 49*(12), 1620-1635. Retrieved from https://journals.sagepub.com/doi/abs/10.1177/0002764206289144

Perna, L. W., & Titus, M. A. (2005). The relationship between parental involvement as social capital and college enrollment: An examination of racial/ethnic group differences. *The Journal of Higher Education, 76*(5), 485-518. doi:https://doi.org/10.1353/jhe.2005.0036

Pulcini, B. (2018). Financial aid policies and practices as impediments to low-income student access to higher education. *College and University, 93*(2), 61-65. Retrieved from https://www.researchgate.net/publication/325180813

Robinson, K. J., & Roksa, J. (2016). Counselors, information, and high school college-going culture: Inequalities in the college application process. *Research in Higher Education, 57*(7), 845-868. doi:10.1007/s11162-016-9406-2

Rubin, R. (2011). The Pell and the poor: A regression-discontinuity analysis of on-time college enrollment. *Research in Higher Education, 52*(7), 675-692. doi:10.1007/s11162-011-9215-6

Sallie Mae (2020). *How America pays for college 2020*. Sallie Mae Retrieved from https://www.salliemae.com/plan-for-college/how-america-pays-for-college/

Song, H., & Petracchi, H. E. (2020). The effects of college savings on college enrollment and the mediating role of parental expectations and discussions about college among students from low-income households. *Children and Youth Services Review, 108*. doi:10.1016/j.childyouth.2019.104553

Steelman, L. C., & Powell, B. (1991). Sponsoring the next generation: Parental willingness to pay for higher education. *American Journal of Sociology, 96*(6), 1505-1521.

Stern, G. M. (2009). Why Latino students are failing to attend college. *The Education Digest, 75*(1), 46-49. Retrieved from https://search.proquest.com/openview/28a55575e48828cc812d9a999a09c1ed/1.pdf?pq-origsite=gscholar&cbl=25066

Stevens, J. P. (2009). *Applied multivariate statistics for the social sciences* (5th ed.). Mahwah, NJ: Routledge Academic.

Stratton, L. S. (2014). College enrollment: An economic analysis. In M. B. Paulsen (Ed.), *Higher education: Handbook of theory and research* (pp. 327-384). Iowa City, IA: Springer.

Taylor, Z. W., & Bicak, I. (2020). First-generation college student financial aid: Results from a national financial aid jargon survey. *College Student Affairs Journal, 38*(1), 91-109. Retrieved from https://muse-jhu-edu.proxy-remote.galib.uga.edu/article/754381/summary

Taylor, Z. W., Bicak, I., & Fry, J. J. (2019). Learning to speak financial aid: Results from a national financial aid jargon survey. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract id=3489556

U.S. Department of Education, Institute of Education Sciences (2017). *How well does high school grade point average predict college performance by student urbanicity and timing of college entry?* : U.S. Department of Education Retrieved from https://eric.ed.gov/?id=ED573041.

U.S. Department of Education, Institute of Education Sciences. (2019). *The EFC formula, 2020–2021*. U.S. Department of Education Retrieved from https://ifap.ed.gov/sites/default/files/attachments/2019-10/2021EFCFormulaGuideOct2019UpdateAttach.pdf

U.S. Department of Treasury, Internal Revenue Service. (2019). *Tax Benefits of Education*. (Publication 970). Washington, DC: U.S. Department of Treasury. Retrieved from www.irs.gov.

Von Bertalanffy, L. (1969). General systems theory and psychiatry. In W. Gray, F. J. Duhl, & N. D. Rizzo (Eds.), *General systems theory and psychiatry* (pp. 33-46). Boston, MA: Little, Brown and Company.

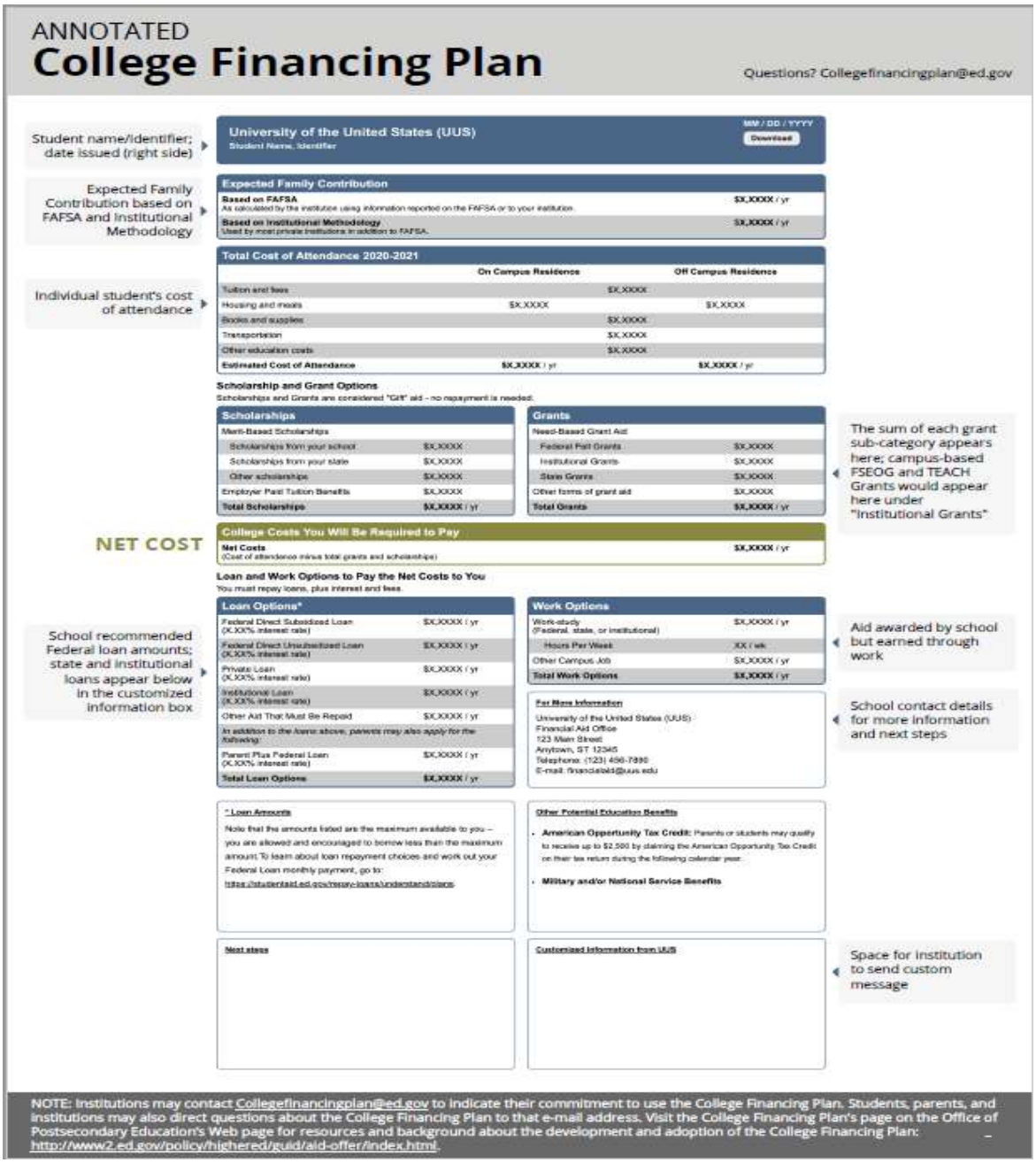
Warnock, D. M. (2016). Inequalities at the outset: Racial, ethnic, and socioeconomic differences in parents' perceptions of paying for college. *Journal of College Student Development, 57*(5), 503-521. doi:10.1353/csd.2016.0066

Wells, R. S., & Lynch, C. M. (2012). Delayed College Entry and the Socioeconomic Gap: Examining the Roles of Student Plans, Family Income, Parental Education, and Parental Occupation. *The Journal of Higher Education, 83*(5), 671-697.

Whitchurch, G. G., & Constantine, L. L. (1993). Systems theory. In P. G. Boss, W. J. Doherty, R. Larossa, W. R. Schumm, & S. K. Steinmetz (Eds.), *Soucebook of family theories and methods: A contextual approach* (pp. 325-352). New York, NY: Springer.

Zheng, H., Starks, B., Ellis, J., O'Brien, M., & Elliott, W. (2020). An examination of parental college expectations' mediating role between children's savings accounts and children's educational attainment by income level. *Sociology Mind, 10*(03), 165-186. doi:10.4236/sm.2020.103011

Appendix - Template for Financial Aid Award Letters



ANNOTATED

# College Financing Plan

Questions? Collegefinancingplan@ed.gov

Student name/identifier; date issued (right side)

**University of the United States (UUS)**
Student Name, Identifier

MM / DD / YYYY
Download

Expected Family Contribution based on FAFSA and Institutional Methodology

**Expected Family Contribution**

| | |
|---|---|
| **Based on FAFSA**<br>As calculated by the institution using information reported on the FAFSA or to your institution | $X,XXX / yr |
| **Based on Institutional Methodology**<br>Used by most private institutions, in addition to FAFSA. | $X,XXX / yr |

Individual student's cost of attendance

**Total Cost of Attendance 2020-2021**

| | On Campus Residence | Off Campus Residence |
|---|---|---|
| Tuition and fees | $X,XXX | |
| Housing and meals | $X,XXX | $X,XXX |
| Books and supplies | $X,XXX | |
| Transportation | $X,XXX | |
| Other education costs | $X,XXX | |
| **Estimated Cost of Attendance** | **$X,XXX** / yr | **$X,XXX** / yr |

**Scholarship and Grant Options**
Scholarships and Grants are considered "Gift" aid – no repayment is needed.

| Scholarships | |
|---|---|
| Merit-Based Scholarships | |
| Scholarships from your school | $X,XXX |
| Scholarships from your state | $X,XXX |
| Other scholarships | $X,XXX |
| Employer Paid Tuition Benefits | $X,XXX |
| **Total Scholarships** | **$X,XXX** / yr |

| Grants | |
|---|---|
| Need-Based Grant Aid | |
| Federal Pell Grants | $X,XXX |
| Institutional Grants | $X,XXX |
| State Grants | $X,XXX |
| Other forms of grant aid | $X,XXX |
| **Total Grants** | **$X,XXX** / yr |

The sum of each grant sub-category appears here; campus-based FSEOG and TEACH Grants would appear here under "Institutional Grants"

**NET COST**

**College Costs You Will Be Required to Pay**

| | |
|---|---|
| **Net Costs**<br>(Cost of attendance minus total grants and scholarships) | **$X,XXX** / yr |

**Loan and Work Options to Pay the Net Costs to You**
You must repay loans, plus interest and fees.

School recommended Federal loan amounts; state and institutional loans appear below in the customized information box

| Loan Options* | |
|---|---|
| Federal Direct Subsidized Loan (X.XX% interest rate) | $X,XXX / yr |
| Federal Direct Unsubsidized Loan (X.XX% interest rate) | $X,XXX / yr |
| Private Loan (X.XX% interest rate) | $X,XXX / yr |
| Institutional Loan (X.XX% interest rate) | $X,XXX / yr |
| Other Aid That Must Be Repaid | $X,XXX / yr |
| In addition to the loans above, parents may also apply for the following: | |
| Parent Plus Federal Loan (X.XX% interest rate) | $X,XXX / yr |
| **Total Loan Options** | **$X,XXX** / yr |

| Work Options | |
|---|---|
| Work-study (Federal, state, or institutional) | $X,XXX / yr |
| Hours Per Week | XX / wk |
| Other Campus Job | $X,XXX / yr |
| **Total Work Options** | **$X,XXX** / yr |

Aid awarded by school but earned through work

**For More Information**
University of the United States (UUS)
Financial Aid Office
123 Main Street
Anytown, ST 12345
Telephone: (123) 456-7890
E-mail: financialaid@uus.edu

School contact details for more information and next steps

*** Loan Amounts**
Note that the amounts listed are the maximum available to you – you are allowed and encouraged to borrow less than the maximum amount. To learn about loan repayment choices and work out your Federal Loan monthly payment, go to:
https://studentaid.ed.gov/repay-loans/understand/plans

**Other Potential Education Benefits**

- **American Opportunity Tax Credit:** Parents or students may qualify to receive up to $2,500 by claiming the American Opportunity Tax Credit on their tax return during the following calendar year.
- **Military and/or National Service Benefits**

**Next steps**

**Customized Information from UUS**

Space for institution to send custom message

NOTE: Institutions may contact Collegefinancingplan@ed.gov to indicate their commitment to use the College Financing Plan. Students, parents, and institutions may also direct questions about the College Financing Plan to that e-mail address. Visit the College Financing Plan's page on the Office of Postsecondary Education's Web page for resources and background about the development and adoption of the College Financing Plan: http://www2.ed.gov/policy/highered/guid/aid-offer/index.html.